

ECONOMIC IMPACTS

EXISTING CONDITIONS

Because of the growing economic intensification of the region, local governments are concerned about the volume of developable land that could be removed from the tax base as a result of implementation of one of the action alternatives. (A 2004 City of Phoenix report demonstrated that the levels of tax revenue impacts and other revenue impacts can be measured in the millions of dollars.) Consideration of major tax revenue impacts that would result from the action alternatives was used in a manner similar to that applied in the City of Phoenix report and is discussed in this section.

Table 4-15 summarizes the acreage of land uses that would be affected by the action alternatives and that would be expected to generate measurable tax revenues. The table was generated assuming the following land uses would not generate substantial tax revenues:

- ▶ *Institutional* lands are generally for public purposes, are not subject to property taxes, and do not generate sales tax revenues.
- ▶ *Park* lands are generally public lands and are consequently not in the tax base.
- ▶ *Transportation* land accounts for existing public R/W for streets, roads, and highways, which are not included in the tax base.
- ▶ *Water surface or riverbed* accounts for the channel and immediate floodplain of the Salt River.

Of the affected municipalities, the City of Phoenix would have the most acreage of taxable land at stake with respect to the proposed action. In the Western Section, the W59 Alternative would need the least amount of taxable land.

Most of the impact on the City of Tolleson’s taxable land base would stem from the W101 Alternative and Options, where primarily agricultural, industrial, and vacant land would be affected.

Impacts on taxable land in Avondale would occur with the W101 Alternative and Options. The impacts would be approximately double in Avondale if full reconstruction

Table 4-15 Acreage of Taxable Land Uses by Jurisdiction, Action Alternatives

Action Alternative/Option	Land Use						Total
	Agricultural	Commercial	Industrial	Single-family Residential	Multifamily Residential	Vacant	
Phoenix							
Western Section							
W59	548	8	157	42	20	118	893
W71	535	1	181	277	— ^a	45	1,039
W101 Western Option	612–618 ^b	26–27	25	291	—	106–107	1,062–1,066
W101 Central Option	469–476	0–1	25	386–387	—	118–121	1,002–1,006
W101 Eastern Option	495–502	0–1	25	351	—	143–145	1,017–1,021
Eastern Section							
E1	163	1	10	104	—	462	740
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	67–81	0–1	100–107	—	—	6–15	183–194
W101 Central Option	85–99	0–1	80–87	—	—	43–52	218–229
W101 Eastern Option	85–99	0–1	80–87	—	—	43–52	218–229
Eastern Section							
E1	—	—	—	—	—	—	—
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	0–4	—	—	—	—	0–4
W101 Central Option	—	0–4	—	—	—	—	0–4
W101 Eastern Option	—	0–4	—	—	—	—	0–4
Eastern Section							
E1	—	—	—	—	—	—	—

Source: analysis of aerial imagery (2009, 2010)

^a not applicable

^b W101 Alternative and Options include ranges because of design options; totals do not equal a simple summing of the impacts because the Partial and Full Reconstruction Options would affect land uses differently.

of the I-10 (Papago Freeway)/SR 101L (Agua Fria Freeway) system traffic interchange were to occur.

ENVIRONMENTAL CONSEQUENCES

Fiscal Impact Economic Assumptions

The primary source of tax generation data used in the analysis was from the Maricopa County Assessor’s database. The analysis employed full cash values and limited cash values because those values are used directly in property tax calculations and are readily available from the County Assessor. Market values were used to calculate the full and limited cash values, but the formulas are complex and market values are not available in the Assessor’s database.

The average full and limited cash values were determined by using a sample set of each property type from parcels within each of the action alternatives. Commercial land was assumed to include 50 percent retail and 50 percent office. Industrial land was assumed to be 50 percent manufacturing and 50 percent warehouse/distribution.

For each type of land use considered, ten samples of representative property values (land and improvement) were randomly drawn from the interactive map and database using a “point-and-click” method. Because these samples were randomly⁴ selected, they represent businesses from all parts of the county. The average values of properties originally identified in 2005 in Maricopa County were escalated at the rate of increase in the value of single-family residential property.

The assessment ratio for each property type was updated with 2009 ratios, as shown in Table 4-16. Assessment ratios for commercial properties were assumed to be 20 percent, the ratio for 2011, because the project would not be built prior to that year and the long-term assessment ratio beyond 2011 is scheduled to be 20 percent. Vacant land was valued to reflect its zoning.

