2 WHAT ARE THE ALTERNATIVES EVALUATED IN THIS PEIS?

This chapter describes the two alternatives that are analyzed in detail in the PEIS: (1) *No Action*: no Section 368 energy corridors[1] would be designated on federal lands, and (2) *Proposed Action*: designation of Section 368 energy corridors on federal land and amendment of land use or equivalent plans for the affected lands. Under the Proposed Action, slightly more than 6,000 miles of Section 368 energy corridors would be designated within federal lands in the 11 western states as identified by environmental, engineering, and land use siting criteria and public input. This chapter details the process taken to site the corridors that would be designated under the Proposed Action Alternative. Other alternatives that were considered but eliminated from detailed study in accordance with the implementing regulations of NEPA are also described. A summary comparison of the environmental consequences of the analyzed alternatives is also presented.

Text Box 2.1-1
Miles of Existing Electricity Transmission Lines and Pipelines in the 11 Western States (federal and nonfederal lands combined)

Transmission lines (>230 kV)	49,430 miles
Natural gas pipelines (>16-inch diameter)	27,451 miles
Crude oil pipelines (>12-inch diameter)	5,507 miles

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no designation of Section 368 energy corridors on federal lands in the West, and the siting and development of future energy transport projects would continue following existing federal authority and agency-specific permitting practices. In general, all public lands, unless otherwise designated, segregated, or withdrawn, are available for ROW authorization by the appropriate land management agency under the FLPMA. Current federal agency practices for permitting energy transport ROWs and ensuring maximum consistency with existing land use or equivalent plans would be followed for each proposed ROW. Applicants for ROWs would continue to identify and evaluate alternative ROW routes following current federal and state regulations, policies, and permitting processes and requirements. There are currently about 32,000 miles of large (>12-inch diameter) oil and gas pipelines and 49,000 miles of large (230 kV and greater) electricity transmission lines on federal and nonfederal lands in the West which were sited and authorized in this manner. There would be relatively little West-wide coordination for siting and permitting energy transport projects on federal lands in order to meet current and future energy needs in the 11 western states.

Under current permitting processes and procedures, applicants identify their preferred project-specific ROWs crossing federal and nonfederal lands. Affected federal land managers evaluate the ROW proposals and work with the applicants to identify an acceptable ROW route across the affected land management unit either based on consistency with approved land use or equivalent plans or through a potential plan amendment. In addition, there are numerous energy corridors that have previously been designated on federal lands by individual BLM field offices and FS national forests that may be used for future energy transport projects. For large projects affecting more than one federal land management agency, a joint permitting approach is often used, with a

[1] Shaded text indicates portions of the document that underwent revision between the draft and the final PEIS in response to comments received during the public comment period as well as additional information provided by local federal land managers and resource specialists.

lead agency identified to be in charge of the NEPA analysis and documentation. Individual land use decisions, necessary plan amendments, and ROW authorizations are then processed by each agency.

Under the No Action Alternative, future energy transport projects would likely not cross federal and nonfederal lands within common, shared energy transport corridors. For example, many of the corridor locations proposed during public scoping (see Figure 2.1-1) were ROWs for individual potential future projects. Few of these proposed corridors, which total more than 61,550 miles in length, are colocated (located together within a shared ROW or in adjacent ROWs), and if developed under the No Action Alternative would result in a proliferation of widely spaced project-specific ROWs crossing the federal and nonfederal landscape. Exceptions would occur in locations (1) where physical constraints (such as mountain passes) would act to bring individual project ROWs together for relatively short distances, (2) where there is an opportunity for corridors to parallel existing ROWs, and (3) where energy corridors that could accommodate multiple projects have been previously designated on federal lands by local federal land managers in individual land use plans.

Development of future energy transport projects on federal land would be required to comply with current agency-specific ROW authorizing and permitting processes and requirements regarding environmental review, construction, operation, and decommissioning. Project siting and design must be consistent with the land use or equivalent plans for the lands to be crossed by the project. Future energy transport projects would continue to be evaluated on an individual, project-by-project basis, and applicants would need to identify and evaluate alternative ROW locations as part of the authorization and permitting processes. Amendment of land use or equivalent plans to incorporate project-specific ROWs would similarly be conducted on a project-by-project and agency-by-agency basis, and there would be no assurance of consistency in siting and evaluation of proposed energy transport projects crossing federal lands.

2.2 PROPOSED ACTION ALTERNATIVE: DESIGNATE SECTION 368 ENERGY CORRIDORS AND AMEND LAND USE PLANS ON FEDERAL LANDS

Under the Proposed Action Alternative, there would be 131 Section 368 energy corridors, totaling approximately 6,112 miles in length, designated in the West (Figure 2.2-1; see Volume III of this PEIS for detailed Proposed Action corridor maps). These corridors represent preferred locations on federal lands for future energy transport systems, such as electric transmission lines and gas pipelines. Designation of these corridors does not authorize or require future project development within the corridors nor guarantee ROW authorization for future projects seeking to use the designated corridors (Text Box 2.2-1). Section 368 corridors would occur in all 11 western states and would be designated for pipeline and transmission line (multimodal) use, with a width of 3,500 feet, unless specified otherwise because of environmental or management constraints or local designations. Projects proposed to use the Section 368 energy corridors will be required to comply with all applicable federal and Agency regulations and requirements. Projects also crossing nonfederal lands will be subject on those lands to all applicable state and local environmental regulations, as well as any stipulations required by the applicable state and/or local authorizing agency. Currently, any requested use of federal lands must demonstrate compliance with all applicable federal, state, and local regulations in order to use federal land. Such compliance is considered during the approval process and required prior to use of the federal land. That process would be unchanged by the designation of the Section 368 energy corridor.

Section 368 and the designation of energy corridors on federal lands do not preempt in any

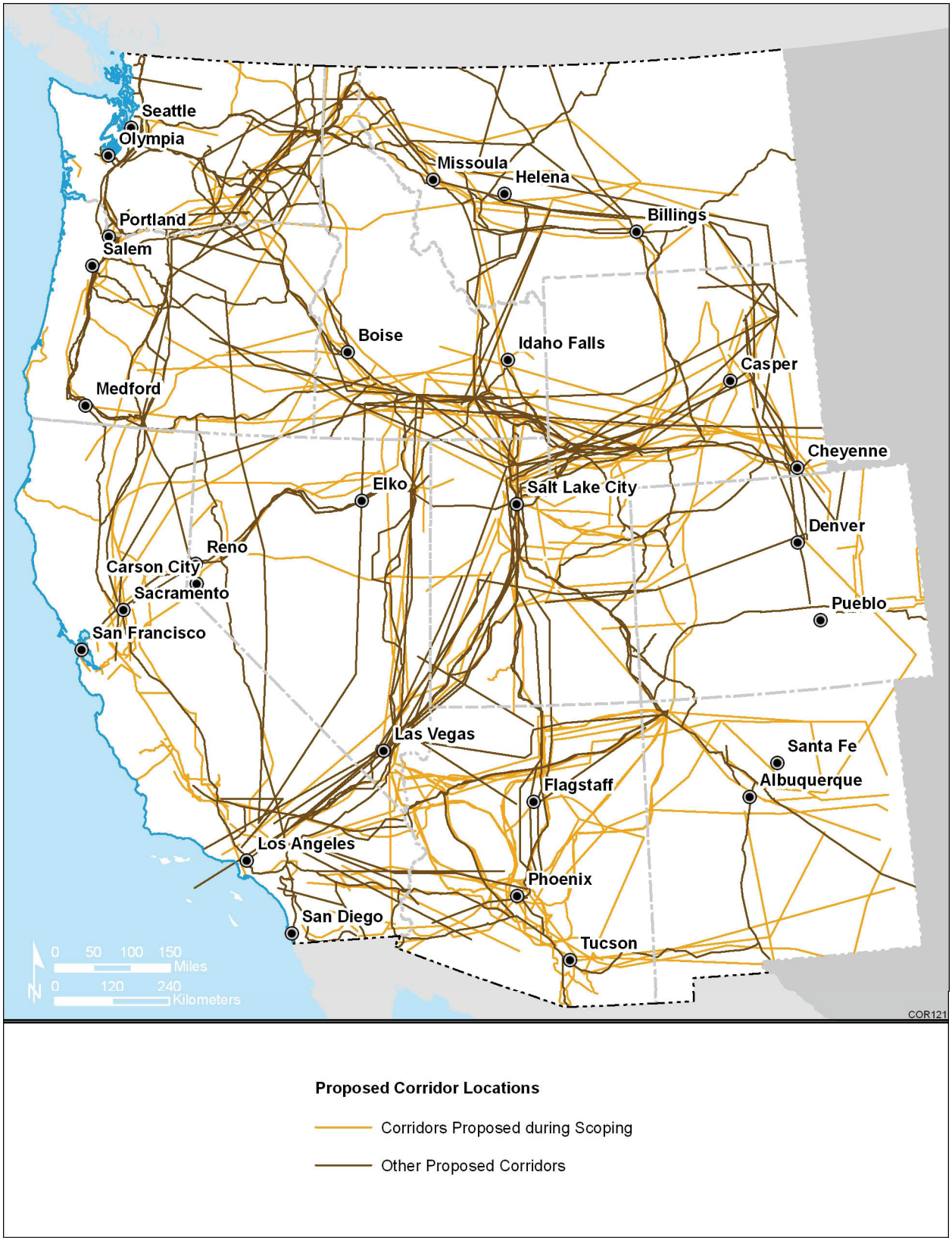

FIGURE 2.1-1 Proposed Energy Corridors Received during and after Public Scoping

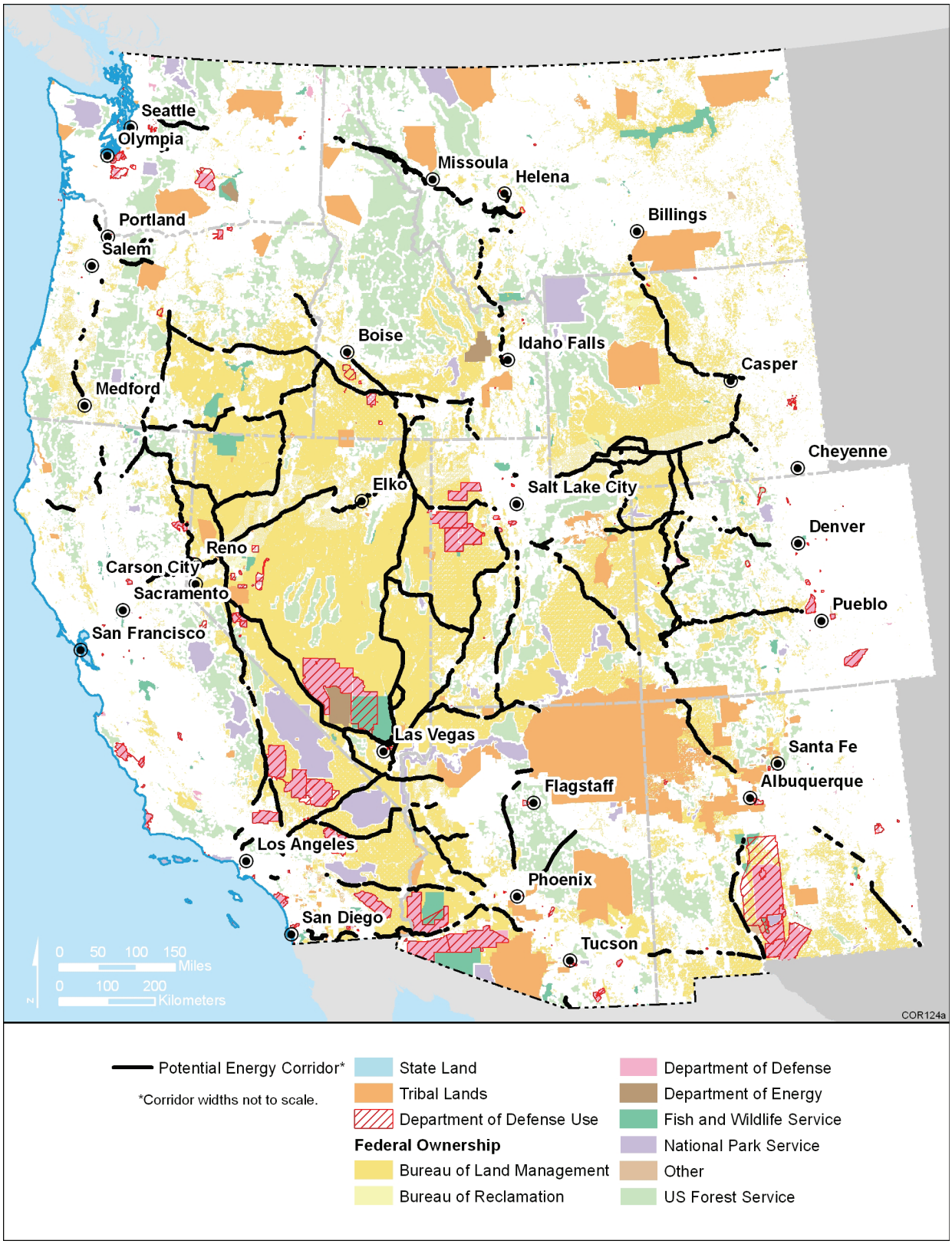

FIGURE 2.2-1 Proposed Section 368 Energy Corridors on Federal Lands in the 11 Western States

way state authority to make decisions regarding routes with respect to private and state lands. Section 368 provides no new authorities that allow the Agencies to preempt states' authorities. All projects that propose to use Section 368 corridors and which also involve state and private lands would be subject to all current state and local laws and regulations. Nor does this action preempt Tribal authority for making decisions on Tribal lands.

Table 2.2-1 presents the total lengths and acreages of the corridors that would be designated under the Proposed Action in each of the 11 western states. Appendix F lists the lengths, widths, and compatible energy transport uses for each corridor segment under the Proposed Action. The proposed corridors have a total surface area of about 3.3 million acres, and approximately 71% (4,347 miles) of the total miles (6,112 miles) of proposed corridors follow or incorporate existing developed transportation or utility ROWs. The vast majority of the proposed corridors in each state fall on lands managed by BLM except in Washington where 50 of the 51 miles of proposed corridors would occur on lands managed by the FS; no proposed corridors would fall on lands managed by DOE. The distribution of the proposed corridors on federal lands is presented in Table 2.2-2. The Proposed Action identifies approximately 34 miles of proposed corridors on federal land managed by the USFWS. These lands include the Sevilleta National Wildlife Refuge in

Text Box 2.2.1
What the Proposed Action Does and Does Not Do

Does:

1. Designate paths on federal land determined to be suitable for and identified as the preferred locations for energy transport projects.
2. Amend land use or equivalent plans for federal lands incorporating Section 368 energy corridors.
3. Require applicants seeking ROW authorization within designated corridors to fully comply with all federal laws and regulations, including NEPA, the Endangered Species Act, and the NHPA.
4. Identify mandatory requirements that will help ensure that future projects developed within Section 368 energy corridors are planned, constructed, operated, and eventually decommissioned in a manner that protects and enhances environmental resources.
5. Establish IOPs to streamline the application and authorization process for projects seeking to use Section 368 energy corridors.

Does not:

1. Designate corridors on nonfederal land.
2. Authorize any projects.
3. Grant the Agencies the authority to override Tribal, state, or local authority for projects also crossing nonfederal lands.
3. Eliminate or reduce the need for environmental review of projects seeking ROW authorization within Section 368 energy corridors.
3. Require applicants seeking ROW authorization on federal land for energy transport projects to use Section 368 energy corridors.
4. Provide the Agencies with the authority to mandate where or how energy resources are to be generated under applications seeking to use Section 368 energy corridors.
5. Provide the Agencies with the authority to require energy producers, transporters, and users to be more efficient in their generation, transport, or use of energy.
6. Provide the Agencies with the authority to require utilities to upgrade their transport systems within Section 368 corridors.

TABLE 2.2-1 Number, Total Linear Miles, and Acres of Federal Energy Corridors Designated under Section 368 as the Proposed Action

State	Number of Corridors	Miles of Corridors	Corridor Area (acres)	Miles Incorporating Existing Developed Utility ROWs[a]	Miles Incorporating Existing Developed Transportation ROWs[a]	Percentage of Length Incorporating Existing Developed Utility and Transportation ROWs[b]
Arizona	16	650	386,567	505	74	81
California	20	823	672,503	684	304	86
Colorado	19	426	260,954	354	59	86
Idaho	14	314	123,108	173	39	60
Montana	8	236	49,308	51	36	33
Nevada	34	1,622	904,771	973	276	69
New Mexico	4	293	121,064	225	31	79
Oregon	12	565	230,593	240	72	54
Utah	14	692	370,382	371	155	68
Washington	2	51	6,198	51	9	100
Wyoming	18	438	185,592	286	82	72
Total	131[c]	6,112[d]	3,311,041[c]	3,914	1,138	71

[a] Miles of corridors that would be designated under the Proposed Action that follow or incorporate authorized ROWs with existing utility or transportation infrastructure.

[b] Because some proposed corridor locations may incorporate both "developed utility" and "developed transportation" ROWs, the stated percentages cannot be obtained by simply summing the mileages of the existing utility and transportation ROWs, since summing these mileage estimates would overestimate the actual mileages of developed ROWs within the proposed corridors.

[c] The total is then the sum of the state numbers because some corridors cross state boundaries, and these are included in each appropriate state total.

[d] Slight difference between indicated total and the sum of the stated entries is due to rounding.

New Mexico and the Desert National Wildlife Range in Nevada, as well as several fish and wildlife areas managed by the USFWS in Utah and Colorado. Although the Proposed Action identifies potential corridors crossing national wildlife refuge lands, the USFWS would not be amending plans designating these segments as energy transport corridors. Development on these refuges may only occur if the specific proposed project is determined to be compatible with the purposes of the refuges and the mission of the National Wildlife Refuge System (NWRS). Existing refuge Comprehensive Conservation Plans may require amendments, should a specific project be found compatible, and subsequent ROW permitting by the USFWS would occur. In addition, development through the Sevilleta National Wildlife Refuge may be subject to a deed restriction constraining commercial use of the refuge.

TABLE 2.2-2 Distribution of Proposed Energy Corridors on Federal Land, by Managing Federal Agency

State	Total Miles of Proposed Corridors	Miles of Proposed Corridors on Federal Land, by Managing Federal Agency					
		BLM	FS	USFWS	BOR[a]	DOD	NPS[a]
Arizona	650	454	181	0	0	5	10
California	823	600	223	0	1	0	0
Colorado	426	308	112	3	0	2	1
Idaho	314	296	16	0	1	0	0
Montana	236	56	180	0	0	0	0
Nevada	1,622	1,535	29	25	18	10	5
New Mexico	293	290	0	4	0	0	0
Oregon	565	431	134	0	0	0	0
Utah	692	619	63	2	0	9	0
Washington	51	1	50	0	0	0	0
Wyoming	438	413	3	0	23	0	0
Total	6,112[b]	5,002	990[b]	34[b]	44[b]	26	16[b]

[a] BOR = Bureau of Reclamation; NPS = National Park Service.

[b] Slight difference between indicated total and the sum of the stated entries is due to rounding.

Text Box 2.2-2
Proposed 3,500-foot Corridor Width

- Provides sufficient width to accommodate the construction and operation of multiple projects and their supporting infrastructure.
- Provides flexibility within a corridor to route project-specific ROWs around important resources that may be encountered during project-specific analyses.

A corridor width of 3,500 feet was selected by the Agencies for the Section 368 energy corridors (Text Box 2.2-2). This width would provide sufficient room to support multiple energy transport systems. Even with the topographic, environmental, or regulatory constraints encountered during the corridor siting process (see Section 2.2.1), a 3,500-foot width could be placed on many federal lands while avoiding many sensitive resources and areas. A 3,500-foot corridor width would also provide additional project siting flexibility ("wiggle room") within corridors for technical or engineering reasons or for routing project-specific ROWs around important resources that may be identified during project-specific analyses within the corridors.

For example, one plausible future development scenario is found in Appendix G, which describes a hypothetical corridor development consisting of three 500-kV transmission lines and four pipelines. The ROWs of this hypothetical development would account for less than half of the 3,500-foot corridor width.

Energy corridor widths proposed during scoping ranged from as narrow as 60 feet to more than 5 miles (Text Box 2.2-3). The smaller suggested widths would be able to support little

Text Box 2.2-3
Proposed Energy Corridor Widths Received during Scoping

Electricity transmission	200 feet to >5 miles
Oil and gas pipelines	60 feet to 2 miles
Combined corridors	1 to 5 miles

more than a single energy project, while the larger widths would be difficult to apply throughout the West because of environmental, physical, cultural, and/or regulatory constraints.

Neither corridor designation nor the width of any particular corridor determines an acceptable level of development for any particular corridor. An acceptable level of development within a corridor will depend on project- and site-specific engineering and operational and environmental issues when individual projects are proposed. The local federal land managers will make decisions on the level of development that could occur, and this depends on the types of projects that may be proposed for any individual corridor segment. Furthermore, future development within Section 368 corridors will be strongly affected by the future demand for energy in the West. Corridor designation may influence the location of such future energy transport projects, but not the need for such projects. That is, a high demand for energy may generate demand for long-distance transmission, and the Section 368 corridors may be more likely to be used. If energy demand is low or if increased demand is met by distributed energy systems, then long-distance transmission facilities may not be as necessary, and the Section 368 corridors would be less likely to be developed.

The Proposed Action incorporates energy corridors (or portions of these corridors) that are currently identified in federal land use plans (Figure 2.2-2). Some BLM field offices and FS national forests have currently "locally designated" energy corridors. These corridors are designated within their respective land management plans for use by energy transport projects proposed for those specific lands, and some of these local corridors currently have one or more energy transport projects and ROWs within their boundaries. While these local energy corridors are designated for use by energy transport projects, in many cases these corridors were not situated in locations where future development of energy transport projects would address the reliability, redundancy, or congestion of the western electricity grid, nor to enhance energy transport across and within the western United States. In many cases, these local corridor designations do not identify compatible energy transport uses of the corridors, and in some cases corridor widths are not identified. Under the Proposed Action, there would be approximately 6,112 miles of energy corridors designated in the 11 western states. About 2,634 miles (43%) of these energy corridors would incorporate existing, locally designated corridors (Table 2.2-3).

