

**APPENDIX G2 – SOCIAL AND ECONOMIC
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APPENDIX G2 – SOCIAL AND ECONOMIC CONDITIONS

ECONOMIC IMPACTS

Employment and Income

Route Group 1: SunZia East Substation to Midpoint Substation

Transmission Line Construction

Subroute 1A – North River Crossing

The construction of Subroute 1A is expected to create between 1,420 and 1,490 direct and indirect jobs, and between \$110 million and \$116 million in labor income. Approximately half of all jobs created would be directly related to the construction of the transmission line(s). Construction of the line(s) would create the most jobs in Socorro and Sierra counties, which contain more than 80 percent of the total route mileage within Subroute 1A. Direct and indirect employment opportunities would be the greatest in communities nearest to the routes and would be similar across all subroutes in Route Group 1. Communities such as Carrizozo in Lincoln County; Socorro and the unincorporated community of San Antonio in Socorro County; Elephant Butte, Truth or Consequences, and Williamsburg in Sierra County; and Deming in Luna County could expect an increase in local economic activity during construction. Indirect industries across small unincorporated rural communities would also experience an increase in economic activity as workers spend money locally.

Subroute 1B – San Antonio Crossing

Subroute 1B1 is the longest Subroute in Route Group 1 and is expected to create a slightly larger number of jobs and labor income than Subroute 1A. The overall economic impacts would be similar to those for Subroute 1A.

Subroutes 1B2 and 1B3 are expected to create a slightly lower number of jobs and wages than either Subroute 1A or Subroute 1B1. Table G1-1 represents the average number of jobs and labor income for all Route Group 1 subroutes.

Table G2-1. Route Group 1 – Employment and Wages for Transmission Line Construction									
New Mexico County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Lincoln	Employment (number of jobs)	57	40	38	134	60	40	39	139

Table G2-1. Route Group 1 – Employment and Wages for Transmission Line Construction									
New Mexico County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
	Labor Income (2010 \$Mil)	6.78	1.49	1.14	9.41	7.20	1.46	1.17	9.83
Luna	Employment (number of jobs)	63	48	22	133	72	50	23	146
	Labor Income (2010 \$Mil)	7.61	1.75	0.63	9.99	8.69	1.78	0.67	11.14
Sierra	Employment (number of jobs)	244	114	87	445	250	113	88	451
	Labor Income (2010 \$Mil)	29.24	3.82	2.50	35.57	30.04	3.71	2.51	36.26
Socorro	Employment (number of jobs)	350	210	147	707	388	211	154	753
	Labor Income (2010 \$Mil)	42.03	8.45	4.11	54.59	46.53	8.24	4.32	59.08
Total	Employment (number of jobs)	714	412	294	1,419	770	413	304	1,488
	Labor Income (2010 \$Mil)	85.66	15.52	8.38	109.56	92.45	15.19	8.68	116.31

Source: University of Arizona and New Mexico State University, 2011a
Note: Totals are the average of all subroutes in Route Group 1.

Route Group 3: Midpoint Substation to Willow-500 kV Substation

Transmission Line Construction

Subroute 3A – North and Subroute 3B – South

Subroutes 3A and 3B cross Luna, Hidalgo, and Grant counties in New Mexico. A range of 490 to 530 jobs would be created in New Mexico, resulting from the construction of either subroute. Table G2-2 represents the average number of jobs and labor income for subroutes 3A and 3B. Many of these jobs would be created in Luna and Hidalgo counties. Approximately \$38 million to \$42 million in labor income would be paid out to workers. In the communities of Deming in Luna County; Lordsburg in Hidalgo County; and Hanover, Hurley, and Silver City in Grant County, direct and indirect employment would likely result. Job creation during construction along the New Mexico-Arizona border may result in positive economic benefits to some Arizona communities, if workers were to decide to commute or temporarily relocate there.

Table G2-2. Route Group 3 – Employment and Wages for Transmission Line Construction (Subroutes 3A and 3B – New Mexico)									
New Mexico County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Grant	Employment (number of jobs)	53	33	25	111	60	34	26	120
	Labor Income (2010 \$Mil)	6.4	1.5	0.7	8.6	7.2	1.4	0.8	9.4
Hidalgo	Employment (number of jobs)	94	48	22	164	105	50	23	178
	Labor Income (2010 \$Mil)	11.3	1.6	0.5	13.4	12.6	1.6	0.6	14.7
Luna	Employment (number of jobs)	103	78	35	215	117	81	38	235
	Labor Income (2010 \$Mil)	12.3	2.8	1.0	16.2	14.1	2.9	1.1	18.0
Total	Employment (number of jobs)	250	159	81	490	282	164	87	533
	Labor Income (2010 \$Mil)	30.0	5.9	2.3	38.1	33.8	5.9	2.4	42.1

Source: University of Arizona and New Mexico State University, 2011a
Note: Totals are the average of subroutes in Route Group 3, New Mexico