The tax levy applied to calculate property tax impacts was updated with the 2008 levy and broken into the primary and secondary levies. Because each action alternative overlaps multiple tax districts, the most common tax district in each alignment was used to

Table 4-16 Land Valuation Assumptions Used to Estimate Property Tax Impacts Resulting from Right-of-way Acquisition

Assumption	Land Use					
	Agricultural	Commercial	Industrial	Single-family Residential	Multifamily Residential	Vacant
Land valuation assumptions for estimating property tax impacts						
Market value						
Full cash value for tax purposes (80% of market value, \$)	6,080	364,430	695,620	841,010	990,560	501,960
Limited value (95% of full cash value, \$)	5,240	300,650	520,270	762,330	897,880	415,850
Assessment ratio	0.16	0.20	0.20	0.10	0.10	0.16
Assessed valuation for primary tax levies (\$)	838	60,130	104,054	76,233	89,788	66,536
Assessed valuation for secondary tax levies (\$)	973	72,886	139,124	84,101	99,056	80,314
Primary tax levy (\$ per \$100 of assessed value)						
Phoenix	5.85	5.85	5.85	5.85	5.85	5.85
Avondale	5.44	5.44	5.44	5.44	5.44	5.44
Tolleson	6.06	6.06	6.06	6.06	6.06	6.06
Secondary tax levy (\$ per \$100 of assessed value)						
Phoenix	3.84	3.84	3.84	3.84	3.84	3.84
Avondale	3.53	3.53	3.53	3.53	3.53	3.53
Tolleson	4.31	4.31	4.31	4.31	4.31	4.31
Primary taxes per acre						
Phoenix	49	3,516	6,084	4,457	5,250	3,890
Avondale	46	3,274	5,665	4,150	4,888	3,622
Tolleson	51	3,646	6,309	4,622	5,444	4,034
Secondary taxes per acre						
Phoenix	37	2,800	5,345	3,231	3,806	3,086
Avondale	34	2,571	4,908	2,967	3,495	2,834
Tolleson	42	3,142	5,997	3,626	4,270	3,462
Total real and personal property taxes (\$/acre)						
Phoenix	86	6,316	11,429	7,689	9,056	6,976
Avondale	80	5,845	10,573	7,117	8,383	6,456
Tolleson	93	6,788	12,306	8,247	9,714	7,496

Table 4-17 Reductions in Local Annual Property Tax Revenues Resulting from Right-of-way Acquisition, Existing Land Uses, Action Alternatives

Action Alternative/ Option	Land Use						Total
	Agricultural	Commercial	Industrial	Single-family Residential	Multifamily Residential	Vacant	
Phoenix							
Western Section							
W59	\$47,300	\$50,500	\$1,794,400	\$322,900	\$181,100	\$823,200	\$3,219,400
W71	46,200	6,300	2,068,700	2,129,700	— ^a	313,900	4,564,800
W101 Western Option	52,900–53,400 ^b	164,200–170,500	285,700	2,237,400	—	739,500–746,400	3,480,200–3,493,000
W101 Central Option	40,500–41,000	0–6,300	285,700	2,967,800–2,975,481	—	823,200–844,100	4,125,500–4,144,500
W101 Eastern Option	42,800–43,400	0–6,300	285,700	2,698,700	—	997,600–1,011,500	4,025,400–4,045,000
Eastern Section							
E1	\$14,000	\$6,300	\$114,300	\$800,000	—	\$3,222,900	\$4,157,500
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	\$6,200–7,500	\$0–6,800	\$1,230,600–1,316,800	—	—	\$45,000–112,400	\$1,356,100–1,369,300
W101 Central Option	7,900–9,200	0–6,800	984,500–1,070,600	—	—	322,300–389,800	1,389,000–1,402,200
W101 Eastern Option	7,900–9,200	0–6,800	984,500–1,070,600	—	—	322,300–389,800	1,389,000–1,402,000
Eastern Section							
E1	—	—	—	—	—	—	—
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	\$0–23,400	—	—	—	—	\$0–23,400
W101 Central Option	—	0–23,400	—	—	—	—	0–23,400
W101 Eastern Option	—	0–23,400	—	—	—	—	0–23,400
Eastern Section							
E1	—	—	—	—	—	—	—

^a not applicable

^b W101 Alternative and Options include ranges because of design options; totals do not equal a simple summing of the impacts because the Partial and Full Reconstruction Options would affect land uses differently.

determine the average primary and secondary levies to be applied to calculate primary and secondary taxes per acre. Note that the most common tax district for each alignment included a City of Phoenix levy, even on the W71 and W101 Alternatives. For illustration purposes, the average levy was calculated for Avondale and Tolleson and included their respective City levies. The calculations show the impact on Avondale and Tolleson if all the properties falling within their respective city boundaries included a City levy from one of these cities.

Property Taxes, Existing Conditions

Table 4-17 presents estimates of reductions (in 2009 dollars) in property tax revenues by type of land use that could be expected by each jurisdiction as a result of each of the action alternatives and options. The estimates are based on existing land uses, land values, and tax rates. Thus, the extent of existing taxable land uses identified in Table 4-15 were both valued and then assessed at the rates shown in Table 4-16 to calculate the loss in tax revenues (Table 4-17) that would reflect the loss of taxable land from tax rolls as a result of acquisition of R/W for the proposed action.