No locally designated corridors are incorporated into the corridors proposed for Wyoming. Among the other 10 states, the contribution of locally designated corridors to the total miles of proposed energy corridors ranges from as little as 2% in Idaho to as much as 93% of the corridors proposed for Washington. For proposed Section 368 energy corridors on specific federally managed lands, the contribution of locally designated energy corridors to the total miles of the proposed Section 368 energy corridors ranges from as much as 75% on NPS-managed lands to as little as 3% on USFWS-managed lands. The miles of locally designated energy corridors incorporated into the total miles of Section 368 proposed corridors, by state and federal agency, on federally managed lands is presented in Table 2.2-4.

Not all of the locally designated corridors used in the Proposed Action Alternative have widths of 3,500 feet or are designated for multimodal use, as some of the locally designated corridors are specified for only one type of energy transport (e.g., pipeline only, electricity transmission only). Some locally designated corridors have specified widths

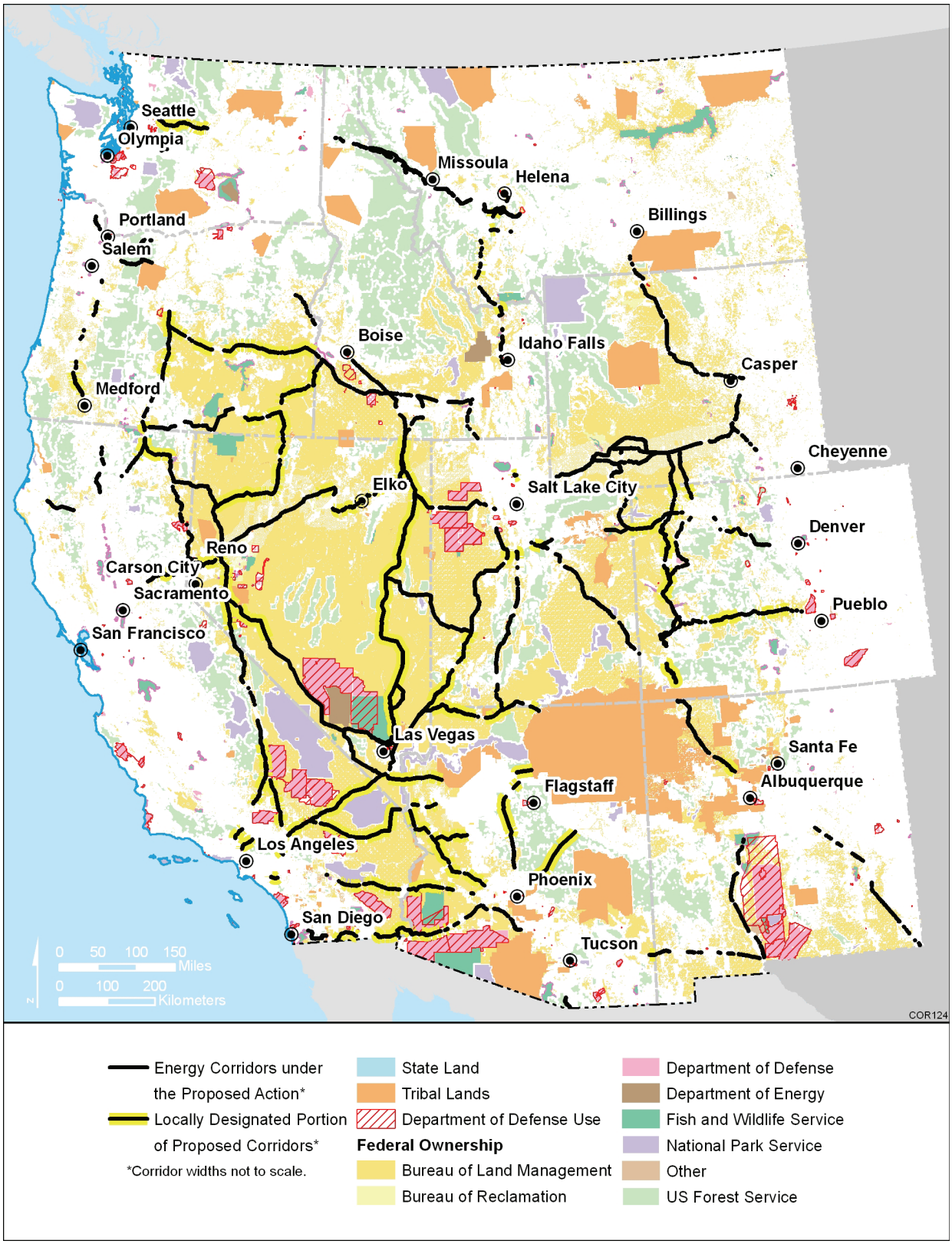

FIGURE 2.2-2 Locally Designated Energy Corridors Incorporated into the Proposed Section 368 Energy Corridors

TABLE 2.2-3 Contribution of Locally Designated Corridors to the Miles of Corridors Proposed for Designation under the Proposed Action

State	Total Miles of Proposed Corridors	Number of Proposed Corridors Incorporating Locally Designated Corridors[a]	Miles of Locally Designated Corridor Incorporated by the Proposed Corridors	Percentage of Proposed Corridor Mileage Incorporating Locally Designated Corridors
Arizona	650	13	529	81
California	823	16	527	64
Colorado	426	9	215	51
Idaho	314	1	6	2
Montana	236	4	23	10
Nevada	1,622	16	817	50
New Mexico	293	1	18	7
Oregon	565	8	333	59
Utah	692	6	118	17
Washington	51	1	48	93
Wyoming	438	0	0	0
Total	6,112[b]	75	2,634[b]	43[b]

[a] Proposed Section 368 corridors having portions that are locally designated. Not all of these corridors are designated.

[b] Slight difference between indicated total and the sum of the stated entries is due to rounding.

greater than, and others less than, the preferred 3,500-foot width. For locally designated corridors with widths greater than 3,500 feet, the locally designated width was directly retained for the Proposed Action. Where possible, the widths of narrow locally designated corridors were expanded up to 3,500 feet (as allowable by environmental or other constraints) and given multimodal use designation. For example, an energy corridor may be locally designated only for gas pipelines and have a width of only 1,000 feet. If possible, under the Proposed Action, the width of this locally designated corridor was expanded to 3,500 feet and the corridor designated to provide for multimodal energy transport use. In some cases, the corridor width could not be increased to 3,500 feet, nor could additional energy transport types be allowed, because of conflicting management needs or due to a resource or topographic constraint. In such cases, the smaller width and/or locally designated compatible use were adopted into the Proposed Action. Table 2.2-5 presents the total miles, by corridor width, of proposed energy corridors in each of the 11 western states. Appendix F lists the lengths, widths, and compatible energy transport uses for each corridor segment that would be designated under the Proposed Action.

Siting energy transport corridors across the western landscape posed many challenges, including topography, resource use, special land use designations and restrictions, and other considerations. The siting of the proposed Section 368 energy corridors was conducted to avoid sensitive resources (such as national parks, wilderness areas, and historic trails; see Section 2.2.1 for a description of the corridor siting process). However, because of the great variety and abundance of sensitive resources on federal lands in the West, the proposed energy corridors do intersect some of these resources. Table 2.2-6 summarizes the major lands that

TABLE 2.2-4 Miles of Locally Designated Energy Corridors Incorporated into the Proposed Section 368 Energy Corridors on Federal Land, by State and Federal Agency

State	Number of Proposed Corridors Incorporating Locally Designated Corridors[a]	Miles of Locally Designated Energy Corridors (total miles of proposed Section 368 energy corridors in parentheses)					
		BLM	FS	USFWS	BOR[b]	DOD	NPS
Arizona	13 (16)	356 (454)	166 (181)	0 (0)	0 (0)	0 (5)	7 (10)
California	16 (20)	405 (600)	122 (223)	0 (0)	0 (1)	0 (0)	0 (0)
Colorado	9 (19)	178 (308)	36 (112)	1 (3)	0 (0)	0 (2)	0 (1)
Idaho	1 (14)	0 (296)	6 (16)	0 (0)	0 (1)	0 (0)	0 (0)
Montana	4 (8)	9 (56)	13 (180)	0 (0)	0 (0)	0 (0)	0 (0)
Nevada	16 (34)	799 (1,535)	1 (29)	0 (25)	11 (18)	2 (10)	5 (5)
New Mexico	1 (4)	18 (290)	0 (0)	0 (4)	0 (0)	0 (0)	0 (0)
Oregon	8 (12)	333 (431)	0 (134)	0 (0)	0 (0)	0 (0)	0 (0)
Utah	6 (14)	88 (619)	30 (62)	0 (2)	0 (0)	0 (9)	0 (0)
Washington	1 (2)	0 (1)	48 (50)	0 (0)	0 (0)	0 (0)	0 (0)
Wyoming	0 (18)	0 (413)	0 (3)	0 (0)	0 (23)	0 (0)	0 (0)
Total	75 (131)	2,186 (5,002)[c]	422 (990)[c]	1 (34)[c]	11 (44)[c]	2 (26)	12 (16)[c]

[a] Proposed Section 368 corridors having portions that are locally designated. Not all portions of these corridors are locally designated. Total number of proposed Section 368 energy corridors are in parentheses.

[b] BOR = Bureau of Reclamation.

[c] Slight difference between indicated total and the sum of the stated entries is due to rounding.

would be intersected by the proposed Section 368 energy corridors, while each specific crossing is identified in Appendix H. In all cases where corridors intersect or approach sensitive areas, the corridor locations represent compromises among many siting challenges; the proposed corridors were sited only after consideration of other siting options. In all instances, the intersections were located with extensive input and direction from the appropriate agency managers for the specific resources involved (see Section 2.2.1.3) as well as input received from the public (see Section 2.2.1.4), and intersections were placed in areas so that potential impacts from any future development and operation of energy transport projects would be minimized to the extent practicable. Most often, intersections follow existing infrastructure in order to avoid placing corridors in "greenfield" (undeveloped) locations. For example, proposed Section 368 energy corridors would cross national parks or monuments only at locations were energy transmission and/or transportation ROWs and infrastructure currently exist or where energy transport corridors are currently designated.

Designation of the proposed energy corridors would require the amendment of as many as 165 land management or equivalent plans for the federal lands where the corridors are located. Land use plan amendments are discussed in Section 2.3.

Environmental analyses of energy transport projects proposed for the corridors designated under the Proposed Action would tier to this PEIS for their environmental analyses, and project applicants would be required to do additional project-specific environmental

TABLE 2.2 5 Total Linear Miles of Proposed Action Energy Corridors, by Width, in the 11 Western States

Corridor Width[a] (feet)	Miles of Proposed Corridor											
	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming	Total[b]
200			5									5
500		35	1			2				39		76
900			6									6
1000		51	4	20	154	28						257
1320		67						15				82
1500							4	18			1	24
1660	7					5						12
2000		24	2	12	26	16						80
2400						11						11
2500			2									2
2640					1	386						388
3500	268	186	292	282	50	830	290	530	463	3	437	3,630
5280	215	1	12			9			13			250
10560	44	68				197						309
15480						17						17
15840						70						70
21120			7									7
26400			22									22
95–3,500									18			18
150–3,500								2				2
250–1,320		6										6
320–2,260									3			3
320–3,200						15						15
360–10,350									15			15
400–3,500						10						10
540–1,000					1							1
650–3,480						1						1
675–1,000					4							4
700–1,320		2				1						2
900–1,320		12										12

TABLE 2.2 5 (Cont.)

Corridor Width[a] (feet)	Miles of Proposed Corridor											
	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming	Total[b]
1,320–3,500									34			34
1,400–2,000		1										1
1,840–3,500		3										3
1,850–3,500									95			95
1,950–3,200										6		6
1,950–3,250										3		3
1,970–2,690						11						11
2,100–7,000		11										11
2,240–3,500			1									1
2,240–13,640			32									32
2,300–16,850									3			3
2,750–3,500	2											2
2,780–3,020						14						14
3,000–5,280	39											39
3,000–10,560		48										48
3,250–5,280	9											9
3,050–13,700	16											16
3,350–10,750			9									9
3,450–10,560		72										72
3,500–5,280			6									6
3,550–9,120			26									26
3,900–5,280	19											19
4,180–5,280	4											4
4,350–5,280	3											3
4,400–5,280	24											24
4,880–28,400									31			31
5,050–10,560		81										81
5,280–10,560		42										42
5,350–12,000		9										9
5,800–10,560		44										44

TABLE 2.2 5 (Cont.)

Corridor Width[a] (feet)	Miles of Proposed Corridor											
	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming	Total[b]
6,880–10,560		37										37
7,550–10,560		22										22
9,650–12,000		1										1
16,850–29,000									17			17
Total	650	823	426	314	236	1,622	293	565	692	51	438	6,112

[a] Most corridors have a constant width for the entire length of the corridor. However, for some corridors, the widths vary extensively due to physical and/or land use constraints. For such corridors, the width is presented as a range.

[b] Slight differences between indicated total and the sum of the stated entries is due to rounding.

TABLE 2.2-6 Major Sensitive Lands That Would Be Intersected by the Proposed Energy Corridors under the Proposed Action

State	National Parks[a]	National Monuments[b]	National Recreation Areas[c]	Other National Park Service Areas[d]	National Conservation Areas	National Scenic Trails	National Historic Trails[e]	National Wild and Scenic Rivers	Roadless Areas	National Wildlife Refuges	State Totals
Arizona	0	0	2	0	0	NA[f]	2	0	0	0	4
California	0	0	1	1	1	1	3	1	2	0	13
Colorado	0	0	1	0	0	1	1	0	0	0	3
Idaho	0	0	0	0	1	1	1	0	0	0	3
Montana	0	0	0	0	0	1	1	0	1	0	2
Nevada	0	NA	1	0	2	NA	3	NA	0	1	7
New Mexico	0	0	0	0	0	1	2	0	0	1	4
Oregon	0	0	0	0	0	1	2	2	0	0	5
Utah	0	1	0	0	0	NA	3	NA	0	0	5
Washington	0	0	0	0	0	1	0	0	0	0	1
Wyoming	0	0	1	0	0	1	3	0	2	0	6
Total	0	1	6	1	4	8	21	3	5	2	53

[a] Does not include national historic parks or national historical parks.

[b] Includes national monuments managed by the NPS, FS, BLM, and USFWS.

[c] Includes national recreation areas managed by the NPS and FS.

[d] Includes national historic parks, national historical parks, national preserves, national reserves, national seashores, national historic sites, national battlefields, national memorials, national memorial parkways, and the San Francisco Presidio.

[e] National historic trails are typically long, linear features of various condition. In some cases, there may be little or no obvious indication of the presence of a historic trail, and its location is largely identified only on maps or by signage. Alternately, some historic trails or portions thereof include features such as wagon wheel ruts, campgrounds, and other features that are directly associated with historic use of the trail and are clearly visible. Trails exhibiting these latter traits are often well marked and preserved. Some landscapes associated with historic trails are also considered important because they are largely unchanged in appearance from the time that the trail was used. Trail crossings by the proposed corridors were selected to avoid these more visible and historically important portions of the trails to the fullest extent possible. Historic trail crossings account for 35% of the major sensitive areas that would be crossed by the proposed corridors.

[f] NA = not applicable; feature type does not occur in the state.

Text Box 2.2-4
Corridor Designation and Sensitive Resources

There is no intent to designate Section 368 energy transport corridors on protected lands or resources (such as designated wilderness or roadless areas), or to imply that construction of energy transport facilities would be authorized on those lands. However, unintentional intersections of portions of some corridors with federal lands identified by the management agencies as protected from certain uses may have occurred, for several reasons:

- The programmatic nature of the PEIS;
- Limitations in the PEIS geographic information system (GIS) database, which was compiled using many smaller GIS databases from multiple sources and multiple scales;
- Efforts to use existing ROWs associated with electricity transmission lines, pipelines, highways, roads, and locally-designated corridors; and
- Corridor widths ranging from as little as 200 feet to as much as 5.5 miles.

Rather than authorize future construction without further review, a designated Section 368 energy transport corridor becomes a pathway within which project-specific ROW applications with precise project-specific centerlines and widths, land ownership descriptions, and proposed development plans will be considered. The availability of more accurate site-specific information will enable the appropriate land management agencies to ensure that protected lands would be fully considered when granting ROWs and authorizing energy transport project construction and operation within designated corridors.

analyses as required by NEPA and other applicable laws. There would be no requirement under the Proposed Action for any proposed energy transport projects to use the designated corridors. If project applicants wished to use other federal lands, they would be free to request ROW authorization on those other lands, as they would under No Action and as they are currently able. In such instances, the project applicant would not receive the benefit of a more efficient application process associated with the use of a Section 368 corridor (see Section 1.4).

2.2.1 How Were the Proposed Section 368 Energy Corridor Locations Sited?

Energy corridors were located to provide for the West-wide transport and distribution of energy (electricity, oil, natural gas, and hydrogen) between supply and demand areas in the 11 western states while avoiding sensitive resources and land use and regulatory constraints to the fullest extent possible. If developed with energy transport projects, the corridors would also aid in alleviating to some extent congestion problems associated with electricity transmission in the West. Energy corridor locations were selected using a systematic four-step siting process (Figure 2.2-3).

These steps are summarized below.

1. First (Step 1), the Agencies developed an "unrestricted" conceptual West-wide network of energy transport paths that addressed the need to connect energy supply areas (regardless of energy type) with demand centers and provide for the long-distance transport of energy, and that also could meet the requirements and objectives of Section 368, regardless of land ownership or environmental or regulatory issues.

2. Next (Step 2), the locations of individual segments of the conceptual network defined in Step 1 were examined and revised to avoid nonfederal lands as well as major known environmental, land use, and regulatory constraints (such as

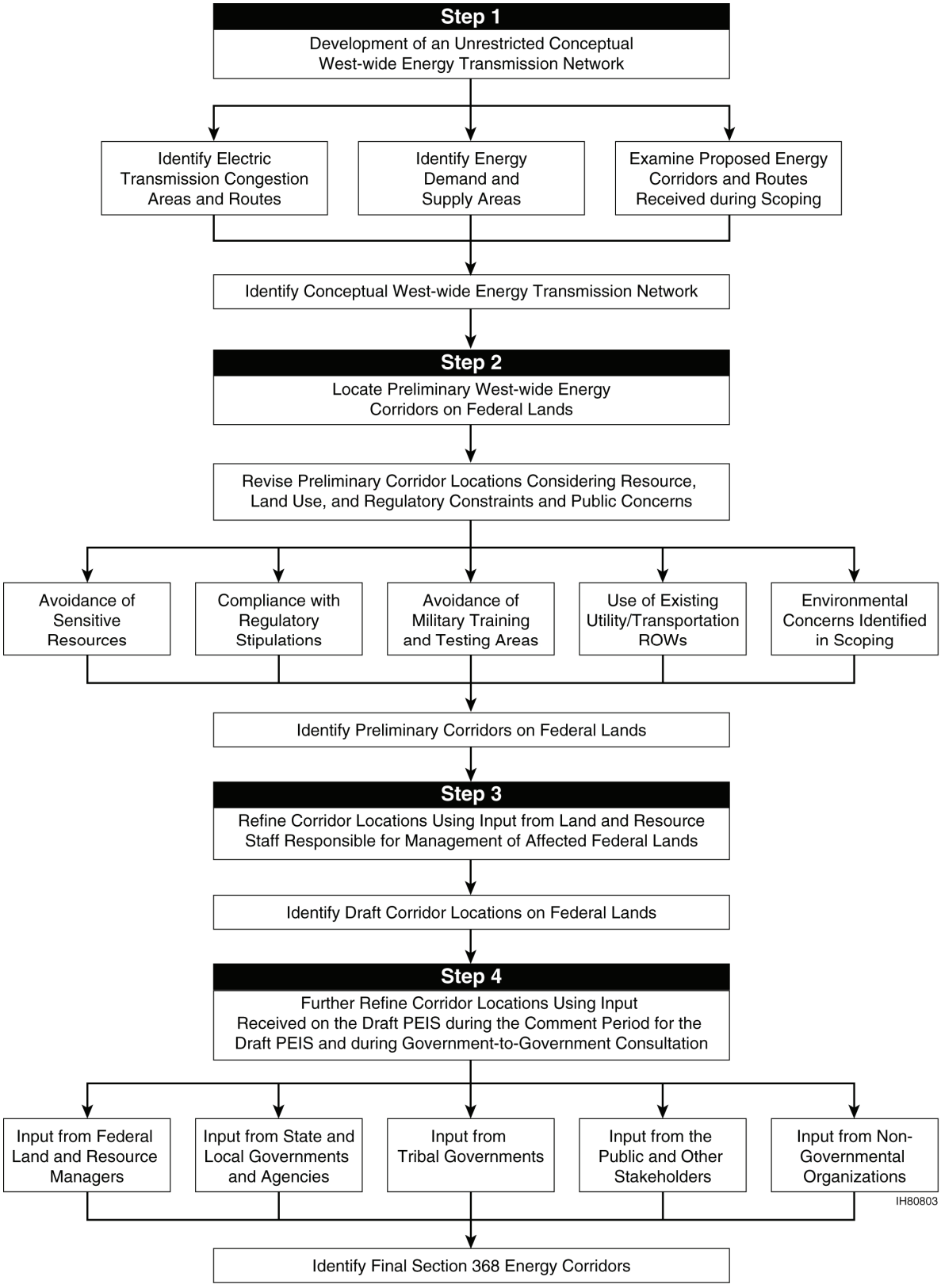

FIGURE 2.2-3 Four-Step Corridor Siting Process for Identifying Section 368 Energy Corridor Locations

Text Box 2.2-5
Tiering

The Council on Environmental Quality (CEQ) defines tiering as (40 CFR 1508.28):

"…the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on issues specific to the statement subsequently prepared."

When a broad NEPA document such as an EIS or environmental assessment has been prepared, any subsequent site-specific assessment or evaluation can summarize (and include by reference) the issues discussed in the broader document, and thus the site-specific assessment can focus its analyses on the project-specific issues of the Proposed Action (40 CFR 1502.20).