Anticipated job creation and labor income in Arizona for Subroute 3A and Subroute 3B varies, primarily due to the fact that Subroute 3B crosses a greater distance than Subroute 3A. Subroute 3A (Table G2-3) is expected to create approximately 260 to 280 jobs in Cochise and Greenlee counties, while Subroute 3B (Table G2-4) is projected to create approximately 370 to 380 jobs in Cochise and Graham counties. Consequently, Subroute 3B would result in up to \$28 million in labor income, as compared to approximately \$21 million for Subroute 3A. In addition to construction employment, economic opportunities for communities crossed by both subroutes in Arizona would likely benefit Bowie, Willcox, and Safford, as well as small unincorporated rural communities in the vicinity.

Table G2-3. Route Group 3 – Employment and Wages for Transmission Line Construction (Subroute 3A – Arizona)									
Arizona County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Graham	Employment (number of jobs)	76	66	58	200	87	68	61	217
	Labor Income (2010 \$Mil)	9.15	3.41	1.77	14.32	10.49	3.39	1.87	15.76
Greenlee	Employment (number of jobs)	33	21	5	58	35	20	5	61
	Labor Income (2010 \$Mil)	3.92	1.06	0.23	5.21	4.24	1.04	0.23	5.51
Total	Employment (number of jobs)	109	87	63	258	123	89	66	278
	Labor Income (2010 \$Mil)	13.1	4.5	2.0	19.5	14.7	4.4	2.1	21.3

Source: University of Arizona and New Mexico State University, 2011a

Table G2-4. Route Group 3– Employment and Wages for Transmission Line Construction (Subroute 3B – Arizona)									
Arizona County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Cochise	Employment (number of jobs)	96	81	58	235	100	78	57	234
	Labor Income (2010 \$Mil)	11.50	3.62	2.16	17.28	11.99	3.40	2.11	17.49
Graham	Employment (number of jobs)	50	43	38	131	57	45	40	142
	Labor Income (2010 \$Mil)	5.99	2.23	1.16	9.37	6.87	2.22	1.22	10.31

Table G2-4. Route Group 3– Employment and Wages for Transmission Line Construction (Subroute 3B – Arizona)									
Arizona County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Total	Employment (number of jobs)	146	124	96	366	157	123	96	376
	Labor Income (2010 \$Mil)	17.5	5.8	3.3	26.7	18.9	5.6	3.3	27.8

Source: University of Arizona and New Mexico State University, 2011a

Route Group 4: Midpoint Substation to Willow-500 kV Substation

Transmission Line Construction

Subroute 4A – North of Mount Graham and Subroute 4B – Sulphur Springs Valley

Subroute 4A is expected to create slightly more jobs in Graham County than in Pinal County. Overall, approximately 890 to 970 jobs, and \$68 million to \$75 million in labor income would be paid to direct and indirect employees. Communities that would likely benefit from direct and indirect job creation attributed to Subroute 4A include Safford in Graham County; San Manuel, Mammoth, Oracle, and Casa Grande in Pinal County; and portions of north Pima County.

Employment and labor income for Subroute 4B is similar to Subroute 4A in Graham and Pinal counties.

Table G2-5 represents the average number of jobs and labor income for subroutes 4A and 4B in Arizona.

Table G2-5. Route Group 4 – Employment and Wages for Transmission Line Construction (Subroutes 4A and 4B – Arizona)									
Arizona County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Graham	Employment (number of jobs)	182	158	138	478	209	163	146	518
	Labor Income (2010 \$Mil)	22	8	4	34.18	25	8	4	37.60

Table G2-5. Route Group 4 – Employment and Wages for Transmission Line Construction (Subroutes 4A and 4B – Arizona)									
Arizona County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Pinal	Employment (number of jobs)	193	122	96	411	222	128	103	454
	Labor Income (2010 \$Mil)	23	7	4	33.33	27	7	4	37.17
Total	Employment (number of jobs)	375	279	234	889	431	291	249	971
	Labor Income (2010 \$Mil)	45.0	14.7	7.8	67.5	51.7	14.7	8.3	74.8

Subroute 4C

The construction of Subroute 4C1 would create direct and indirect employment in Cochise, Graham, and Pinal counties. Cochise and Pinal counties could experience the largest number of direct and indirect job creation, ranging from 430 up to 500 jobs and \$36 million to \$41 million of labor income (Table G2-6). In all, between 990 and 1,050 jobs and \$76 million and \$82 million in labor income could result during the construction phase of Subroute 4C1.

Subroutes 4C2 and 4C3 cross Cochise, Graham, Pima, and Pinal counties in Arizona; however, Subroute 4C2 only crosses a small portion of northeast Pima County. During construction, approximately 800 to 850 direct jobs and approximately 280 to 290 additional indirect jobs would result (Table G2-6). Total labor income across the four counties would range between \$83 million and \$89 million, if Subroute 4C2 were constructed.