For Phoenix, under existing conditions, the W71 Alternative would create the greatest adverse impact on annual property tax revenues, followed by the W101 Alternative and Options. It should be noted, however, that any impacts on property tax revenues from any of the action alternatives would account for approximately 1 percent of the overall primary and secondary property tax revenues accruing to the City of Phoenix (City of Phoenix 2009b).

Although existing conditions reflect a less developed area surrounding the W101 Alternative, the City of Phoenix anticipates that future development would be as intense around the W101 Alternative as it would be along the W59 and W71 Alternatives. The City of Phoenix’s reduction in annual property tax revenues under the E1 Alternative, based on existing land uses, is estimated to be \$4.2 million.

The City of Tolleson would experience reductions in property tax revenues from the W101 Alternative and Options, which would create adverse impacts. These

impacts would range from about \$1.3 million to about \$1.4 million per year, depending on the option of the W101 Alternative considered. The impacts would account for approximately 28 percent of Tolleson’s existing annual primary property tax revenues (City of Tolleson 2009), a substantial loss for the small community. It should be noted that these percentages apply to the City’s General Fund discretionary revenues. Some additional property tax revenues are dedicated for existing debt service.

The impact on the City of Avondale’s property tax revenues would depend on whether the W101 Alternative and Options have the I-10 (Papago Freeway)/SR 101L system traffic interchange partially reconstructed or fully reconstructed. With partial reconstruction, there would be no impacts on Avondale’s tax revenues. With full reconstruction, the property tax revenue impacts would account for less than 1 percent of Avondale’s existing annual property tax revenues (City of Avondale 2009).

Sales Taxes on Retail Sales, Existing Conditions

Retail sales are primarily generated from enterprises in commercial and industrial land uses. Table 4-18 shows assumptions regarding retail sales. Along with the local option sales tax rate of 2 percent in Avondale and Tolleson, these assumptions were used to calculate retail sales tax revenue on a per acre basis. Table 4-19 shows estimates of reductions (in 2009 dollars) in annual sales tax revenues that could be expected with the purchase of the roadway R/W, assuming existing land use and tax rates, for each action alternative, by jurisdiction.

For Phoenix, the W59 (Preferred) and W71 Alternatives would have the highest level of annual impact. Overall, the potential impacts on Phoenix’s existing retail sales tax revenues would be relatively small compared with the City’s total sales tax revenues, accounting for less than 0.5 percent regardless of the action alternative considered.

For Tolleson, the W101 Alternative and Options would result in substantial adverse impacts on retail sales tax revenues, ranging from about \$1 million to \$1.3 million per year, depending on the option considered. That level

Table 4-18 Assumptions Used to Estimate Retail Sales Tax Impacts Resulting from Right-of-way Acquisition

Assumption	Land Use					
	Agricultural	Commercial	Industrial	Single-family Residential	Multifamily Residential	Vacant
Retail sales tax assumptions						
Retail sales generation (\$ per building square foot)	— ^a	250	35	—	—	—
Floor area ratio	—	0.23	0.31	—	—	—
Retail sales generation (\$ per acre)	—	2,504,700	472,600	—	—	—
Local tax rate^b						
Phoenix	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Avondale	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Tolleson	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Retail sales tax generation (\$/acre)						
Phoenix	—	\$50,100	\$9,500	—	—	—
Avondale	—	62,600	11,800	—	—	—
Tolleson	—	62,600	11,800	—	—	—

^a not applicable ^b Rate represents the local option sales tax, whose revenues are allocated directly to the municipality.

of impact would account for about 14 to 17 percent of the City’s existing total annual revenues from retail sales taxes, depending on the action alternative considered (City of Tolleson 2009).

The adverse impacts on Avondale associated with the W101 Alternative and Options would be approximately \$250,500 per year. As a fraction of the City’s existing total annual revenue from retail sales taxes, that level of impact would account for less than 1 percent (City of Avondale 2009).

Tax Revenue Impacts, Future Land Uses

Although the current economic downturn has created a slow-growth development context, historic and projected long-term growth rates in the region invite consideration of how tax revenue impacts might change under future land use conditions. Indeed, this was the center of the City of Phoenix’s concerns regarding the proposed action alternatives.

Tables 4-20 and 4-21 show future land use estimates and taxable acreage for the three jurisdictions, respectively. For analysis purposes, these estimates are assumed to reflect built-out conditions as they might exist from 2025 through 2035. The tables reveal a shift from agricultural and other low-intensity land uses to commercial, industrial, and residential development. Overall, no substantial changes in the taxable land base are anticipated between the current period and future conditions. The increasing intensity of land use, however, creates greater tax revenue impacts.

Property Tax Revenues, Future Land Uses

Table 4-22 shows projected impacts on annual property tax revenues (in 2009 dollars) for land within the action alternatives’ R/W, assuming future land use and the tax generation coefficients shown in Table 4-16. The impacts would be several times the magnitude of those under existing land uses.

