APPENDIX W:

SOCIOECONOMIC METHODS AND IMPACTS

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APPENDIX W:

SOCIOECONOMIC METHODS AND IMPACTS

W.1[1] HOW WERE POTENTIAL IMPACTS EVALUATED?

The economic analysis of project developments (not designation) assesses impacts at the state level for each of the 11 western states in terms of changes in employment, income, population, housing, community service finances and employment, and state income and sales tax revenues. Property values and quality-of-life impacts are assessed qualitatively through a review of the literature. Capturing state-level effects is important to estimating the benefits of West-wide energy corridor (WWEC) developments, since it is likely that much of the expenditures related to the capital equipment, materials, and services associated with project construction and operation would not take place in the immediate areas hosting each development but would more likely occur elsewhere in the state hosting WWEC developments.

Because of the relative economic importance of WWEC developments in small rural economies and the potential lack of local economic and community infrastructure in some communities, WWEC developments may result in an influx of a temporary population in some locations. Although population increases are likely to be small in most areas of each state, there may be impacts to local community public finances and local government employment in some areas.

W.1.1 Corridor Energy Transport Project Data

WWEC energy transport project data in Appendix E provide an upper bound to potential impacts in any given 3,500-foot corridor segment by assuming that the maximum technically feasible development in each corridor will occur, specifically, three 500-kV electricity transmission lines, two 42-inch gas pipelines, and two 32-inch petroleum products pipelines. Impacts in one build-out year are estimated on the basis of the amount of construction activity that could occur in one year for a typical electricity line and for typical gas and petroleum pipeline segments. It is assumed that a maximum of 150 miles of corridor containing all three transport systems could be developed during one build-out year, with 150 miles assumed to be developed in one year in each state, with the exception of Washington, where the analysis assumed only 51 miles of corridor would be required. To assess the relative impacts of WWEC development, the analysis assumes — since the specific energy development trajectory for each corridor over the 20-year planning period is not known — that the build-out year occurs in the first year of the planning period, with operations impacts occurring in the second year.

W.1.2 Impacts on Employment and Income

Impacts of WWEC developments on regional employment and income include estimates of direct (onsite) impacts, which are calculated using data available on utility capital expenditures for construction and data on operations, and indirect (offsite) impacts, which are assessed by using regional economic multipliers in association with data on direct impacts. Multipliers capture the indirect effects of onsite activities associated with the

[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.

construction and operation of WWEC developments. The multipliers are derived from IMPLAN (economic impact modeling system) input-output economic accounts for each state, which show the flow of commodities to industries from producers and institutional consumers (Minnesota IMPLAN Group, Inc. 2006). The accounts also show consumption activities by workers, owners of capital, and imports from outside the region. The IMPLAN model contains 528 sectors representing industries in agriculture, mining, construction, manufacturing, wholesale and retail trade, utilities, finance, insurance and real estate, and consumer and business services. The model also includes information for each sector on employee compensation; proprietary and property income; personal consumption expenditures; federal, state, and local expenditures; inventory and capital formation; and imports and exports.

Expenditures data associated with the construction and operation of WWEC developments is derived from numerous sources (Schremp et al. 2002; Buchanan et al. 2005; Parker 2005). These sources provided the relevant construction and operating cost data for labor and materials in various general cost categories on the three main WWEC technologies: electricity transmission, gas pipelines, and petroleum product pipelines. Cost data for each cost category was then mapped into the relevant North American Industry Classification System (NAICS) codes for use with multipliers from an IMPLAN model specified for each state.

Information on the expected pattern of procurement within the state for the various materials and subcontracts in each cost category is used in the calculation of impacts to adjust total procurement expenditures in these two categories. The extent of procurement within the state would be based either on procurement data provided by the engineering and construction contractors or would be estimated using proxy data based on state employment shares by sector and state unemployment rates.

IMPLAN multipliers for each sector in which regional spending occurs are used in association with expenditures data to estimate impacts on state employment and income. Impacts on employment are described in terms of the total number of jobs created in the region in the first build-out year and in the first year of operation. The relative impact of the increase in employment in the state is calculated by comparing total construction employment related to WWEC developments in the first build-out year to baseline state employment forecasts over the same period. Impacts are expressed in terms of percentage point differences in the average annual employment growth rates with and without WWEC project construction. Forecasts are based on data provided by the U.S. Department of Commerce.