If Subroute 4C3 were constructed, impacts to jobs and labor income during the construction phase would be the greatest in Pima and Cochise counties (Table G2-6). Overall, Subroute 4C3 has the potential to create the most jobs and greatest amount of labor income across Route Group 4.

Table G2-6. Route Group 4 – Employment and Wages for Transmission Line Construction: Subroute 4C – Arizona

Arizona County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Subroute 4C1									
Cochise	Employment (number of jobs)	178	151	107	436	186	145	105	435
	Labor Income (2010 \$Mil)	21.36	6.72	4.02	32	22.26	6.31	3.92	32
Graham	Employment (number of jobs)	40	34	30	104	46	36	32	113
	Labor Income (2010 \$Mil)	4.76	1.77	0.92	7.45	5.46	1.77	0.97	8.20
Pinal	Employment (number of jobs)	212	133	105	451	244	140	113	498
	Labor Income (2010 \$Mil)	25.48	7.17	3.94	36.59	29.29	7.27	4.24	40.80
Total	Employment (number of jobs)	430	318	243	991	475	321	250	1,046
	Labor Income (2010 \$Mil)	51.6	15.7	8.9	76.1	57.0	15.3	9.1	81.5

Table G2-6. Route Group 4 – Employment and Wages for Transmission Line Construction: Subroute 4C – Arizona

Arizona County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
Subroute 4C2									
Cochise	Employment (number of jobs)	172	145	104	421	179	140	101	420
	Labor Income (2010 \$Mil)	20.63	6.49	3.88	31	21.50	6.09	3.79	31
Graham	Employment (number of jobs)	16	14	12	42	19	14	13	46
	Labor Income (2010 \$Mil)	1.94	0.72	0.37	3.03	2.22	0.72	0.40	3.34
Pima	Employment (number of jobs)	47	32	53	132	53	34	56	143
	Labor Income (2010 \$Mil)	5.63	1.56	2.06	9.25	6.38	1.58	2.18	10.14
Pinal	Employment (number of jobs)	230	144	114	488	264	152	123	539
	Labor Income (2010 \$Mil)	27.57	7.76	4.27	39.60	31.70	7.87	4.59	44.16
Total	Employment (number of jobs)	465	336	283	1,084	515	340	293	1,148
	Labor Income (2010 \$Mil)	55.8	16.5	10.6	82.9	61.8	16.3	11.0	89.0
Subroute 4C3									
Cochise	Employment (number of jobs)	185	157	112	453	193	151	109	453
	Labor Income (2010 \$Mil)	22.22	6.99	4.18	33	23.16	6.56	4.08	34
Graham	Employment (number of jobs)	16	14	12	42	19	14	13	46

Table G2-6. Route Group 4 – Employment and Wages for Transmission Line Construction: Subroute 4C – Arizona

Arizona County	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
	Labor Income (2010 \$Mil)	1.94	0.72	0.37	3.03	2.22	0.72	0.40	3.34
Pima	Employment (number of jobs)	205	141	230	576	232	146	244	622
	Labor Income (2010 \$Mil)	24.59	6.82	8.98	40.39	27.82	6.91	9.52	44.25
Pinal	Employment (number of jobs)	127	80	63	269	146	84	68	297
	Labor Income (2010 \$Mil)	15.19	4.27	2.35	21.82	17.47	4.33	2.53	24.33
Total	Employment (number of jobs)	533	392	416	1,341	589	395	434	1,418
	Labor Income (2010 \$Mil)	63.9	18.8	15.9	98.6	70.7	18.5	16.5	105.7

Source: University of Arizona and New Mexico State University, 2011a

Substation Construction (New Mexico and Arizona)

Three substations could be constructed in New Mexico in Lincoln, Hidalgo, and Luna counties: SunZia East, Lordsburg, and Midpoint substations, respectively. Two substations could be constructed in Arizona in Graham and Pinal counties: Willow-500 kV and Pinal Central substations, respectively. Table G2-7 represents the potential economic impacts by state across each development option. The cost of the development for the construction of all five substations or expansions is estimated to be \$299.3 million (Option A) and \$1.4 billion (Option B). The communities of Deming (Luna County), Carrizozo (Lincoln County), and Lordsburg (Hidalgo County) in New Mexico, as well as smaller rural communities, would benefit from increased job creation and labor income spent locally.

Between 220 and 270 new jobs and \$12 million to \$21 million in labor income would result from the development of options A and B, respectively. Unemployed construction workers in Safford, Bowie, Willcox, Eloy, Coolidge, Florence, Casa Grande, and the Tucson region could potentially benefit from new job opportunities.