Table 4-19 Reductions in Annual Retail Sales Tax Revenues Resulting from Right-of-way Acquisition, Existing Land Uses, Action Alternatives

Action Alternative/Option	Land Use						Total
	Agricultural	Commercial	Industrial	Single-family Residential	Multifamily Residential	Vacant	
Phoenix							
Western Section							
W59	— ^a	\$400,800	\$1,484,000	—	—	—	\$1,884,800
W71	—	50,100	1,711,000	—	—	—	1,761,100
W101 Western Option	—	1,302,400–1,352,500 ^b	236,300	—	—	—	1,538,800–1,588,900
W101 Central Option	—	0–50,100	236,300	—	—	—	236,300–286,400
W101 Eastern Option	—	0–50,100	236,300	—	—	—	236,300–286,400
Eastern Section							
E1	—	\$50,100	\$94,500	—	—	—	\$144,600
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	\$0–62,600	\$1,181,600–1,264,300	—	—	—	\$1,244,200–1,264,300
W101 Central Option	—	0–62,600	945,300–1,028,000	—	—	—	1,007,900–1,028,000
W101 Eastern Option	—	0–62,600	945,300–1,028,000	—	—	—	1,007,900–1,028,000
Eastern Section							
E1	—	—	—	—	—	—	—
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	\$0–250,500	—	—	—	—	\$0–250,500
W101 Central Option	—	0–250,500	—	—	—	—	0–250,500
W101 Eastern Option	—	0–250,500	—	—	—	—	0–250,500
Eastern Section							
E1	—	—	—	—	—	—	—

^a not applicable

^b W101 Alternative and Options include ranges because of design options; totals do not equal a simple summing of the impacts because the Partial and Full Reconstruction Options would affect land uses differently.

Table 4-20 Estimated Acreage of Future Study Area Land Uses, Action Alternatives

Action Alternative/ Option	Land Use										Total
	Agricultural	Commercial	Industrial	Public	Single-family Residential	Multifamily Residential	Open Space	Transportation	Vacant	Water Surface or River Bed	
Phoenix											
Western Section											
W59	— ^a	372	190	—	120	181	72	—	—	—	935
W71	—	147	223	—	650	—	41	—	—	—	1,061
W101 Western Option	—	214	103–108 ^b	—	742	3	19	3–4	—	—	1,084–1,090
W101 Central Option	—	141	77–82	—	786	—	19	3–4	—	—	1,026–1,032
W101 Eastern Option	—	141	76–81	—	802	—	19	3–4	—	—	1,041–1,047
Eastern Section											
E1	—	70	11	2	373	15	32	380	—	—	883
Tolleson											
Western Section											
W59	—	—	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—	—	—
W101 Western Option	—	62–69	91–98	—	54	—	—	—	—	—	207–221
W101 Central Option	—	62–69	128–136	—	52	—	—	—	—	—	242–257
W101 Eastern Option	—	62–69	128–136	—	52	—	—	—	—	—	242–257
Eastern Section											
E1	—	—	—	—	—	—	—	—	—	—	—
Avondale											
Western Section											
W59	—	—	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—	—	—
W101 Western Option	—	0–6	—	—	—	—	—	0–10	—	—	0–16
W101 Central Option	—	0–6	—	—	—	—	—	0–10	—	—	0–16
W101 Eastern Option	—	0–6	—	—	—	—	—	0–10	—	—	0–16
Eastern Section											
E1	—	—	—	—	—	—	—	—	—	—	—

Sources: City of Tolleson, 2005; City of Phoenix, 2001; City of Avondale, 2002; Maricopa County, 1997

^a not applicable ^b W101 Alternative and Options include ranges because of design options; totals do not equal a simple summing of the impacts because the Partial and Full Reconstruction Options would affect land uses differently.

Table 4-21 Acreage of Future Taxable Land Uses, Action Alternatives

Action Alternative/ Option	Land Use						Total
	Agricultural	Commercial	Industrial	Single-family Residential	Multifamily Residential	Vacant	
Phoenix							
Western Section							
W59	— ^a	372	190	120	181	—	863
W71	—	147	223	650	—	—	1,020
W101 Western Option	—	214	103–108 ^b	742	3	—	1,062–1,067
W101 Central Option	—	141	77–82	786	—	—	1,004–1,009
W101 Eastern Option	—	141	76–81	802	—	—	1,019–1,024
Eastern Section							
E1	—	70	11	373	15	—	469
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	62–69	91–98	54	—	—	207–221
W101 Central Option	—	62–69	128–136	52	—	—	242–257
W101 Eastern Option	—	62–69	128–136	52	—	—	242–257
Eastern Section							
E1	—	—	—	—	—	—	—
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	0–6	—	—	—	—	0–6
W101 Central Option	—	0–6	—	—	—	—	0–6
W101 Eastern Option	—	0–6	—	—	—	—	0–6
Eastern Section							
E1	—	—	—	—	—	—	—

^a not applicable

^b W101 Alternative and Options include ranges because of design options; totals do not equal a simple summing of the impacts because the Partial and Full Reconstruction Options would affect land uses differently.

