South Mountain corridor team

Economic Impacts Report

In support of the
Environmental Impact Statement

South Mountain Transportation Corridor in Maricopa County, Arizona

Arizona Department of Transportation
Federal Highway Administration
in cooperation with
U.S. Army Corps of Engineers
U.S. Bureau of Indian Affairs
Western Area Power Administration

ADOT

November 2012

Federal-aid Project Number: NH-202-D(ADY)
ADOT Project Number: 202L MA 054 H5764 01L

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Abstract: This document assesses and describes the effects on economics that would occur as a result of the construction and operation of the proposed South Mountain Freeway, as adopted in the 2003 *Regional Transportation Plan*. Contents of this document will be presented in Chapter 4 of the South Mountain Transportation Corridor Environmental Impact Statement.

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List of Acronyms and Abbreviations

ADOT	Arizona Department of Transportation
C	Central
C.F.R.	Code of Federal Regulations
Community	Gila River Indian Community
E	Eastern
E1	E1 Alternative
EIS	environmental impact statement
FCV	full cash value
FHWA	Federal Highway Administration
FR	Full Reconstruction
I-10	Interstate 10
LCV	limited cash value
MAG	Maricopa Association of Governments
MH	manufactured home
MF	multifamily
PR	Partial Reconstruction
R/W	right-of-way
SMPP	Phoenix South Mountain Park/Preserve
SMTC	South Mountain Transportation Corridor
SR	State Route
TI	traffic interchange
USDOT	U.S. Department of Transportation
W	Western
W101CFR	W101 Alternative, Central Option, Full Reconstruction
W101CPR	W101 Alternative, Central Option, Partial Reconstruction
W101EFR	W101 Alternative, Eastern Option, Full Reconstruction
W101EPR	W101 Alternative, Eastern Option, Partial Reconstruction
W101WFR	W101 Alternative, Western Option, Full Reconstruction
W101WPR	W101 Alternative, Western Option, Partial Reconstruction
W59	W59 Alternative
W71	W71 Alternative

Glossary

capacity	The maximum number of vehicles that a given section of roadway or traffic lane can accommodate.
Eastern Section	The portion of the Study Area located east of 59th Avenue.
environmental impact statement (EIS)	The project documentation prepared in accordance with the National Environmental Policy Act when the project is anticipated to have a significant impact on the environment.
Federal Highway Administration (FHWA)	A branch of the U.S. Department of Transportation responsible for administering the Federal-aid Program. The program provides financial resources and technical assistance for constructing, preserving, and improving the National Highway System along with other urban and rural roads.
last resort housing	Arizona Revised Statutes § 28-7152 requires ADOT to "provide comparable, decent, safe, and sanitary replacement housing."
mitigation	An action taken to reduce or eliminate an adverse impact stemming from construction, operation, or maintenance of a proposed action alternative. Mitigation could reduce the magnitude and extent of an impact from a level of significance to a level of insignificance. Mitigation includes *avoiding* the impact altogether by not taking a certain action or parts of an action; *minimizing* impacts by limiting the degree of magnitude of the action and its implementation; *rectifying* the impact by repairing, rehabilitating, or restoring the affected environment; *reducing or eliminating* the impact over time by preservation and maintenance operations during the life of the action, and *compensating* for the impact by replacing or providing substitute resources or environments. (40 Code of Federal Regulations § 1508.20)
Study Area	The geographic area within which action alternative solutions to the problem are developed.
Western Section	The portion of the Study Area located west of 59th Avenue.

1. Project Description and Purpose and Need

Project Description

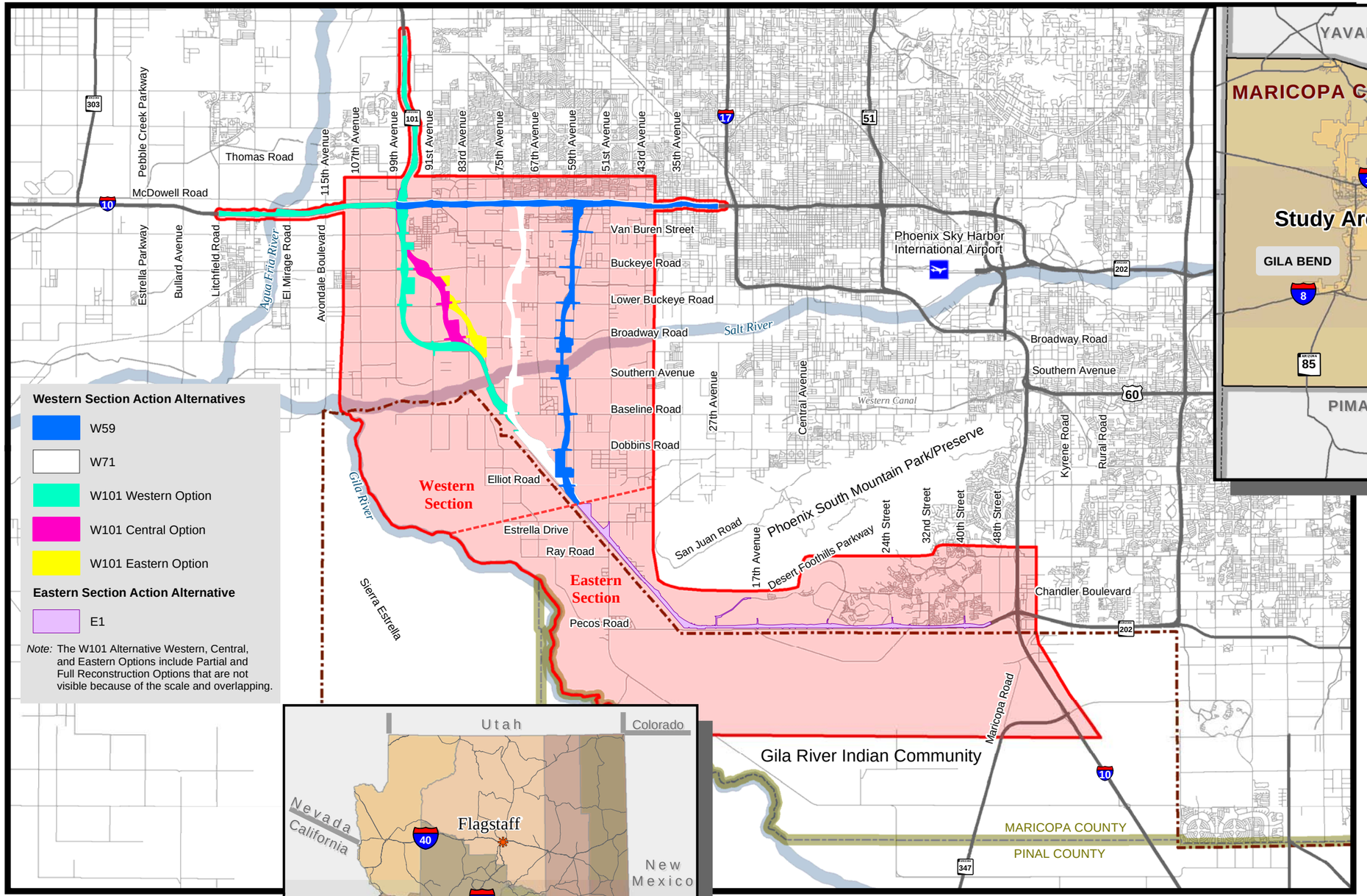
The Arizona Department of Transportation (ADOT) is studying the South Mountain Transportation Corridor (SMTC) in southern Phoenix, Maricopa County, Arizona. The South Mountain Freeway corridor was adopted into the Maricopa Association of Governments (MAG) regional freeway system in 1985 as part of the *MAG Freeway/Expressway Plan* (MAG 1985), at which time it was placed on the state highway system by the State Transportation Board. In 1988, ADOT prepared a design concept report and a state-level environmental assessment for the project, identified at that time as the South Mountain Parkway (ADOT 1988a, 1988b). As presented then, the project would connect Interstate 10 (I-10) (Maricopa Freeway) south of Phoenix with I-10 (Papago Freeway) west of the city, following an east-to-west alignment along Pecos Road through the western tip of the Phoenix South Mountain Park/Preserve (SMPP), then north to I-10 between 59th and 99th avenues. Because of the time elapsed since those documents were approved and to secure eligibility for federal funding for a proposed project within this corridor, ADOT and the Federal Highway Administration (FHWA) are now preparing an environmental impact statement (EIS) in accordance with the National Environmental Policy Act. In November 2004, the MAG *Regional Transportation Plan* (2003) was placed before Maricopa County voters, who approved the sales tax funding the plan. The South Mountain Freeway was included in this plan.

Alternatives considered for the SMTC included past freeway proposals as well as transportation system management, transportation demand management, transit improvements, arterial street network improvements, and land use controls. A freeway facility was determined to best address the project purpose and need. Therefore, this report discusses the potential impacts of a proposed freeway in the SMTC.

The Study Area for the EIS encompasses more than 156 square miles and is divided into a Western Section and an Eastern Section at a location common to all action alternatives (Figure 1). The division between sections occurs just east of 59th Avenue and south of Elliot Road.

Within the Western Section, three action alternatives are being considered for detailed study. These are the W59, W71, and W101 Alternatives. The W59 Alternative would connect to I-10 at 59th Avenue, while the W71 Alternative would connect at 71st Avenue. The W101 Alternative would connect to I-10 at the existing State Route (SR) 101L (Agua Fria Freeway)/I-10 system traffic interchange (TI) and has six associated options. The W101 Alternative options vary geographically among the Western (W), Central (C), and Eastern (E) Options and would vary geometrically based on a Partial Reconstruction (PR) or a Full Reconstruction (FR) of the system TI.

Improvements to I-10 (Papago Freeway) would occur for each Western Section action alternative (W59, W71, and W101). Improvements to SR 101L would occur for each option associated with the W101 Alternative.



Study Area and action alternatives

South Mountain Transportation Corridor
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Figure 1

Study Area and Action Alternatives

Economic Impacts Report

Within the Eastern Section of the Study Area, one action alternative is being considered. The E1 Alternative would begin near Elliot Road and 59th Avenue and proceed to the southeast to Pecos Road, which it would follow to the east until connecting to I-10 (Maricopa Freeway) at the Pecos Road/I-10/SR 202L (Santan Freeway) system TI.

The action alternatives and options are summarized in Table 1.