IMPLAN data shows the current economic structure of the states in which WWEC developments are projected to occur. The extent to which both local spending to procure materials and services and wage and salary spending occur in the each state's economy will be included in the analysis of economic impacts. However, the extent and likelihood of structural change to the states' economies will not be assessed in the analysis, given the relatively small economic impacts of WWEC developments in each state as well as uncertainty over the development trajectory for each WWEC-designated corridor, the timing of WWEC-related spending on industries in the affected areas, and their impact on the relocation of industries to the 11 states to serve the developments.

W.1.3 Impacts on Population

An important consideration in assessing impacts of the WWEC developments is the number of workers, families, and children that would migrate into each state, either temporarily or permanently, to support construction and/or operation of WWEC developments. The capacity of regional labor markets to produce workers in sufficient numbers in the appropriate

occupations required for the developments' construction and operation is closely related to a state's occupational profile and occupational unemployment rates. To estimate the in-migration that would occur to satisfy direct labor requirements, the analysis develops estimates of available labor in each direct labor category on the basis of state unemployment rates applied to each occupational category. In-migration associated with indirect labor requirements is derived from estimates of the labor available in the state economy as a whole that is able to satisfy the demand for labor by industry sectors in which WWEC development-related spending initially occurs. The national average household size is used to calculate the number of additional family members that would accompany direct and indirect in-migrating workers. The analysis also uses additional data from similar linear energy development projects and provided in various publications, technical reports, and EISs.

Impacts on population are described in terms of the total number of in-migrants arriving in the region in the first build-out year. It is assumed that no in-migrating workers would be required during project operations. The relative impact of the increase in population in the state is calculated by comparing total WWEC development in-migration for construction in the first build-out year with baseline state population forecasts over the same period. Impacts are expressed in terms of percentage point differences in average annual population growth rates with and without project construction. Forecasts are based on data provided by the U.S. Bureau of the Census.

W.1.4 Impacts on Housing Markets

The in-migration of workers that will occur during construction has the potential to substantially affect the states' housing markets. The analysis considers these impacts by estimating the increase in demand for rental housing units in the first build-out year that results from the in-migration of both direct and indirect workers into the state. Because it is assumed that in-migrating workers would not be required during project operations, there would be no projected impacts on housing during this phase of each project. The relative impact on the existing housing in the state is estimated by calculating the impact of WWEC-related housing demand on the forecasted number of vacant rental housing units in the first build-out year. Forecasts are based on data provided by the U.S. Bureau of the Census.

W.1.5 Impacts on Community Services

The relative scale of WWEC project development may mean small increases in state population as workers migrate into each state to fill WWEC projects' construction and operation positions, in some cases accompanied by family members. In-migration associated with construction of WWEC developments would translate into increased demand for educational services and for public services (e.g., police, fire protection, health services) in each state. Estimates of the total number of in-migrating workers and their families were used to calculate the impact of WWEC construction on county, city, and school district revenues and expenditures using baseline data provided in annual comprehensive financial reports aggregated to the state-level, forecasted for the build-out year on the basis of per capita revenues and expenditures for each jurisdiction. Because it is assumed that in-migrating workers would not be required during project operations, there would be no projected impacts on community services during this phase of each project. Population forecasts are based on data provided by the U.S. Bureau of the Census.

The impacts of WWEC developments-related in-migration on community service employment are also calculated at the state level. By using the estimates of the number of in-migrating workers and families, the analysis calculates the numbers of new sworn police officers, firefighters, and general government employees that would be required to maintain

existing levels of service for each community service. These calculations are based on the numbers of existing employees per 1,000 people for each community service. The analysis of the impact on educational employment estimates the number of teachers in each school district that would be required to maintain existing teacher-student ratios across all student age groups.

Impacts on health care employment are estimated by calculating both the number of physicians in each county required to maintain the existing levels of service on the basis of the numbers of existing physicians per 1,000 population, as well as the number of additional staffed hospital beds that will be required to maintain the existing levels of service based on the existing number of staffed beds per 1,000 population. Impacts are estimated for the first build-out year. No impacts would occur during operations, as it is assumed that in-migrating workers would not be required during this phase of each project. Information on existing employment and levels of service is based on data provided by the U.S. Bureau of the Census.