Table 4-22 Reductions in Local Annual Property Tax Revenues Resulting from Right-of-way Acquisition, Future Land Uses, Action Alternatives

Action Alternative/Option	Land Use						Total
	Agricultural	Commercial	Industrial	Single-family Residential	Multifamily Residential	Vacant	
Phoenix							
Western Section							
W59	— ^a	\$2,349,600	\$2,171,600	\$922,600	\$1,639,100	—	\$7,082,900
W71	—	928,500	2,548,700	4,997,600	—	—	8,474,800
W101 Western Option	—	1,351,700	1,177,200–1,234,400 ^b	5,704,900	27,200	—	8,261,000–8,318,100
W101 Central Option	—	890,600	880,200–937,200	6,043,200	—	—	7,813,900–7,871,000
W101 Eastern Option	—	890,600	868,600–925,800	6,166,200	—	—	7,925,400–7,982,600
Eastern Section							
E1	—	\$442,100	\$125,700	\$2,867,800	\$135,800	—	\$3,571,400
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	\$420,800–468,300	\$1,119,900–1,206,000	\$445,400	—	—	\$1,986,000–2,119,700
W101 Central Option	—	420,800–468,300	1,575,200–1,673,600	428,900	—	—	2,424,900–2,570,900
W101 Eastern Option	—	420,800–468,300	1,575,200–1,673,600	428,900	—	—	2,424,900–2,570,900
Eastern Section							
E1	—	—	—	—	—	—	—
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	\$0–35,100	—	—	—	—	\$0–35,100
W101 Central Option	—	0–35,100	—	—	—	—	0–35,100
W101 Eastern Option	—	0–35,100	—	—	—	—	0–35,100
Eastern Section							
E1	—	—	—	—	—	—	—

^a not applicable

^b W101 Alternative and Options include ranges because of design options; totals do not equal a simple summing of the impacts because the Partial and Full Reconstruction Options would affect land uses differently.

Table 4-23 Reductions in Annual Sales Tax Revenues Resulting from Right-of-way Acquisition, Future Land Uses, Action Alternatives

Action Alternative/Option	Land Use						Total
	Agricultural	Commercial	Industrial	Single-family Residential	Multifamily Residential	Vacant	
Phoenix							
Western Section							
W59	— ^a	\$18,635,000	\$1,796,000	—	—	—	\$20,431,000
W71	—	7,363,800	2,107,900	—	—	—	9,471,700
W101 Western Option	—	10,720,100	973,600–1,020,900 ^b	—	—	—	11,693,700–11,741,000
W101 Central Option	—	7,063,300	727,800–775,100	—	—	—	7,791,100–7,863,400
W101 Eastern Option	—	7,063,300	718,400–765,700	—	—	—	7,781,600–7,828,900
Eastern Section							
E1	—	\$3,506,600	\$104,000	—	—	—	\$3,610,600
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	\$3,882,300–4,320,600	\$1,075,200–1,158,000	—	—	—	\$4,957,500–5,478,500
W101 Central Option	—	3,882,300–4,320,600	1,512,400–1,606,900	—	—	—	5,394,700–5,927,500
W101 Eastern Option	—	3,882,300–4,320,600	1,512,400–1,606,900	—	—	—	5,394,700–5,927,500
Eastern Section							
E1	—	—	—	—	—	—	—
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101 Western Option	—	\$0–375,700	—	—	—	—	\$0–375,700
W101 Central Option	—	0–375,700	—	—	—	—	0–375,700
W101 Eastern Option	—	0–375,700	—	—	—	—	0–375,700
Eastern Section							
E1	—	—	—	—	—	—	—

^a not applicable

^b W101 Alternative and Options include ranges because of design options; totals do not equal a simple summing of the impacts because the Partial and Full Reconstruction Options would affect land uses differently.

For the City of Phoenix, the W71 Alternative would create the greatest adverse impact, although there do not appear to be large differences among any of the Western Section action alternatives. In the Eastern Section, the E1 Alternative’s projected reduction in property tax revenues for the City of Phoenix would, in the context of all tax revenues that the City of Phoenix would likely collect annually, be nearly inconsequential. For the Cities of Tolleson and Avondale, future property tax revenue impacts would be driven by commercial and industrial land uses.

Sales Tax Revenues, Future Land Uses

Similar to property taxes, impacts on local retail sales tax revenues under future land uses would be many times the magnitude of those under existing land uses (Table 4-23). For Phoenix, future sales tax impacts would range from approximately 5 to about 33 times those reported under current conditions. (The higher multiplier is related more to small initial conditions than to an extreme impact.) Of all the action alternatives, the W59 Alternative would cause the greatest loss—by a large margin—in annual sales tax revenues. These reduced revenues would be attributable to the loss of annual tax collections from land that would be lost to R/W acquisition for this alternative. The City of Phoenix’s reductions in sales tax revenues under the E1 Alternative, based on future land uses, are estimated to be about \$3.6 million.