Table 1. Action Alternatives and Options

Section	Interstate 10 Connection	Action Alternative	Option – Broadway Road to Buckeye Road	Option – State Route 101L/ Interstate 10 Connection Reconstruction	Option Name
Western	59th Avenue	W59	—[a]	—	—
	71st Avenue	W71	—	—	—
	State Route 101L	W101	Western	Partial Reconstruction	W101WPR
				Full Reconstruction	W101WFR
			Central	Partial Reconstruction	W101CPR
				Full Reconstruction	W101CFR
			Eastern	Partial Reconstruction	W101EPR
				Full Reconstruction	W101EFR
Eastern	Pecos Road	E1	—	—	—

[a] not applicable

The No-Action Alternative is being considered for the entire Study Area.

Purpose and Need

An analysis of population trends, land use plans, and travel demand shows that a considerable traffic problem in the Phoenix metropolitan area is projected for the future, resulting in the need for a new freeway in the SMTC. This traffic problem is likely to worsen if plans are not made to accommodate the regional travel anticipated. The purpose of a freeway within the SMTC is to support a solution to traffic congestion. Between the early 1950s and the mid-1990s, the metropolitan area grew by over 500 percent, compared with approximately 70 percent for the United States as a whole (MAG 2001). From 1980 to 2005, the Maricopa County population more than doubled, from 1.5 million to 3.7 million. The MAG region has been one of the fastest-growing metropolitan areas in the United States; Phoenix is now the fifth-largest city in the country, and the region ranks as the 12th-largest metropolitan area in the country.

Travel demand and vehicle miles driven in the metropolitan area are expected to increase at a faster rate than the population. MAG projections (conducted in collaboration with the Arizona Department of Economic Security) indicate Maricopa County's population will increase from 3.7 million in 2005 to 6.5 million in 2035 (MAG 2009). It is projected that in the next 25 years, daily vehicle miles traveled will increase from 101 million to 185 million.

Even with anticipated improvements in light rail service, bus service, trip reduction programs, and existing roads and freeways, vehicle traffic volumes are expected to exceed the capacity of Phoenix metropolitan area streets and highways by as much as 11 percent in 2035. A freeway within the SMTC would accommodate approximately 6 percentage points of the 11 percent of the unmet travel demand and would be part of an overall traffic solution.

2. Current Economic Conditions

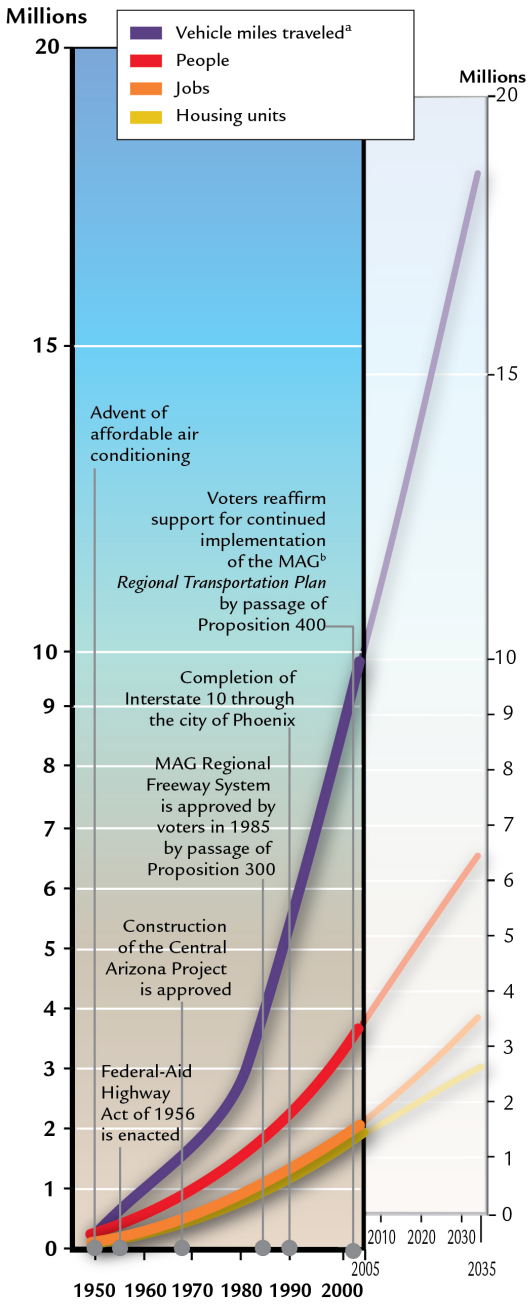
A worldwide recession that began in the United States in late 2007, intensified through 2008, and slowed in 2009 generated a substantial downturn in growth rates for population, housing, and employment across the United States. Only slow economic growth has occurred into 2012 in the United States. Origins of the pronounced worldwide deceleration in economic activity generally are considered to be related to unsustainable lending practices resulting from the deregulation and securitization of real estate mortgages in the United States. Lax lending practices coupled with sharp increases in oil and food prices eventually led large and well-established United States and European investment and commercial banks to suffer huge losses, to subject themselves to seizure and sale by federal banking officials, or even to declare bankruptcy. While opinions and predictions vary, strong economic recovery—while slowly beginning—may not be well underway until 2013 or later. The recession may be the worst since the Great Depression of the 1930s (Arizona State University 2010).

In Arizona, effects of the recession have been dramatic partly because beginning in the early 2000s, Arizona in general and Maricopa County specifically experienced some of the fastest population, housing, and employment growth rates in the country. Much of the "boom" period was directly tied to a robust housing market. With the downturn in the United States being directly tied to the housing market, Phoenix has experienced the worst of the recession when compared with the rest of the country—second only to the Las Vegas metropolitan area and parts of Florida and California.

However, this is not the first Great Recession the country has experienced since the 1930s. In fact, recessions have occurred in the 1970s, 1980s, and 1990s; each at some point was referred to as "the Great Recession." The greater Phoenix area has been affected by each. The savings and loans scandals of the 1980s, for example, substantially impaired the region's socioeconomic growth. During that time, many savings and loan institutions ran out of money, were denied access to additional capital, and closed. Commercial real estate was drastically overbuilt, with tenant space highly overpriced. Businesses left Arizona daily. Yet, in a matter of years, Arizona resumed dramatic socioeconomic growth.

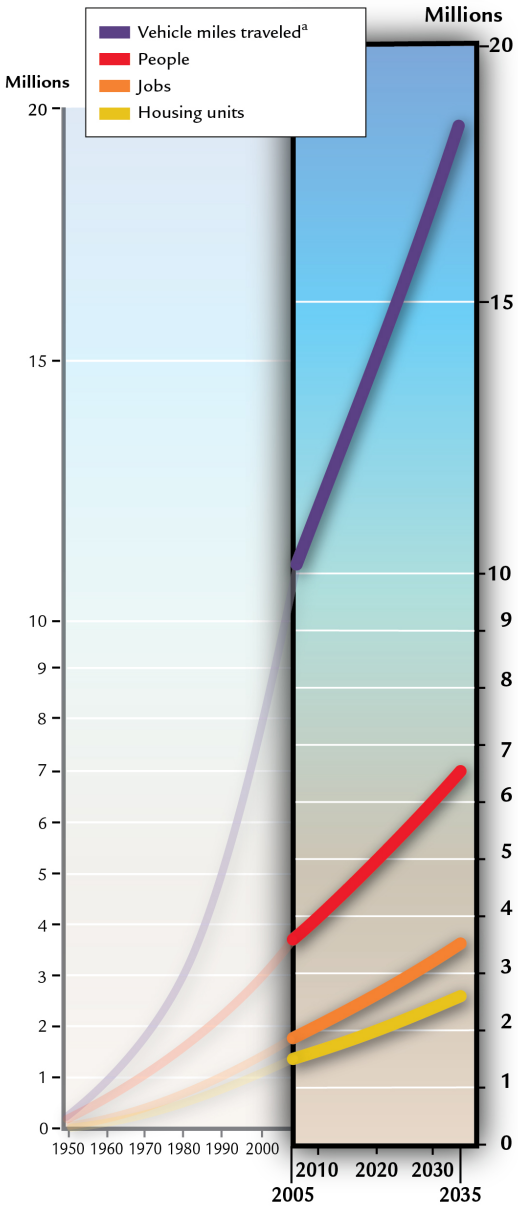
At first glance, because the need for the proposed action is predicated in part on projected growth, one may conclude the late 2000s recession will reduce the need for the project. A socioeconomic downturn associated with a given recession period is, however, generally considered a short-term phenomenon with respect to the longer-term planning horizon established for the proposed project. As described in the main text and as shown in Figure 2, socioeconomic indicators have steadily and consistently increased in the region during the latter half of the 1900s. The critical factors underlying these indicators remain unchanged. Long-term forecasts like those presented in Figure 3 suggest that, despite the recession of the late 2000s, population, housing, and employment will steadily and consistently increase into the foreseeable future.

Figure 2. Growth Rates, 1950–2000



[a] vehicle miles traveled reduced to one-tenth of their actual values to facilitate comparison of growth rates on the same axis

Figure 3. Projected Growth Rates, 2000–2035



[a] vehicle miles traveled reduced to one-tenth of their actual values to facilitate comparison of growth rates on the same axis

3. Displacement Impacts and Relocations

Study Area

For purposes of this analysis, several geographic regions are considered. In some cases, impacts are discussed in terms of the greater Phoenix region, which is defined as the communities making up the Phoenix metropolitan area and the remainder of Maricopa County.

The economic setting of the Study Area is described in the *Social Conditions* technical report. In general, the Western Section of the Study Area is a developing area formerly on the edge of the urbanized area. It is characterized by manufacturing industries, warehousing, trucking companies, and other nonretail land uses. Agricultural land is being converted to residential uses, and future development will be of mixed uses with a wide variety of businesses and residential housing types. The Eastern Section of the Study Area includes a portion of SMPP, Gila River Indian Community (Community) land, and Ahwatukee Foothills Village in Phoenix, a relatively young but well-established residential community.

Displacements and Relocations

Construction of the proposed freeway would displace households, businesses, and public facilities. In addition to displacements, changes in accessibility along the new facility could also affect properties adjacent to the highway by altering travel patterns. The resulting displacement impacts would primarily involve residential properties, but commercial establishments would also be affected.

All acquisitions and relocations resulting from implementation of the Selected Alternative—if an action alternative were to be selected—would comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Title VI of the Civil Rights Act of 1968, and 49 Code of Federal Regulations (C.F.R.) § 24. No person displaced by this project would be required to move from a displaced dwelling unless comparable replacement housing were available.