Applicants seeking a ROW authorization within a designated Section 368 energy corridor may tier from the final PEIS, by incorporating reference-relevant corridor- and resource-specific information as well as the IOPs presented in the final PEIS.

topography, wilderness areas, cultural resources, military test and training areas, and Tribal and state natural and cultural resource areas, etc.). This revision of corridor locations was based on an analysis of GIS-based data (see Appendix I) from multiple sources (BLM, FS, USFWS, State Historic Preservation Offices, USGS, DOE, and DOD). The revision resulted in a preliminary Section 368 energy corridor network that avoided private, state, and Tribal lands, many important known natural and cultural resources, and many areas incompatible with energy transport corridors because of regulatory or land use constraints while meeting the requirements and objectives of Section 368.

Text Box 2.2-6
Overview of the Process for Siting Energy Corridor Locations

Step 1. Develop an unrestricted conceptual energy transport network that addresses energy supply and demand and transport congestion, with no consideration of regulatory or environmental restrictions or constraints.

Step 2. Locate preliminary corridors on federal lands such that major known, sensitive, or important resources and land uses are avoided.

Step 3. Refine preliminary corridor locations so they are consistent with local federal land management responsibilities and further avoid sensitive resources to the fullest extent possible.

Step 4. Refine the draft PEIS corridor locations to address concerns expressed in comments received during the public comment period for the draft PEIS and during government-to-government consultations, and to incorporate new information from federal land and resource managers to ensure consistency with local federal land management responsibilities and to further avoid sensitive resources to the fullest extent possible.

3. Next (Step 3), the locations of the Section 368 corridors developed in Step 2 were further adjusted using corridor-specific input from local federal land managers and staff. These managers and staff evaluated the preliminary corridor locations on their respective administrative units and adjusted the corridor locations to further avoid important or sensitive resources and to ensure consistency with resource management objectives described in each unit's land use plans, while meeting the requirements and objectives of Section 368.

4. Lastly (Step 4), following issuance of the draft PEIS in November 2007 for public review, the corridor locations presented in the draft PEIS were further evaluated and revised, as appropriate, in response to concerns expressed by the

public, states and Tribes, local governments, nongovernmental organizations, and other stakeholders during the public comment period for the draft PEIS and during government-to-government consultations (see Section 1.9.6 of the PEIS). During Step 4, the corridor locations were further refined to incorporate new information from federal land and resource managers to ensure consistency with local federal land management responsibilities and further avoid sensitive resources to the fullest extent possible.

While this siting process considered all current and expected forms of energy (e.g., electricity, oil, natural gas, hydrogen), energy generation (e.g., coal-fired power plants, hydropower, solar and wind generation), and energy transport system (e.g., pipelines, electricity transmission lines), additional emphasis was given to electricity transmission because of the interconnected nature of the electricity transmission and congestion issues currently facing the West. Throughout the corridor siting process, comments received from the public and other stakeholders on corridor locations were considered with regard to both the need for energy corridors in specific locations and the desire to avoid or minimize impacts to environmental resources.

2.2.1.1 Step 1 – Develop an Unrestricted Conceptual West-wide Energy Transport Network

The first step in identifying potential energy corridors was the development of an "unrestricted" conceptual West-wide energy transport network. This network represents an interconnected set of paths along which energy could theoretically move throughout the western states. This network was developed considering (1) the need to transport energy from supply areas to demand areas; (2) the need to improve reliability, relieve congestion, and enhance the transmission capability of the western electric grid; and (3) the need to evaluate the locations of corridors suggested by the public and other stakeholders. Development of this network did not, however, consider physical, environmental, or regulatory constraints to siting energy corridors, nor was land ownership considered.

Where Are the Energy Demand and Supply Areas? Energy demand areas were considered to be the major metropolitan centers in each of the 11 western states, such as San Diego, Los Angeles, San Francisco, Las Vegas, Phoenix, Albuquerque, Denver, Salt Lake City, Seattle, Portland, Boise, Billings, and Cheyenne. These cities represent not only current locations of high energy demand, but also locations expected to grow in population, and thus in energy demand in the foreseeable future.

Energy supply areas were considered to include areas with existing high or growing electricity generating capacity, such as areas with numerous small-capacity or several high-capacity electricity generating units, and current natural gas facilities (Figure 1.1-1); areas with potential renewable energy (such as wind, geothermal, and solar energy) development (Figure 2.2-4); and areas of known coal, oil, and natural gas reserves or production (including energy resources in oil shale and tar sand deposits) that could be developed in the future (Figure 2.2-4).

Where Are the Major Electricity Transmission Constraints and Congestion Areas in the West? Section 368 directs the Agencies to take into account the need for upgraded and new electricity transmission and distribution facilities to relieve congestion of the national electricity grid (see Section 1.1.1 and Appendix G for details on the grid and congestion). Congestion of the grid can be relieved, in part, by locating electricity transmission projects in locations that would provide additional paths around or through electricity transmission bottlenecks

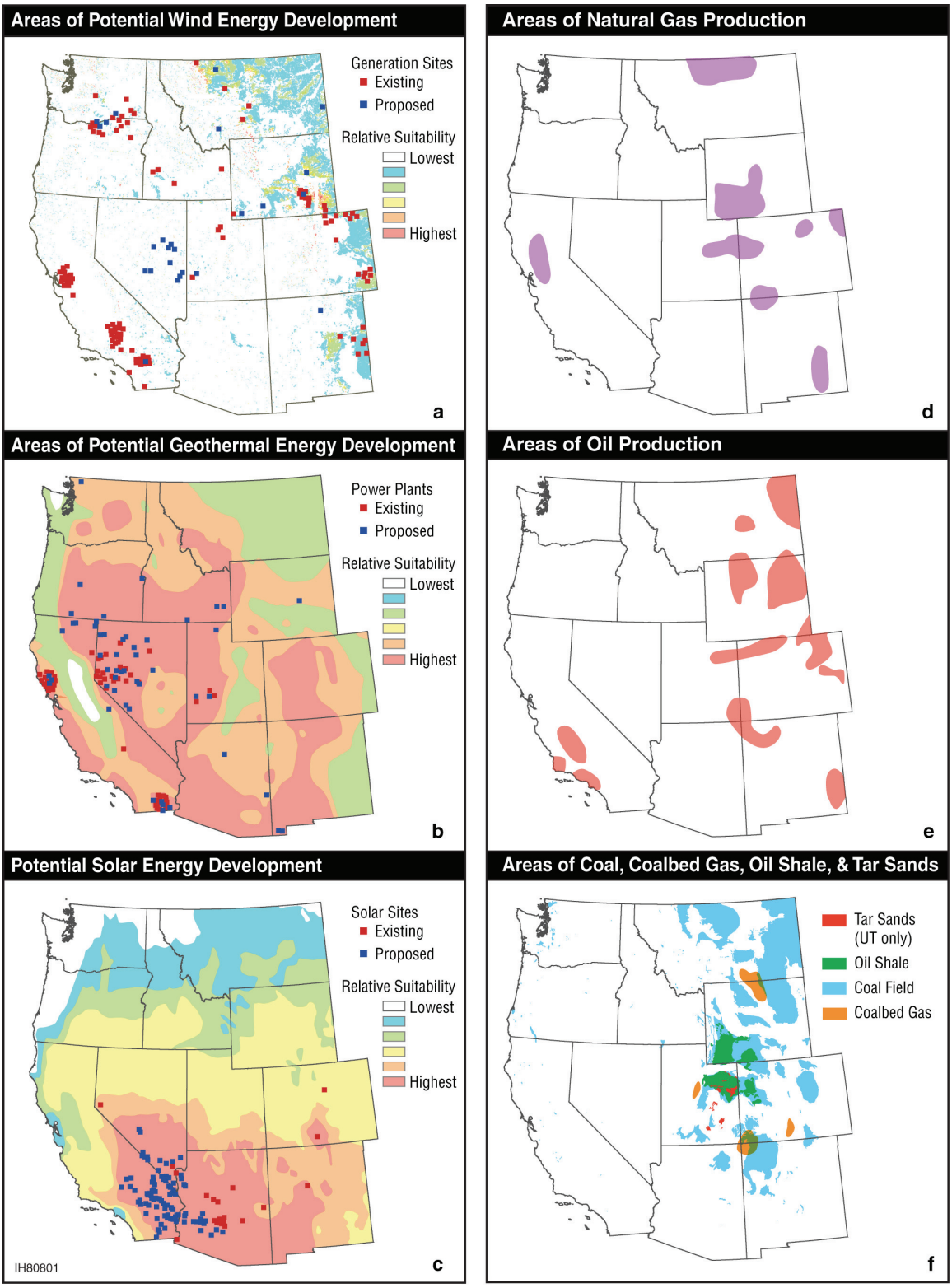

FIGURE 2.2-4 Areas of Existing, Planned, or Potential (a) Wind Energy, (b) Geothermal Energy, and (c) Solar Energy Development; and Areas of (d) Natural Gas Production, (e) Oil Production, and (f) Coal, Coalbed Gas, Oil Shale, and Tar Sands Resources in the 11 Western States (Sources: USGS 2005; Western Resource Associates 2008)

(i.e., congestion points). Development of the unrestricted conceptual West-wide energy transport network took into account the locations of current and future transmission constraints and congestion paths identified in the *National Electric Transmission Congestion Study* (Figure 1.1-2) (DOE 2006a; conducted pursuant to Section 1221(a) of EPAct) and identified potential paths where new projects could help facilitate current and future electricity transmission.

What Energy Corridor Locations Were Suggested by the Public? During public scoping, approximately 210 individuals, Tribes, and organizations provided comments on the scope of the PEIS. The comments were received from a variety of sources, including individual energy transport or generation companies; municipalities; and state, regional, and national energy transport organizations that have been examining energy supply, demand, and transport issues in the West. Numerous comments were also received from individual members of the public. The public scoping process is described in more detail in Section 1.9.1, and a scoping summary report (DOE 2006b) is provided in Appendix B. Many comments requested that specific existing or planned energy transport project ROWs be designated as Section 368 energy corridors; these suggested corridors range in length from relatively short corridors of less than 100 miles to ones that are hundreds of miles in length and cross one or more states. The majority of the commentors were concerned with electricity transmission; fewer were concerned with natural gas, oil, or hydrogen transport. Several commentors discussed the need for electricity transmission corridors that would support renewable energy projects. In addition to the comments received during the scoping period (September 28 to November 28, 2005), the Agencies also received comments on maps of preliminary corridor routes that were made publicly available in June 2006. The proposed energy corridors, totaling more than 6,112 miles in length, received from the public are shown in Figure 2.1-1. These proposed corridors suggest where energy transport paths may be needed within the 11 western states.

Text Box 2.2-7
Corridor Siting Step 1

Step 1 developed an unrestricted conceptual network of energy transmission paths linking energy supply and demand areas in the West while considering:

- Electricity congestion concerns of the national electricity grid, and
- Corridor suggestions received from the public.

Development of the unrestricted conceptual network did not consider environmental or regulatory constraints or land ownership.

What Was the Outcome of Step 1? An unrestricted conceptual energy transport network was developed for the 11 western states, following an examination of the locations of (1) energy demand and supply centers, (2) transmission constraints and congestion areas and paths in the national electricity grid, and (3) energy transport corridors identified during and after public scoping, as well as those previously developed by the energy transport industry, regional energy planning entities, and state agencies. For example, during scoping, 12 proposed energy corridors between the Salt Lake City and Las Vegas areas were identified (Figure 2.1-1). The large number of corridor suggestions indicates an underlying need for additional energy transport capacity to connect energy production areas in southwestern Wyoming with the high energy demand areas of Las Vegas and southern California.

The unrestricted conceptual West-wide (Figure 2.2-5) energy transport network identifies general paths for energy transport that could connect current and future areas of energy supply and demand (Figure 2.2-6) and, if developed for electricity transmission, could alleviate current and future congestion of the

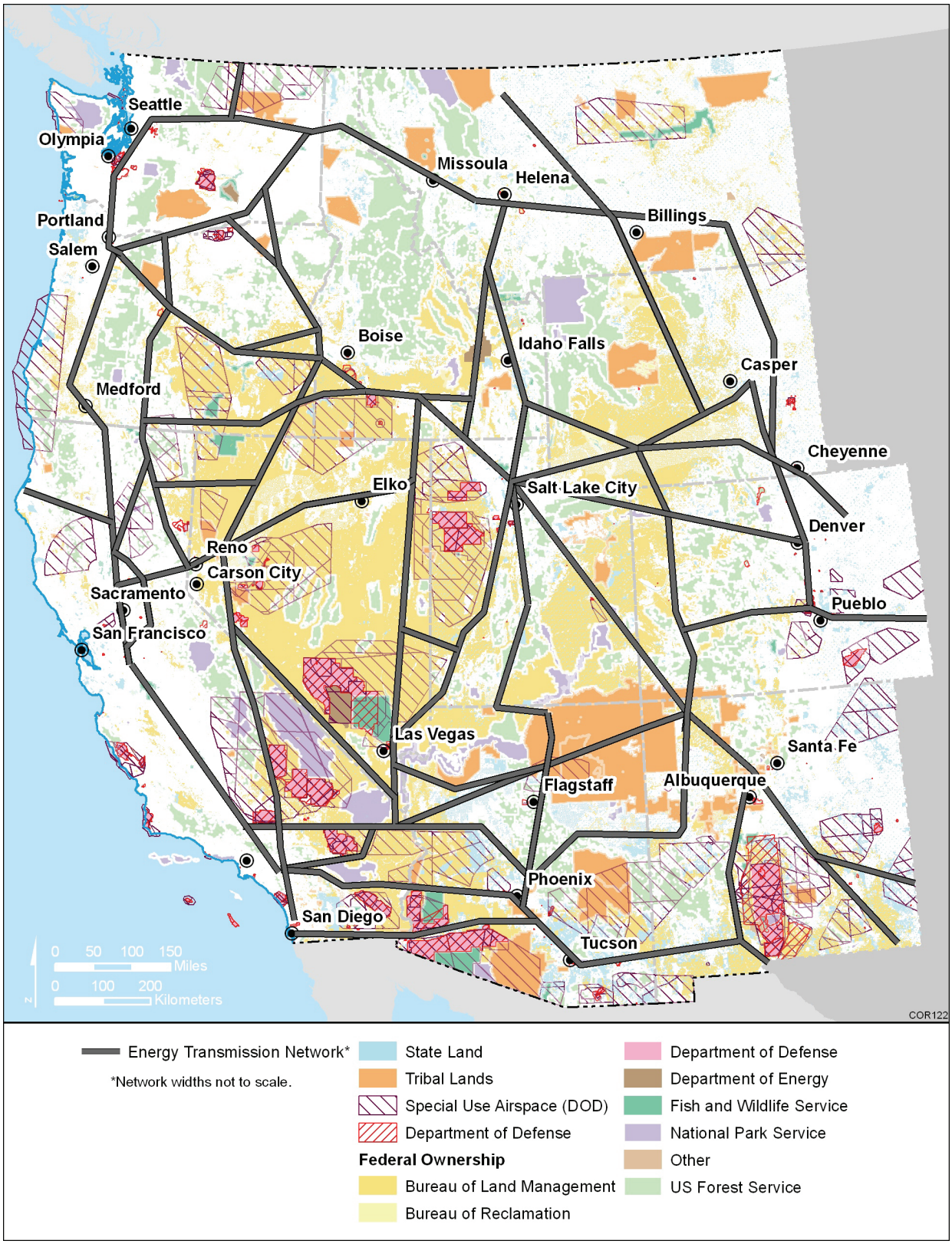

FIGURE 2.2-5 Unrestricted Conceptual West-wide Energy Transport Network Following Step 1 of the Corridor Siting Process

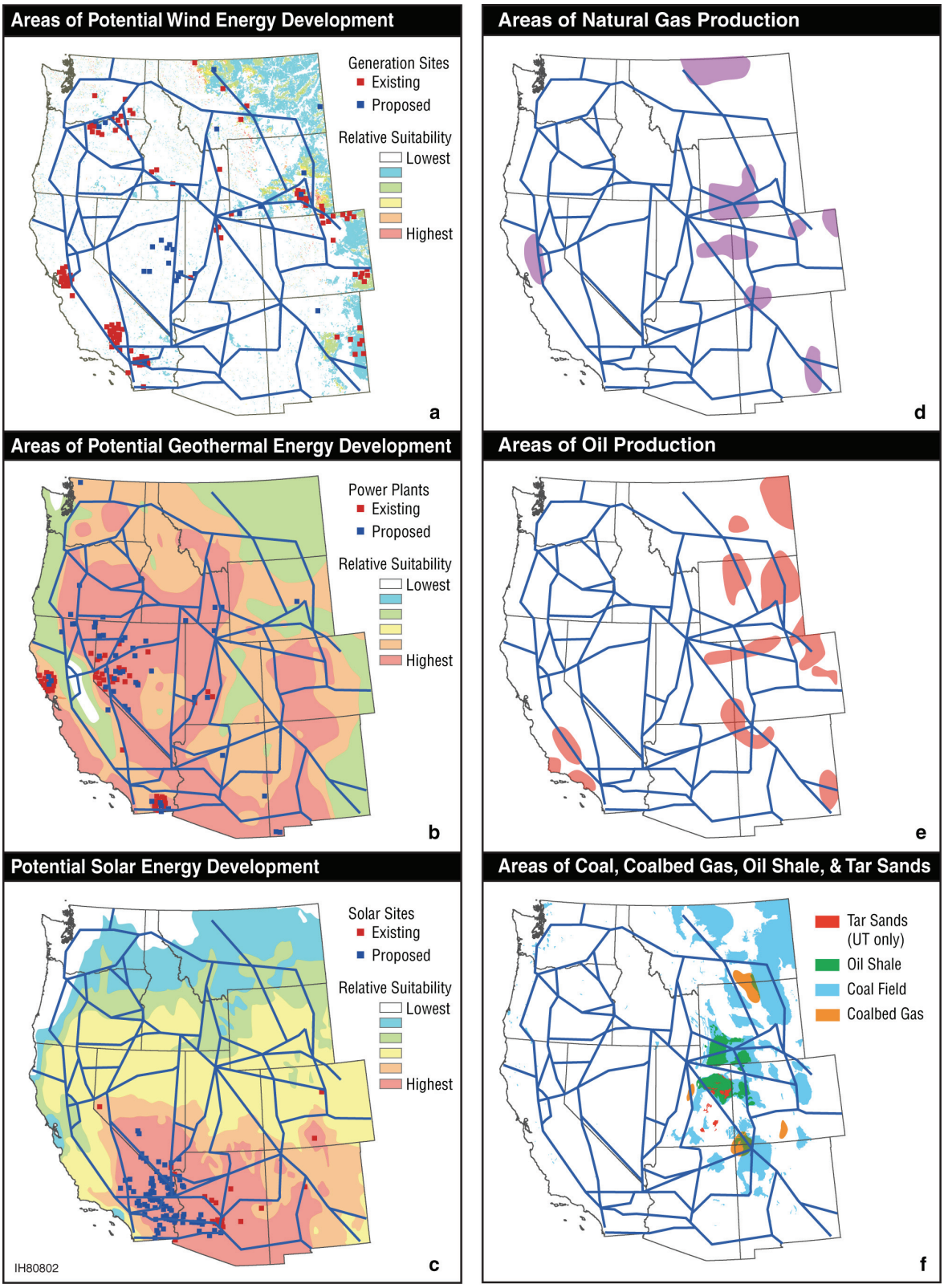

FIGURE 2.2-6 Relationship of the Unrestricted Conceptual West-wide Energy Transport Network and Areas of Current, Planned, and Potential Future Energy Development (Sources: USGS 2005; Western Resource Associates 2008)

Text Box 2.2-8
What about Nonfederal Lands?

A number of scoping comments identified concerns about designation of federal energy corridors and their impacts on nonfederal lands. As specified by Section 368, the federal energy corridors would be designated only on federal land. Furthermore, designation of the federal corridors does not require utilities to use the corridors, and it would be up to each project applicant to identify its preferred, project-specific route across federal and nonfederal lands and to secure access across those lands. Project applicants would secure ROWs across nonfederal lands in the same manner that they currently obtain such access, independent of federal energy corridor designations. Each project would undergo a project-specific NEPA evaluation to determine potential project impacts to federal and nonfederal lands. The Agencies conducted outreach to Tribal, state, and local governments with regard to appropriate siting of corridors on federal lands and the consequent effects on local communities of future project development within designated corridors.

western electricity transmission grid (Figure 2.2-7). This corridor network is considered to be unrestricted because it does not incorporate considerations of land ownership, nor any environmental or regulatory constraints. For example, the corridors in this unrestricted network cross 29 national parks, monuments, and recreation areas, 15 national wildlife refuges, and 58 wilderness areas.[2] This unrestricted network also did not consider topographic features, such as mountain passes and river gorges, which could affect the siting and construction of energy transport projects.

[2] Federal lands designated by Congress under the Wilderness Act of 1964 for protection from human disturbance.

2.2.1.2 Step 2 – Identify the Preliminary Energy Corridors on Federal Lands

How Were the Preliminary Energy Corridors Identified? The unrestricted conceptual West-wide energy transport network developed in Step 1 (Figure 2.2-5) does not consider physical, environmental, or regulatory constraints, or land ownership. Because Section 368 specifies the designation of energy transport corridors only on federal land, Step 2 focused on identifying potential corridors that would:

1. Be consistent with the unrestricted conceptual West-wide energy transport network, and thus provide paths for connecting current and future energy supply and demand areas that could, if used by future electricity transmission projects, improve reliability, relieve congestion, and enhance the capability of the national grid to deliver electricity; and

2. Meet the Section 368 requirement of designating corridors only on federal land.

The identification of preliminary energy corridors also took into account several "location" factors that affected where a corridor may or may not be located on federal land. These factors (Table 2.2-7) included (1) locations of important natural and cultural resources, (2) locations of military training and testing areas, (3) DOD restricted airspace, (4) regulatory stipulations preventing siting of certain activities or infrastructure on specific lands, and (5) environmental concerns identified during scoping (see Appendix B). Corridors were located to avoid these areas, resources, and lands to the maximum extent possible, although not all important or sensitive resources could be avoided.