W.1.6 State Taxes

The analysis estimates direct sales tax revenues by multiplying the value of in-state project capital expenditures plus materials and supplies expenditures in both the first build-out year and the first year of operations by the current sales tax rate in each state. Indirect sales tax revenues are calculated by using the value of the additional indirect output (sales) generated by WWEC wages and salary spending, procurement of materials and supplies, and capital projects by the state sales tax rates.

Then, total state income tax revenues are estimated by multiplying the value of direct and indirect personal income generated by WWEC activities in the first build-out year and in the first year of operations by the average state tax rates for taxpayer income categories.

W.1.7 Property Values and Quality of Life

Energy transmission projects can potentially affect property values in areas designated as energy corridors or in communities located on adjacent land. These aspects of the impact of energy transport facilities may consequently affect quality of life in the rural communities hosting these developments. Impacts on property values and quality of life would occur primarily as a result of the visibility of electricity transmission structures, with other factors (such as health and safety and any noise associated with each of the three transmission systems) likely to be less important. Three approaches have been used to study the impacts of electricity transmission systems on property values: appraisal methods, perception studies, and statistical analyses. The results of assessments of the impact of electricity transmission lines using each of these methods are reviewed.

W.1.8 Recreation

Estimating the impact of corridor designation on recreation under each alternative is problematic, as it is not clear how activities in each state under each alternative would impact recreational visitation and non-market values (the value of recreational resources for potential or future visits). While it is clear that some federal land in each state would no longer be accessible for recreation, the majority of popular wilderness locations would be precluded from corridor development. It is also possible that corridor developments and associated transmission lines and transportation infrastructure in each state would be visible from popular recreation locations (see Section 3.9), reducing visitations and consequently impacting the economy of each state.

Because the impact of energy transmission systems on visitation and non-market values is not known, two simple scenarios are presented to indicate the magnitude of the economic impact of corridor development on recreation,

the impact of a 0.5% and 1% reduction in recreation activity in each state. Impacts include the direct loss of recreation employment in the recreation sectors and the indirect effects, which represent the impact on the remainder of the economy in each state as a result of declining recreation employee wage and salary spending and expenditures by the recreation sector on materials, equipment, and services. Impacts were estimated using IMPLAN data for each state (Minnesota IMPLAN Group Inc. 2007), an input-output modeling framework designed to capture spending flows among all economic sectors and households in each state economy.

W.2 WHAT MIGHT BE THE ENVIRONMENTAL CONSEQUENCES OF PROJECT CONSTRUCTION AND OPERATION?

Construction and operation of energy transport projects could produce impacts on state employment and unemployment rates, personal income, and state sales and income tax revenues. Project construction could also likely lead to the temporary in-migration of workers and their family members, which could impact the rental housing market in each state, and could likely also impact state and local government expenditures and employment.

Under the No Action Alternative, energy transport projects would be independently sited and developed in the 11 western states, with the amount of development on federal land being uncertain. Under the Proposed Action, it is assumed that (1) reasonable, technically feasible development would occur in any given 3,500-foot corridor that would include, specifically, three 500-kV electricity transmission lines, two 42-inch gas pipelines, and two 32-inch petroleum products pipelines; and (2) annual construction in each state would occur up to an annual maximum of 150 miles. The specific energy development trajectory for each corridor over the 20-year planning period is not known. Therefore, to assess the relative impacts of developing the hypothetical energy transport projects under either of the alternatives, the analysis assumed that the build-out year would occur in 2007, the first year of the planning period, with operations impacts occurring in 2008, the second year.

Economic and fiscal impacts of energy transport projects construction and operation in each state include direct impacts, which include the construction expenditures and employment associated with building the transmission lines, pipeline systems, and ancillary facilities identified (Appendix G); and indirect effects, which include the subsequent impacts in each state resulting from the spending of project wages and salaries, as well as from expenditures related to the procurement of material and equipment and from the spending of sales and income tax revenues.