Methodology

Impacts were estimated using the proposed action alternatives and options as depicted on aerial photographs flown in 2010. This information was supplemented by field observations. A geographic information system was used to determine the number and type of displacement impacts within each alternative. A second step, a visual field verification of each displacement using the aerial photographs as a guide, was used to reach the final displacement estimates. Depending on final design and actual and final right-of-way (R/W) needs, the actual number of displacements could change.

Business displacements were assessed by:

- observation of the type of business to determine whether other similar businesses exist in the area and a qualitative description of whether the enterprise could be relocated at a reasonable cost

► identification of the largest employers

Data for characterizing the business displacements were obtained from two sources: the MAG business database and communications between business owners, ADOT, and others describing their anticipated impacts.

The following text presents estimated residential relocations, anticipated residential relocation potential, estimated business relocations, and anticipated business relocation potential.

Impacts

The action alternatives and options would predominantly displace single-family residences. Displacements under each action alternative and option would largely be concentrated in the northwestern and southeastern sections of the Study Area. The northwestern section contains the cities of Avondale and Tolleson and portions of southwestern Phoenix and unincorporated Maricopa County. This area has in the recent past experienced rapid development and is still slowly growing. It contains numerous single-family residential neighborhoods and a warehouse/distribution area for many Phoenix-area businesses. The southeastern section of the Study Area contains Ahwatukee Foothills Village, part of the southern portion of Phoenix, and the Community. Ahwatukee Foothills Village is largely built out, with master-planned communities, areas of active and passive open space, and several public schools and parks. The adjacent area of the Community is generally undeveloped desert land and agricultural fields.

A number of currently undeveloped tracts of land are also located near or within the action alternatives' proposed R/W. Single-family residential subdivisions are being developed or have been proposed for a large portion of the Western Section of the Study Area. As of February 2010, when the most recent field visits were conducted, development had not yet occurred in all of these areas; however, several residential subdivisions had been approved, platted, and recorded. Impacts on developed as well as undeveloped single-family lots have also been considered in the displacement and relocation analysis. Table 2 shows the potential displacement impacts by action alternative.

Western Section

The W59 Alternative would create the most business displacements, while the W101 Alternative Eastern Option would displace the most residences. The W101 Alternative Eastern Option would also affect a number of platted lots in subdivisions now under construction and, therefore, would potentially result in additional residential displacements. To a lesser extent, this is also true of the W71 Alternative and the W101 Alternative Central and Western Options.

Table 2. Potential Displacements, by Action Alternative

Action Alternative/ Option[a]	Businesses[b]	Residential					Community Facilities[c]	Utilities[d]
		Single-Family	Lots[e]	MH[f]	MF[g]	Total		
Western Section								
W59	41	53	—[h]	—	680	733	—	1
W71	22	705	120	—	—	825	—	—
W101EFR	28	857	447	—	—	1,304	3	2
W101EPR	14	857	447	—	—	1,304	3	2
W101CFR	29	769	350	—	—	1,119	3	2
W101CPR	14	769	350	—	—	1,119	3	2
W101WFR	30	598	326	2	—	926	3	3
W101WPR	14	599	327	2	—	928	3	3
Eastern Section								
E1	—	112	17	9	—	138	1	2

Source: aerial photography flown in 2010

[a] Displacements were estimated from aerial photography and supplemented by field observations during February 2010.

[b] includes businesses whose buildings are directly affected by an action alternative; does not include businesses whose parking and outdoor storage areas would be affected by an action alternative; count reflects the number of structures involved in business activities, not the number of actual businesses; counts have not been reconciled with the counts shown in Table 3, which derive from a Maricopa Association of Governments database, because the number of businesses could change as frequently as weekly or monthly

[c] includes schools

[d] includes electric substations, communication facilities, well sites, etc.

[e] includes an estimate of the number of lots that have been platted without homes being built

[f] manufactured home

[g] multifamily, represents the total number of units potentially affected

[h] not applicable

Eastern Section

Displacements associated with the E1 Alternative would occur primarily along Pecos Road in Ahwatukee Foothills Village. In addition, a number of lots platted for new, single-family home construction would also be affected. The Mountain Park Community Church would be displaced under this action alternative. Coordination with the City of Phoenix regarding the 32nd Street and 25th Avenue interchanges resulted in both being removed from the proposed action. Had these interchanges been included, they would have affected additional residences. No displacement of properties on Community land would occur.

No-Action Alternative

Under the No-Action Alternative, no residences would be displaced or otherwise affected by the proposed action. However, over time, it is possible that roadway improvements later initiated by local jurisdictions might cause adverse impacts on residences.

Residential Relocation Potential

The majority of the single-family residences that would be displaced by the action alternatives and options in the Western Section are primarily located between Baseline and Buckeye roads. Housing in the Study Area is predominantly single-family, with a range of older housing built in the 1950s through 1970s to new housing recently constructed. According to the 2000 Census, the vacancy rate in the Study Area was 7 percent for all housing units (including homes, apartments, mobile homes, etc.); however, the area continues to experience a modest rate of residential growth. Homeowner vacancy rates for the fourth quarter of 2009 for the Phoenix-Mesa-Scottsdale metropolitan statistical areas are at 3.2 percent, with rental vacancy rates at 17.9 percent (U.S. Census Bureau 2010). Subdivisions containing single-family homes of similar size and style to those that would potentially be displaced have been developed in the Study Area during recent years. In addition, several platted subdivisions have yet to be developed.

For purposes of this analysis, it is assumed that displaced residents (as a result of action alternatives and options) would most likely relocate in the Study Area and farther into the developing suburbs to the east and west. This area allows for the same proximity to existing services and facilities, such as schools, parks, medical offices, retail shopping areas, and access to I-10.

Long-term population and land use projections from MAG indicate that the Study Area will continue to grow substantially in the future. To summarize, the entire Study Area's population will grow by a projected 69.7 percent between 2005 and 2030, and the number of dwelling units in the Study Area is projected to grow by 80 percent during the same period. It is expected that single-family residential development would continue to fill in vacant land and spread to the west and south. The population growth rate in the Eastern Section would be expected to be slower (the area is nearly built-out) and is projected to increase by only 9 percent, while the number of dwelling units is anticipated to increase by 9 percent between 2005 and 2030.

Data from the Maricopa County Assessor's office on recent sales and comparable prices indicate potentially displaced residences located within the action alternatives in the Western Section generally range in value from the low $100,000s for some of the older housing up to the low $300,000s for newly constructed housing. Applicable housing located in the Eastern Section generally ranges in value from the upper $200,000s to the low $600,000s. In 2006, prior to the economic downturn, houses within the action alternatives in the Western Section were valued at $271,000 on average and in the Eastern Section were valued at $430,000 on average.

A survey of real estate sales listings in January 2009 was conducted to determine the availability and prices of existing homes similar to those that would be displaced. Real estate listings for four ZIP Codes in southwestern Phoenix (85323, 85353, 85043, and 85048) were examined for similar-size homes. The data indicated that comparable single-family dwellings would exist for replacement housing, particularly in the area of the action alternatives in the Western Section, which includes ZIP Codes 85323, 85353, and 85043.

As the population in the Phoenix metropolitan area increases, demand for housing in the Study Area would also increase. Newly constructed housing would most likely provide some of the replacement housing required as a result of construction of any of the action alternatives and options in the Western Section. It is likely, however, that demand would be much tighter in and near Ahwatukee Foothills Village because it is much more densely developed and fewer opportunities exist for new single-family home construction within this area. Tempe has available displacement housing, and suburban Chandler and Gilbert are projected to grow in the next 20 years and would provide other options for relocation of displaced residents from this area. A combination of available housing and newly built homes projected and/or planned for development would accommodate the expected number of relocations, especially if R/W acquisition were to occur over an extended period of time.

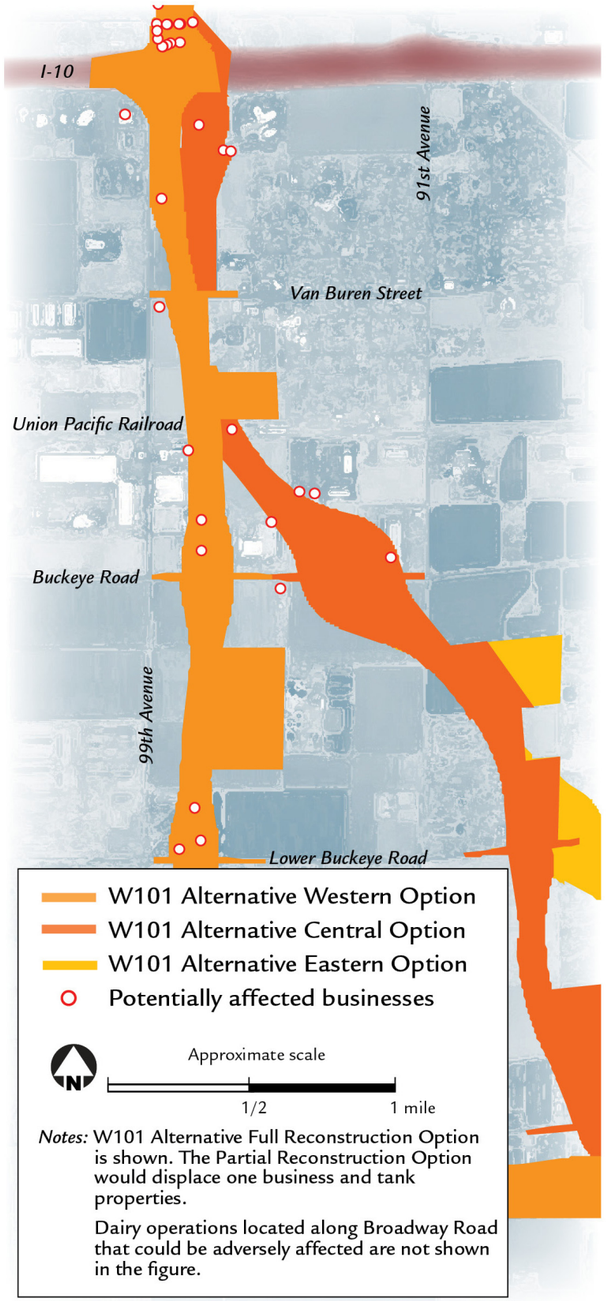
Business Displacements and Proximity Impacts