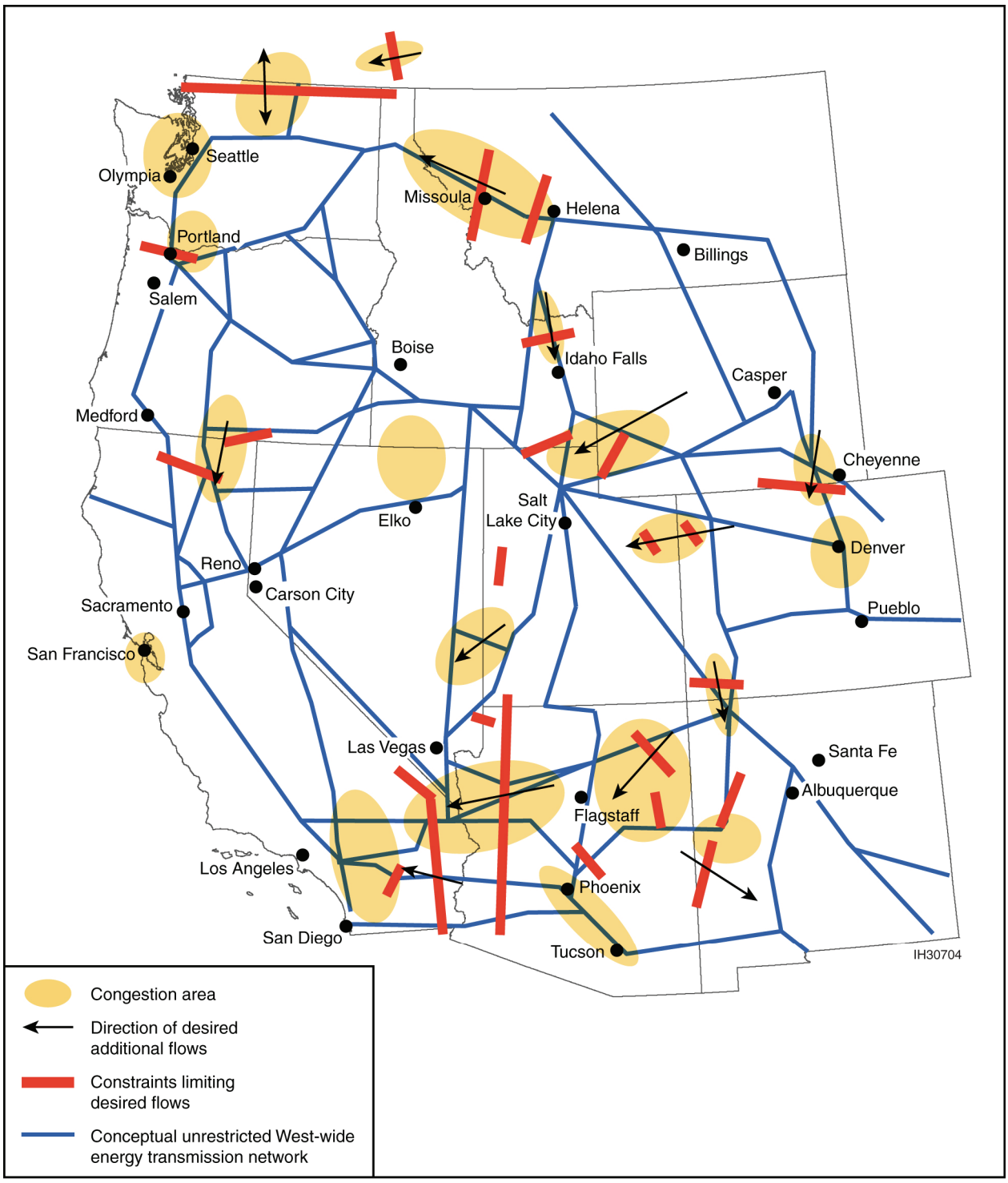

FIGURE 2.2-7 Relationship of the Unrestricted Conceptual Energy Corridor Network with Current and Potential Future Transmission Constraints and Congestion Paths and Areas of Congestion Overlain on the Network

Preliminary energy corridors were identified by examining each of the unrestricted conceptual West-wide energy transport network corridors and adjusting corridor locations to avoid conflicts with applicable location factors (Table 2.2-7) to the maximum extent possible. For example, the number of national parks, monuments, and recreation areas crossed by the unrestricted conceptual network decreased from 29 to 15 following Step 2; the number of national wildlife refuges crossed decreased from 15 to 12; and the number of wilderness areas crossed decreased from 58 to 27. In addition, existing ROWs (including those for energy transport and roads and highways) in the vicinity of the conceptual energy transport network were identified and examined for possible use in locating Section 368 corridors. Consideration of existing ROWs can expedite the siting and designation of Section 368 energy corridors because for many of these ROWs, project-specific impact analyses and amendments to land use plans have already been completed. The unrestricted conceptual energy transport network corridors were moved, where possible, to take advantage of existing ROWs, following existing infrastructure in order to avoid placing corridors in "greenfield" (undeveloped) locations.

TABLE 2.2-7 Location Factors, Lands, and Resources Receiving Special Consideration during Preliminary Siting of Section 368 Energy Corridors on Federal Lands

Location Factor	Type of Area or Resource to Be Avoided[a]
Existing federal statutes, regulations, and policies (e.g., Wilderness Act of 1964)	Federally designated wilderness areas, roadless areas, wild and scenic rivers, national parks, national monuments, national recreation areas, national wildlife refuges, roadless areas, and national natural landmarks
Resources that are ecologically, culturally, scientifically, educationally, and/or recreationally important	Wilderness study areas, national conservation areas, areas of critical environmental concern, national parks, national monuments, national recreation areas, national wildlife refuges, special recreation management areas, national historic trails and national scenic trails, important cultural and historic properties, national natural and historic landmarks, world heritage sites, research natural areas, experimental forests, and important paleontological resources
Military installations and training and testing areas	Military bases, military training and testing areas, DOD special-use airspace
Public concerns raised during scoping	All of the above except military bases, training and testing areas, and special-use airspace
Tribal lands	Tribal lands and cultural resources[b]

[a] Some areas or resources may represent multiple location factors; wild and scenic study rivers are not included.

[b] Section 368 energy corridors are not proposed for designation on Tribal lands. However, ROWs can be obtained on Tribal lands following the processes set out in 25 USC 323, 25 CFR 169, and 25 USC 3504. ROWs on Tribal lands are subject to the Tribe's approval procedures and regulations, and may require coordination with the BIA. They would require NEPA and Section 106 reviews. Some energy projects developed using proposed Section 368 energy corridors could also cross Tribal lands, but the Agencies did not designate corridors for such crossings.

Text Box 2.2-9
Use of Existing ROWs

Existing ROWs, such as those for electricity transmission systems, roads, and highways, near the conceptual West-wide energy transport network corridors were identified and examined for possible colocation of Section 368 corridors.

What Was the Outcome of Step 2? At the conclusion of Step 2, a preliminary set of energy corridors was identified on federal lands. These corridors would meet the needs of Section 368 with regard to designation of energy corridors on federal lands and enhancement of the national electricity grid, while avoiding many sensitive resources and areas to the extent practicable, complying with most statutory and regulatory provisions, avoiding military training and testing areas and restricted airspace, avoiding Tribal lands, and being responsive to concerns raised in public scoping. These preliminary energy corridors are shown in Figure 2.2-8. Additional adjustments in corridor locations to further avoid sensitive resources and areas were made during Steps 3 and 4 of the corridor siting process.

Text Box 2.2-10
Energy Corridor Siting Step 2

In Step 2, the unrestricted conceptual corridor network paths were restricted to federal land and on those lands relocated to avoid to the extent practicable environmental and regulatory constraints and address public concerns to the maximum extent possible, while still providing paths connecting energy supply and demand areas and addressing electricity congestion issues. These relocated paths represent preliminary energy corridors on federal lands in the West.

2.2.1.3 Step 3 – Refine the Section 368 Energy Corridor Locations

Following identification of preliminary energy corridors on federal lands, agency personnel involved with the management of federal lands that would be crossed by the preliminary corridors were asked to examine the corridor locations and identify any additional location adjustments that would further avoid important resources or areas, and to confirm that the corridor locations would be consistent with the specific management needs of each land management unit (such as a BLM field office or a FS national forest).

Text Box 2.2-11
Energy Corridor Siting Step 3

In Step 3, the preliminary corridor network was examined by local federal land managers and their staff, and corridor locations were moved as practicable to further avoid important environmental and regulatory constraints and ensure that corridor locations and characteristics were consistent with management responsibilities on the federal lands.

Corridor data in a GIS database was provided to approximately 55 FS national forest offices, 74 BLM district and field offices, and 17 DOD facilities that could be crossed by the preliminary corridors. In addition, this information was also provided to the national office of the USFWS for its use in examining preliminary corridors that may be crossing national wildlife refuges or other USFWS-managed areas. The managers and staff of these federal lands were asked to use this information, together with their unique, site-specific knowledge of sensitive resources, management activities, and compatible land uses, to provide (together with detailed supporting rationale) corridor location adjustments to further minimize potential conflicts with management responsibilities, important resources, and other location factors while providing consistency with current land use plans. As part of this activity, more than 50 Web-based meetings (Appendix J) were held with staff from the affected agencies, during which resource-specific issues (such as concern for important fossil beds or avoidance of wilderness areas) were discussed and corridor locations adjusted to best address those issues. Adjustment to the

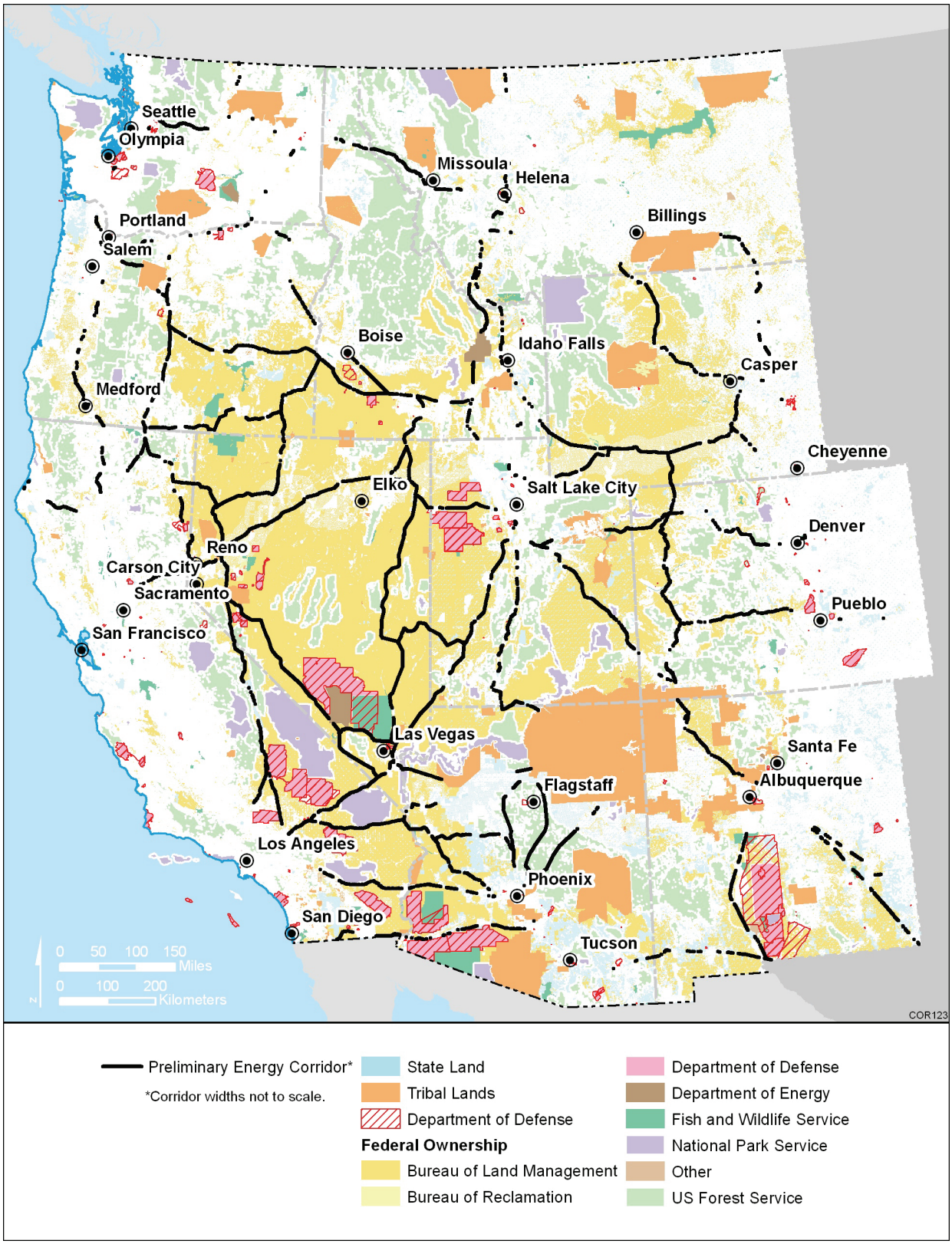

FIGURE 2.2-8 Preliminary Section 368 Energy Corridors on Federal Lands in the 11 Western States Following Step 2 of the Corridor Siting Process

locations of the preliminary corridors also considered public and Tribal comments received after the close of the scoping period (see Section 1.9).

2.2.1.4 Step 4 – Refinement of the Draft PEIS Section 368 Energy Corridors

The draft PEIS was issued for public comment on November 16, 2007. During the 90-day comment period, the Agencies received comments (see Volume IV of the final PEIS) from state and local governments and agencies, nongovernmental organizations (such as environmental groups), the general public, and other stakeholders (see Section 1.9.6). The Agencies have also been conducting government-to-government consultations with Tribal governments (see Section 1.9.3) and have received comments on corridor locations from a number of Tribes. Many of the comments received through the public comment process and government-to-government consultations expressed concerns about potential impacts to sensitive resources and areas along the corridor locations presented in the draft PEIS.

The Agencies examined each of the draft PEIS corridor locations for which comments were received and, working closely with federal land and resource managers, state and local governments and agencies, Tribes, and other potentially affected stakeholders, examined adjustments to individual corridor segments with reference to the criteria established in this PEIS for siting corridor locations. When adjustments met the established criteria and improved the location of the corridors, adjustments were accepted. In many cases, the Agencies were able to adjust corridor locations to avoid conflicts with important resources that were not known at the time of the draft (such as important grizzly bear and pygmy rabbit habitat in southern Montana and northern Idaho), and to avoid areas of concern raised by Tribes, the public, and other stakeholders regarding the corridor locations. The draft corridors that were adjusted during Step 4, as well as the rationale and nature of the change and the parties involved in making the changes, are listed in Appendix K.

Text Box 2.2-12
Energy Corridor Siting Step 4

In Step 4, the Agencies made adjustments to the draft PEIS corridor locations to address comments and concerns raised during the public comment period for the draft PEIS and through government-to-government consultation with Tribes. The Agencies examined the comments received from the public, Tribes, state and local governments, nongovernment organizations, and other stakeholders, as well additional resource information provided by federal land and resource managers, and adjusted the draft PEIS corridor locations when the proposed changes complied with the siting criteria developed in this PEIS to minimize or avoid conflicts with important resources, areas of concern, and federal land management responsibilities, while still meeting the purpose and need of the Proposed Action.

2.2.2 How Much Did the Corridors Change between the Preliminary Corridor Network and the Final Corridor Locations?

The 4-step corridor siting process resulted in a set of Section 368 energy corridors on federal lands in the 11 western states (Figure 2.2-1). Following development of the conceptual network in Step 1 of the siting process, the Agencies made numerous adjustments and refinements to the corridor locations in order to avoid or minimize conflicts with important or sensitive resources and lands and conflicts with federal land and resource management responsibilities and current land use (or equivalent) plans, while meeting the purpose and need for the Proposed Action. In many areas, there was relatively little adjustment to the corridor locations between Steps 2 and 4 of the siting process. In other areas, major

changes were required in corridor location (for example, compare corridor locations in southwestern Wyoming and in western Colorado between Figures 2.2-1 and 2.2-8). In these areas, corridor locations, characteristics, and compatible uses were revised to address concerns related to wildlife habitat, wildfire concerns, local government concerns, and avoidance of sensitive areas (such as national wildlife refuges). As a result of the Step 3 and 4 corridor evaluations and adjustments, the number of national wildlife refuge crossings dropped from 12 crossings in Step 2 to 2 crossings after Step 4; wilderness area crossings decreased from 27 to 0 (Table 2.2-6), and roadless areas from 17 to 5.

As a result of the Step 4 revisions to the corridors, the total corridor length increased from the draft to the final PEIS by less than 60 miles, while total corridor area increased by about 12% (from about 2.9 million acres in the draft PEIS to about 3.3 million acres in the final PEIS). The increase in total corridor length is due largely to changes in the alignment or location of some corridor segments. About 35% of the total corridor areas changed between the draft and the final PEIS. At some locations, the corridor widths identified in the draft PEIS were reduced to address resource concerns identified by local Agency resource staff as well as those raised by the public. The overall increase in corridor area is due largely to an increase in the width of some corridor segments, which were made to directly adopt the widths of locally designated corridors. About 89% of the corridors remained unchanged in the final PEIS from the draft PEIS.

2.3 WHAT LAND USE PLAN AMENDMENTS AND INTERAGENCY PERMITTING COORDINATION WOULD BE REQUIRED UNDER THE PROPOSED ACTION?

Designation of Section 368 energy corridors under the Proposed Action would require the amendment of agency-specific land use or equivalent plans to incorporate the designated corridors. Affected plans would be those for federal administrative units crossed by the Section 368 energy corridors. Plan amendments may also be required for administrative units crossed by future energy transport projects developed under the No Action Alternative. Analyses conducted in this PEIS would support the amendment of approved land use plans for federal lands where Section 368 energy corridors would be designated.

The plan amendments for the Proposed Action would include (1) the identification of specific Section 368 energy corridors by centerline, width, and compatible energy uses and restrictions (such as pipeline only or electricity transmission with a restricted tower height); and (2) the adoption of mandatory interagency operating procedures (IOPs; see Section 2.4) that would be implemented on a corridor- and project-specific basis. Only those plans where Section 368 energy corridors would be located would be amended. Corridor-related amendments would be applied to approved existing land use plans when each agency-specific ROD for this PEIS is signed. Plans that are currently undergoing revision for other reasons (not related to Section 368), but not scheduled for completion until after the ROD is signed, would have the corridor designations incorporated into their ongoing plan revisions. Plans that are currently being revised for other reasons and would be completed before the ROD is signed would need to undergo further amendment when the ROD is signed. Plans that could be amended under the Proposed Action and the proposed amendments to each plan are presented in Appendix A. The names for some BLM plans depicted in Appendix A may not be current. During the development of this PEIS, a number of BLM land use plans were undergoing revisions for reasons unrelated to corridor designation, and those revisions may have resulted in changes in plan boundaries and names. Some of those plan revisions were only recently completed, but not in time to be incorporated into the final PEIS. Subject to the limitations indicated above, the specific plans

that could be amended under the Proposed Action and the proposed amendments are presented in Appendix A of the PEIS.

Section 368 calls for the Secretaries to ensure that additional corridors for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities on federal land are promptly identified and designated, as necessary. Thus, additional Section 368 energy corridors may be designated, together with additional plan amendments, to address future energy transport and distribution needs (see Section 1.4). Neither No Action nor the Proposed Action would preclude the Agencies from designating Section 368 energy corridors in the future. The Agencies anticipate that the analyses contained in this PEIS would be reviewed and, as appropriate, incorporated into those amendments and revisions.

2.4 HOW WOULD THE AGENCIES EVALUATE AND OVERSEE THE USE AND OCCUPANCY OF ENERGY CORRIDORS?

The Agencies would adopt appropriate IOPs when evaluating a ROW application within a Section 368 energy corridor. The IOPs would assist the Agencies, project applicants, and others in evaluating applications for using the corridors by providing uniform processing and performance criteria for energy transport ROWs in the corridors. Consideration of information generated by implementation of the IOPs would help ensure that energy transport projects within the Section 368 energy corridors are planned, implemented, operated, and eventually removed in a manner that protects environmental resources. In addition, the adoption of applicable IOPs and regulatory requirements, such as the ESA and NHPA, are mandatory and would be required for all proposed projects at all corridor locations. Other IOPs, such as those dealing with stream crossings, would only apply for projects in certain locations, as appropriate.

Text Box 2.4-1
What Are IOPs?

IOPs are mandatory interagency planning and implementation procedures that apply to the development of ROW applications and improve the federal authorization and administration of ROWs in Section 368 energy corridors.

The IOPs will be implemented during the application and permitting process (see Section 1.4) as well as during project construction and operation. Where appropriate, specific IOPs, as well as other Agency-specific management controls and performance standards will accompany a ROW authorization. These will be identified on the basis of the project-specific application and supporting site-specific environmental evaluations. The specific requirements described by the IOPs and adopted in each agency's ROW authorization must be consistent for the entire ROW of the project within a Section 368 corridor.

2.4.1 What Would Be the IOPs for Project Planning?

Regulatory Compliance

1. The appropriate agency, assisted by the applicant, must conduct project-specific NEPA analyses in compliance with Section 102 of NEPA. The scope, content, and type of analysis shall be determined on a project-by-project basis by the Agencies and the applicants.

2. The appropriate agency, assisted by the project applicant, must comply with Section 106 of the NHPA on a project-by-project basis. Consultation with SHPOs, federally recognized Tribes, and other appropriate parties as per regulations (36 CFR 800) must begin early in the planning process and continue throughout project

development and execution. The ACHP retains the option to comment on all undertakings (36 CFR 800.9).

3. The appropriate agency, assisted by the project applicant, must consult with the USFWS and the NMFS as required by Section 7 of ESA. The specific consultation requirements would be determined on a project-by-project basis. Applicants should identify known occupied sites, such as nest sites, for threatened and endangered species and species of special concern, and, to the extent feasible, design the project to minimize or mitigate impacts to these sites and associated species. If impacts cannot be avoided or mitigated, the Agencies will consider other ROW routes.