W.2.1 No Action Alternative

Under the No Action Alternative, utilities would pursue the independent siting and development of the energy transport projects on federal land, without the benefits of an expedited permitting process and the colocation of auxiliary facilities and other related infrastructure. The construction and operation of energy transport projects under the No Action Alternative would produce employment and generate income and state tax revenues and would likely require the in-migration of workers for certain occupational categories, which in turn would affect rental housing markets and create the need for additional state and local government expenditures and employment. Under this alternative, however, there would be considerable uncertainty regarding the location and timing of energy infrastructure construction on federal land. The absence of a coordinated permitting process may mean less federal land is utilized if energy transport projects can be more easily permitted on private land, or may mean that more federal land is used if facilities cannot take advantage of colocation. Given these considerations, the impacts of the No Action Alternative are not known.

W.2.2 Proposed Action

Construction and operation of the hypothetical energy transport projects in the proposed energy corridors could produce the socioeconomic impacts shown in Table W-1. Under the Proposed Action, construction impacts in 10 of the 11 western states were based on development occurring at an assumed maximum of 150 miles per year, with only impacts in Washington based on total miles. Under the Proposed Action, the largest employment impacts would be in Utah (4,946 jobs created), Idaho (4,933 jobs), and New Mexico (4,800 jobs). Corridor development would produce more than 4,000 jobs in each of the other states in 2007 with the exception of Washington, where 1,816 jobs would be created.

Corridor development would produce larger income impacts in California ($199.7 million), Colorado ($191.7 million), and Oregon ($188 million), with more than $150 million in income produced in each remaining state in the 11-state region except Montana and Washington. Sales taxes associated with development of the energy transport projects in the proposed energy corridors would be the largest in California ($22.6 million) and Colorado and Utah (both with $22.1 million), with the projects producing revenues of more than $20 million in seven of the remaining states. Income taxes would be largest in California ($8.3 million), Colorado ($7.9 million), and Oregon ($7.8 million), with somewhat smaller impacts in seven of the remaining eight states.

Given the scale of construction activities that could occur under energy transport projects, and the projected availability of local workers in the required occupational categories, project construction could require some in-migration of workers and their families from outside each state. Development of energy transport projects on the proposed energy corridors would relocate 700 in-migrants temporarily to each of the 11 states in 2007 except Washington, where 294 in-migrants would arrive. Although in-migration may potentially impact local housing markets, the relatively small number of in-migrants and the availability of temporary accommodation (hotels, motels, and mobile home parks) would mean that the impact of energy transport project construction on the number of vacant rental housing units is not expected to be large. Approximately 500 rental units are expected to be occupied in each of the states (except Washington) during construction, which would represent 7.9% of the vacant rental units expected to be available in Wyoming in 2007, 5.2% in Montana, 4.3% in Idaho, and 3.3% in Utah, with increases of less than 2% of the vacant rental housing stock elsewhere in the remaining six states. In Washington, 174 units would be required, representing less than 1% of the vacant rental stock.

In addition to the potential impact on housing markets, in-migration would also affect state and local government expenditures and employment. Construction of the energy transport projects within the proposed energy corridors would require an additional $8.9 million in expenditures in Wyoming, $8.3 million in California, and $7.1 million in Oregon to meet the existing levels of service in the provision of state and local government services, which would represent an increase of less than 0.2% over expenditures expected in each of these states in 2007. Smaller increases in expenditures would be expected elsewhere in the 11-state region. Increases in local government employment would also be expected with corridor development to maintain levels of service, with 69 new employees likely to be required in Wyoming, 54 in New Mexico, and 48 in Montana, representing less than 0.2% of state and local employment expected in these states in 2007.

Employment impacts associated with operation of the energy transport projects' infrastructure would be small, with the largest impacts in Utah (187 jobs created), Montana (186 jobs), and Idaho (185 jobs). Corridor development would produce more than 140 jobs in each of the other states in 2008 with the

TABLE W-1 Potential Socioeconomic Impacts of Energy Transport Project Development in the Proposed Energy Corridors[a]