Table G2-7. New Mexico and Arizona – Employment and Wages for Substation Construction

State	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
New Mexico	Employment (number of jobs)	321	147	220	688	326	140	220	686
	Labor Income (2010 \$Mil)	38.5	6.8	7.9	53.2	39.1	6.2	8	53.3
Arizona	Employment (number of jobs)	61	47	111	219	85	52	136	273
	Labor Income (2010 \$Mil)	9.1	2.1	4.9	16.1	12.7	2.2	5.9	20.8
Total	Employment (number of jobs)	382	194	331	907	411	192	356	959
	Labor Income (2010 \$Mil)	47.6	8.9	12.8	69.3	51.8	8.4	13.9	74.1

Source: University of Arizona and New Mexico State University, 2011a

Operations (New Mexico and Arizona)

Operations employment associated with the Project is expected to take place each year, following the completion of the Project. Table G2-8 represents employment and income impacts expected to result for the life of the Project (estimated to be at least 50) on a yearly basis across New Mexico and Arizona. New Mexico operations would be largely based in Doña Ana County near Las Cruces. Approximately 41 to 50 jobs could result across the state.

In Arizona, Pima County (Tucson metropolitan area) is expected to house maintenance employment near the transmission line(s), while Maricopa County (Phoenix metropolitan area) would likely be home to the central management of the transmission line(s) and substations. For this reason, a smaller portion of this statewide employment would be located in Pima County; approximately one-third of all operations-related permanent jobs in Arizona. The total number of operations jobs would range between 85 and 100 jobs. Across both states, a total of approximately 125 to 150 jobs and \$8 million to \$10 million in labor income could result.

Table G2-8. New Mexico and Arizona – Employment and Wages for Project Operations

State	Impact Category	Option A				Option B			
		Direct Employment Effects		Indirect Employment Effects	Total Effects	Direct Employment Effects		Indirect Employment Effects	Total Effects
		Labor	Other			Labor	Other		
New Mexico	Employment (number of jobs)	17	8	16	41	21	10	19	50
	Labor Income (2010 \$Mil)	1.5	0.3	0.5	2.3	1.9	0.4	0.6	2.9
Arizona	Employment (number of jobs)	28	13	45	86	33	14	53	100
	Labor Income (2010 \$Mil)	3.2	0.4	1.9	5.5	3.8	0.5	2.3	6.6
Total	Employment (number of jobs)	45	21	61	127	54	24	72	150
	Labor Income (2010 \$Mil)	4.7	0.7	2.4	7.8	5.7	0.9	2.9	9.5

Source: University of Arizona and New Mexico State University, 2011a

State and Local Sales and Income Tax Revenue

Route Group 1: SunZia East Substation to Midpoint Substation

Transmission Line Construction

Subroute 1A – North River Crossing

Subroute 1A is expected to generate between \$9.5 million and \$9.9 million in direct and induced tax revenues across Lincoln, Luna, Sierra, and Socorro counties. The communities in Socorro and Sierra counties that would benefit the most from job creation and labor income increases would also see the greatest tax benefits. Socorro and Sierra counties could expect to receive up to approximately \$5.2 million and \$2.6 million during the construction of Subroute 1A, respectively. Lincoln County would receive \$890,000 to \$930,000 and Luna County would receive approximately \$1.1 million in revenues. All numbers presented for subroutes 1A and 1B were calculated based on average multipliers unique to each subroute (Charney et. al. 2011).

Subroute 1B – San Antonio Crossing

Subroute 1B1 is the longest subroute in Route Group 1, and is expected to generate a slightly higher amount of tax revenue than Subroute 1A. The overall economic impacts would be similar to those mentioned for Subroute 1A.

Subroutes 1B2 and 1B3 are expected to generate slightly lower tax revenue than subroutes 1A and 1B1. Table G2-9 illustrates the average tax revenue across all Route Group 1 subroutes. Overall, these numbers are representative of tax revenue that could be expected to result from the construction of any subroute within this route group.

New Mexico County	Option A			Option B		
	Direct Sales Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
Lincoln	824	109	932	778	116	894
Luna	1,019	125	1,145	1,003	143	1,146
Sierra	2,316	306	2,622	2,176	310	2,487
Socorro	4,595	613	5,207	4,314	652	4,966
Total¹	8,754	1,153	9,906	8,271	1,222	9,493

¹Totals may not sum, due to rounding.

Route Group 3: Midpoint Substation to Willow-500 kV Substation

Transmission Line Construction

Subroute 3A and Subroute 3B

Subroutes 3A and 3B cross Luna, Hidalgo, and Grant counties in New Mexico. Approximately \$3.9 million to \$4.1 million in tax revenue could be generated, with the greatest amount of tax revenue generated in Luna and Hidalgo counties (\$1.9 million and \$1.3 million, respectively). Tax revenue resulting from the construction of the transmission line(s) would be distributed across each New Mexico county that is crossed, including the communities of Deming in Luna County; Lordsburg in Hidalgo County; and Hanover, Hurley, and Silver City in Grant County. Table G2-10 summarizes the average tax revenue impacts for subroutes 3A and 3B in New Mexico.