4. The appropriate agency, assisted by the project applicant, must coordinate and consult with NMFS regarding potential impacts to essential fish habitat (EFH) as required by the 1996 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act.

Agency Coordination

1. Applicants seeking to develop energy transport projects within corridors located on or near DOD facilities or flight training areas (see Appendix L for applicable corridors) must, early in the planning process and in conjunction with the appropriate agency staff, inform and coordinate with the DOD regarding the characteristics and locations of the anticipated project infrastructure.

2. Early in the planning process, applicants seeking ROW authorization within a Section 368 energy corridor that is located within five miles of a unit of the NPS should contact the appropriate Agency staff and work with the NPS regarding the characteristics and locations of anticipated project infrastructure. In those instances where corridors cross lands within the boundaries of a unit of the NPS, the National Park Service Organic Act and other relevant laws and policies shall apply.

3. In those instances where projects using energy corridors may wish to also cross National Wildlife Refuge System lands, the National Wildlife System Administration Act and other relevant laws and policies pertinent to national wildlife refuges shall apply.

4. For electricity transmission projects, the applicant shall notify the Federal Aviation Administration (FAA) as early as practicable in the planning process in order to identify appropriate aircraft safety requirements.

5. All project applications must consider applicable findings, mitigation, and/or standards contained in regional land management plans, such as the Northwest Forest Plan, when such regional plans have been incorporated into agency planning guidelines and requirements. Modification of some standards may be needed to reasonably allow for energy transport within a corridor.

Government-to-Government Consultation

1. The appropriate agency, assisted by the project applicant, must initiate government-to-government consultation with affected Tribes at the outset of project planning and shall continue consultation throughout all phases of the project, as necessary. Agencies should determine how to consult in a manner that is cognizant of the cultural

values, socioeconomic factors, and administrative structures of the interested Tribes.

2. The agency POC may require the project proponent to prepare an ethnographic study when Tribal consultation indicates the need. The study shall be conducted by a qualified professional selected in consultation with the affected Tribe.

General

1. Applicants seeking to develop an electricity transmission or pipeline project will develop a project-specific plan of development (POD). The POD should display the location of the project infrastructure (i.e., towers, power lines) and identify areas of short- and long-term land and resource impacts and the mitigation measures for site-specific and resource-specific environmental impacts. The POD should also include notification of project termination and decommissioning to the agencies at a time period specified by the agencies.

2. Applicants, working with the appropriate agencies, shall design projects to comply with all appropriate and applicable Agency policies and guidance.

3. Project planning shall be based on the current state of knowledge. Where corridors are subject to sequential projects, project-related planning (such as the development of spill-response plans, cultural resource management plans, and visual resource management plans) and project-specific mitigation and monitoring should incorporate information and lessons learned from previous projects.

4. Applicants shall follow the best management practices for energy transport project siting, construction, and operations of the states in which the proposed project would be located, as well as federal agency practices.

5. Corridors are to be efficiently used. The applicant, assisted by the appropriate agency, shall consolidate the proposed infrastructure, such as access roads, wherever possible and utilize existing roads to the maximum extent feasible, minimizing the number, lengths, and widths of roads, construction support areas, and borrow areas.

6. When concurrent development projects are proposed and implemented within a corridor, the agency POCs shall coordinate among projects to ensure consistency with regard to all regulatory compliance and consultation requirements, and to avoid duplication of effort.

7. Applicants, assisted by the appropriate agency, shall prepare a monitoring plan for all project-specific mitigation activities.

8. Potential cumulative impacts to resources should be considered during the early stages of the project. Agency POCs must coordinate various development projects to consider and minimize cumulative impacts. A review of resource impacts resulting from other projects in the region should be conducted and any pertinent information be considered during project planning.

Project Design

1. Applicants shall locate desired projects within energy corridors to promote

effective use of the corridors by subsequent applicants and to avoid the elimination of use or encumbrance of use of the corridors by ROW holders. Proposed projects should be compatible with identified energy transport modes and avoid conflicts with other land uses within a corridor.

2. Applicant shall identify and delineate existing underground metallic pipelines in the vicinity of a proposed electricity transmission line project and design the project to avoid accelerating the corrosion of the pipelines and/or pumping wells.

Transportation

1. The applicant shall prepare an access road siting and management plan that incorporates relevant agency standards regarding road design, construction, maintenance, and decommissioning. Corridors will be closed to public access unless determined by the appropriate federal land manager to be managed as part of an existing travel and transportation network in a land use plan or subsequent travel management plan(s).

2. The applicant shall prepare a comprehensive transportation plan for the transport of transmission tower or pipeline components, main assembly cranes, and other large equipment. The plan should address specific sizes, weights, origin, destination, and unique equipment handling requirements. The plan should evaluate alternative transportation routes and should comply with state regulations and all necessary permitting requirements. The plan should address site access roads and eliminate hazards from truck traffic or adverse impacts to normal traffic flow. The plan should include measures such as informational signage and traffic controls that may be necessary during construction or maintenance of facilities.

3. Applicants shall consult with local planning authorities regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) should be identified and addressed in the traffic management plan.

Groundwater

1. Applicants must identify and delineate all sole source aquifers in the vicinity of a proposed project and design the project to avoid disturbing these aquifers or to minimize potential risks that the aquifers could be contaminated by spills or leaks of chemicals used in the projects.

2. In instances where a project within an energy corridor crosses sole source aquifers, the applicant must notify the U.S. Environmental Protection Agency (EPA) and the agencies that administer the land as early as practicable in the planning process. Section 1424(e) of the Safe Drinking Water Act and other relevant laws and policies pertinent to the corridors that cross sole source aquifers shall apply.

Surface Water

1. Applicants must identify all wild and scenic rivers (designated by act of Congress or by the Secretary of the Interior under Section 3(a) or 2(a)(ii) of the Wild and Scenic Rivers Act, respectively), congressionally authorized wild and scenic study rivers, and agency identified (eligible or

suitable) wild and scenic study rivers in the vicinity of a proposed project and design the project to avoid the rivers or minimize the disturbance of the rivers and their vicinity.

2. In instances where a project within an energy corridor crosses a wild and scenic river or a wild and scenic study river, the appropriate federal permitting agency, assisted by the project applicant, must coordinate and consult with the river-administrating agency regarding the protection and enhancement of their free-flowing condition, water quality, and outstandingly remarkable natural, cultural, and recreational values.

3. Applicants shall identify all streams in the vicinity of proposed project sites that are listed as impaired under Section 303(d) of the Clean Water Act and provide a management plan to avoid, reduce, and/or minimize adverse impacts on those streams.

Paleontological Resources

1. The applicant shall conduct an initial scoping assessment to determine whether construction activities would disturb formations that may contain important paleontological resources. Potential impacts to important paleontological resources should be avoided by moving or rerouting the site of construction or removing or reducing the need for surface disturbance. When avoidance is not possible, a mitigation plan should be prepared to identify physical and administrative protective measures and protocols such as halting work, to be implemented in the event of fossil discoveries. The scoping assessment and mitigation plan should be conducted in accordance with the managing agency's fossil management practices and policies.

2. If paleontological resources are known to be present in the project area, or if areas with a high potential to contain paleontological material have been identified, the applicant shall prepare a paleontological resources management and mitigation plan. If adverse impacts to paleontological resources cannot be avoided or mitigated within the designated corridors, the agency may consider alternative development routes to avoid, minimize, or mitigate adverse effects.

3. A protocol for unexpected paleontological discoveries should be developed. Unexpected discovery during construction should be brought to the immediate attention of the responsible federal agency's authorized officer. Work should be halted in the vicinity of the discovery to avoid further disturbance of the resource while the resource is being evaluated and appropriate mitigation measures are being developed.

Ecological Resources

1. Applicants shall identify important, sensitive, or unique habitats and BLM-sensitive, FS-sensitive, and state-listed species in the vicinity of proposed projects and, to the extent feasible, design the project to avoid, minimize, or mitigate impacts to these habitats and species.

2. To restore disturbed habitats, the applicant will prepare a habitat restoration plan that identifies the approach and methods to be used to restore habitats disturbed during project construction activities. The plan will be designed to expedite the recovery to natural habitats supporting native vegetation, and require restoration to be completed as soon as practicable after

completion of construction, minimizing the habitat converted at any one time. To ensure rapid and successful restoration efforts, the plan will include restoration success criteria, including time frames, which will be developed in coordination with the appropriate agency and which must be met by the applicant. Bonding to cover the full cost of restoration will be required.

3. In consultation with the U.S. Army Corps of Engineers, the appropriate agency, assisted by the project applicant, will identify wetlands (including ephemeral, intermittent, and isolated wetlands), riparian habitats, streams, and other aquatic habitats in the project area and, to the extent feasible, design the project to avoid, minimize, or mitigate impacts to these habitats.

Vegetation Management

1. Applicants shall develop an integrated vegetation management plan consistent with applicable regulations and agency policies for the control of unwanted vegetation, noxious weeds, and invasive species (E.O. 13112). The plan should address monitoring; ROW vegetation management; the use of certified weed-seed-free hay, straw, and/or mulch mulching; the cleaning of vehicles to avoid the introduction of invasive weeds; education of personnel on weed identification; the manner in which weeds spread; and the methods for treating infestations (BLM 2006a, 2007b,c, 2008c).

Cultural Resources

1. Cultural resources management services and individuals providing those services shall meet the Secretary of the Interior's Standards for Archaeology and Historic Preservation.

2. The project applicant may, with the approval of the agency POC, assign a Cultural Resource Coordinator to ensure an integrated compliance process across administrated and jurisdictional boundaries. The Cultural Resource Coordinator will facilitate and coordinate compliance with multiple laws, policies, regulations, and existing pertinent agreements (PAs, MOAs, or MOUs) among multiple agencies and other entities, jurisdictions, and federally recognized Tribes. The coordinator may assist with development of pertinent agreements among concerned parties during the course of the project. The coordinator shall be a qualified professional with experience in cultural resource compliance. Where appropriate, the Cultural Resource Coordinator may also serve as the Tribal Coordinator. Alternatively, the agency POC may assign such coordinators, to be paid for through project cost-recovery funds. The agencies, through the POC, remain responsible for consultation.

3. The project applicant may, with the approval of the agency POC, assign a Tribal Coordinator to facilitate and coordinate consultation and compliance with multiple laws, agencies, and Tribes in order to ensure effective government-to-government consultation throughout the life of the project. Alternatively, the agency POC may assign such coordinators, to be paid for through project cost-recovery funds. The agencies, through the POC, remain responsible for consultation.

4. All historic properties in the Area of Potential Effect (APE) will be identified and evaluated. The APE shall include that area within which an undertaking

may directly or indirectly cause alterations in the character or use of historic properties and shall include a reasonable construction buffer zone and laydown areas, access roads, and borrow areas, as well as a reasonable assessment of areas subject to effects from visual, auditory, or atmospheric impacts, or impacts from increased access.

5. Project proponents must develop a cultural resources management plan (CRMP) to outline the process for compliance with applicable cultural resource laws during pre-project planning, management of resources during operation, and consideration of the effect of decommissioning. CRMPs should meet the specifications of the appropriate agency and address compliance with all appropriate laws. CRMPs should include the following, as appropriate: identification of the federally recognized Tribes, State Historic Preservation Offices (SHPOs), and consulting parties for the project; identification of long- and short-term management goals for cultural resources within the APE of the project; the definition of the APE; appropriate procedures for inventory, evaluation, and identification of effects to historic properties; evaluation of eligibility for the NRHP for all resources in the APE; description of the measures to avoid, minimize, or mitigate adverse effects to historic properties; procedures for inadvertent discovery; procedures for considering Native American Graves Protection and Repatriation Act (NAGPRA) issues, monitoring needs, and plans to be employed during construction; curation procedures; anticipated personnel requirements and qualifications; public outreach and interpretation plans; and discussion of other concerns. The draft CRMP should be reviewed and approved by the agency POC in consultation with historic preservation partners, including appropriate SHPOs, Tribes, and consulting parties. CRMPs must specify procedures that would be followed for compliance with cultural resource laws, should the project change during the course of implementation.

6. Project applicants will provide cultural resources training for project personnel regarding the laws protecting cultural resources, appropriate conduct in the field (such as procedures for the inadvertent discovery of human remains), and other project-specific issues identified in the CRMP. Training plans should be part of the CRMP and should be subject to the approval of the POC. When government-to-government consultation identifies the need and the possibility, Tribes may be invited to participate in or contribute to relevant sessions.

7. If adverse effects to historic properties will result from a project, a Historic Property Treatment Plan will be developed in consultation with the SHPO, the appropriate federally recognized Tribes, and any consulting parties. The plan will outline how the impacts to the historic properties would be mitigated, minimized, or avoided. Agency officials will give full consideration to the applicable mitigation measures found in Section 3.10.5.2 of the Final PEIS when consulting during the project pre-planning stages to resolve adverse effects on historic properties.

8. As directed by the agency POC, project proponents will prepare a public education and outreach component regarding cultural resources such as a public presentation, a news article, a publication, or a display. Public education and outreach components will be subject to Agency approval and

Tribal review and consultation when the content or format is of interest to affected Tribes.

9. Cultural resources inventory, evaluation, and mitigation practices should incorporate modeling and sampling strategies to the extent practicable, in concurrence with SHPOs and other relevant parties, and as approved by the agency POC.

10. Project applicants shall provide all cultural resources reports and data in an electronic format that is approved by the Agency POC and integrated across jurisdictional boundaries, that meets current standards, and that is compatible with SHPO systems. The Agency will submit this data to the SHPO in a timely fashion. Project proponents should submit cultural resources data on a regular basis to ensure that SHPO systems are kept up to date for reference as the different phases of the project proceed. Paper records may also be required by the agency.

11. Cultural resources inventory procedures, specified in the CRMP, will include development of historic contexts based on the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716) sufficient to support the evaluation of cultural resources encountered in the APE.

Tribal Traditional Cultural Resources

1. The appropriate agency, assisted by the applicant, must comply with all laws, policies, and regulations pertaining to government-to-government consultation with federally recognized Tribes. Agencies shall initiate consultation with affected Tribes at the outset of project planning and shall continue consultation throughout project planning, construction, operation, and decommissioning. Consultation shall include, but not be limited to, the following: (a) identification of potentially affected Tribes; (b) identification of appropriate Tribal contacts and the preferred means of communication with these Tribes; (c) provision to the Tribes of project-specific information (e.g., project proponents, maps, design features, proposed ROW routes, construction methods, etc.) at the outset of project planning and throughout the life of the project; (d) identification of issues of concern specific to affected Tribes (e.g., potential impacts to culturally sensitive areas or resources, hazard and safety management plans, treaty reserved rights and trust responsibilities); (e) identification of areas and resources of concern to Tribes; and (e) resolution of concerns (e.g., actions to avoid, minimize, or mitigate impacts to important resources; Memoranda of Agreement stating what actions would be taken to mitigated project effects; or agreements for Tribal participation in monitoring efforts or operator training programs).

2. The appropriate agency, assisted by the applicant, must comply with all pertinent laws, policies, and regulations addressing cultural and other resources important to Tribes, including the NHPA, ARPA, NAGPRA, and other laws and regulations as listed in Table 3.11-2 of this PEIS.

3. The agencies shall recognize the significance to many Tribes of traditional cultural places, such as sacred sites, sacred landscapes, gathering grounds, and burial areas, and shall seek to identify such areas through consultation with affected Tribes early in the project planning process.

Agencies shall seek to avoid, minimize, or mitigate impacts to such places in consultation with the Tribes, project proponents, and other relevant parties. Where confidentiality concerning these areas is important to an affected Tribe, agencies shall honor such confidentiality unless the Tribe agrees to release the information.

4. A protocol must be developed for inadvertent discovery of Native American human remains and funerary items to comply with the NAGPRA in consultation with appropriate federally recognized Tribes. Unexpected discovery of such items during construction must be brought to the immediate attention of the responsible federal agency's authorized officer. Work must be halted in the vicinity of the find of Native American graves and funerary items to avoid further disturbance to the resources while they are being evaluated and appropriate mitigation measures are being developed. The procedures for reporting items covered under NAGPRA must be identified in the CRMP.

Visual Resources

1. Applicants shall identify and consider visual resource management (VRM) and scenery management (SMS) issues early in the design process to facilitate integration of VRM and scenery treatments into the overall site development program and construction documents. Visual/scenery management considerations, environmental analyses, mitigation planning, and design shall reference and be in accordance with the land management agency visual/scenery management policies and procedures applicable to the jurisdiction the project lies within. Applicants shall coordinate between multiple agencies on visual/scenery sensitive issues when projects transition from one jurisdiction to another, especially when transitions occur within a shared viewshed.

2. Applicants shall prepare a VRM or scenery management plan. The applicant's planning team shall include an appropriately trained specialist, such as a landscape architect with demonstrated VRM and/or SMS experience. The VRM/SMS specialist shall coordinate with the BLM/FS on the availability of the appropriate visual or scenic inventory data, VRM management class delineations, Scenic Integrity Objectives (SIOs), and federal agency expectations for preparing project plans and mitigation strategies to comply with RMP or LRMP direction related to scenery and/or visual resources. Applicants shall confirm that a current Visual Resource Inventory and/or Scenic Class inventory is available and that the resource management plan (RMP) or land resource and management plan (LRMP) VRM classifications or SIOs have been designated in the current land management plan. Project plans shall abide by the VRM class designations and SIOs and consider sensitivities defined within the visual or scenic resource Inventory. If visual or scenic management objectives are absent, then the proper inventory and classification process shall be followed to develop them in accordance with the BLM VRM manual and handbooks or FS SMS process, depending on the agency. When the VRM management classes or SIOs are absent, then the project alternatives must reflect a range of management options related to scenery and visual resources that reflect the values identified in the visual/scenic inventory. Responsibility for developing an inventory or VRM management classes (or in the case of the FS, Scenic Classes

and SIOs) will remain with the respective agency, but how to accomplish these tasks will be determined by the Field Office Manager or Forest Supervisor, who will consider the applicant's role and financial participation in completing the work.

3. Visual and scenic mitigation planning/design and analysis shall be performed through integrated field assessment, applied global positioning system (GPS) technology, field photo documentation, use of computer-aided design and development software, 3-D modeling GIS software, and visual simulation software, as appropriate. Proposed activities, projects, and site development plans shall be analyzed and further developed using these technologies to meet visual and scenic objectives for the project area and surrounding areas sufficient to provide the full context of the viewshed. Visual simulations shall be prepared according to BLM Handbook H-8432-1, or other agency requirements, to create spatially accurate depictions of the appearance of proposed facilities, as reflected in the 3-D design models. Simulations shall depict proposed project appearance from sensitive/scenic locations as well as more typical viewing locations. Transmission towers, roads, compressor stations, valves, and other aboveground infrastructure should be integrated esthetically with the surrounding landscape in order to minimize contrast with the natural environment.

4. Applicants shall develop adequate terrain mapping on a landscape/ viewshed scale for site planning/design, visual impact analysis, visual impact mitigation planning/design, and for full assessment and mitigation of cumulative visual impacts through applied, state-of-the-art design practices using the cited software systems. The landscape/ viewshed scale mapping shall be geo-referenced and at the same Digital Elevation Model (DEM) resolution and contour interval within the margin of error suitable for engineered site design. This level of mapping shall enable proper placement of proposed developments into the digital viewshed context. Final plans shall be field verified for compliance.

5. The full range of visual and scenic best management practices shall be considered, and plans shall incorporate all pertinent best management practices (BMPs). Visual and scenic resource monitoring and compliance strategies shall be included as a part of the project mitigation plans.

6. Compliance with VRM/SMS objectives shall be determined through the use of the BLM Contrast Rating procedures defined in BLM Handbook H-8431-1 Visual Contrast Rating, or the FS SMS Handbook 701. Mitigation of visual impacts shall abide by the requirements of these handbooks.

Public Health and Safety

1. An electricity transmission project shall be planned by the applicant to comply with FAA regulations, including lighting regulations, and to avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips.

2. A health and safety program shall be developed by the applicant to protect both workers and the general public during construction, operation, and decommissioning of an energy transport project. The program should identify all applicable federal and state occupational safety standards, establish safe work practices for each task

(e.g., requirements for personal protective equipment and safety harnesses, Occupational Safety and Health Administration [OSHA] standard practices for safe use of explosives and blasting agents, measures for reducing occupational electromagnetic field [EMF] exposures), and define safety performance standards (e.g., electrical system standards). The program should include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies should be established.

3. The health and safety program shall establish a safety zone or setback from roads and other public access areas that is sufficient to prevent accidents resulting from various hazards. It should identify requirements for temporary fencing around staging areas, storage yards, and excavations during construction or decommissioning activities. It should also identify measures to be taken during the operations phase to limit public access to those components of energy facilities that present health or safety risks.

4. Applicants will develop a comprehensive emergency plan that considers the vulnerabilities of their energy system to all credible events initiated by natural causes (earthquakes, avalanches, floods, high winds, violent storms, etc.), human error, mechanical failure, cyber attack, sabotage, or deliberate destructive acts of both domestic and international origin and the potential for and possible consequences of those events. Vulnerability, threat, and consequence assessment methodologies and criteria in the sector-specific plan (SSP) for energy[3] will be used and appropriate preemptive and mitigative response actions will be identified. The applicant must coordinate emergency planning with state, local, and Tribal emergency and public safety authorities and with owners and operators of other energy systems colocated in the corridor or in adjacent corridors that could also be impacted.

5. In addition to directives contained in other IOPs in this chapter, the applicant must identify all federal, state, and local regulations pertaining to environmental protection, worker health and safety, public safety, and system reliability that are applicable throughout the construction, operation, and decommissioning phases of their facility's life cycle and must develop appropriate compliance strategies, including securing all necessary permits and approvals.