For Tolleson, the increase in retail sales tax impact would be striking for the W101 Alternative and Options. Impacts would change from approximately \$1 million per year to a range of \$4.9 million to \$5.9 million. Implementation of any of these options would preclude considerable commercial development and collection of corresponding retail sales tax revenues. Similarly, for Avondale, estimated annual sales tax impacts would jump from \$250,500 under existing land uses to approximately \$375,500 under future conditions. In terms of relative impact on municipal government revenues, the percentage share of the sales tax impact on the smaller jurisdictions would be greater than would be the impacts on the City of Phoenix.

Other Types of Fiscal Impacts

Other types of fiscal impacts were considered in this analysis, but were not estimated because they represent a relatively small portion of total revenues to the communities. Not considered, for example, were capital expenditure reductions and other efficiencies for emergency response teams, reduced maintenance expenses for street repair because of reduced traffic congestion, or the costs of financing and providing additional infrastructure and social services to support community needs on an accelerated time scale.

Combined Property and Sales Tax Impacts, Existing and Future Conditions

Table 4-24 summarizes the combined property tax and retail sales tax impacts on the communities for existing and future land uses. The following text discusses the data presented, by municipality.

Phoenix

For the City of Phoenix, under existing land uses, the W71 Alternative would create substantially greater impact compared with the W59 Alternative and W101 Alternative and Options. This is as expected for the W101 Alternative and Options because they cover less developed land. Under future land uses, the combined impacts would increase substantially and the W59 Alternative would cause the highest adverse impact. Overall, the W101 Alternative Central and Eastern Options and the W71 Alternative would create substantially less impact on the City of Phoenix under future conditions. The E1 Alternative would result in a relatively small reduction in overall tax revenues that would be nearly inconsequential when considered in the context of total tax revenues the City of Phoenix now collects and anticipates collecting in the future.

Tolleson

For the City of Tolleson, under existing and future conditions, the W101 Alternative and Options would have the greatest impacts because considerably more of this community’s land would be needed for R/W (the community would not be affected under the W59 and

Table 4-24 Estimates of Total Tax Revenue Impacts, Property and Sales Tax Combined, Dollars per Year, Action Alternatives

Action Alternative/Option	Phoenix		Tolleson		Avondale	
	Land Use Condition		Land Use Condition		Land Use Condition	
	Existing	Future	Existing	Future	Existing	Future
Western Section						
W59	\$5,104,300	\$27,513,800	— ^a	—	—	—
W71	6,325,900	17,946,500	—	—	—	—
W101 Western Option	5,018,900–5,081,800 ^b	19,954,700–20,059,100	\$2,600,200–2,633,500	\$6,943,600–7,598,300	\$0–273,900	\$0–410,800
W101 Central Option	4,361,800–4,430,900	15,605,000–15,709,400	2,396,800–2,430,100	7,819,600–8,498,400	0–273,900	0–410,800
W101 Eastern Option	4,261,700–4,331,400	15,707,100–15,811,500	2,396,800–2,430,100	7,819,600–8,498,400	0–273,900	0–410,800
Eastern Section						
E1	\$4,302,100	\$7,182,000	—	—	—	—

^a not applicable

^b W101 Alternative and Options include ranges because of design options.

W71 Alternatives). Impacts on the City of Tolleson under future land uses would be adverse because of the removal of developable land from the tax base. The City’s total tax revenues would be reduced by 14 to 17 percent under the W101 Alternative and Options, potentially affecting the City’s ability to provide public services.

Avondale

The City of Avondale would be affected by only the W101 Alternative and Options. Existing impacts are estimated to be small in relation to total City revenues, although under future land uses the impacts would likely become relatively greater. Again, this would be because of removal of developable land from the tax base.

No-Action Alternative

The No-Action Alternative would conflict with local jurisdictions’ land use plans that have incorporated a freeway. Not building a freeway in the Study Area would mean that land set aside for the freeway would become available for taxable uses, if the jurisdictions were to change their zoning plans. The communities would have to amend their existing land use plans to identify new uses for land that has been owned by ADOT or that has otherwise been protected for a future freeway use. It is

difficult to make projections of fiscal impacts on these communities that would result from expanding their tax base without knowing the specific zoning changes that would occur and the rate of conversion of the land to new and possibly taxable uses.

Impacts on the Traveling Public

A major objective of the proposed action is to improve travel conditions in and around the Phoenix metropolitan area (see Chapter 1, *Purpose and Need*, for detailed discussion regarding the purpose of the proposed action). Alternatively stated, the proposed freeway would reduce automobile and truck travel times throughout the region. The projected time savings, as described in the analysis in this section, would be valuable to the traveling public and are estimated to be worth approximately \$18.65 per hour (see Table 4-25). This dollar-per-hour figure was multiplied by an estimate of the overall annual travel time reductions per action alternative and option in the region, as measured in the MAG travel demand model, for 2020–2035. The present value⁵ of the future time savings that would accrue to the traveling public is an estimate of the monetized benefits resulting from implementation of the proposed project.