**Table G2-10. Route Group 3 – Average Income Tax Revenue
for Transmission Line(s) Construction (\$1,000s in 2010 dollars)**

New Mexico County	Option A			Option B		
	Direct Sales Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
Grant	807	108	915	756	116	872
Hidalgo	1,208	136	1,334	1,114	144	1,257
Luna	1,649	203	1,852	1,622	323	1,854
Total¹	3,664	447	4,101	3,491	583	3,983

¹Totals may not sum, due to rounding.

Anticipated tax revenue in Arizona for subroutes 3A and 3B vary from one another, primarily due to the fact that Subroute 3B crosses a greater distance than Subroute 3A. Subroute 3A (Table G2-11) is expected to produce approximately \$700,000 in Graham County and approximately \$70,000 in Greenlee County. Subroute 3B (Table G2-12) is projected to generate approximately \$1.1 million in Cochise County, and approximately \$450,000 in Graham County. Subroutes 3A and 3B in Arizona are expected to financially benefit Bowie, Willcox, and Safford, as well as small, unincorporated rural communities in the vicinity of the Project.

**Table G2-11. Subroute 3A– Income Tax Revenues
for Transmission Line(s) Construction (\$1,000s in 2010 dollars)¹**

Arizona County	Option A			Option B		
	Direct Sales Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
Graham	568	118	686	576	127	703
Greenlee	56	13	68	55	13	69
Total	624	131	754	631	140	772

¹Table does not include state-shared revenue generated for Arizona counties and communities not crossed by the Subroute. Tax revenue benefits are expected to be shared across all 15 Arizona counties.

Source: University of Arizona and New Mexico State University, 2011a

**Table G2-12. Subroute 3B– Income Tax Revenues
for Transmission Line(s) Construction (\$1,000s in 2010 dollars)¹**

Arizona County	Option A			Option B		
	Direct Sales Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
Cochise	894	198	1,093	857	198	1,055
Graham	372	77	449	377	83	460
Total	1,266	275	1,542	1,234	281	1,516

¹Table does not include state-shared revenue generated for Arizona counties and communities not crossed by the Subroute. Tax revenue benefits are expected to be shared across all 15 Arizona counties.

Source: University of Arizona and New Mexico State University, 2011a

Route Group 4: Midpoint Substation to Willow-500 kV Substation

Transmission Line(s) Construction

Subroute 4A – North of Mount Graham

Subroute 4A is expected to generate approximately \$1.7 million in tax revenues in Graham County and approximately \$2.7 million in Pinal County. Communities that would likely benefit from direct and induced tax revenue include Safford in Graham County; San Manuel, Mammoth, Oracle, and Casa Grande in Pinal County; and portions of north Pima County.

Subroute 4B – Sulphur Springs Valley

Tax revenue for state and local governments from the construction of Subroute 4B would be similar to Subroute 4A, because each crosses the same distance of land in proximity to the same communities (Table G2-13).

Table G2-13. Subroutes 4A and 4B – Average Income Tax Revenue for Transmission Line Construction(\$1,000s in 2010 dollars)¹						
Arizona County	Option A			Option B		
	Direct Sales Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
Subroute 4A – North of Mount Graham¹						
Graham	1,357	281	1,638	1,374	304	1,678
Pinal	2,202	469	2,671	2,251	509	2,760
Total	3,559	750	4,309	3,625	813	4,438
Subroute 4B – Sulphur Springs Valley						
Graham	1,357	281	1,638	1,374	304	1,678
Pinal	2,202	469	2,671	2,251	509	2,760
Total	3,559	750	4,309	3,625	813	4,438

¹ Table does not include state-shared revenue generated for Arizona counties and communities not crossed by the Subroute. Tax revenue benefits are expected to be shared across all 15 Arizona counties.
Source: University of Arizona and New Mexico State University, 2011a

Subroute 4C

The construction of subroutes 4C1, 4C2, and 4C3 presents varying levels of tax revenue generation across southern and eastern Arizona (Table G2-14). Tax revenue generation is directly tied to the length of each alternative (approximately 139 miles, 151 miles, and 173 miles, respectively). The expected tax revenue impacts of Subroute 4C1 are similar to those presented for subroutes 4A and 4B, and may generate between \$4.4 million and \$5.3 million.

Subroute 4C2 crosses only 16 miles in Pima County, but is expected to contribute approximately \$1.4 million in tax revenues for the county. Most of these impacts would result from state-shared revenue allocated to the county based on its large population size. Tax revenue impacts resulting from the construction of Subroute 4C2 could reach \$6.7 million.

Subroute 4C3 has the potential to create the largest tax revenue impact among all alternative subroutes presented in Route Group 4, due in part to the length of the line relative to other subroutes; and because counties with large populations are able to keep more dollars circulating in the local economy (Charney et. al. 2011). Pima County would be expected to generate the largest amount of direct and induced tax revenue. Despite only 41 percent of Subroute 4C3 crossing Pima County, the county expects to generate approximately 47 percent and 60 percent of all tax revenue for options A and B, respectively.