Hazardous Materials Management

1. Applicants for petroleum pipelines and projects involving oil-filled electrical devices shall develop a spill prevention and response plan identifying spill prevention measures to be implemented, training requirements, appropriate spill response actions, and procedures for making timely notifications to authorities. The spill prevention and response plan should include identification of any sensitive biotic

[3] The SSP for energy, developed by the Department of Energy's Office of Electricity Delivery and Energy Reliability, is one of seventeen such SSPs that comprise the National Infrastructure Protection Plan (NIPP). The energy SSP (redacted) is available at http://www.oe.energy.gov/DocumentsandMedia/Energy_SSP_Public.pdf. The NIPP is available at http://www.dhs.gov/xlibrary/assets/NIPP_Plan.pdf.

resources and locations (such as habitats) that require special measures to provide protection, as well as the measures needed to provide that protection.

Fire Management

1. Applicants shall develop a fire management strategy to implement measures to minimize the potential for a human-caused fire during project construction, operation, and decommissioning. The strategy should consider the need to reduce hazardous fuels (e.g., native and non-native annual grasses and shrubs) and to prevent the spread of fires started outside or inside a corridor, and clarify who has responsibility for fire suppression and hazardous fuels reduction for the corridor.

2. Applicants must work with the local land management agency to identify project areas that may incur heavy fuel buildups, and develop a long-term strategy on vegetation management of these areas. The strategy may include land treatment during project construction, which may extend outside the planned ROW clearing limits.

2.4.2 What Would Be the IOPs for Project Construction?

General

1. To avoid conflict with federal and nonfederal operations, the applicant shall be aware of liabilities pertaining to environmental hazards, safety standards, and military flying areas.

2. The applicant shall locate all stationary construction equipment (i.e., compressors and generators) as far as practicable from nearby residences.

3. Applicants will pay fair market value to the land management agency for any merchantable forest products that will be cut during ROW clearing. The local land management agency will determine the fair market value, which will be paid prior to clearing. The applicant will either remove the forest products from the area or will stack the material at locations determined by the local land management agency. Treatment of unmerchantable products will be determined by the local land management agency.

Soils, Excavation, and Blasting

1. Applicants shall salvage, safeguard, and reapply topsoil from all excavations and construction activities during restoration.

2. All areas of disturbed soil shall be restored by the applicant using weed-free native grasses, forbs, shrubs, and trees as directed by the agency. Restoration should not be unnecessarily delayed. If native species are not available, noninvasive vegetation recommended by agency specialists may be used.

3. The applicant must not create excessive slopes during excavation. Areas of steep slopes, biological soil crusts, erodible soil, and stream channel crossings would often require site-specific and specialized construction techniques by the applicant. These specialized construction techniques should be implemented by adequately trained and experienced employees.

4. Blasting activities will be avoided or minimized in the vicinity of sole source

aquifer areas to reduce the risk of releasing sediments or particles into the groundwater and inadvertently plugging water supply wells.

5. The applicant must backfill foundations and trenches with originally excavated material as much as possible. Excess excavation materials should be disposed of by the applicant only in approved areas.

6. The applicant shall obtain borrow (fill) material only from authorized sites. Existing sites should be used in preference to new sites.

7. The applicant shall prepare an explosives use plan that specifies the times and meteorological conditions when explosives will be used and specifies minimum distances from sensitive vegetation and wildlife or streams and lakes.

8. If blasting or other noisy activities are required during the construction period, the applicant must notify nearby residents in advance.

Mitigation and Monitoring

1. All control and mitigation measures established for the project in the POD and other required plans must be maintained and implemented by the applicant throughout construction. Necessary adjustments may be made with the concurrence of the appropriate agency.

Surface and Groundwater Resources

1. The applicant must safeguard the possibility of dewatering shallow groundwater and/or wetland in the vicinity of project sites during foundation excavations or excavations for buried pipelines.

2. The applicant must implement erosion controls complying with county, state, and federal standards, such as jute netting, silt fences, and check dams, and secure all necessary storm water pollution prevention plan (SWPPP) permits.

3. The applicant shall minimize stream crossings by access roads to the extent practicable. All structures crossing intermittent and perennial streams should be located and constructed so that they do not decrease channel stability, increase water velocity, or impede fish passage.

4. Applicants shall not alter existing drainage systems and should give particular care to sensitive areas such as erodible soils or steep slopes. Soil erosion should be reduced at culvert outlets by appropriate structures. Catch basins, roadway ditches, and culverts should be cleaned and maintained.

5. Applicants must not create hydrologic conduits between aquifers.

Paleontological Resources

1. Project construction activities will follow the protective measures and protocols identified in the paleontological resources mitigation plan.

2. All paleontological specimens found on federal lands remain the property of the U.S. government. Specimens, therefore, may only be collected by a qualified paleontologist under a permit issued by the managing agency and must be curated in an approved repository.

Ecological Resources

1. Areas that are known to support ESA-listed species, BLM-sensitive, FS-sensitive, and state-listed species or their habitats must be identified and marked with flagging or other appropriate means to avoid direct impacts during construction activities. Construction activities upslope of these areas should be avoided to prevent indirect impacts of surface water and sediment runoff.

2. All construction activities that could affect wetlands or waters of the United States must be conducted in accordance with permit requirements identified in permits issued by the U.S. Army Corps of Engineers.

Visual Resources

1. A pre-construction meeting with BLM/FS landscape architects or other designated visual/scenic resource specialist shall be held before construction begins to coordinate on the VRM/SMS mitigation strategy and confirm the compliance-checking schedule and procedures. Applicants shall integrate interim/final reclamation VRM/SMS mitigation elements early in the construction, which may include treatments such as thinning and feathering vegetation along project edges, enhanced contour grading, salvaging landscape materials from within construction areas, special revegetation requirements, etc. Applicants shall coordinate with BLM/FS in advance to have BLM/FS landscape architects or other designated visual/scenic resource specialists onsite during construction to work with implementing BMPs.

Cultural Resources

1. Project applicants shall provide all cultural resources reports and data in an approved electronic format that is integrated across jurisdictional boundaries, that meets current standards, and that is compatible with SHPO systems. Project proponents shall submit cultural resources data on a regular basis to ensure that SHPO systems are kept up to date for reference as the different phases of the project proceed.

2. When an area is identified as having a high potential for cultural resources but none are found during a pre-construction field survey, a professionally qualified cultural resources specialist will be required to monitor ground-disturbing activities during project construction, and to complete a report when the activities are finished. The protocol for monitoring should be identified in the CRMP.

3. When human remains, funerary objects, sacred objects, or objects of cultural patrimony are inadvertently discovered, the provisions of NAGPRA shall apply and the process identified in the CRMP must be followed.

Hazardous Materials and Wastewater Management

1. Any wastewater generated by the applicant in association with temporary, portable sanitary facilities must be periodically removed on a schedule approved by the agency, by a licensed hauler and introduced into an existing municipal sewage treatment facility. Temporary, portable sanitary facilities provided for construction crews should

be adequate to support expected on-site personnel and should be removed at completion of construction activities.

2. All hazardous materials (including vehicle and equipment fuels) brought to the project site will be in appropriate containers and will be stored in designated and properly designed storage areas with appropriate secondary containment features. Excess hazardous materials will be removed from the project site after completion of the activities in which they are used.

Air Emissions

1. The applicant shall cover construction materials and stockpiled soils if these are sources of fugitive dust.

2. To minimize fugitive dust generation, the applicant shall water land before and during surface clearing or excavation activities. Areas where blasting would occur should be covered with mats.

Noise

1. The applicant shall limit noisy construction activities (including blasting) to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 10 p.m.) and weekdays.

Fire Safety

1. The applicant must ensure that all construction equipment used is adequately muffled and maintained and that spark arrestors are used with construction equipment in areas with, and during periods of, high fire danger.

2. Flammable materials (including fuels) will be stored in appropriate containers.

2.4.3 What Would Be the IOPs for Project Operation?

Mitigation and Monitoring

1. All control and mitigation measures established for the project shall be maintained and implemented by the applicant throughout the operation of the project. Necessary adjustments may be made with the concurrence of the appropriate agency.

Ecological Resources

1. Applicants shall review existing information regarding plant and animal species and their habitats in the vicinity of the project area and identify potential impacts to the applicable agencies.

2. Project staff shall avoid harassment or disturbance of wildlife, especially during reproductive courtship, migratory, and nesting seasons.

3. Observations by project staff of potential wildlife problems, including wildlife mortality, will be immediately reported to the applicable agency authorized officer.

Pesticide and Herbicide Use

1. If pesticides are used, the applicant shall ensure that pesticide applications as specified in the integrated vegetation management plan are conducted within the framework of agency policies and entail only the use of EPA-registered pesticides that are applied in a manner consistent with label directions and state pesticide regulations. Pesticide use should be limited to nonpersistent immobile pesticides and may be applied only in accordance with label and

application permit directions and stipulations for terrestrial and aquatic applications (BLM 2007b).

2. Pesticide and herbicide uses must be avoided in the vicinity of sole source aquifer areas (BLM 2007b).

Visual Resources

1. Terms and conditions for VRM/SMS mitigation compliance shall be maintained and monitored for compliance with visual objectives, with adaptive management adjustments and modifications as necessary and approved by the BLM/FS landscape architect or other designated visual/scenic resource specialist.

Hazardous Materials, Wastes, and Wastewater Management

1. The applicant shall provide secondary containment for all on-site hazardous materials and waste storage areas.

2. The applicant shall ensure that wastes are properly containerized and removed periodically for disposal at appropriate off-site permitted disposal facilities.

3. In the event of an accidental release to the environment, the applicant must initiate spill cleanup procedures and document the event, including a cause analysis; appropriate corrective actions taken; and a characterization of the resulting environmental or health and safety impacts. Documentation of the event should be provided to the land management agency's authorized officer and other federal and state agencies, as required.

Air Quality

1. Dust abatement techniques (e.g., water spraying) shall be used by the applicant on unpaved, unvegetated surfaces to minimize airborne dust. Water for dust abatement should be obtained and used by the applicant under the appropriate state water use permitting system. Used oil will not be used for dust abatement.

Noise

1. The applicant shall ensure that all equipment has sound-control devices no less effective than those provided on the original equipment.

2.4.4 What Would Be the IOPs for Project Decommissioning?

General

1. Where applicable, decommissioning activities will conform to agency standards and guidance for mitigation and reclamation (e.g., BLM's Gold Book[4]).

2. Applicants must receive approval for changes to the ROW authorization prior to any modifications to the ROW required for decommissioning.

3. Gravel work pads will be removed; gravel and other borrow material brought to the ROW during construction will be disposed of as approved by the agency.

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4 Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development, 4th Edition, revised 2007. Available electronically at http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html.

4. Any wells constructed on the ROW to support operations will be removed and properly closed in accordance with applicable local or state regulations.

5. All equipment, components, and above-ground structures must be cleaned and removed from the site for reclamation, salvage, or disposal; all below-ground components will be removed to a minimum depth of three feet to establish a root zone free of obstacles; pipeline segments and other components located at greater depths may be abandoned in place provided they are cleaned (of all residue) and filled with inert material to prevent possible future subsidence.

6. Dismantled and cleaned components will be promptly removed; interim storage of removed components or salvaged materials that is required before final disposition is completed will not occur on federal land.

7. At the close of decommissioning, applicants will provide the federal land manager with survey data precisely locating all below-grade components that were abandoned in place.

Mitigation and Monitoring

1. All control and mitigation measures established for the project in the POD and other required plans will be incorporated into a decommissioning plan that will be approved by the federal land manager(s); the decommissioning plan will include a site reclamation plan and a monitoring program and will be coordinated with owners and operators of other systems on the corridor to ensure no disruption to the operation of those systems.

Surface Water

1. A SWPPP permit will be obtained and its provisions implemented for all affected areas before any ground-disturbance activities commence.

Transportation

1. Additional access roads needed for decommissioning will follow the paths of access roads established during construction to the greatest extent possible; all access roads not required for the continued operation and maintenance of other energy systems present in the corridor shall be removed and their footprints reclaimed and restored.

Restoration

1. Topsoil removed during decommissioning activities shall be salvaged and reapplied during final reclamation; all areas of disturbed soil shall be reclaimed using weed-free native shrubs, grasses, and forbs or other plant species approved by the land management agency; grades will be returned to pre-development contours to the greatest extent feasible.

2. The vegetation cover, composition, and diversity shall be restored to values commensurate with the ecological setting, as approved by the authorizing officer.

Hazardous Materials and Waste Management

1. All fuels, hazardous materials, and other chemicals will be removed from the site and properly disposed of or reused.

2. Incidental spills of petroleum products and other chemicals will be removed and the affected area cleaned to meet applicable standards.

3. Solid wastes generated during decommissioning will be accumulated, transported, and disposed in permitted off-site facilities in accordance with state and local requirements; no solid wastes will be disposed of within the footprint of the ROW or the corridor.

4. Hazardous wastes generated as a result of component cleaning will be containerized and disposed of in permitted facilities.

2.5 WERE OTHER ALTERNATIVES CONSIDERED FOR DETAILED STUDY?

The NOI for this PEIS identified four alternatives: (1) No Action Alternative, (2) Increased Utilization Alternative, (3) New Corridor Alternative, and (4) Optimization Criteria Alternative. Among these, the Increased Utilization and the New Corridor Alternatives were eliminated from further study. The Optimization Criteria Alternative is included in the Proposed Action Alternative.

A number of alternatives for energy corridor designation were suggested during scoping (see Section 2.1). These alternatives are:

- Designating all existing energy corridors and ROWs in the 11 western states as federal energy corridors;

- Upgrading existing energy transport facilities within existing energy corridors and ROWs for greater transport capacity or efficiency, before new federal energy corridors are designated;

- Locating designated energy corridors only in areas adjacent to federal highways and major state and municipal roads;

- Designating energy corridors on national park lands and DOD facilities;

- Designating as energy corridors existing, under way, or planned energy transport project ROWs (as identified by energy providers), including individual inter- and intrastate corridors connecting very specific supply and demand area locations throughout the West; and

- Energy conservation and efficiency alternatives that called for increasing energy efficiency or conservation by energy users instead of designating corridors.

These alternatives were considered but eliminated from further study on the basis of their inability to meet the purpose and need of Section 368, support designation of federal energy corridors, or address the energy transmission congestion issues of the electricity transmission grid in the West.

In addition to these alternatives, a number of preliminary corridors identified during Step 2 of the corridor siting process and representing alternative corridor networks were also considered but eliminated from further study.

2.5.1 Increased Utilization Alternative

While this alternative was initially identified in the NOI for this PEIS, examination during the corridor siting process of existing energy corridors and ROWs and their associated facilities revealed that adding more energy transport projects to an existing ROW or increasing the energy transport capabilities of existing facilities within an ROW is not possible

in many locations. Many of the existing ROWs are only wide enough for the individual energy transport project that they serve, and the addition of multiple transport projects could only be accomplished by widening the ROW. While an electricity transmission line may be upgraded to carry greater current (e.g., from 230 kV to 500 kV), this type of upgrade could require new infrastructure (such as higher transmission towers) that could conflict with other land use activities (such as low-level military flight training activities). Furthermore, Section 368 does not authorize the agencies to require energy transport facility owners to upgrade or expand their transport systems within existing energy corridors or ROWs on federal lands. The Agencies do expect that project developers will consider all relevant factors (including ROW expansion or infrastructure upgrade) before proposing new energy transport ROWs, and that new infrastructure development within new ROWs will only be proposed when other approaches (ROW expansion or infrastructure upgrade) will not achieve the desired energy transport objectives. The Proposed Action does include the potential for upgrading existing transport infrastructure when present in a proposed energy corridor. Some corridor segments are restricted to "upgrade only" due to technical, physical, resource, or land management constraints that preclude widening the corridor to accommodate additional energy transport projects.

2.5.2 New Corridor Alternative

As corridors were being located during the corridor siting process (see Section 2.2.1), it became apparent that in many locations locally designated energy corridors existed that had already been evaluated for their compatibility with the land management responsibilities of the local federal landowner. After development of a preliminary corridor network (the unrestricted conceptual energy corridor network developed in Step 1 of the corridor siting process [see Section 2.2.1]), it became apparent that by incorporating portions of these existing energy corridors into the Proposed Action corridors, the objectives of Section 368 could be met while limiting the proliferation of energy ROWs (and associated project-specific construction and operation impacts) in "greenfield" (undeveloped) locations on the federal landscape.

2.5.3 Alternatives That Would Designate All Existing Energy Transport ROWs and Corridors as Federal Energy Corridors

The designation of all existing corridors and ROWs in the 11 western states as federal energy corridors was removed from further study for a number of reasons. Many of the existing corridors and ROWs have relatively small transport systems (e.g., less than 230-kV electricity transmission lines, less than 8-inch-diameter pipes) and could not support additional transport systems due to a variety of reasons ranging from topographic restrictions, sensitive resources, and federal land use restrictions. Expanding the width of existing corridors and ROWs to accommodate additional transport facilities would not be feasible in many of these areas. Thus, the designation of all existing energy ROWs and corridors as Section 368 energy corridors would not necessarily provide for the enhancement of energy delivery nor reliability, nor address congestion concerns in the western electricity grid, as required by Section 368. However, some existing energy corridors and ROWs could be expanded to support additional energy transport projects, and existing facilities could be upgraded to increase the efficiency and capacity of energy transport. Approximately 71% of the corridors that would be designated under the Proposed Action incorporate existing corridors and/or ROWs, and in some locations the existing widths are proposed for expansion up to 3,500 feet where possible.

2.5.4 Alternatives That Would Upgrade Existing Corridors and ROWs before Designating New Corridors

Upgrading energy transport infrastructure in all existing corridors and ROWs before new federal energy corridors are designated could provide increased energy delivery throughout the West and address reliability and congestion issues of the electricity transmission grid in the West. Section 368 does not authorize the agencies to require facility owners to upgrade their transport systems within existing corridors or ROWs on federal lands. In addition, it may not be possible to upgrade existing infrastructure in many locations. As previously discussed (see Section 2.5.1), upgrading energy transport facilities within existing corridors and ROW is not possible in many locations because of technical, physical, resource, or land management constraints. In addition, the upgrade of some types of infrastructure may conflict with activities in the area of a proposed upgrade. For example, the upgrade of an electric transmission line to carry greater current (e.g., from 230 kV to 500 kV) may require taller support structures than currently exist, and these taller structures may conflict with military aircraft training activities, local airport safety, or visual resources in the vicinity of the transmission line. The Proposed Action does not preclude the potential for upgrading existing energy transport systems, and the agencies expect that project developers will consider infrastructure upgrades before proposing new energy transport ROWs and associated infrastructure development. The Proposed Action does include several corridor segments that are restricted to "upgrade only" due to technical, physical, resource, or land management constraints.

2.5.5 Alternatives Designating Corridors Only in Areas Adjacent to Major Transportation Routes

Locating newly designated federal energy corridors only adjacent to federal highways and major state and municipal roads was considered during alternative development. In fact, some of the corridor segments that comprise the Proposed Action do parallel or make use of existing transportation routes. Because of the limited amount of federal land available adjacent to many transportation routes, locating designated corridors only along transportation routes would result in a limited set of federal energy corridors. Existing transportation ROWs were considered during the corridor siting process. The Proposed Action makes use of such ROWs where possible (Table 2.2-1), and existing transportation ROWs are utilized in 9–81% of the corridors that would be designated under the Proposed Action within any one state.

2.5.6 Alternatives Designating Corridors on DOD Installations and Lands Managed by the National Park Service

During scoping, a number of commentors requested that energy corridors be designated to specifically cross some national parks and military reservations. Alternatives that would designate federal energy corridors on national parks and military reservations were, in general, removed from further study because such designations would conflict with the management requirements of the NPS or degrade the training, testing, and security needs of DOD. The NPS has only limited authority to permit ROWs for energy corridors. There must be specific statutory authority to allow the use for which a ROW permit is requested. There are no statutory authorities to allow NPS to issue ROW permits for oil, gas, or other petroleum product pipelines; thus, NPS cannot designate corridors for these purposes. With respect to electricity transmission and distribution facilities, NPS policy and guidance provide that 16 USC 5 is the authority to be used. This statute provides that electricity transmission and distribution ROWs shall not exceed 200 ft on either side of the project centerline. This statute also provides that the permits are revocable at the discretion of the NPS. The granting of permits by NPS is discretionary and conditional

upon a finding by the NPS that the proposed project will not cause unacceptable impacts to park resources, values, or purposes, and is not incompatible with the public interest. In addition, the NPS's *Management Policies 2006* (Section 8.6.4.2) provides that ROW permits are "discretionary and conditional upon a finding by the Service that the proposed use will not cause unacceptable impacts to park resources, values, or purposes."

A very limited amount of land managed by the NPS and DOD is included in the Proposed Action because there were no alternate locations for the corridors in the general area of these federal lands and because some of these federal lands had preexisting ROWs and energy transport facilities. Many of these corridors are restricted to "upgrade only" use because of land management restrictions and military training requirements (such as low-level flights) and the corridors that would cross NPS-managed lands utilize preexisting utility ROWs.

Because of concerns related to potential conflicts of potential future energy transport infrastructure with military training airspace, a number of the Section 368 corridors will require that project planning be coordinated with DOD (see the IOPs in Section 2.4.1) to ensure compatibility with training activities (the corridors requiring DOD consultation are listed in Appendix L).

2.5.7 Alternatives Designating Existing, Under Way, or Planned Transport Projects as Energy Corridors

A number of existing, under way, or planned project ROWs were suggested during scoping for designation as Section 368 energy corridors (see Figure 2.1-1). These specific proposed corridors were eliminated from further study because of one or more of the following factors:

- The publicly proposed corridors did not take into account regulatory (e.g., avoidance of federally designated wilderness areas) or environmental constraints;
- The publicly proposed corridors were located on little or no federal land;
- The publicly proposed corridors would provide only for local energy delivery, and would not address West-wide energy transport issues, including the reliability and congestion of the national electricity grid; or
- The publicly proposed corridors would not support the development of multiple energy transport systems (the proposed corridors would have project-specific ROWs that would be only wide enough for the specific project).