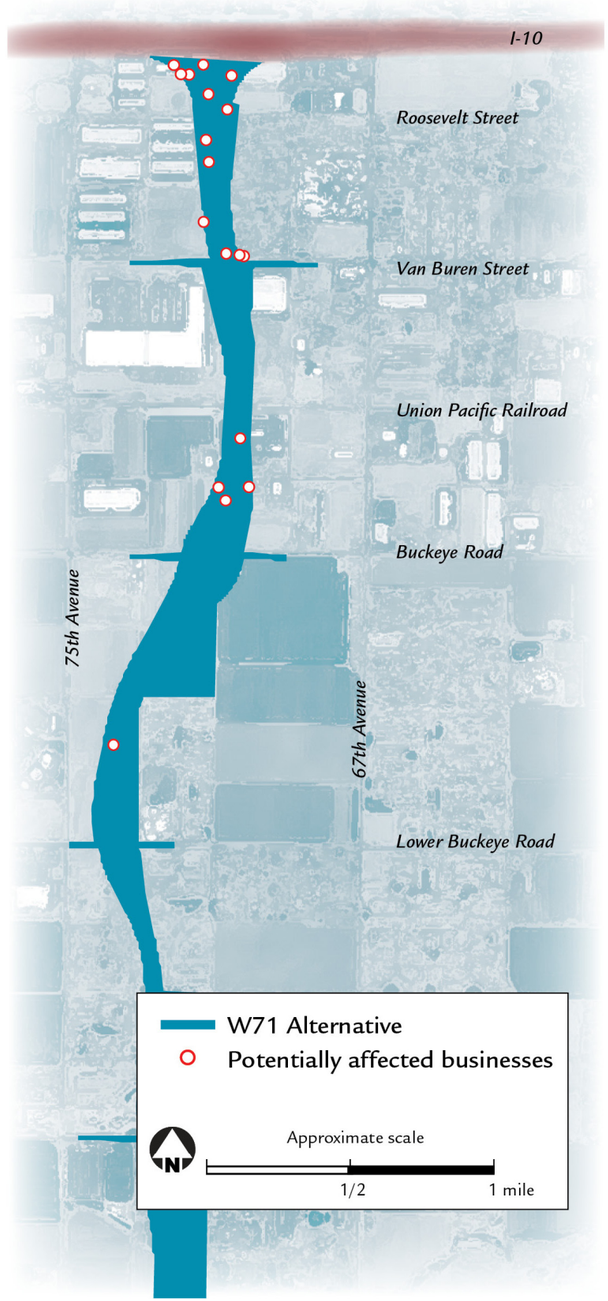
Economic impacts on businesses that could be caused by implementation of the action alternatives would range from beneficial (resulting from improved highway access for transportation companies) to highly adverse, such as displacement. For those remaining businesses, impacts would be temporary, such as accessibility problems during project construction, or permanent, such as changes in visibility or accessibility. Displacement and accessibility impacts would be mitigated through acquisition and relocation or access modifications. The following sections focus initially on business displacements and then identify potential impacts on remaining businesses.

Although displacement could result in an adverse impact on a given business, it is not necessarily an adverse impact on the economy. These impacts would be mitigated through relocation or outright purchase of the business site. If demand for the types of services provided by the businesses remains, activity should continue at the new location, especially when it is within reasonable proximity of the current location. Such is the case with most of the types of businesses in the Western Section of the Study Area. However, some businesses in the corridor are characterized by very high levels of capital investment and serve a regional demand for their products. One, in particular, also requires rail access. Displacing these businesses and relocating or rebuilding their capital equipment would be very expensive, could cause relocation out of the region, or could cause the business to close. These businesses will be discussed in the context of the action alternative in which each is located.

Overall, businesses potentially affected by each action alternative are shown in Figure 4, which uses aerial photography to show the specific location of each displaced business with respect to the proposed action alternatives. Table 3 summarizes potential business displacements, by action alternative.

Figure 4. Potential Business Displacements





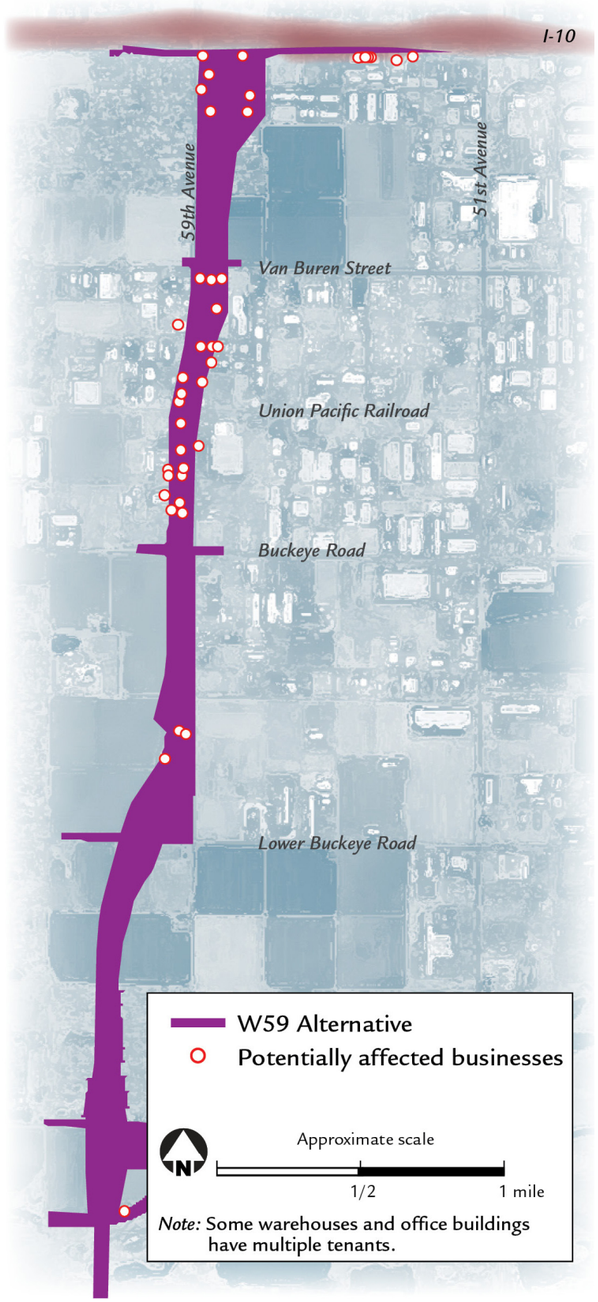


Table 3. Summary of Business Displacements by Type of Business, by Action Alternative

Action Alternative/ Option	Accommodation and Food Services	Administrative and Support and Waste Management and Remediation Services	Agriculture, Forestry, Fishing, and Hunting	Construction	Manufacturing	Other Services (except Public Administration)	Professional, Scientific, and Technical Services	Public Administration	Retail Trade	Transportation and Warehousing	Utilities	Wholesale Trade	Unclassified	Total
Western Section														
W59	3	2	—[a]	3	7	3	3	2	6	6	—	6	1	42
W71	1	—	—	2	2	—	—	—	1	2	—	1	—	9
W101EFR	1	—	1	—	4	1	—	—	2	1	—	1	13	24
W101EPR	—	—	1	—	4	—	—	—	—	1	—	1	—	7
W101CFR	1	—	3	—	4	1	—	—	2	1	—	1	13	26
W101CPR	—	—	3	—	4	—	—	—	—	1	—	1	—	9
W101WFR	2	—	3	—	2	2	—	—	6	1	—	3	13	32
W101WPR	—	—	2	—	2	—	—	—	1	1	—	3	—	9
Eastern Section														
E1	—	—	—	1	—	2	1	—	—	1	—	—	4	9

Sources: MAG 2007 Business Database; Maricopa County Assessor's Office, 2009

[a] not applicable

Western Section

W59 Alternative

Manufacturing, retail trade, transportation and warehousing, and wholesale trade account for over half the number of displaced businesses. The remaining businesses are distributed among accommodation and food services, construction, and other sectors. The largest single employers are in the retail and construction fields. These types of businesses tend to be relatively easier to relocate because their equipment and workforce are generally more mobile than industrial and manufacturing enterprises, with less site-specific capital investment. There are several machinist facilities for manufacturing metal products. These processes tend to have large, heavy equipment fixed in place. Removal and reinstallation

would result in high costs and business disruption. These businesses would, however, likely remain viable within the region if relocated (with the project sponsor assuming the comparatively high costs of relocation).

Most businesses could be relocated within the region. The known types of businesses are not so site-specific that displacement may cause them to leave the region. Therefore, the relocations of these businesses should not cause an adverse economic impact on the region.

W71 Alternative

Of the displaced businesses, there would be two each of construction, manufacturing, and transportation and warehousing. One of the manufacturing businesses, Daystar, would be difficult to relocate. It is a plastics product manufacturer with a high level of capital investment specially invented by the company for production. The equipment would be difficult to move and would be difficult to replace without prefabrication.

Similar to the nature of the businesses along the W59 Alternative, with the exception of Daystar, it appears that the displacement or relocation of businesses along the W71 Alternative would not cause regional economic impacts. This is because demand for these goods and services would likely continue into the future.

W101 Alternatives and Options

The options of the W101 Alternative would displace businesses, mostly in the city of Tolleson. In contrast to the W59 and W71 Alternatives, no professional or administrative offices or construction businesses are in the proposed R/W. In contrast to the other action alternatives, only one transportation and warehousing business would be displaced. Large businesses with substantial employment, however, would be adversely affected. Similar to the other action alternatives, many of the businesses along the W101 Alternative could be relocated with minimal impact on the regional economy. Effects on the regional economy resulting from implementation of the W101 Alternative and Options would be based on the anticipated adverse impacts on a limited number of businesses:

- The W101 Alternative Central and Eastern Options would involve the displacement of two major Tolleson employers: Atrium Door & Window Company and Holsum Bakery. Atrium Door & Window Company, employing nearly 300 people, serves a large market throughout the Southwest and could continue business in a range of locations inside or outside of the Phoenix region. Holsum Bakery, which employs about 180 people, is one of the few flour milling businesses in the region. Because of the nature of its operations, this business would require a similar location with rail and truck access. Both businesses would likely be very expensive to relocate because of high levels of capital investment in their plants. In addition, Holsum Bakery has expressed concerns about the feasibility of relocating without major interruptions in its business. If relocated within the region, the regional economic impacts of these business displacements would be minimal.