Table G2-14. Subroutes 4C1, 4C2, 4C3 – Average Income Tax Revenues for Transmission Line Construction (\$1,000s in 2010 dollars)¹						
Arizona County	Option A			Option B		
	Direct Sales Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
Subroute 4C1 – San Pedro Valley						
Cochise	1,661	368	2,030	1,592	368	1,041
Graham	296	61	357	300	66	366
Pinal	2,417	515	2,932	2,471	243	3,030
Total	4,374	944	5,319	4,363	677	4,437
Subroute 4C2 – San Pedro Valley						
Cochise	1,604	356	1,960	1,538	355	1,893
Graham	120	25	145	122	27	149
Pima	1,081	287	1,368	1,086	306	1,392
Pinal	2,616	557	3,173	2,674	605	3,279
Total	5,421	1,225	6,646	5,420	1,293	6,713
Subroute 4C3 – Tucson						
Cochise	1,728	383	2,111	1,657	383	2,039
Graham	120	25	145	122	27	149
Pima	2,305	1,254	3,560	4,740	1,334	6,074
Pinal	1,441	307	1,748	1,473	333	1,807
Total	5,594	1,969	7,564	7,992	2,077	10,069

¹Table does not include state-shared revenue generated for Arizona counties and communities not crossed by the subroute. Tax revenue benefits are expected to be shared across all 15 Arizona counties.
Source: University of Arizona and New Mexico State University 2011a

Substation Construction in New Mexico

Table G2-15 illustrates that between \$5.2 million and \$21 million could be generated for Hidalgo, Lincoln, and Luna counties from the construction of three substations.

Table G2-15. New Mexico – Average Income Tax Revenue for Substation Construction (\$1,000s in 2010 dollars)						
New Mexico County	Option A			Option B		
	Direct Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
Hidalgo	776.2	166.2	942.4	631.9	134.6	766.5

**Table G2-15. New Mexico – Average Income Tax Revenue
for Substation Construction (\$1,000s in 2010 dollars)**

New Mexico County	Option A			Option B		
	Direct Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
Lincoln	1,936.6	145.3	2,081.9	18,518.2	99.3	18,617.5
Luna	2,009.1	192.3	2,201.4	1,484.3	160.1	1,644.4
Total	4,721.9	503.8	5,225.7	20,634.4	394.0	21,028.4

Source: University of Arizona and New Mexico State University 2011a

Substation Construction in Arizona

Approximately \$750,000 or \$2.7 million could be generated for Pinal and Graham counties from the construction of two substations (Table G2-16). Cochise, Graham, and Greenlee counties would also receive tax revenues. As with Subroute 4C3, Pima County would receive a large portion of state-shared revenue for each development option.

**Table G2-16. Arizona – Average Income Tax Revenues
for Substation Construction (\$1,000s in 2010 dollars)**

Arizona County	Option A			Option B		
	Direct Tax	Induced Tax	Total	Direct Sale Tax	Induced Tax	Total
Cochise	11.6	2.2	13.8	36.5	7.3	43.8
Graham	505.4	86.4	591.8	375.6	68.8	444.4
Greenlee	1.4	0.3	1.7	4.3	1.9	6.2
Pima	91.9	18.0	109.9	290.2	58.2	348.4
Pinal	136.1	21.2	157.3	2,142.2	97.2	2,239.4
Total	746.4	128.1	874.5	2,848.8	233.4	3,082.2

Source: University of Arizona and New Mexico State University, 2011a.

Substation Operations in New Mexico

The operations phase for the proposed Project is expected to yield between \$340,000 and \$410,000 of direct and induced tax revenue per year across the state of New Mexico (Table G2-17). Most of these benefits are expected to impact Doña Ana County, where workers for transmission line and substation maintenance would be based. Based on the EIA, if the Project is operated for its expected life span, between \$17 million and \$20 million (in 2010 dollars, not including depreciation) in tax revenue could be generated in New Mexico (Charney et al. 2011).

Substation Operations in Arizona

Tax revenue benefits in Arizona are expected to be much greater than those in New Mexico, because the centralized operations functions of the transmission line(s) would be based in the Phoenix area in Maricopa County; maintenance of the line would be based in Pima County. The total yearly direct and induced tax revenues are expected to range between \$520,000 and \$690,000, depending on which development option is chosen (Table G2-18). According to the EIA for the Project, if the Project is operated for its expected life span, between \$26 million and \$35 million (in 2010 dollars, not including depreciation) in tax revenue could be generated in Arizona (Charney et al. 2011). Table G2-17 represents the average income tax revenue by state for Project operations.