While these individual, project-specific publicly proposed corridors were eliminated from further study, the locations of all these corridors were considered in the development of the unrestricted conceptual West-wide energy transport network (during Step 1 of the corridor siting process; see Section 2.2.1). For example, 12 corridors were proposed during and after scoping for designation as Section 368 energy corridors between the Salt Lake City area and Las Vegas, while seven corridors were similarly proposed between Elko, Nevada, and Las Vegas (see Figure 2.1-1). The locations of these corridors indicated a need for one or more corridors along these paths, and this need was considered in the development of the unrestricted conceptual West-wide energy transport network (Section 2.2.1.1). Further evaluation of this network was conducted during Steps 2 and 3 of the corridor siting process. Because the energy corridors identified in the Proposed Action could help connect many of the start and endpoints of the publicly proposed corridors and could support multiple projects, the Proposed Action corridors could meet the energy transport objectives of many of the publicly proposed corridors.

2.5.8 Alternatives That Would Increase Energy Efficiency and Conservation

Analysis of projected energy needs in the West indicates the need for development of energy transmission facilities to meet projected demand, including the demand for energy from renewable resources. Increasing the efficiency of energy transport through the use of new technologies such as conversion of electricity transmission lines from alternating-current to direct-current operation as well as increased energy conservation by energy users would reduce the need for energy transmission development to some extent. Increased efficiency and reduced demand are possible under both the No Action and Proposed Action Alternatives, and would result in a decreased need for energy transmission facilities in both cases.

Section 368 specifically calls for the designation of federal energy corridors as locations for energy transport facilities. It does not authorize the agencies to direct energy users to be more efficient and effective in their use of energy. Analysis of future energy needs suggests that even with increased efficiency and conservation, energy transport facilities will be needed in the West (Section 1.1.1). To the extent that future development takes place, Section 368 corridors provide the preferred location for such facilities. The number and extent of Section 368 corridors may influence the location of energy transport facilities but does not reflect the demand for such facilities, which may be constructed under either the No Action or Proposed Action Alternatives.

2.5.9 Preliminary Corridors Identified during Step 2 of the Siting Process

During Step 2 of the corridor siting process (see Section 2.2.1.2), preliminary energy corridors were identified in each of the 11 western states (Figure 2.2-8). Further evaluation of these preliminary corridors with regard to further avoiding sensitive resources and conflicting land uses (see Table 2.2-7) was conducted by appropriate federal land managers and their staff during Step 3 of the corridor siting process (see Section 2.2.1.3). As a result of this evaluation, some corridor segments were removed from further consideration and evaluation in this PEIS. For example, in Step 2, preliminary corridors were identified in north-central Montana and north-central Washington (Figure 2.2-8). During Step 3, these corridors were eliminated because they consisted of relatively small corridor segments on largely isolated federal lands; thus their designation under the Proposed Action would do little to meet the needs of Section 368. The Step 3 evaluation also relocated portions of some of the Step 2 preliminary corridors in response to, or at the direction of, local land manager concerns regarding sensitive resources and their intersection by the Step 2 corridors.

2.6 HOW DO THE ALTERNATIVES COMPARE?

The Proposed Action and No Action Alternatives were evaluated in this PEIS for environmental impacts associated with the designation of energy corridors on federal lands and the amendment of land use plans to incorporate the corridor designations. Because the Proposed Action is the designation of corridors and not the authorization, construction, and operation of energy transport projects, a programmatic evaluation is provided of the types of impacts that could result from development of energy transport projects regardless of project location. Specific impact analyses, including the identification of social, cultural, economic, and natural resources, can only be conducted at the project level. For example, in the same location, the effects of a pipeline within a corridor would be different from impacts of a transmission line, while the siting of a project on one side of a corridor would be different in its impacts from that of the same type of project sited a half-mile away but still within the corridor. Thus, project-specific analysis would be done in the future if an

application to use a designated corridor were received by the Agencies. The scope and approach for the project-specific analysis would be determined on a project-by-project basis. The programmatic analysis of project-specific impacts applies to energy transport development under both alternatives.

No direct environmental impacts are expected to occur as a result of implementing either the No Action or Proposed Action Alternatives, with the possible exception of effects to property values on nonfederal lands adjacent to or between designated corridor segments. Nor are the types of impacts from project development likely to differ between the two alternatives. Corridor designation would likely reduce the proliferation of ROWs across the landscape, and concentrate development to some extent within the corridors. Project applicants using Section 368 corridors would benefit from the expedited application and permitting process associated with the use of a Section 368 corridor (see Section 1.4), and projects would be subject to the IOPs (Section 2.4), which provide both streamlined administrative procedures and best practices for environmental compliance and protection.

Corridor designation could affect property values on nonfederal lands adjacent to or between corridor segments. The type and magnitude of effect would depend on the current and anticipated future property values and land use in these areas. Section 368 of EPAct does not authorize any individual projects, nor does it authorize the Agencies to override state decisions on projects located on Tribal, state, or private lands. Currently, the standard process for securing a ROW can include eminent domain actions, when a Public Certificate of Need is granted under a state-authorized process to a company. Authorization of projects to cross non-federal lands is at the discretion of the appropriate Tribal, state, and local authorities, and the designation of Section 368 energy corridors makes no changes to existing procedures on nonfederal lands.

2.6.1 How Do the Physical Characteristics of the Corridors Compare between the Alternatives?

Under the No Action Alternative, there would be no Section 368 federal energy corridors designated on federal lands. Existing locally designated corridors would remain, and new corridors may continue to be locally designated. Under the Proposed Action, approximately 6,112 miles of such corridors would be designated on federal lands. Approximately 71% of the proposed corridors follow or include existing utility and/or transportation infrastructure while approximately 43% of the proposed corridors incorporate existing locally designated energy corridors. There are 131 corridor segments that comprise the Proposed Action corridors. These segments have an average length of 37.3 miles.

2.6.2 Do the Alternatives Meet the Goals and Objectives of Section 368?

Section 368 calls for the designation on federal lands of corridors for energy transport facilities and directs the Secretaries to develop procedures to expedite applications to construct pipelines and electricity transmission and distribution facilities within the corridors. In carrying out Section 368, the Secretaries are directed to also consider improving the reliability, reducing congestion, and enhancing the capability of the national electricity grid to deliver electricity.

Under the No Action Alternative, no Section 368 energy corridors would be designated on federal land; thus the goals and objectives of Section 368 would not be met. In contrast, approximately 6,112 miles of Section 368 energy corridors would be designated on federal lands under the Proposed Action. The corridors that could be designated

under the Proposed Action would provide routes across federal lands for energy transport projects to connect current and future energy production areas, including areas of solar, wind, and geothermal generation, to current and future energy demand centers (Figure 2.6-1). Thus, the Proposed Action would meet the requirements of Section 368 of designating energy transport corridors on federal lands in the West.

While project applicants would not be required to locate projects within the Section 368 energy corridors, applicants using the corridors could take advantage of an expedited application and permitting process (Section 1.4). These benefits could expedite the application, authorization and permitting, and construction of energy transport and distribution projects, as directed by Section 368.

Under the No Action Alternative, the locations of future energy transport project ROWs would be identified by the project applicants, and the development of transmission projects at these locations may or may not improve reliability, reduce congestion, or enhance the capability of the western portion of national electricity transmission grid to deliver electricity. While the designation of Section 368 energy transport corridors under the Proposed Action does not authorize the development of any projects, the proposed corridors were sited, in part, considering the need to address reliability and congestion, and enhance the capability to deliver electricity in the western part of the grid (see Section 2.2.1). The proposed corridors are located (Figure 2.6-2) such that future electricity transmission projects using the corridors could improve reliability, reduce congestion, and enhance the capability of the national grid to deliver electricity, as directed by Section 368.

2.6.3 What Steps Are Being Taken to Ensure the Reliability of Bulk Electricity Transmission?

Irrespective of whether future development of a bulk electricity transmission system occurs under the No Action Alternative or in corridors designated under the authority of Section 368 (the preferred alternative of this PEIS), various federal and state regulations will apply to those future developments. FERC has the primary responsibility for ensuring the reliability of the electricity transmission grid.

In addition, to ensuring continued reliability of electric service, EPAct authorized the creation of an independent, international Electric Reliability Organization (ERO) and directed FERC to establish rules for ERO as well as a process for certification. In July 2006, FERC approved NERC as the authorized ERO for the United States.[5]

NERC's mission is to promote the reliability of the bulk electricity transmission systems (i.e., electricity transmitted at 100 kV or greater) that serve North America. To achieve that, and in collaboration with all segments of the electric power industry, NERC develops and enforces FERC-approved reliability standards; monitors the bulk power system; assesses future adequacy; audits owners, operators, and users for preparedness; and educates and trains industry personnel. Reliability standards provide for the reliable performance of North American bulk electric systems without causing undue restrictions or adverse impacts on competitive electricity markets.[6]

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[5] More information on NERC can be found at the NERC website: http://www.nerc.com.

[6] Currently, there are 121 FERC-approved NERC standards addressing the reliability of all facets of bulk electricity transmission, including design, planning, operations, infrastructure and cyber security, communication, coordination, and operational safety. All NERC reliability standards can be accessed electronically at: http://www.nerc.com/~filez/standards/Reliability_Standards.html.

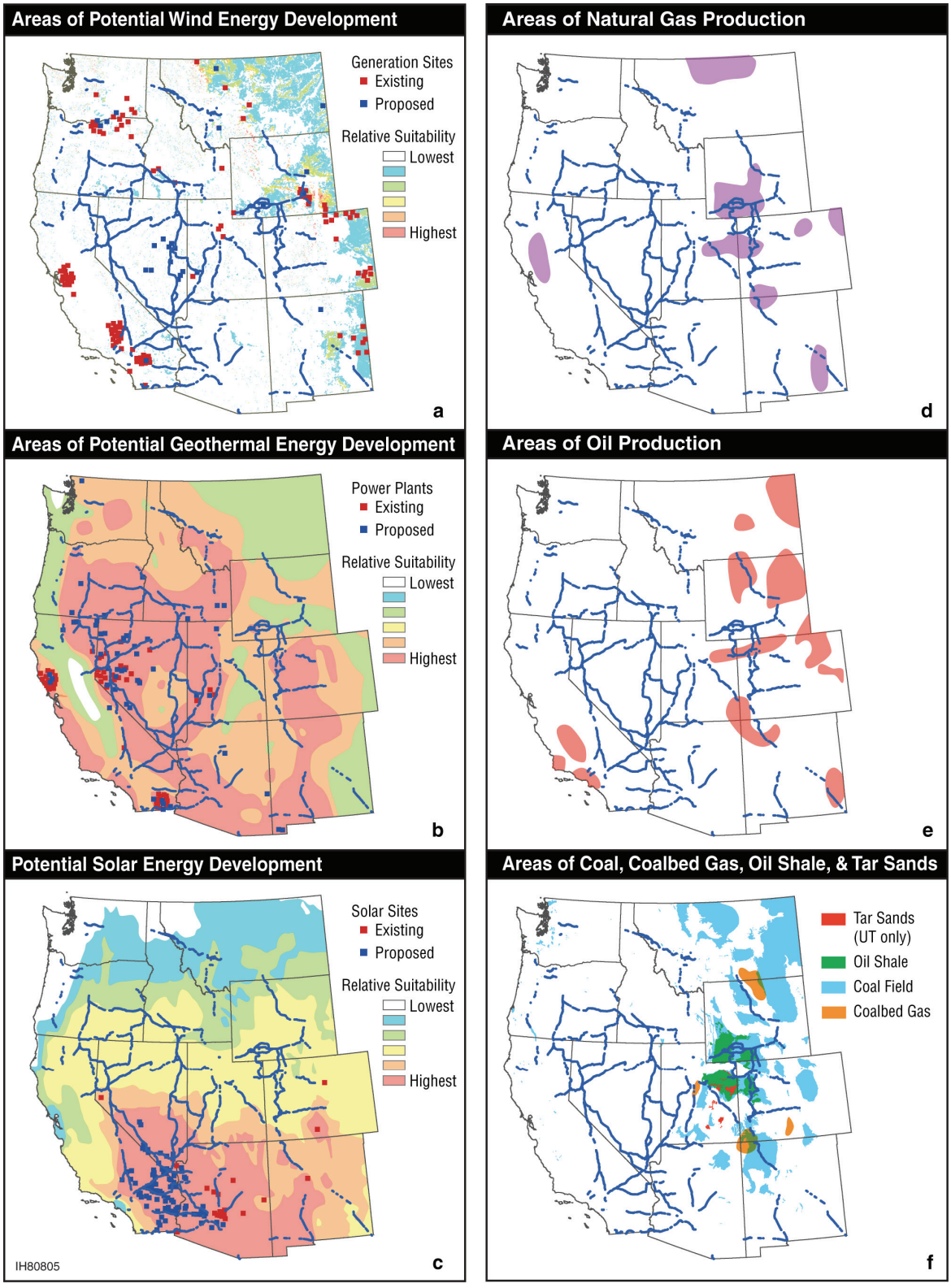

FIGURE 2.6-1 Relationship of the Proposed Section 368 Energy Corridors and Current and Potential Future Energy Generation (Sources: USGS 2005; Western Resource Associates 2008)

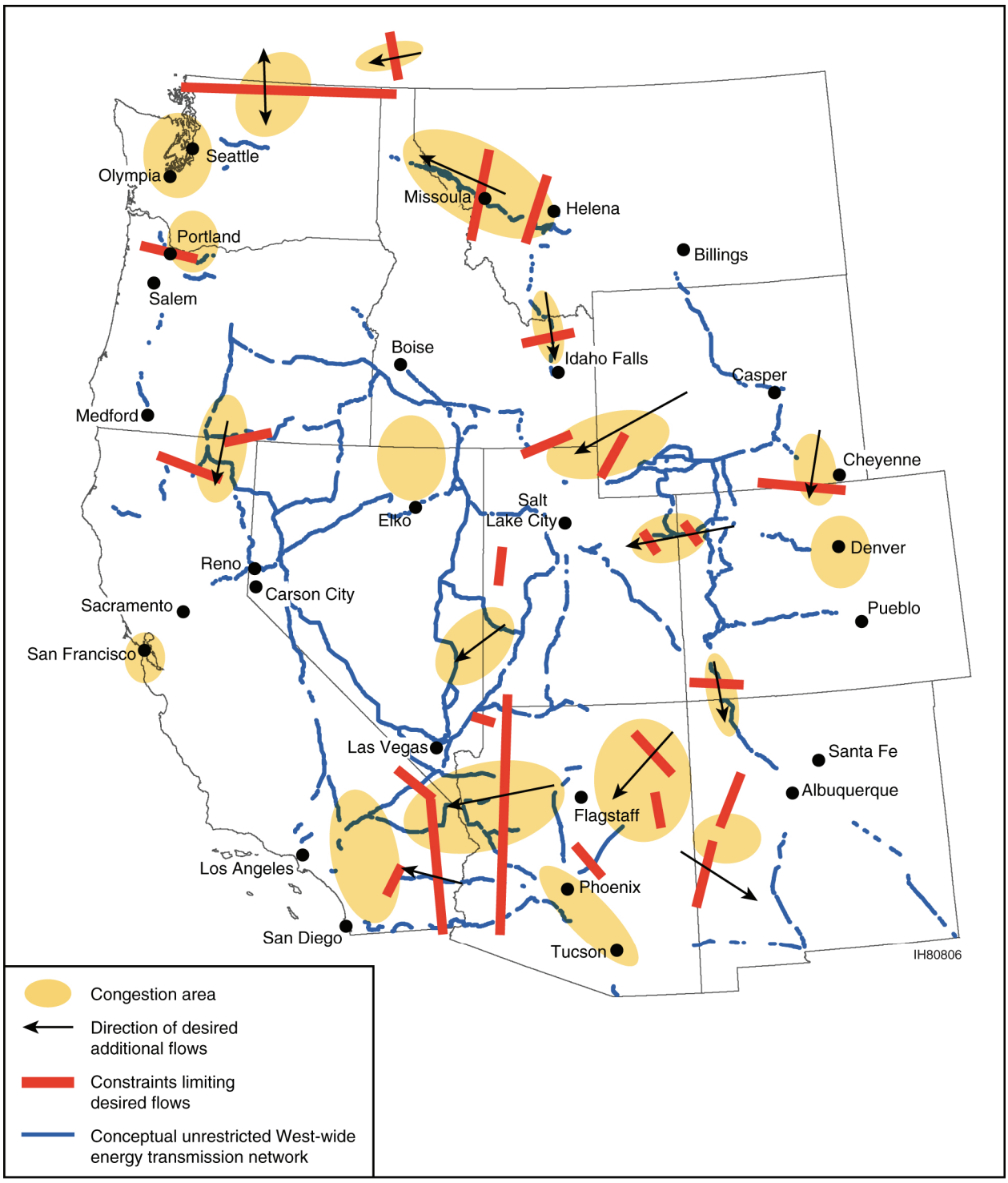

FIGURE 2.6-2 Relationship of the Proposed Section 368 Energy Corridors on Federal Lands with Current and Potential Future Electricity Transmission Constraints and Congestion Paths and Areas in the West (Congestion and constraint paths and areas from DOE 2006a)

NERC is comprised of Regional Reliability Councils (RRCs), which are responsible for bulk transmission within their assigned geographic areas. The Western Electricity Coordinating Council (WECC) (formerly, the Western Systems Coordinating Council) RRC encompasses the 11 western states addressed in the WWEC PEIS, as well as portions of the Canadian Provinces of Alberta and British Columbia and a portion of Baja California Norte, Mexico.[7] WECC may elect to promulgate regional reliability standards (that must be approved by NERC and FERC)[8] or to develop regional reliability criteria or planning standards that complement the NERC reliability and planning standards or establish consistent procedures for ensuring compliance with NERC standards among all WECC transmission system participants. All such activities occur under the auspices of WECC's Reliability Management System (RMS).

Compliance with NERC and regional reliability standards is essential to guaranteeing the reliability of the nation's bulk electricity transmission network and nothing in this PEIS, including the establishment of energy corridors that may subsequently result, contravenes, replaces, or relaxes the applicability or enforceability of NERC or WECC reliability standards or the supporting directives to member organizations contained in WECC reliability criteria. In those instances where the postulated specifications of hypothetical energy corridors are inconsistent with the reliability standards or criteria, those specifications shall be deemed moot, replaced with specifications that are consistent with the applicable standards or criteria. One area where the reliability standards or criteria critically dictate corridor specifications is with respect to the distance separations between multiple bulk electricity transmission lines located in common or adjacent corridors.

Reliability criteria recently proposed by WECC address the potential for simultaneous or successive failures of multiple transmission lines within a common corridor or within parallel adjacent corridors. These proposed WECC reliability criteria establish regional differences from NERC reliability standards TPL-001 through TPL-004 and require transmission system planners and designers to address the likelihood and consequences of the simultaneous or successive outages of multiple lines (cascading) due to what WECC system operators have determined to be credible events, including the simultaneous loss of two adjacent lines occurring at a frequency greater than once every 300 years. The proposed reliability criteria define various initiating events that should be addressed in system planning, including: one tower falling onto an adjacent line/tower, a shield wire[9] being snagged by a small aircraft and pulled onto an adjacent tower/line, an aircraft flying into one or more circuits, fire on the ROW that results in the release of charged particles in a smoke plume that can simultaneously envelop conductors of multiple circuits in close proximity, causing those circuits to fail, and lightning strokes simultaneously affecting two or more lines in close proximity.

Although there are various technical means of system configuration and/or operational responses to line outages that can preempt or limit the potential for line failures, including cascading (e.g., load shedding, islanding, selected generator tripping, or the use of various other reactive devices), by far the most cost-effective preemptive strategy against multiple simultaneous line loss involves ensuring adequate distance separation between lines at the planning stage. Experience among WECC system operators has also shown that the nature

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[7] See the WECC website, http://www.wecc.biz, for more detailed information about WECC, including its standard-setting activities.

[8] As of June 2007, FERC has approved eight WECC Reliability Standards. All can be accessed electronically at: http://www.ferc.gov/industries/electric/indus-act/reliability/WEC-standards.asp

[9] The shield wire, or overhead ground wire, is a bare wire attached to the top of each tower, electrically bonding the towers to enhance the system's ability to safely absorb and discharge lightning strikes.

of the land between lines (e.g., mountainous, agricultural, forested) and topography (as it affects tower spacing or creates physical barriers between adjacent lines) should dictate safe separation distances on a case-by-case basis. In practice, some WECC operators separate lines in common or adjacent corridors by more than the longest span length between towers on either line (anywhere from 1,000 to 1,500 feet for 500-kV lines, depending on terrain), thus ensuring that a snagged shield wire or conductor cannot be dragged into adjacent lines. However, in forested areas or in areas where vegetation provides substantial amounts of fuel for fires, greater line spacings (up to 5 miles) may be necessary to prevent adjacent lines from becoming simultaneously involved in faults caused by ionized smoke.

2.6.4 How Could the Alternatives Affect the Locations of Future Energy Transport Projects in the 11 Western States?

Neither of the alternatives evaluated in this PEIS includes authorization of energy transport projects. The corridors designated under the Proposed Action would be sited on federal land in areas that have been determined to be suitable for supporting future energy transport projects. Under the No Action Alternative, there would be no such Section 368 corridors. While the number and types of projects that may be expected to be developed in the foreseeable future are unknown, the corridor suggestions received from the public identify a potential for many energy transport routes throughout the West (Figure 2.1-1). These suggested corridor locations came largely from individual utilities or energy industry planning groups, and many were specific to potential individual projects.

Assuming these proposed corridors represent possible future energy transport ROWs, under the No Action Alternative, individual projects could be widely distributed across federal and nonfederal lands and thus result in a proliferation of energy transport ROWs. For example, Figure 2.6-3A, C, and E show the possible distribution of proposed projects in southwestern Wyoming, southern Nevada, and southwestern Arizona as they might be located under the No Action Alternative. Under the Proposed Action, however, portions of the ROWs for these same projects could be colocated within the designated corridors (Figure 2.6-3, B, D, and F), and would not be spread out over the federal landscape. The location of those portions of these projects on nonfederal lands would depend on the project, the length, the ROW locations preferred by the individual project applicants, and the applicants' ability to secure access to those locations.