- The W101 Alternative Western Option would also displace Bay State Milling Company, which has a substantial investment in equipment at its existing site. Bay State Milling Company is a large flour mill serving more than 80 percent of the bakeries, tortilla factories, and food-service providers in Arizona. The mill requires a site with both truck and rail access for operations. Interruption of operations at the flour mill for possible relocation would have a detrimental effect on this business as well as on the local and regional economies.
- The W101 Alternative Western and Central Options would displace dairy operations on Broadway Road and 99th Avenue. It is not now known whether the sites could be reconfigured to allow the dairies to remain in operation. Similar to milling companies, these businesses have a high level of capital investment in equipment. Because of the biological nature of the operations, no interruption in operations could be tolerated if relocated. If totally displaced, the dairy operations would be difficult to relocate within the region because of urbanization in surrounding areas. These potential displacements would continue a trend of dairy production moving farther away from the Phoenix metropolitan area.

Eastern Section

The E1 Alternative would displace nine businesses: one in construction; two in the "other services" category; one in professional, scientific, and technical services; one in transportation and warehousing; and four that are unclassified.

No-Action Alternative

Under the No-Action Alternative, no businesses would be displaced or otherwise affected by a proposed freeway. However, over time, it is possible that roadway improvements later initiated by local jurisdictions may cause impacts to businesses. In addition, increasing future traffic congestion might adversely affect trucking and other transportation-related businesses in the Study Area.

Proximity Impacts on Businesses

In general, development of SMTC would benefit nearby businesses by providing improved highway access and would benefit regional businesses by improving regional traffic conditions. Potentially offsetting these benefits are short-term, adverse impacts during construction and, for some types of businesses, reduced visibility to the traveling public possibly leading to reduced business volume. Retail businesses, restaurants, and some service industries are some types of businesses most dependent on visibility. Other types of businesses, particularly those located in the Study Area, are less dependent on "drive-by" customers and tend to be sought out by customers, sometimes termed destination businesses. For instance, customers of trucking companies, warehouses, wholesale traders, and manufacturers do not frequent these businesses on an impulse—visibility is still important, but less important than it may be to retail trade.

Table 4 summarizes the businesses within 300 feet of the respective action alternatives by business type and number.

Table 4. Summary of Businesses within 300 feet of Action Alternatives

Action Alternative/ Option	Accommodation and Food Services	Administrative and Support and Waste Management and Remediation Services	Agriculture, Forestry, Fishing, and Hunting	Construction	Manufacturing	Other Services (except Public Administration)	Professional, Scientific, and Technical Services	Real Estate and Rental and Leasing	Public Administration	Retail Trade	Transportation and Warehousing	Utilities	Wholesale Trade	Unclassified	Total
Western Section															
W59	5	4	1	6	14	10	3	2	—[a]	7	15	—	15	1	83
W71	—	—	—	—	1	—	1	—	—	2	2	—	5	—	11
W101EFR	—	1	1	1	—	—	—	—	1	2	—	1	3	—	10
W101EPR	1	1	1	1	—	1	—	—	1	1	—	1	3	13	24
W101CFR	—	1	—	1	—	—	—	—	1	2	—	1	3	—	9
W101CPR	1	1	—	1	—	1	—	—	1	1	—	1	3	13	23
W101WFR	—	1	1	—	1	—	—	—	1	2	—	1	2	—	9
W101WPR	—	—	—	—	—	3	4	—	—	—	7	—	—	—	14
Eastern Section															
E1	—	—	—	—	—	3	3	—	—	—	1	—	—	—	7

Sources: MAG 2007 Business Database; Maricopa County Assessor, 2009

Note: This table includes businesses within 300 feet of the action alternatives but outside of each respective action alternative's right-of-way.

[a] not applicable

Western Section

W59 Alternative

Eighty-three businesses would be within 300 feet of the proposed W59 Alternative. As long as access to businesses would remain uninterrupted during the construction period, there should be minimal adverse economic impact to the local or the regional economy. The majority of these businesses are located on relatively well-used arterial and collector streets, and it is reasonable to assume that access would always be provided during the construction period. Because of the nature of the businesses—predominantly wholesale trade, trucking, and manufacturing—temporary construction impacts from dust, noise, and access changes would be disruptive in the near term, but unlikely to adversely affect the economic

viability of the business or industry in the long term. It is also likely that the majority of businesses would benefit from the new freeway through improved highway access.

W71 Alternative

Eleven businesses would be within 300 feet of the proposed W71 Alternative. It does not appear that these businesses or their business volumes would be adversely affected by the W71 Alternative because of the nature of the businesses. It is likely that these businesses would benefit from the new freeway through improved highway access; therefore, any permanent effects would likely be positive.

W101 Alternative and Options

Between 9 and 24 businesses would be within 300 feet of the proposed W101 Alternative and Options. As long as access to these businesses would remain uninterrupted during the construction period, there should be minimal adverse economic impact to the local or the regional economy. Because the majority of these businesses are located on relatively well-used arterial and collector streets, it is reasonable to assume that access would always be provided. In addition, with the exception of a drive-in type business, it does not appear that any business volumes would be reduced by temporary dust and noise impacts associated with project construction.

Eastern Section

Seven businesses would be within 300 feet of the E1 Alternative. With respect to permanent impacts, it is also likely that the majority of businesses would benefit from the new freeway through better highway access.

No-Action Alternative

With selection of the No-Action Alternative, no businesses would be specifically affected by the proposed action. However, over time, it is possible that roadway improvements later initiated by local jurisdictions might cause temporary and permanent impacts to businesses in proximity to these new or improved roadways. In addition, increasing future traffic congestion might adversely affect trucking and other transportation-related businesses in the Study Area.

Mitigation

The following describes measures for ADOT to consider as future commitments to be implemented as part of the project to avoid, reduce, or otherwise mitigate relocation affects associated with the project. Discussion of these measures in this report does not obligate ADOT to these specific measures. ADOT, along with FHWA, may choose to modify, delete, or add new measures to mitigate affects. Results of such will be made available in the Draft EIS.

- An acquisition and relocation assistance program would be conducted in accordance with the Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970 (49 C.F.R. § 24), which identifies the process, procedures, and time frame for R/W acquisition and relocation of affected residents or businesses. Replacement housing is available in the general area;

however, "last resort housing" would be provided if it were found that sufficient, comparable housing were not available.

- If necessary, specific relocation plans would be developed to assist residents of displaced mobile homes to find alternative sites for their mobile homes. The plans would address the issue of providing mobile home park sites that have access to schools and other family-related social services for those residents with such needs.
- Private property owners would be compensated at fair market value for land and may be eligible for additional benefits. As for renters, the U.S. Department of Housing and Urban Development considers anything under a 6 percent rental vacancy rate as a "tight" rental market (i.e., replacement rental housing may be difficult to locate). In accordance with 49 C.F.R. § 24, ADOT can pay a tenant or owner-occupant displaced from a dwelling a payment not to exceed $5,250. This payment would be available to assist with the difference in rent if the cost of replacement housing were to exceed the rental cost at that time (with conditions).

4. Local Concerns Regarding Economic Impacts

During the course of the SMTC project, representatives of several of the affected communities have expressed concerns regarding potential adverse economic impacts resulting from implementation of the various action alternatives in the Western Section. Their concerns are identified in the following sections.

Potential alternatives in the Western Section were the focus of these local concerns. This does not imply that there would be no impacts in the Eastern Section; these are estimated as well.

Representatives of the cities of Phoenix, Tolleson, and Avondale; ADOT; and other stakeholders participated in a series of meetings in late 2004 to discuss the proposed action's potential economic and social impacts.[1] In response to the meetings, each community prepared a document outlining specific concerns related to economic development and to potential impacts associated with the various action alternatives and options. Issues and concerns are summarized below.

City of Phoenix

The City of Phoenix is concerned about land being removed from the City's tax base and the resulting land use changes that might result if an alternative other than one between 51st and 59th avenues were to be selected for the Western Section of the Study Area. Since 1985, the City has identified this corridor as the most likely route of this portion of the proposed action and has developed zoning and land use plans accordingly. Moving the route to the west would require plan modifications and changes in acreages of various land uses. The City is concerned about the impact of land use changes on its municipal revenues.

Economic and fiscal impacts on the City of Phoenix were estimated in detail in a report submitted by the City, which was completed in 2004. The report examined the incremental, primarily adverse, impacts associated with not selecting an action alternative in the vicinity of 51st and 59th avenues as the Preferred Alternative. Although comprehensive, two qualifications to the report's applicability to this environmental document are identified below:

- The *Southwestern Loop 202 Fiscal, Economic, and Social Impacts to the City of Phoenix, Arizona* (City of Phoenix 2004) is a snapshot of possible impacts at the build-out condition, which, as indicated in the report, could take as long as 20 years to realize. It is reasonable that Phoenix would focus on the build-out of this growing area because future land uses in these areas are highly valued for generating fiscal revenues. For purposes of this document, the current conditions and the time required for build-out must be considered.
- Specific impacts on the City of Phoenix proper are estimated in the report, rather than impacts on the more general Phoenix metropolitan area. Although an appropriate concern for the City, many of the adverse impacts accruing to the City would have offsetting beneficial impacts on other communities

[1] The dates of these meetings are November 29–30, and December 13–15, 2004. Various stakeholders attended these meetings, as well as the hosts.

in the region. A regional demand exists for many of the goods and services characterizing future land uses in the western portion of the Phoenix metropolitan area. If the action alternatives were to displace or preclude development of these land uses in Phoenix, these industries would likely attempt to locate or relocate in adjacent areas and other parts of the region. In terms of regional demand, jobs, and earnings, this analysis, therefore, assumes that net impacts to the collective regional economy would be minimal.

Overall, fiscal impacts on the City attributable to the other action alternatives and options (the W71 Alternative and the W101 Alternative and Options) would be related to the length of the road (as represented by the amount of land required for R/W) and to land use changes resulting from an alternative other than the W59 Alternative being selected. Selection of the E1 Alternative would cause the City of Phoenix to undergo the loss of property tax revenues from numerous homes that would need to be acquired for R/W. On the other hand, the City has been losing tax revenues over the years since the freeway was first proposed with respect to the land protected from development along the proposed R/W. Impacts on community cohesion and on SMPP would also arise with selection of the E1 Alternative.

City of Tolleson

Concerns in Tolleson are both economic and social. From an economic perspective, the W101 Alternative and Options would remove a substantial portion of the City's remaining developable land from its tax base[2] and would adversely affect major employers located in Tolleson. In addition, the City has cited the potential for highly adverse impacts on community cohesion associated with an additional freeway (to I-10 [Papago Freeway]) that would further divide the community.