State	Option A			Option B		
	Direct Tax	Induced Tax	Total	Direct Sales Tax	Induced Tax	Total
New Mexico	210	130	340	250	160	410
Arizona	60	460	520	70	620	690

¹ Table includes state-shared revenue generated for only Arizona counties that are crossed by a Project subroute; however, tax revenue is expected to be shared across all 15 Arizona counties.
Source: University of Arizona and New Mexico State University, 2011a

Property Tax Revenues

Route Group 1: SunZia East Substation to Midpoint Substation

Construction of Transmission Lines and Substations

Similar to employment, income, and tax revenues previously presented for Route Group 1, there is little to no variance in expected property tax revenue across subroutes 1A and 1B. Over the 2- to 3-year construction period, between \$9.4 million and \$13.7 million could be generated across Lincoln, Luna, Sierra, and Socorro counties (Table G2-18). Socorro County would expect the greatest property tax revenue, because most construction would take place within its boundaries.

Operations

During the first 5 years of operations, all four counties could expect to receive \$26.3 million to \$49.8 million in property tax revenues (Table G2-18).

Table G2-18. Route Group 1 – Average Property Tax Revenues during Construction and Operations (\$1,000s in 2010 dollars)				
New Mexico County	Option A		Option B	
	Construction (2013 to 2016)	Operations (2017 to 2021)	Construction (2013 to 2016)	Operations (2017 to 2021)
Lincoln ¹	1,778	4,896	6,512	29,858
Luna ¹	1,611	2,765	1,424	2,426
Sierra	1,892	5,844	1,819	5,483
Socorro	4,147	12,789	3,984	11,990
Total	9,428	26,295	13,738	49,756

¹County includes property tax revenues expected from construction and operations associated with the substations.
Source: University of Arizona and New Mexico State University, 2011a

Route Group 3: Midpoint Substation to Willow-500 kV Substation

Construction of Transmission Lines and Substations in New Mexico

Table G2-19 presents the expected average property tax revenues generated for Grant, Hidalgo, and Luna counties from subroutes 3A and 3B. Over the 2- to 3-year construction period, between \$3.6 million and \$3.9 million could be generated as a result of the construction of Subroute 3A. Subroute 3B would generate similar tax revenues, estimated to be between \$3.5 million and \$3.8 million.

Operations in New Mexico

During the first 5 years of operations, subroutes 3A and 3B present similar property tax revenue estimates. Subroute 3A presents an opportunity for the collection of \$8.8 million to \$9.9 million across Grant, Hidalgo, and Luna counties; while Subroute 3B would create revenue ranging between \$8.6 million and \$9.7 million.

Table G2-19. Route Group 3 (New Mexico) – Property Tax Revenues during Construction and Operations (\$1,000s in 2010 dollars)¹				
County	Option A		Option B	
	Construction (2013 to 2016)	Operations (2017 to 2021)	Construction (2013 to 2016)	Operations (2017 to 2021)
Subroute 3A–North				
Grant	430	1,324	412	1,238
Hidalgo ¹	1,476	4,200	1,369	3,677
Luna ¹	1,958	4,422	1,770	3,879
Total	3,864	9,947	3,550	8,794

Table G2-19. Route Group 3 (New Mexico) – Property Tax Revenues during Construction and Operations (\$1,000s in 2010 dollars)¹				
County	Option A		Option B	
	Construction (2013 to 2016)	Operations (2017 to 2021)	Construction (2013 to 2016)	Operations (2017 to 2021)
Subroute 3B – South				
Grant	387	1,193	371	1,115
Hidalgo¹	1,434	4,004	1,327	3,506
Luna¹	1,979	4,524	1,792	3,968
Total	3,799	9,721	3,490	8,588

¹County includes property tax revenues expected from construction and operations associated with the substations.
Source: University of Arizona and New Mexico State University, 2011a

Construction of Transmission Lines and Substations in Arizona

As with employment, income, and tax revenues previously presented for Route Group 3 in Arizona, the difference in property tax revenue is directly related to the difference in length between subroutes 3A and 3B. Table G2-20 presents the expected property tax revenues for Cochise, Graham, and Greenlee counties. Subroute 3A is expected to create between \$1.2 million and \$1.6 million of property tax revenue in Graham and Greenlee counties; while Subroute 3B is expected to create between \$2.0 million and \$2.3 million in Cochise and Graham counties.

Operations in Arizona

During the first 5 years of operations, subroutes 3A and 3B are expected to create \$1.6 million to \$1.8 million and \$2.4 million to \$2.7 million in property tax revenues, respectively (Table G2-20).