Designation of the Section 368 energy corridors is not guaranteed to help limit the proliferation of energy transport ROWs on federal lands, since Section 368 does not require mandatory use of the corridors by project proponents. While project developers will be encouraged to locate project ROWs within designated corridors, applicants will not be precluded from applying for ROWs outside of designated corridors, as they are currently able to do in areas with existing locally designated corridors. While corridor designation may influence the location of some future energy transport projects, corridor designation does not drive the development of such projects. Project development is driven by energy demand. If the demand for energy is high and local energy generation cannot meet that demand, then the need for long-distance energy transport systems to link energy production areas with the high demand areas may be expected to be high and drive development of energy transport projects. Conversely, if the demand for energy is low, or local energy generation is sufficient to meet the energy demand, then the need for long-distance energy transport projects may be low, and the corridors will be less likely to be used.

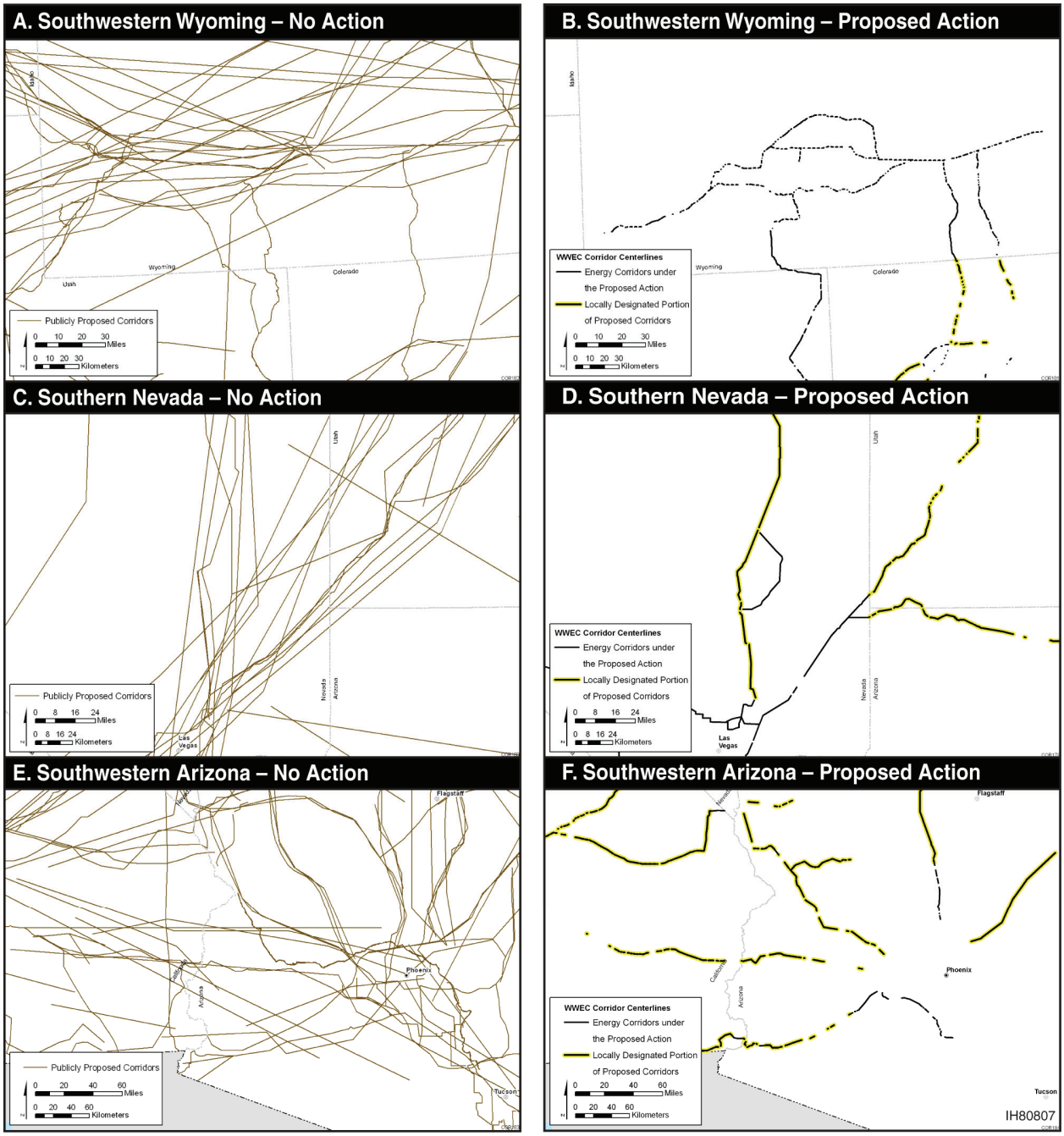

FIGURE 2.6-3 Potential Distribution of Energy Transport Projects in Southwestern Wyoming, Southern Nevada, and Southwestern Arizona under No Action and the Proposed Action

2.6.5 What Types of Impacts Might Be Expected with the Development of Energy Transport Projects under the Alternatives?

The construction and operation of energy transport projects to meet future energy demand under both alternatives would result in environmental impacts on federal and nonfederal lands. The types of potential impacts would vary by project phase (i.e., construction, operation). The specific nature, magnitude, and extent of possible project-specific impacts would be determined by the project type (transmission line, pipeline) and its length and location on federal and nonfederal lands. Potential direct impacts typical of project construction and operation include the use of geologic and water resources; soil disturbance and erosion; degradation of water resources; localized generation of fugitive dust and air emissions from construction and operational equipment; noise generation; disturbance or loss of paleontological and cultural resources and traditional cultural properties; degradation or loss of fish and wildlife habitat; disturbance of resident and migratory fish and wildlife species, including protected species; degradation or loss of plant communities; increased opportunity for invasive vegetation establishment; alteration of visual resources; land use changes; accidental release of hazardous substances; and increased human health and safety hazards.

Project development under either of the alternatives could also affect populations in the vicinity of the projects on both federal and nonfederal land as well as local and regional economies. The location, nature, magnitude, and extent of potential impacts to populations and economies would depend on the type, length, and location of the energy transport project, and thus can only be evaluated at the project level.

For multiple projects, environmental impacts from project construction and operation would likely be dispersed over a larger area under No Action than under the Proposed Action (e.g., compare differences in project ROW locations shown in Figure 2.6-3). Under No Action, multiple project ROWs could share locally designated corridors but outside of these areas the ROWs could be more widely dispersed on other federal and nonfederal lands. Similarly, project impacts would also be more widely dispersed. Under the Proposed Action, the ROWs could share about 6,112 miles of designated corridor where project impacts would be localized.

The extent and magnitude of these impacts would depend on the project type, length, and location. Under both alternatives, potential project impacts could be avoided or minimized through the implementation of appropriate mitigation measures and policies, practices, and procedures that are currently specified by the agencies that would grant permits for the projects to proceed (e.g., FERC, DOE, BLM, FS). Projects will also be required to follow each state's best management practices during project construction, operation, and maintenance. Potential project impacts that may occur with development in the energy corridors designated under the Proposed Action could be further reduced or avoided with the implementation of applicable mitigation measures and IOPs identified in this PEIS and incorporated into affected land management plans by the ROD. Table 2.6-1 summarizes the impacts of designating Section 368 energy corridors on federal lands and amending land use plans. Also summarized are the types of environmental impacts (identified in Chapter 3 of this PEIS) that could occur as a result of the construction and operation of individual energy transport projects on federal and nonfederal lands under both alternatives.

TABLE 2.6-1 Summary of Potential Environmental Impacts of Designating Section 368 Energy Corridors on Federal Lands and Amending Federal Land Use Plans, and Generic Environmental Impacts of Constructing and Operating Future Energy Transport Projects under the Two Alternatives

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Land use	There would be no direct land use impacts on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to land use from the construction and operation of future energy transport projects in the absence of designated corridors. Land use could be affected on federal and nonfederal lands where energy transport projects are developed and operated. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. ROW clearing would result in permanent loss of timber production within and adjacent to the ROW in areas designated for that use. Recreation, livestock grazing, oil and gas leasing, and wildlife habitat conservation could experience short-term disturbance during construction activities. Some land areas would be converted to temporary or permanent access roads (throughout the operating life of the energy project). Project development and operation could limit oil and gas production and mineral extraction directly within the ROW. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	The designation of Section 368 energy corridors would not interfere with current land uses on federal or nonfederal lands. Such land uses (e.g., recreational use of the land for campsites) would continue within and along the designated Section 368 energy corridors until a specific energy transport project is developed. There may be land use impacts from future project construction and operation within the proposed Section 368 energy corridors. Those impacts, which would be similar to the ones identified for the No Action Alternative, could impact land use within and adjacent to the designated corridors, as well as along other federal and nonfederal lands that project ROWs may cross. In terms of scale of impacts, where there are multiple projects in the same Section 368 energy corridor, the projects may affect a smaller geographic area than the same projects would if developed in separate locations under the No Action Alternative. In most cases, even future development within the designated Section 368 energy corridors would be compatible with current use of the land. However, there may be instances where future development does restrict land use (e.g., by precluding mining or military operations).

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Geologic resources	There would be no direct impacts to geologic resources on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to geologic resources from the construction and operation of future energy transport projects in the absence of designated corridors. Geologic resources could be affected on federal land wherever energy transport projects are developed, operated, and decommissioned. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Construction impacts may include disturbance of surface soils and soil erosion from grading, foundation construction, and trenching activities, and removal of geologic materials (gravel, stone) from borrow areas. Soils could be affected by accidental spills of hazardous materials during project operations. The impacts in the decommissioning phase include disturbance of surface soils and soil erosion from equipment vehicle traffic and grading and disposal of geologic material. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct impacts to geologic resources on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts of future projects would be similar to those identified for No Action. About 71% of the designated corridors would occur along existing utility and transportation ROWs where geologic resources have been previously disturbed. For multiple projects, potential impacts would occur at fewer locations and within a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact geologic resources.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Paleontologic resources	There would be no direct impacts to paleontologic resources on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to paleontological resources from the construction and operation of future energy transport projects in the absence of designated corridors. Paleontological resources could be affected on federal and nonfederal lands wherever energy transport projects are developed and operated. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Ground-disturbing construction activities may damage or destroy fossils and their scientific context within project-specific ROWs. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects. Increased accessibility to an area may also expose fossils to vandalism or theft, the magnitude and extent of which would depend on the type, location, and design of the individual projects.	There would be no direct impacts to paleontologic resources on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts from future projects would be similar to those identified for No Action. About 63 geologic units with high fossil yield potential occur within 2,000 feet of the proposed corridor centerlines. Ground-disturbing construction activities could damage or destroy fossils and their scientific context within the designated corridors as well as on other federal and nonfederal lands. About 71% of the designed corridors include existing utility and transportation ROWs where paleontological resources, if present, may have been previously disturbed. Increased accessibility to an area may also expose fossils to vandalism or theft, the magnitude and extent of which would depend on the type, location, and design of the individual projects. For multiple projects, potential project impacts may occur at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact paleontological resources.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Water resources	There would be no direct impacts to water resources or 100-year floodplains on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to water resources from the construction and operation of future energy transport projects in the absence of designated corridors. Water resources and floodplains could be affected on federal and nonfederal lands where energy transport projects are developed, operated, and decommissioned. Project impacts would be similar to those from current energy transport project development, operation, and decommissioning on federal and nonfederal lands. Groundwater could be impacted if project development affects aquifer recharge or water quality is affected by an accidental release of a hazardous substance. Surface water could be impacted by soil erosion and runoff from disturbed areas, alteration of stream flow and morphology at ROW crossings, and by an accidental release of hazardous materials. Floodplain capacity could be affected by placement of structures or excavated materials. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct impacts to water resources or 100-year floodplains on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts of future projects would be similar to those identified for No Action. Projects developed within designated corridors would intersect about 273 named perennial and intermittent streams and man-made channels (totaling 412 miles), 30 lakes and reservoirs, and 3 wild and scenic rivers, additional surface waters could be crossed on other federal and nonfederal lands crossed by the projects. Aquifers on federal and nonfederal lands crossed by projects could be affected by project construction and operation. About 34 miles of floodplains could be crossed by projects within designated corridors. Additional floodplain areas could be crossed on other federal and nonfederal lands. About 71% of the designated corridors include existing utility and transportation ROWs where water resources and floodplains may have been previously disturbed. For multiple projects, water resources and floodplains would be affected at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact water resources.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Air quality	There would be no direct impacts to air quality on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans.	There would be no direct impacts to air resources on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans.
	The following are the potential types of impacts to air quality from the construction and operation of future energy transport projects in the absence of designated corridors. Air quality could be affected on federal and nonfederal land where energy transport projects are developed and operated. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Air quality impacts would be associated with fugitive dust, construction equipment emissions, and operation of compressor stations. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	Potential types of impacts of future projects to air quality would be similar to those identified for No Action. Energy transport project development and operation could affect air quality along the designated corridors. Similar impacts could also occur along project ROWs on other federal and nonfederal lands that could be crossed by individual projects. About 71% of the designated corridors would occur along existing utility and transportation ROWs where air resources may have been (and may continue to be) affected. For multiple projects, air quality could be affected at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact air quality.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Noise	There would be no direct noise impacts on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to ambient noise levels from the construction and operation of future energy transport projects in the absence of designated corridors. Ambient noise levels could be affected on federal and nonfederal lands where energy transport projects are developed and operated. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Noise impacts would be associated with construction equipment, blasting, compressor/pump station operations, corona discharge, and transformer and switchgear operations. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct noise impacts on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts of future projects to ambient noise levels would be similar to those identified for No Action. Project development could affect noise levels along the proposed corridors. Similar impacts could also occur along project ROWs on other federal and nonfederal lands. About 71% of the designated corridors would occur along existing utility and transportation ROWs where ambient noise levels may have been (and may continue to be) affected. For multiple projects, ambient noise levels would be affected at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact noise levels.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Ecological resources	There would be no direct impacts to ecological resources on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to ecological resources from the construction and operation of future energy transport projects in the absence of designated corridors. Ecological resources could be affected on federal and nonfederal lands where energy transport projects are developed and operated. Project impacts would be similar to those currently experienced from energy transport project development and operation on federal and nonfederal lands. Impacts from project development may include habitat fragmentation, wildlife disturbance, habitat loss and modification, exposure to accidental releases of hazardous materials, and the loss or injury of biota within physically disturbed portions of the project ROWs. Construction and operation activities, together with physically disturbed habitats at the ROWs, could lead to the spread or establishment of invasive species. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct impacts to ecological resources on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts of future projects to ecological resources would be similar to those identified for No Action. Projects utilizing the designated corridors could cross or intersect about 412 miles of perennial and intermittent stream habitat and about 1,825 acres of lake or reservoir habitat as well as associated wetland areas; additional aquatic habitats could be affected along the project ROWs on other federal and nonfederal lands adjacent to the designated corridor. Projects developed and operated within the corridors could affect wildlife habitat on and adjacent to land present within the corridors, although about 71% of the proposed corridors would occur along existing transportation and utility ROWs where biota and their habitats have been previously disturbed. For multiple projects, ecological resources could be affected at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact ecological resources.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Visual resources	There would be no direct impacts to visual resources on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to visual resources from the construction and operation of future energy transport projects in the absence of designated corridors. Visual resources could be affected on federal and nonfederal lands where energy transport projects are developed and operated. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Visual resources could be affected by ROW clearing, project construction, and operation. Potential impacts would be associated with access roads, construction equipment and activity, cleared project ROWs, and the type and visibility of individual project structures such as compressor stations and electricity transmission line towers. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct impacts to visual resources on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts of future projects to visual resources would be similar to those identified for No Action. Visually sensitive areas crossed by or occurring within 5 miles of the proposed corridor centerlines and that could be affected by project development and operation include 25 national parks, national monuments, and recreation areas; 9 wild and scenic rivers; 11 national scenic or historic trails; 10 national historic landmarks and national natural landmarks; 19 national wildlife refuges; and 20 national scenic highways. Additional visually sensitive resources may be expected to occur on other federal and nonfederal lands that could be crossed by project ROWs. About 71% of the proposed corridors would occur along existing transportation or utility ROWs, and visual resources in these areas may currently be impacted to some extent. For multiple projects, visual resources could be affected at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact visual resources.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Cultural resources	There would be no direct impacts to cultural resources on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to cultural resources from the construction and operation of future energy transport projects in the absence of designated corridors. Cultural resources could be affected on federal and nonfederal lands where energy transport projects are developed and operated. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Cultural resources could be impacted during project construction, and there could be an increased potential for vandalism or looting due to increased accessibility of sites from project ROWs in previously inaccessible locations. Development of energy transport projects would be subject to the Section 106 review process of the NHPA which requires consultations with appropriate SHPOs and Tribes. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct impacts to cultural resources on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts from future project construction and operation to cultural resources would be similar to those identified for No Action. Cultural resources may be expected to occur in most project ROWs within the designated corridors, as well as on other federal and nonfederal lands that would be crossed by the project ROWs. About 71% of the proposed corridors would occur along existing transportation or utility ROWs, and the cultural resources near these areas may have previously been disturbed. Development of energy transport projects within Proposed Action corridors would be subject to the Section 106 review process of the NHPA which requires consultations with appropriate SHPOs and Tribes. For multiple projects, cultural resources could be affected at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact cultural resources.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Resources important to Tribes	There would be no direct impacts to resources on federal and nonfederal lands of important to Tribes from not designating Section 368 energy corridors on federal land or amending land use plans. The following are the potential types of impacts to resources of interest to Tribes from the construction and operation of future energy transport projects in the absence of designated corridors. Resources could be affected on federal and nonfederal lands where energy transport projects are developed and operated. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Tribal resources could be impacted during project construction, and there could be an increased potential for looting due to increased accessibility of sites from project ROWs through previously inaccessible locations. Development of energy transport projects would include consultations with the affected Tribal entities as mandated by law. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct impacts to resources on federal and nonfederal lands important to Tribes from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts from future project construction and operation to resources of interest to Tribes would be similar to those identified for No Action. Tribal resources may be expected to occur in most project ROWs within the designated corridors, as well as on other federal and nonfederal lands that would be crossed by the project ROWs. About 71% of the proposed corridors would occur along existing transportation or utility ROWs, and Tribal resources near these areas may have previously been disturbed. Development of energy transport projects would include consultations with the appropriate Tribal entities as mandated by law. For multiple projects, Tribal resources could be affected at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact resources important to Tribes.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Socioeconomic resources	There would be no direct social or economic impacts on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to socioeconomic resources from the construction and operation of future energy transport projects in the absence of designated corridors. Socioeconomic resources could be affected on federal and nonfederal lands where energy transport projects are developed and operated as well as in conjunction with project development and operation. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Development of energy transport projects could result in positive impacts to local and state tax revenues, state employment rates, personal income, and the rental housing market. Land use royalties and property values may be adversely affected within and near project ROWs. Project development could also reduce land prices in areas near the project ROWs. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	Designating Section 368 energy corridors on federal land and amending land use plans may influence real estate values on nonfederal lands that are adjacent to the proposed Section 368 energy corridors. However, any changes would be purely economic and, under CEQ regulations at 40 CFR 1508.14, would not by themselves require preparation of an EIS. Potential types of impacts of future projects would be similar to those identified for No Action. These impacts could occur not only for areas associated with the Proposed Action corridors, but also at other federal and nonfederal lands that the project ROWs might also cross. About 71% of the designated corridors include existing utility and transportation ROWs where socioeconomic resources may have been previously affected. Corridor designation and development of energy transport projects could have a direct impact on real estate values on adjacent nonfederal lands. Impacts would be mainly economic, although use of these lands may also be affected. For multiple projects, socioeconomic impacts could occur at fewer locations and over a smaller geographic area than under No Action. However, multiple projects in close proximity over a period of time could add more significantly to cumulative impacts.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Environmental justice	There would be no direct impacts, including no disproportionately high or adverse impacts, to minority or low-income populations on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to environmental justice from the construction and operation of future energy transport projects in the absence of designated corridors. Minority and low-income populations could be affected on federal and nonfederal lands where energy transport projects are developed and operated. Project impacts would be similar to those from current energy transport project development and operation on federal and nonfederal lands. Project development and operation could affect some minority and low-income populations as a result of impacts to visual resources and local economic conditions. The likelihood of disproportionately high impacts can only be evaluated at the project level. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct impacts, including no disproportionately high or adverse impacts, to minority or low-income populations on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Corridor designation could have effects on property values on nonfederal lands adjacent to or between the designated corridors on federal land, which could affect minority or low-income populations. The nature and magnitude of any effects on minority or low-income populations would depend on the populations that occur in the vicinity of a proposed corridor as well as the current and future land use and property values of the nonfederal lands. Potential types of impacts of future projects would be similar to those identified for No Action. These impacts could occur not only for areas associated with the Proposed Action corridors, but also at other federal and nonfederal lands that the project ROWs might also cross. About 71% of the proposed corridors would occur along existing utility and transportation ROWs and where minority and low-income populations may have been previously affected. For multiple projects, potential impacts, including disproportionately high impacts, could occur at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact environmental justice.

TABLE 2.6-1 (Cont.)

Resource	No Action Alternative: No Action on Federal Lands	Proposed Action Alternative: Designate New Section 368 Corridors
Health and safety	There would be no direct health and safety impacts on federal and nonfederal lands from not designating Section 368 energy corridors on federal land and amending land use plans. The following are the potential types of impacts to health and safety from the construction and operation of energy transport projects in the absence of designated corridors. Health and safety could be affected on federal and nonfederal lands where energy transport projects are developed and operated. Impacts are not expected to differ from those of current energy transport project development and operation on federal and nonfederal lands. Primary concerns are associated with worker safety during project construction and operation, public safety from accidents, and fire incidents. The nature, magnitude, and extent of project-related impacts would depend on the type, location, length, and design of the individual projects.	There would be no direct health and safety impacts on federal and nonfederal lands from designating Section 368 energy corridors on federal land and amending land use plans. Potential types of impacts from future project construction and operation would be similar to those identified for No Action. About 71% of the designated corridors include existing utility and transportation ROWs where health and safety concerns related to worker safety, public safety, and fire incidence currently may exist. For multiple projects, health and safety concerns, including concerns for increased fire hazard, would occur at fewer locations and over a smaller geographic area than under No Action. However, multiple projects developed at the same or nearby locations over a period of time could cumulatively impact health and safety.

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