City of Avondale

Similar to Tolleson, concerns in Avondale center on impacts on its remaining developable land and on adverse impacts to major businesses that would result from selection of the W101 Alternative and Options.[3] In particular, the area associated with a potential system TI for I-10 and the W101 Alternative would be partially within Avondale, with commercial properties located there likely to be severely affected.

[2] personal communication of Ralph Velez, Tolleson City Manager: letter to Bill Hayden, ADOT, on May 27, 2003, regarding the City's review of the *Alternatives Screening Report* (ADOT and FHWA 2003)

[3] personal communication of Todd Hileman, Avondale City Manager: letter on May 17, 2004, to Victor Mendez, ADOT Director, regarding alternatives along a 99th Avenue alignment

5. Fiscal Impacts on Local Governments

Because of the growing economic intensification of the region, local governments are concerned about the amount of developable land that could be removed from the tax base as a result of implementation of one of the action alternatives. The *Southwestern Loop 202 Fiscal, Economic, and Social Impacts to the City of Phoenix, Arizona* (City of Phoenix 2004) demonstrates 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 were used in a similar manner in this report: for example, using land use information developed for the *Land Use* technical report and tax generation coefficients independently within this report.

Tax Revenue Impacts on the Cities of Phoenix, Tolleson, and Avondale: Current Land Use

Table 5 summarizes the current types of land uses by jurisdiction (in Phoenix, Tolleson, and Avondale) within the footprint of the various action alternatives.

Table 5. Current Land Uses within the Proposed Action Alternatives (acres)

Action Alternative/ Option	Agricultural	Commercial	Industrial	Public/Quasi-public	Residential Single-family	Residential Multifamily	Open Space	Transportation	Undeveloped	Total
Phoenix										
Western Section										
W59	548	8	157	1	42	20	40	1	118	935
W71	535	1	181	1	277	—[a]	20	1	45	1,061
W101EFR	495	1	25	—	351	—	24	—	145	1,041
W101EPR	502	—	25	—	351	—	23	3	143	1,047
W101CFR	469	1	25	—	386	—	24	—	121	1,026
W101CPR	476	—	25	—	387	—	23	3	118	1,032
W101WFR	612	27	25	—	291	—	22	—	107	1,084
W101WPR	618	26	25	—	291	—	21	3	106	1,090
Eastern Section										
E1	163	1	10	12	104	—	92	39	462	883

(continued on next page)

Table 5. Current Land Uses within the Proposed Action Alternatives (acres) (continued)

Action Alternative/ Option	Agricultural	Commercial	Industrial	Public/Quasi-public	Residential Single-family	Residential Multifamily	Open Space	Transportation	Undeveloped	Total
Tolleson										
Western Section										
W59	—	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—	—
W101EFR	85	1	80	1	—	—	—	23	52	242
W101EPR	99	—	87	1	—	—	—	27	43	257
W101CFR	85	1	80	1	—	—	—	23	52	242
W101CPR	99	—	87	1	—	—	—	27	43	257
W101WFR	67	1	100	1	—	—	—	23	15	207
W101WPR	81	—	107	—	—	—	—	27	6	221
Avondale										
Western Section										
W59	—	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—	—
W101EFR	—	4	—	—	—	—	—	12	—	16
W101EPR	—	—	—	—	—	—	—	—	—	—
W101CFR	—	4	—	—	—	—	—	12	—	16
W101CPR	—	—	—	—	—	—	—	—	—	—
W101WFR	—	4	—	—	—	—	—	12	—	16
W101WPR	—	—	—	—	—	—	—	—	—	—

Sources: HDR Engineering, Inc., analysis; aerial photography (2009, 2010)

[a] not applicable

Table 6 summarizes the acreage by land uses that are expected to generate measurable tax revenues. It was generated assuming that 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 current public R/W for streets, roads, and highways, which are not included in the tax base.
- *Water surface or river bed* accounts for the channel and immediate floodplain of the Salt River.

Table 6. Current Taxable Land Uses within the Proposed Action Alternatives (acres)

Action Alternative/Option	Agricultural	Commercial	Industrial	Residential Single-family	Residential Multifamily	Vacant	Total
Phoenix							
Western Section							
W59	548	8	157	42	20	118	893
W71	535	1	181	277	—[a]	45	1,039
W101EFR	495	1	25	351	—	145	1,017
W101EPR	502	—	25	351	—	143	1,021
W101CFR	469	1	25	386	—	121	1,002
W101CPR	476	—	25	387	—	118	1,006
W101WFR	612	27	25	291	—	107	1,062
W101WPR	618	26	25	291	—	106	1,066
Eastern Section							
E1	163	1	10	104	—	462	740
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101EFR	85	1	80	—	—	52	218
W101EPR	99	—	87	—	—	43	229
W101CFR	85	1	80	—	—	52	218
W101CPR	99	—	87	—	—	43	229
W101WFR	67	1	100	—	—	15	183
W101WPR	81	—	107	—	—	6	194
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101EFR	—	4	—	—	—	—	4
W101EPR	—	—	—	—	—	—	—
W101CFR	—	4	—	—	—	—	4
W101CPR	—	—	—	—	—	—	—
W101WFR	—	4	—	—	—	—	4
W101WPR	—	—	—	—	—	—	—

[a] not applicable

Based on information in Tables 5 and 6, the City of Phoenix would have the most property at stake with respect to the proposed action. The W59 Alternative would need the least amount of taxable land. Most of the impact on Tolleson's taxable land base would stem from the W101 Alternative and Options, where primarily agricultural, industrial, and vacant land uses would be affected.

Impacts on taxable lands in Avondale would occur with the W101 Alternative only if full reconstruction of the I-10 TI were to occur.

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 (FCVs) and limited cash values (LCVs), because those values are used directly in property tax calculations and are readily available from the County Assessor. Market values are used to calculate FCV and LCV, but the formulas are complex and market values are not available in the Assessor's database.

The average FCV and LCV 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 randomly selected, they represent businesses from all parts of the county. Therefore, 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 2008 ratios, as shown in Table 7. 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 alternative overlaps multiple tax districts, the most common tax district in each alignment was used to 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.

Additional information in Table 8 shows the taxing entities and levies that the primary and secondary tax levies include for each of the three jurisdictions (Phoenix, Avondale, and Tolleson) and the percentage of

the total levy that each taxing entity collects. The tax rates used for this analysis are the average rates for the primary tax districts within each alternative's R/W. These percentages were used to calculate the total property tax revenue impacts on each taxing entity for each action alternative in Tables 9 through 12 and 17 through 20.

Tables 9 through 12 show the property tax revenue impacts under current land uses broken into primary tax impacts and secondary tax impacts. Tables 17 through 20 show property tax revenue impacts under future land uses broken into primary tax impacts and secondary tax impacts.

Table 7. Land Valuation Assumptions Used for Estimating Property Tax Impacts

Assumptions	Land Use					
	Agricultural	Commercial	Industrial	Residential Single-family	Residential Multifamily	Vacant
Market value						
Full cash value for tax purposes ($/acre)	$6,080	$364,430	$695,620	$841,010	$990,560	$501,960
Limited cash value ($/acre)	$5,240	$300,650	$520,270	$762,330	$897,880	$415,850
Assessment ratio (commercial at 0.22 in 2009, dropping to 0.20 over next 3 years)	0.16	0.20	0.20	0.10	0.10	0.16
Limited cash assessment for primary tax levies	$838	$60,130	$104,054	$76,233	$89,788	$66,536
Full cash assessment for secondary tax levies	$973	$72,886	$139,124	$84,101	$99,056	$80,314
Primary tax levy						
Phoenix	5.85	5.85	5.85	5.85	5.85	5.85
Avondale	5.44	5.44	5.44	5.44	5.44	5.44
Tolleson	6.06	6.06	6.06	6.06	6.06	6.06
Secondary tax levy						
Phoenix	3.84	3.84	3.84	3.84	3.84	3.84
Avondale	3.53	3.53	3.53	3.53	3.53	3.53
Tolleson	4.31	4.31	4.31	4.31	4.31	4.31
Primary taxes ($/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

(continued on next page)

Table 7. Land Valuation Assumptions Used for Estimating Property Tax Impacts (continued)

Assumptions	Land Use					
	Agricultural	Commercial	Industrial	Residential Single-family	Residential Multifamily	Vacant
Secondary taxes ($/acre)						
Phoenix	37	2,800	5,345	3,231	3,806	3,086
Avondale	34	2,571	4,908	2,967	3,495	2,834
Tolleson	42	3,142	5,997	3,626	4,270	3,462
Total real and personal property taxes ($/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
Phoenix						
% of tax revenues from primary taxes	57	56	53	58	58	56
% of tax revenues from secondary taxes	43	44	47	42	42	44
Avondale						
% of tax revenues from primary taxes	57	56	54	58	58	56
% of tax revenues from secondary taxes	43	44	46	42	42	44
Tolleson						
% of tax revenues from primary taxes	55	54	51	56	56	54
% of tax revenues from secondary taxes	45	46	49	44	44	46

Table 8. Tax Rates and Levies

Tax Rate and Levy	Phoenix Primary	% of Total	Phoenix Secondary	Avondale Primary	% of Total	Avondale Secondary	Tolleson Primary	% of Total	Tolleson Secondary
Maricopa County	0.9909	17	0.0000	0.9909	18	0.0000	0.9909	16	0.0000
Community colleges	0.7246	12	0.1598	0.7246	13	0.1598	0.7246	13	0.1598
Other: flood control, water conservation, fire districts, library	0.0000	5	0.2777	0.0000	0	0.2777	0.0000	0	0.2777
City	0.7664	13	1.0563	0.3634	7	0.7424	0.9822	18	1.5252
School District (W59 – Phoenix; W71 – Tolleson; W101 – Tolleson)	1.6673	29	0.8534	1.6673	31	0.8534	1.6673	31	0.8534
Elementary School District (W59 – Laveen #59; W71 – Fowler #45; W101 – Union #62)	1.6979	29	1.4948	1.6979	31	1.4948	1.6979	31	1.4948
Total tax levies	**5.8471**		**3.8420**	**5.4441**		**3.5281**	**6.0629**		**4.3109**

Property Taxes, Current Land Uses

Table 9 presents estimates of reductions 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 current land uses, land values, and tax rates.