	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
Construction											
Employment[b]											
Direct	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	455	1,333
Total	3,949	4,347	4,450	4,933	4,678	3,888	4,800	4,755	4,946	1,480	4,494
Income ($m 2005)[b]											
Direct	68.4	68.4	68.4	68.4	68.4	68.4	68.4	68.4	68.4	23.4	68.4
Total	186.5	199.7	191.7	174.2	132.0	175.3	171.1	188.0	185.5	61.7	160.0
Taxes ($m 2005)											
Sales	21.7	22.6	22.1	21.3	20.4	20.5	21.3	20.0	22.1	7.3	20.4
Income	7.7	8.3	7.9	7.2	6.6	7.3	7.0	7.8	7.6	2.6	6.6
In-migrants (number)	700	700	700	700	700	700	700	700	700	239	700
Vacant Rental Housing (number)	508	508	508	508	508	508	508	508	508	174	508
Local Government											
Expenditures ($m 2005)	7.3	10.4	8.6	6.9	7.5	8.3	8.4	8.9	8.0	3.4	11.2
Employment (number)	49	50	55	56	60	43	68	52	54	18	88
Operations											
Employment[b]											
Direct	50	50	50	50	50	50	50	50	50	17	50
Total	148	155	162	185	186	144	183	168	187	55	170
Income ($m 2005)[b]											
Direct	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0.8	2.3
Total	6.3	6.6	6.4	5.9	5.7	5.8	5.9	6.3	6.3	2.1	5.4

TABLE W-1 (Cont.)

	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
Taxes ($m 2005)											
Sales	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.2	0.4
Income	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.1

[a] Data represent impacts in the first build-out year, 2007, and in the first year of operations, 2008, based on the maximum amount of construction activity that could occur in one year for 150 miles of a 3,500 foot wide corridor in all states except Washington, where 51 miles would be built.

[b] Employment and income impacts include direct (onsite) impacts, based on typical utility labor and expenditure data, and indirect (offsite) effects, estimated using IMPLAN multipliers in association with data on direct impacts.

exception of Washington, where 55 jobs would be created. Corridor development would produce larger income impacts in California ($6.6 million), Colorado ($6.4 million), Oregon ($6.3), and Utah ($6.3 million). Fiscal impacts of corridor development would be similar in the 11-state region, with sales taxes of $0.6 million in each of the states, with smaller impacts in Montana ($0.5 million), Wyoming ($0.4 million), and Washington ($0.2 million). Income taxes would be similar in most of the states ($0.3 million), with slightly larger impacts in California ($0.4 million) and smaller impacts in Washington and Wyoming ($0.1 million).

Because a relatively small local labor force would be required to maintain and operate the energy transmission projects' infrastructure, in-migrants are not expected, and no impacts are likely in the rental housing market or to local government expenditures or employment.

Federal agencies may collect right-of-way grants, rentals, royalty fees, and other revenues from utilities operating energy transport systems located in designated corridors on federal land. However, as it is not known precisely how existing or new revenue collection mechanisms might be used by federal agencies on corridor land, the magnitude of these revenues cannot be determined at this time.

W.2.3 Impact of Energy Transport Systems on Property Values

Energy transport projects can potentially affect property values in areas designated as energy corridors, or in communities located on adjacent land. These aspects of the impact of energy transport facilities may consequently affect quality of life in the rural communities hosting these developments. Impacts on property values and quality-of-life would occur primarily as a result of the visibility of electricity transmission structures, with other factors (such as health and safety and any noise associated with each of the three transport systems) likely to be less important. Three approaches have been used to study of impacts of electricity transmission systems on property values: appraisal methods, perception studies, and statistical analyses (Kroll and Priestley 1992; Grover Elliot and Company 2005). There are significant data and methodological problems associated with each approach, and the results of studies using each approach are often inconclusive.

Appraisal studies use data on sale prices on similar properties or groups of properties to examine whether land crossed by or close to transport systems have significantly different values compared to properties that are unaffected by these systems. In a review of the evidence from sales data and interviews with real estate professionals, Kroll and Priestley (1992) and Grover Elliot and Company (2005) found that price differentials for residential properties based on sales data in appraisal studies tended to be small, usually 5% or less, with slightly larger price impacts for agricultural, commercial, and industrial land. Impacts tended to taper off rapidly with distance from the transmission line. Although there are a large number of appraisal studies on the impact of transmission lines, most studies used a small sample of properties, and many relied on the informed judgment of appraisers rather than more rigorous statistical analysis, undermining the validity of the findings of many of these studies.