Table 4-25 Estimated Value of Motorists' Travel Time

Type of Travel	Person-hours in Traffic ^a (%)	Travel Share ^b (%)		Total Hours		Percentage Value of Travel Time		Local Earnings/Hour Rate		Value of Travel Time		Weighted Average Local Travel Time Value
		Personal	Business	Personal ^c	Business ^d	Personal ^e	Business	Personal ^f	Business ^g	Personal	Business	
Local travel	35	94	6	0.33	0.02	50	100	\$27.30	\$29.40	\$13.65	\$29.40	\$14.53 ^h
Intercity travel	55	87	13	0.48	0.07	70	100	27.30	29.40	19.11	29.40	20.46
Truck travel ⁱ	10	—	100	—	0.10	—	100	—	23.08 ^j	—	23.08	23.08
Total weighted average time value (\$ per person-hour) ^k												\$18.65

^a The percentage of person-hours in congested traffic for travel on the proposed action is assumed to be 35% for local travel, 55% for intercity travel, and 10% for trucks.
^b Travel distribution shares, from the U.S. Department of Transportation, derive from on-line analysis of person miles of travel data from the 1995 Nationwide Personal Transportation Survey.
^c Derived from 94.4% of the time in local traffic being devoted to personal travel: thus, 33% of the total travel hours are devoted to personal local travel (94.4% x 35%).
^d Derived from 5.6% of the time in local traffic being devoted to business travel: thus, 2% of the total travel hours are devoted to business local travel (5.6% x 35%).
^e The value of local personal travel is considered to be 50% of that of business travel; for intercity travel, the value is considered to be 70% of that of business travel.
^f Personal local and intercity earnings/hour rates: The 2008 median household income for Maricopa County (\$56,197) was obtained from the U.S. Census Bureau American Community Survey.
^g The business local and intercity earnings/hour rates were retrieved from the U.S. Bureau of Labor Statistics Employer Cost for Employee Compensation for U.S. Mountain Region workers in private industry. The most recent per hour data were used (third quarter 2009).
^h If one assumes a nominal 1,000 hours, 330 hours would be devoted to local personal travel at a valuation of \$13.65 and 20 hours would be devoted to local business travel at a valuation of \$29.40. Adding these together yields a weighted average of \$14.55 (\$4,504.50 and \$588.00 ÷ 350 hours [i.e., 35% of the nominal 1,000 hours] = \$14.53).
ⁱ The percentage of person-hours in traffic for trucks on the roadway is from MAG 2001 traffic counts on freeways in the Study Area.
^j Earnings per hour rates for truck drivers were retrieved from the U.S. Bureau of Labor Statistics Employer Cost for Employee Compensation for the U.S. Transportation and Material Moving sector. The most recent per hour data were used (third quarter 2009).
^k Using a nominal 1,000 hours: 350 hours @ \$14.53 plus 550 hours @ \$20.46 plus 100 hours @ \$23.08 = \$18,646.5. Dividing this by 1,000 hours gives a weighted average of \$18.65.

4

Differences in travel time impacts are primarily between the No-Action Alternative and the action alternatives because, from a traffic modeling standpoint, all action alternatives are designed to accomplish the same objectives in the region: reduce congestion and reduce travel time. In 2035, travel time savings for the action alternatives would be approximately 15 million hours annually (see Table 4-26).

There would be some adverse impact on the traveling public during the construction phase of the proposed action alternative because modifications would be made to I-10 (Papago Freeway) at the freeway's western terminus and because surface arterial streets would be crossed. These impacts would, however, be temporary and, because the roadway would be constructed in a relatively undeveloped area, these impacts are not anticipated to be severe compared with impacts in a developed corridor. Therefore, travel time impacts

during construction are not accounted for in this analysis.

The following discussion develops the dollar per hour figure in more detail and presents the calculations for determining the economic impacts.

Estimating the Value of Motorists' Time

The value of time spent in traffic congestion can amount to millions of dollars annually. Real monetary costs can be associated with additional productivity costs, worker availability, freight inventory, logistics, just-in-time production, and market access (Weisbrod et al. 2001).

Factors to be considered when estimating the value of motorists' time include:

- average household income levels
- amount of local and intercity truck travel
- distribution of personal and business travel

Consistent with U.S. Department of Transportation (USDOT) guidelines, the analysis determined the value of time for regional personal, business, and truck travel (USDOT 1997). These values were then weighted by the relative volume of each on the road, as estimated at a national level by USDOT (1997). Results are in Table 4-25.