Table G2-20. Route Group 3 (Arizona) – Property Tax Revenues during Construction and Operations (\$1,000s in 2010 dollars)				
County	Option A		Option B	
	Construction (2013 to 2016)	Operations (2017 to 2021)	Construction (2013 to 2016)	Operations (2017 to 2021)
Subroute 3A–North				
Graham¹	979	1,322	1,419	1,169
Greenlee	232	432	220	403
Total	1,211	1,754	1,639	1,572
Subroute 3B – South				
Cochise	982	1,841	912	1,670
Graham¹	977	865	1,417	765
Total	1,958	2,707	2,329	2,435

¹County includes property tax revenues expected from construction and operations associated with the substations.
Source: University of Arizona and New Mexico State University, 2011a

Route Group 4: Midpoint Substation to Willow-500 kV Substation

Construction of Transmission Lines and Substations

Subroute 4A – North of Mount Graham

Subroute 4A is expected to generate between \$3.3 million and \$8.8 million in tax revenue in Graham and Pinal counties in Arizona (Table G2-21). The greatest property tax revenue would be gathered from construction in Pinal County. The development of a new substation would be required if the development of Option B were chosen, because a DC converter station would be required. Options A would only require an expansion of the approved Pinal Central Substation, and would cover approximately 75 fewer acres than Option B.

Subroute 4B – Sulphur Springs Valley

Property tax revenue resulting from the construction of Subroute 4B would be similar to Subroute 4A, because each crosses the same distance of land in proximity to the same communities.

Table G2-21. Route Group 4 (Subroutes 4A and 4B) – Property Tax Revenues during Construction and Operations (\$1,000s in 2010 dollars)				
Arizona County	Option A		Option B	
	Construction (2013 to 2016)	Operations (2017 to 2021)	Construction (2013 to 2016)	Operations (2017 to 2021)
Subroute 4A – North of Mount Graham				
Graham¹	1,473	3,156	1,902	2,790
Pinal¹	1,832	3,410	6,953	15,744
Total	3,305	6,566	8,855	18,534
Subroute 4B – Sulphur Springs Valley				
Graham¹	1,473	3,156	1,902	2,790
Pinal¹	1,832	3,410	6,953	15,744
Total	3,305	6,566	8,855	18,534

¹County includes property tax revenue expected from construction and operations associated with the substations.
Source: University of Arizona and New Mexico State University, 2011a

Subroute 4C – San Pedro Valley and Tucson

Property tax revenue associated with the construction of subroutes 4C1, 4C2, or 4C3 are similar to one another. Construction of the Project would create between \$4.6 million and \$11 million in revenue over 2 to 3 years (Table G2-22). Subroutes 4C2 and 4C3 would result in property tax revenues for four counties, including Pima, while Subroute 4C1 would result in revenues for Cochise, Graham, and Pinal. Overall, Pinal County would experience the largest amount of tax revenue during construction, although it would represent a maximum of less than 1 percent of the county's yearly operating budget of \$429.8 million (Pinal County 2011).

Table G2-22. Route Group 4 (Subroute 4C) – Average Property Tax Revenues during Construction and Operations (\$1,000s in 2010 dollars)				
Arizona County	Option A		Option B	
	Construction (2013 to 2016)	Operations (2017 to 2021)	Construction (2013 to 2016)	Operations (2017 to 2021)
Subroute 4C1 San Pedro Valley				
Cochise	1,824	3,421	1,694	3,103
Graham¹	808	688	1,252	608
Pinal¹	2,000	3,743	7,174	17,281
Total	4,632	7,852	10,120	20,992
Subroute 4C2 San Pedro Valley				
Cochise	1,761	3,303	1,636	2,996
Graham¹	698	280	1,145	248
Pima	477	894	457	846
Pinal¹	2,155	4,051	7,378	18,704
Total	5,091	8,529	10,616	22,795
Subroute 4C3 San Pedro Valley – I-10 (South Tucson)				
Cochise	1,897	3,559	1,763	3,228
Graham¹	698	280	1,145	248
Pima	2,081	3,902	1,993	3,694
Pinal¹	1,241	2,232	6,172	10,305
Total	5,917	9,972	11,073	17,474
¹ County includes property tax revenue expected from construction and operations associated with the substations. Source: University of Arizona and New Mexico State University, 2011a				

Operations

Subroute 4A – North of Mount Graham

Subroute 4A is expected to generate between approximately \$6.6 million and \$18.5 million in property tax revenues in Graham and Pinal counties over the first 5 years of the operations phase. Similar to the construction phase, the operation associated with Option B would generate the largest amount of property tax revenue, because it would require the construction of a larger substation facility in Pinal County.

Subroute 4B – Sulphur Springs Valley

Property tax revenue resulting from the operations phase of Subroute 4B would be similar to Subroute 4A, because each crosses the same distance of land in proximity to the same communities.

Subroute 4C – San Pedro Valley and Tucson

Similar to property tax revenues expected from the construction of subroutes within the San Pedro Valley, the operations of a DC substation would create a larger property tax impact in

Pinal County if Option B were to be developed. The range of total tax revenue resulting from operations across Subroute 4C ranges between \$10 million and \$11 million, and \$17 million and \$23 million over the first 5 years of Project operations. When divided by 5 years, the overall impacts to property tax revenues for each county would be even less; approximately \$2 million per year.