Table 9. Reductions in Local Annual Property Tax Revenues Resulting from Right-of-way Acquisition, Current Land Uses (in $), by Action Alternative

Action Alternative/ Option	Land Use						Total
	Agricultural	Commercial	Industrial	Residential Single-family	Residential Multifamily	Vacant	
Phoenix							
Western Section							
W59	47,346	50,529	1,794,398	322,920	181,115	823,177	3,219,484
W71	46,222	6,316	2,068,701	2,129,737	—[a]	313,923	4,564,899
W101EFR	42,767	6,316	285,732	2,698,692	—	1,011,531	4,045,037
W101EPR	43,371	—	285,732	2,698,692	—	997,579	4,025,374
W101CFR	40,520	6,316	285,732	2,967,792	—	844,105	4,144,466
W101CPR	41,125	—	285,732	2,975,481	—	823,177	4,125,515
W101WFR	52,875	170,536	285,732	2,237,377	—	746,440	3,492,960
W101WPR	53,393	164,220	285,732	2,237,377	—	739,464	3,480,186
Eastern Section							
E1	14,083	6,316	114,293	799,612	—	3,222,947	4,157,251
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101EFR	7,885	6,788	984,495	—	—	389,805	1,388,973
W101EPR	9,184	—	1,070,638	—	—	322,339	1,402,161
W101CFR	7,885	6,788	984,495	—	—	389,805	1,388,973
W101CPR	9,184	—	1,070,638	—	—	322,339	1,402,161
W101WFR	6,215	6,788	1,230,619	—	—	112,444	1,356,066
W101WPR	7,514	—	1,316,762	—	—	44,978	1,369,254

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Table 9. Reductions in Local Annual Property Tax Revenues Resulting from Right-of-way Acquisition, Current Land Uses (in $), by Action Alternative (continued)

Action Alternative/ Option	Land Use						Total
	Agricultural	Commercial	Industrial	Residential Single-family	Residential Multifamily	Vacant	
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101EFR	—	23,380	—	—	—	—	23,380
W101EPR	—	—	—	—	—	—	—
W101CFR	—	23,380	—	—	—	—	23,380
W101CPR	—	—	—	—	—	—	—
W101WFR	—	23,380	—	—	—	—	23,380
W101WPR	—	—	—	—	—	—	—

[a] not applicable

Table 10. Reductions in Primary and Secondary Tax Revenues for Phoenix Resulting from Right-of-way Acquisition, Current Land Uses (in $), by Action Alternative

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Primary Property Tax Revenue Reductions							
Western Section							
W59	309,577	226,379	—	239,439	520,898	530,458	1,839,838
W71	438,948	320,983	—	339,499	738,579	752,135	2,590,145
W101EFR	388,960	284,429	—	300,836	654,468	666,480	2,295,173
W101EPR	387,069	283,046	—	299,374	651,287	663,240	2,284,015
W101CFR	398,520	291,420	—	308,231	670,555	682,862	2,351,589
W101CPR	396,698	290,087	—	306,822	667,489	679,740	2,340,836
W101WFR	335,873	245,609	—	259,777	565,145	575,517	1,981,921
W101WPR	334,645	244,711	—	258,827	563,078	573,412	1,974,673
Eastern Section							
E1	399,750	292,319	—	309,182	672,624	684,969	2,358,843

(continued on next page)

Table 10. Reductions in Primary and Secondary Tax Revenues for Phoenix Resulting from Right-of-way Acquisition, Current Land Uses (in $), by Action Alternative (continued)

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Secondary Property Tax Revenue Reductions							
Western Section							
W59	—[a]	57,928	100,667	382,911	309,360	541,869	1,392,734
W71	—	82,136	142,735	542,929	438,640	768,314	1,974,755
W101EFR	—	72,782	126,480	481,099	388,687	680,817	1,749,865
W101EPR	—	72,428	125,865	478,760	386,797	677,507	1,741,358
W101CFR	—	74,571	129,589	492,924	398,241	697,551	1,792,877
W101CPR	—	74,230	128,997	490,671	396,420	694,362	1,784,679
W101WFR	—	62,849	109,218	415,437	335,638	587,897	1,511,039
W101WPR	—	62,619	108,819	413,918	334,410	585,747	1,505,513
Eastern Section							
E1	—	74,801	129,989	494,495	399,469	699,703	1,798,408

[a] not applicable

Table 11. Reductions in Primary and Secondary Tax Revenues for Avondale Resulting from Right-of-way Acquisition, Current Land Uses (in $), by Action Alternative

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Primary Property Tax Revenue Reductions							
W101EFR	2,429	1,776	—[a]	891	4,087	4,162	13,345
W101EPR	—	—	—	—	—	—	—
W101CFR	2,429	1,776	—	891	4,087	4,162	13,345
W101CPR	—	—	—	—	—	—	—
W101WFR	2,429	1,776	—	891	4,087	4,162	13,345
W101WPR	—	—	—	—	—	—	—

(continued on next page)

Table 11. Reductions in Primary and Secondary Tax Revenues for Avondale Resulting from Right-of-Way Acquisition, Current Land Uses (in $), by Action Alternative (continued)

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Secondary Property Tax Revenue Reductions							
W101EFR	—	455	790	2,112	2,427	4,252	10,035
W101EPR	—	—	—	—	—	—	—
W101CFR	—	455	790	2,112	2,427	4,252	10,035
W101CPR	—	—	—	—	—	—	—
W101WFR	—	455	790	2,112	2,427	4,252	10,035
W101WPR	—	—	—	—	—	—	—

Note: Avondale has no land that would be acquired under the W59, W71, or E1 Alternatives. Therefore, no right-of-way acquisition within this community would be involved in implementing any of these action alternatives.

[a] not applicable

Table 12. Reductions in Primary and Secondary Tax Revenues for Tolleson Resulting from Right-of-way Acquisition, Current Land Uses (in $), by Action Alternative

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Primary Property Tax Revenue Reductions							
W101EFR	124,388	90,959	—[a]	123,296	209,296	213,138	761,076
W101EPR	125,569	91,823	—	124,466	211,284	215,161	768,303
W101CFR	124,388	90,959	—	123,296	209,296	213,138	761,076
W101CPR	125,569	91,823	—	124,466	211,284	215,161	768,303
W101WFR	121,441	88,804	—	120,375	204,338	208,088	743,045
W101WPR	122,622	89,668	—	121,545	206,325	210,112	750,271
Secondary Property Tax Revenue Reductions							
W101EFR	—	23,275	40,448	222,150	124,300	217,722	627,897
W101EPR	—	23,496	40,832	224,260	125,481	219,790	633,858
W101CFR	—	23,275	40,448	222,150	124,300	217,722	627,897
W101CPR	—	23,496	40,832	224,260	125,481	219,790	633,858
W101WFR	—	22,724	39,490	216,887	121,356	212,564	613,020
W101WPR	—	22,945	39,874	218,996	122,536	214,631	618,982

Note: Tolleson has no land that would be acquired under the W59, W71, or E1 Alternatives. Therefore, no right-of-way acquisition within this community would be involved in implementing any of these action alternatives.

[a] not applicable

For the City of Phoenix, under current conditions, the W71 Alternative would result in 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 2009).

Although current 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 reductions in annual property tax revenues, based on current land uses, are estimated to be $4.2 million for the E1 Alternative.

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 this 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.

Under existing conditions, the impact on the City of Avondale's property tax revenues would depend on whether the W101 Alternative and Options have the SR 101L/I-10 system TI 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 Tax on Retail Sales, Current Land Uses

Retail sales are primarily generated from enterprises in the commercial and industrial land use classifications. Table 13 shows assumptions regarding retail sales per building square foot and floor area ratio. Along with the local option sales tax rate of 2 percent in Phoenix and 2.5 percent in Avondale and Tolleson, these assumptions are used to calculate retail sales tax revenue on a per-acre basis. Table 14 shows estimates of reductions in annual sales tax revenues that could be expected with the purchase of the roadway R/W, assuming current land use and tax rates, for each action alternative by jurisdiction.

Table 13. Assumptions Used to Estimate Sales Tax Revenue Effects Resulting from Right-of-way Acquisition

Assumptions	Land Use							
	Agricultural	Commercial	Industrial	Mining	Residential Single-family	Residential Multifamily	Vacant	Desert
Retail sales tax assumptions								
Retail sales generation ($/building square foot)	—[a]	250	35	—	—	—	—	—
Floor area ratio	—	0.23	0.31	—	—	—	—	—
Retail sales generation ($/acre)	—	2,504,700	472,626	—	—	—	—	—
Local tax rate								
Phoenix	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Avondale	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Tolleson	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Retail sales tax generation ($/acre)								
Phoenix	—	50,094	9,453	—	—	—	—	—
Avondale	—	62,618	11,816	—	—	—	—	—
Tolleson	—	62,618	11,816	—	—	—	—	—

[a] not applicable

For Phoenix, the W59 and W71 Alternatives would have the highest level of annual impact (see Table 14). Overall, 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 annual impacts on retail sales tax revenues, ranging from about $1,008,000 to about $1,264,000 per year, depending on the option considered. That level 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). Adverse annual impacts on Avondale associated with the W101 Alternative and Options would be approximately $250,000 per year. That level of impact would be less than 1 percent of the City's existing total annual revenue from retail sales taxes (City of Avondale 2009).

Table 14. Reductions in Annual Retail Sales Tax Revenues Resulting from Right-of-way Acquisition, Current Conditions (in $), by Action Alternative

Action Alternative/ Option	Land Use						Total
	Agricultural	Commercial	Industrial	Residential Single-family	Residential Multifamily	Vacant	
Phoenix							
Western Section							
W59	—[a]	400,752	1,484,046	—	—	—	1,884,798
W71	—	50,094	1,710,906	—	—	—	1,761,000
W101EFR	—	50,094	236,313	—	—	—	286,407
W101EPR	—	—	236,313	—	—	—	236,313
W101CFR	—	50,094	236,313	—	—	—	286,407
W101CPR	—	—	236,313	—	—	—	236,313
W101WFR	—	1,352,538	236,313	—	—	—	1,588,851
W101WPR	—	1,302,444	236,313	—	—	—	1,538,757
Eastern Section							
E1	—	50,094	94,525	—	—	—	144,619
Tolleson							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101EFR	—	62,618	945,252	—	—	—	1,007,870
W101EPR	—	—	1,027,962	—	—	—	1,027,962
W101CFR	—	62,618	945,252	—	—	—	1,007,870
W101CPR	—	—	1,027,962	—	—	—	1,027,962
W101WFR	—	62,618	1,181,565	—	—	—	1,244,183
W101WPR	—	—	1,264,275	—	—	—	1,264,275
Avondale							
Western Section							
W59	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—
W101EFR	—	250,470	—	—	—	—	250,470
W101EPR	—	—	—	—	—	—	—
W101CFR	—	250,470	—	—	—	—	250,470
W101CPR	—	—	—	—	—	—	—
W101WFR	—	250,470	—	—	—	—	250,470
W101WPR	—	—	—	—	—	—	—

[a] not applicable

Tax Revenue Impacts on the Cities of Phoenix, Tolleson, and Avondale: Future Land Uses

Although the current economic downturn has created a no- or slow-growth regional environment, historic and projected long-term growth rates invite the question 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 alternative freeway alignments. Tables 15 and 16 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 2030. 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. However, the increasing intensity of land use creates greater tax revenue impacts.