Perception studies attempt to establish how individual property owners and real estate professionals perceive the impact of energy transport developments on property values. Data is collected using mailed questionnaires and personal interviews, and includes data on EMF effects and other health and safety issues, aesthetics, and overall environmental quality (Rhodeside and Harwell Inc. 1988). Kroll and Priestley (1992), the International Electric Transmission Perception Project (1996), and Grover Elliot and Company (2005) noted that in many of the studies the majority of respondents felt that transmission lines had little or no effect on residential property values, with small

increases noted only in some studies. Interviews with agricultural land owners found a high level of indifference with respect to property value losses. In general, impacts tended to be smaller at distances from the transmission line site and once the transmission line had been operating for some time. There were large differences between perceptions of property values losses and actual losses where additional statistical analyses were undertaken. Perception-based studies are inconclusive on the impact of transmission lines, with a wide range of questions soliciting attitudes and various approaches to the definition of key aesthetic variables (International Electric Transmission Perception Project 1996; Grover Elliot and Company 2005).

Statistical analyses attempt to establish the relationship between energy transmission lines and the value of property sales on land crossed by or close to energy developments, compared to land located elsewhere. Evidence presented in studies using statistical methods suggests that transmission lines have no discernable impact on residential properties values in the majority of cases, or produce losses of between 2% and 10%. Impacts have been found to be greater for smaller residential properties and immediately following construction of a line (Delaney and Timmons 1992; Kroll and Priestley 1992; Hamilton and Schwann 1995; Cowger, Bottemiller, and Cahill 1996; Bolton and Sick 1999; Bottemiller, Cahill, and Cowger 2000; Des Rosiers 2002; Wolverton and Bottemiller 2003; Grover Elliot and Company 2005). While properties with a direct view of a transmission line may suffer losses in value, property in locations close to transmission line easements might actually experience appreciation in property values resulting from greater local visibility, increased privacy, and greater access to buffer zones alongside each line (Des Rosiers 2002). Although there are numerous statistical analyses of property value impacts, there are few with large sample sizes that incorporate a range of subject property types and sales price and that measure the effects on property value over time. Moreover, much of the variation in sales prices between properties located next to transmission lines and in otherwise similar locations is likely a reflection of differences in property and neighborhood characteristics not captured by the statistical methodologies chosen (Kroll and Priestley 1992; Grover Elliot and Company 2005).

W.2.4 Recreation

Construction and operation of the hypothetical energy transport projects in the proposed energy corridors could produce the socioeconomic impacts shown in Table W-2 resulting from a 0.5% and a 1% decline in recreation activity. In California, the total (direct plus indirect) impacts of a 0.5% reduction in recreation activity would be the loss of 12,114 jobs statewide, and 24,229 jobs if recreation employment were to decline 1%. Income lost as a result of the 0.5% contraction in recreational activity would be $298 million, with $597 million lost for the 1% loss in recreation. Elsewhere in the 11 states, a 0.5% reduction in recreational activity would mean the loss of 2,105 jobs and $48 million in income in Washington, 1,967 jobs and $42 million in income in Colorado, 1,879 jobs and $39.3 million in income in Arizona, and 1,827 jobs and $48.2 million in income in Nevada. Table S-2 indicates that a larger reduction in recreational activity of 1% would impact each state in the same proportion as with a 0.5% reduction.

W.2.5 Quality of Life

Corridor designation may affect environmental amenities in a location, and consequently the ability of communities to attract new entrepreneurial activity that is highly sensitive to actual or perceived changes in environmental quality, rural community stability, and cultural values. Over recent decades, many areas of the western United States have been able to diversify their

TABLE W-2 State Economic Impacts of Reductions in Recreation Sector[a] Activity

	0.5% Reduction		1% Reduction	
State	Employment	Income ($m)	Employment	Income ($m)
Arizona	1,879	39.3	3,758	78.6
California	12,114	298.4	24,229	596.9
Colorado	1,967	42.3	3,933	84.7
Idaho	456	6.8	912	13.5
Montana	422	6.2	844	12.5
Nevada	1,827	48.2	3,653	96.4
New Mexico	627	10.4	1,253	20.8
Oregon	1,286	25.5	2,572	50.9
Utah	809	13.9	1,617	27.8
Washington	2,105	47.5	4,211	95.0
Wyoming	214	3.2	428	6.4