Overall Value of Motorists' Time Weighted by Type of Travel

Table 4-25 summarizes the calculations used to estimate the overall value of motorists' travel time in the Phoenix region. A weighted average local travel time value and a weighted average intercity travel time value were calculated using the percentages of personal and business travel to weight the value of earnings per hour for local travel and for intercity travel, respectively. The weighted average local travel time value is \$14.53 per person-hour. The weighted average intercity travel time value is \$20.46 per person-hour. Truck drivers use 100 percent of earnings-per-hour rates for travel because all truck travel is considered for business purposes. The value of time for trucks spent in congestion is \$23.08 per person-hour. An overall weighted value of travel time was then computed based on the relative share of person-hours spent in congestion for local travel, intercity travel, and truck travel; these are assumed to be 35 percent, 55 percent, and 10 percent, respectively. For Maricopa County, the total weighted average time value of congestion is \$18.65 per person-hour. This value was used to estimate the total value of time savings achievable through relieved congestion for each action alternative and option.

Net Travel Delay Reductions Attributable to the Proposed Action

Table 4-26 shows the reduction in delay compared with the No-Action Alternative for each of the action alternatives and options from 2020 to 2035. It is assumed that benefits would begin upon project completion, in approximately 2020. Any benefits achieved from partial opening of the proposed freeway were not counted. It was assumed that there are 270 days of congestion per year. In 2035, travel time savings for the action alternatives are expected to be approximately 15 million hours annually.

Table 4-26 Economic Benefit of Reduced Regional Traffic Congestion, Action Alternatives

Year	Reduction in Delay Compared with No-Action Alternative (hours/year)			Economic Benefit Associated with Reduction in Traffic Congestion (\$ million/year)		
	W59/E1	W71/E1	W101/E1	W59/E1	W71/E1	W101/E1
2020	5,639,220	5,713,470	6,660,630	\$105	\$107	\$124
2021	6,243,894	6,318,144	7,265,304	116	118	135
2022	6,848,568	6,922,818	7,869,978	128	129	147
2023	7,453,242	7,527,492	8,474,652	139	140	158
2024	8,057,916	8,132,166	9,079,326	150	152	169
2025	8,662,590	8,736,840	9,684,000	162	163	181
2026	9,267,264	9,341,514	10,288,674	173	174	192
2027	9,871,938	9,946,188	10,893,348	184	185	203
2028	10,476,612	10,550,862	11,498,022	195	197	214
2029	11,081,286	11,155,536	12,102,696	207	208	226
2030	11,685,960	11,760,210	12,707,370	218	219	237
2031	12,290,634	12,364,884	13,312,044	229	231	248
2032	12,895,308	12,969,558	13,916,718	240	242	260
2033	13,499,982	13,574,232	14,521,392	252	253	271
2034	14,104,656	14,178,906	15,126,066	263	264	282
2035	14,709,330	14,966,100	14,911,020	274	279	278
Total				\$3,036	\$3,062	\$3,326

Source: Maricopa Association of Governments, 2010b; extrapolated analysis
 Note: The value of motorists' time caught in congestion is \$18.65 per hour (Table 4-25), the number of days per year with congested traffic conditions is 270, and all monetary figures are in 2010 dollars.

Findings Regarding Travel Time Costs and Effects on Traveling Public

Using the weighted average travel time value of congestion (\$18.65 per person-hour) and a present value based on a discount rate of 3 percent, the total value of travel time savings was calculated for each action alternative, as shown in Table 4-26. By using the present value of the economic benefits that would accrue from reducing congestion and delays once an action alternative were to become operational, the benefits of constructing an action alternative as compared with the No-Action Alternative were estimated. The present value of travel

time savings for each action alternative between 2020 and 2035 would be between \$3 billion and \$3.3 billion. These benefits compare favorably with the estimated total project cost of \$2.43 billion (for the Preferred Alternative). (All valuations in this paragraph are in 2010 dollars.)

MITIGATION

The mitigation discussion in the section, *Displacements and Relocations*, beginning on page 4-39, presents compensation policies and procedures for displaced residences and businesses.

ADOT District Responsibilities

During construction, the ADOT District office would coordinate with local businesses to ensure reasonable access to businesses would be maintained during regular operating hours.

CONCLUSIONS

Implementation of any of the action alternatives would result in conversion of a taxable land base to a nontaxable land base. The Cities of Phoenix, Tolleson, and Avondale would experience reductions in sales tax and property tax revenues. Reductions experienced by the Cities of Phoenix and Avondale would be inconsequential.

The City of Tolleson would experience a 14 to 17 percent reduction under the W101 Alternative. This, in turn, would have a potentially adverse effect on the City's ability to effectively provide public services. Implementation of the W101 Alternative would also transfer a higher percentage of developable land in Tolleson to a transportation use than would be the comparable cases in Phoenix and Avondale.

The action alternatives would substantially benefit the region through travel time savings and enhanced movement of goods and delivery of services. Depending on which action alternative might be implemented—if any—travel time savings estimated through 2035 would range from \$3 billion to \$3.3 billion (in 2010 dollars); furthermore, approximately 15 million hours of travel time would be saved annually. Conversely, under the No-Action Alternative, substantial travel time savings in hours and dollars would not be realized.