[a] The recreation sector includes amusement and recreation services, automotive rental, eating and drinking places, hotels and lodging places, museums and historic sites, RV parks and campsites, scenic tours, and sporting goods retailers.

economies away from largely extractive industries toward knowledge-based industries; the professional and service sector; and retirement, recreation, and tourism (Bennett and McBeth 1998). It is apparent that growth in these parts of the economy has become highly sensitive to changes in environmental amenities, meaning that environmental quality and access to environmental amenities may have become important factors in the economic development of the rural West. Although not all sectors of the economy are highly responsive to changes in environmental quality, with various other factors, including the quality and availability of regional human resources, energy availability and the reliability of energy supply, and the prevailing relative cost of doing business, there is a large literature that indicates that perceived deterioration of the natural environment and the natural amenities offered in particular locations, particularly those available on public lands, may have an important impact on the ability of communities in adjacent regions to foster sustainable economic growth (Rudzitis and Johansen 1989; Johnson and Rasker 1995; Rasker 1994; Power 1996; Rudzitis 1999; Rasker et al. 2004; Chipeniuk 2004; Holmes and Hecox 2005; Reeder and Brown 2005).

Since the 1980s, many rural areas in the 11 western states have diversified their economies toward tourism and recreation, much of which is based on natural amenities, notably hunting, fishing, bird watching, skiing, etc. To the extent that existing and potential new economic activities sensitive to changes in environmental quality and the amenity-based activities they support in each state, energy transportation corridor development may create conflicts with the ability of adjacent areas in each state to attract future economic growth in economic activities that are sensitive to environmental amenities. In addition to amenity values, there are various other economic and demographic factors that would have to be favorable in any given designated corridor location for additional economic growth to occur, in particular, the economic development

potential of infrastructure and human resources in the area and the cost of doing business relative to other comparable locations. Given the limited economic base in areas through which proposed energy corridors would be established, it is unlikely that high amenity values alone would be sufficient to encourage local economic growth, or that businesses, once established in a given location, would necessarily relocate with changes in amenity values. Moreover, as many of the locations for proposed corridor locations already host energy transmission systems and designation would only add transmission systems to existing routes, additional transmission facilities would be unlikely to lead to sufficient deterioration in amenity values in nearby communities to lead to the relocation of business activity.

W.2.6 Social Impacts

In smaller rural communities, the number of new residents from outside the corridor locations and the resulting increases in the rate of population growth associated with corridor development may lead to increases in alcoholism, depression, suicide, social conflict, divorce, delinquency, and deterioration in levels of community satisfaction. Communities hosting these developments may be required to adapt to a different quality of life, with a transition away from a more traditional lifestyle involving ranching and taking place in small, isolated, close-knit, homogenous communities with a strong orientation toward personal and family relationships, and toward a more urban lifestyle, with increasing cultural and ethnic diversity and increasing dependence on formal social relationships within the community.

W.2.7 Energy Reliability and Availability Impacts on Local Economic Development

Greater availability and reliability of energy supply would likely facilitate economic and demographic growth in the 11 western states and in the U.S. economy in general (see Chapter 1). For economic growth to occur at the local level, in the vicinity of energy transmission corridor developments, with improvements in energy availability and reliability, various other economic and demographic factors in addition to improvements in energy supply would have to be favorable for growth to occur. Important among these factors are the economic development potential of the various natural, environmental, and human resources in the area and the prevailing relative cost of doing business. Given the current economic base in many parts of the states through which proposed energy corridors would be established, it is unlikely that improved energy availability and reliability alone would contribute to significant growth in the area, or that other factors, combined with reliability, would produce significant additional sources of economic and demographic growth.

W.3 MITIGATION MEASURES

Under each of the alternatives, mitigation of socioeconomic impacts is unlikely to be required. Although construction of each energy transport project is likely to require in-migration of workers and family members from outside each state, the number of in-migrants arriving in each state in 2007 is likely to be small and not likely to create impacts to rental housing markets, and only likely to require small increases in local government expenditures and employment.

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