Table 15. Future Land Uses in the Proposed Action Alternatives (acres)

Action Alternative/ Option	Agricultural	Commercial	Industrial	Institutional	Mining	Residential Single-family	Residential Multifamily	Park	Transportation	Vacant	Desert	Water Surface or River Bed	Total
Phoenix													
Western Section													
W59	—[a]	372[b]	190	—	—	120[c]	181	72	—	—	—	—	935
W71	—	147	223	—	—	650	—	41	—	—	—	—	1,061
W101EFR	—	141	76	—	—	802	—	19	3	—	—	—	1,041
W101EPR	—	141	81	—	—	802	—	19	4	—	—	—	1,047
W101CFR	—	141	77	—	—	786	—	19	3	—	—	—	1,026
W101CPR	—	141	82	—	—	786	—	19	4	—	—	—	1,032
W101WFR	—	214	103	—	—	742	3	19	3	—	—	—	1,084
W101WPR	—	214	108	—	—	742	3	19	4	—	—	—	1,090
Eastern Section													
E1	—	70[d]	11	2	—	373[e]	15	32	380	—	—	—	883

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Table 15. Future Land Uses in the Proposed Action Alternatives (acres) (continued)

Action Alternative/ Option	Land Use												Total
	Agricultural	Commercial	Industrial	Institutional	Mining	Residential Single-family	Residential Multifamily	Park	Transportation	Vacant	Desert	Water Surface or River Bed	
Tolleson													
Western Section													
W59	—	—	—	—	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—	—	—	—	—
W101EFR	—	62	128	—	—	52	—	—	—	—	—	—	242
W101EPR	—	69	136	—	—	52	—	—	—	—	—	—	257
W101CFR	—	62	128	—	—	52	—	—	—	—	—	—	242
W101CPR	—	69	136	—	—	52	—	—	—	—	—	—	257
W101WFR	—	62	91	—	—	54	—	—	—	—	—	—	207
W101WPR	—	69	98	—	—	54	—	—	—	—	—	—	221
Avondale													
Western Section													
W59	—	—	—	—	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—	—	—	—	—
W101EFR	—	6	—	—	—	—	—	—	10	—	—	—	16
W101EPR	—	—	—	—	—	—	—	—	—	—	—	—	—
W101CFR	—	6	—	—	—	—	—	—	10	—	—	—	16
W101CPR	—	—	—	—	—	—	—	—	—	—	—	—	—
W101WFR	—	6	—	—	—	—	—	—	10	—	—	—	16
W101WPR	—	—	—	—	—	—	—	—	—	—	—	—	—

Sources: City of Tolleson (2005), City of Phoenix (2001), City of Avondale (2002), Maricopa County (1997)
Note: For Phoenix, mixed use land uses are allocated between commercial and single-family residential development.
[a] not applicable
[b] includes 231 acres allocated from the Maricopa Association of Governments (MAG) land use category "Mixed Use"
[c] includes 58 acres allocated from the MAG land use category "Mixed Use"
[d] includes 4 acres allocated from MAG's land use category "Mixed Use"
[e] includes 1 acre allocated from MAG's land use category "Mixed Use"

Table 16. Future Taxable Land Uses within the Action Alternatives (acres)

Action Alternative/ Option	Land Use								Total
	Agricultural	Commercial	Industrial	Mining	Residential Single-family	Residential Multifamily	Vacant	Desert	
Phoenix									
Western Section									
W59	—[a]	372	190	—	120	181	—	—	863
W71	—	147	223	—	650	—	—	—	1,020
W101EFR	—	141	76	—	802	—	—	—	1,019
W101EPR	—	141	81	—	802	—	—	—	1,024
W101CFR	—	141	77	—	786	—	—	—	1,004
W101CPR	—	141	82	—	786	—	—	—	1,009
W101WFR	—	214	103	—	742	3	—	—	1,062
W101WPR	—	214	108	—	742	3	—	—	1,067
Eastern Section									
E1	—	70	11	—	373	15	—	—	469
Tolleson									
Western Section									
W59	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—
W101EFR	—	62	128	—	52	—	—	—	242
W101EPR	—	69	136	—	52	—	—	—	257
W101CFR	—	62	128	—	52	—	—	—	242
W101CPR	—	69	136	—	52	—	—	—	257
W101WFR	—	62	91	—	54	—	—	—	207
W101WPR	—	69	98	—	54	—	—	—	221
Avondale									
Western Section									
W59	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—
W101EFR	—	6	—	—	—	—	—	—	6
W101EPR	—	—	—	—	—	—	—	—	—
W101CFR	—	6	—	—	—	—	—	—	6
W101CPR	—	—	—	—	—	—	—	—	—
W101WFR	—	6	—	—	—	—	—	—	6
W101WPR	—	—	—	—	—	—	—	—	—

[a] not applicable

Property Tax Revenues, Future Land Uses

Tables 17 through 20 show projected impacts on annual property tax revenues for land within the action alternatives' R/W, assuming future land use and the tax generation coefficients shown in Table 7 broken down by primary and secondary sources. It is apparent that the impacts are many times the magnitude of those under current land uses. For Phoenix, the W71 Alternative would have the greatest adverse impact, although there do not appear to be large differences between any of the Western Section action alternatives. For Tolleson and Avondale, future property tax revenue impacts are driven by commercial and industrial land uses.

Table 17. Reductions in Local Annual Property Tax Revenues Resulting from Right-of-way Acquisition, Future Land Use (in $), by Action Alternative

Action Alternative/ Option	Land Use								Total
	Agricultural	Commercial	Industrial	Mining	Residential Single-family	Residential Multifamily	Vacant	Desert	
Phoenix									
Western Section									
W59	—[a]	2,349,605	2,171,564	—	922,630	1,639,086	—	—	7,082,885
W71	—	928,473	2,548,731	—	4,997,577	—	—	—	8,474,781
W101EFR	—	890,576	868,626	—	6,166,241	—	—	—	7,925,443
W101EPR	—	890,576	925,772	—	6,166,241	—	—	—	7,982,589
W101CFR	—	890,576	880,055	—	6,043,224	—	—	—	7,813,855
W101CPR	—	890,576	937,201	—	6,043,224	—	—	—	7,871,001
W101WFR	—	1,351,654	1,177,216	—	5,704,926	27,167	—	—	8,260,964
W101WPR	—	1,351,654	1,234,363	—	5,704,926	27,167	—	—	8,318,111
Eastern Section									
E1	—	442,130	125,722	—	2,867,840	135,836	—	—	3,571,528
Tolleson									
Western Section									
W59	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—
W101EFR	—	420,835	1,575,192	—	428,867	—	—	—	2,424,894
W101EPR	—	468,349	1,673,641	—	428,867	—	—	—	2,570,857
W101CFR	—	420,835	1,575,192	—	428,867	—	—	—	2,424,894
W101CPR	—	468,349	1,673,641	—	428,867	—	—	—	2,570,857
W101WFR	—	420,835	1,119,863	—	445,362	—	—	—	1,986,060
W101WPR	—	468,349	1,206,006	—	445,362	—	—	—	2,119,717

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Table 17. Reductions in Local Annual Property Tax Revenues Resulting from Right-of-way Acquisition, Future Land Use (in $), by Action Alternative (continued)

Action Alternative/ Option	Land Use								Total
	Agricultural	Commercial	Industrial	Mining	Residential Single-family	Residential Multifamily	Vacant	Desert	
Avondale									
Western Section									
W59	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—
W101EFR	—	35,070	—	—	—	—	—	—	35,070
W101EPR	—	—	—	—	—	—	—	—	—
W101CFR	—	35,070	—	—	—	—	—	—	35,070
W101CPR	—	—	—	—	—	—	—	—	—
W101WFR	—	35,070	—	—	—	—	—	—	35,070
W101WPR	—	—	—	—	—	—	—	—	—

[a] not applicable

Table 18. Reductions in Primary and Secondary Tax Revenues for Phoenix Resulting from Right-of-way Acquisition, Future Land Uses (in $), by Action Alternative

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Primary Property Tax Revenue Reductions							
Western Section							
W59	681,071	498,036	—	526,766	1,145,978	1,167,010	4,018,861
W71	814,912	595,908	—	630,284	1,371,180	1,396,345	4,808,629
W101EFR	762,089	557,281	—	589,429	1,282,300	1,305,834	4,496,932
W101EPR	767,584	561,299	—	593,679	1,291,546	1,315,250	4,529,358
W101CFR	751,359	549,435	—	581,130	1,264,245	1,287,448	4,433,617
W101CPR	756,854	553,453	—	585,380	1,277,491	1,296,864	4,466,042
W101WFR	794,352	580,873	—	614,382	1,336,586	1,361,116	4,687,309
W101WPR	799,847	584,892	—	618,632	1,345,832	1,370,532	4,719,734
Eastern Section							
E1	343,428	251,134	—	265,621	577,857	588,462	2,026,501

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Table 18. Reductions in Primary and Secondary Tax Revenues for Phoenix Resulting from Right-of-way Acquisition, Future Land Uses (in $), by Action Alternative (continued)

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Secondary Property Tax Revenue Reductions							
Western Section							
W59	—	127,442	221,468	842,407	680,593	1,192,114	3,064,024
W71	—	152,486	264,990	1,007,953	814,340	1,426,383	3,666,151
W101EFR	—	142,602	247,813	942,617	761,554	1,333,924	3,428,511
W101EPR	—	143,630	249,600	949,414	767,045	1,343,543	3,453,232
W101CFR	—	140,594	244,324	929,346	750,832	1,315,143	3,380,238
W101CPR	—	141,622	246,111	936,142	756,323	1,329,761	3,404,959
W101WFR	—	148,639	258,309	982,523	793,794	1,390,396	3,573,656
W101WPR	—	149,667	260,091	989,319	799,285	1,400,014	3,598,377
Eastern Section							
E1	—	64,262	111,675	424,782	343,187	601,121	1,545,027

Table 19. Reductions in Primary and Secondary Tax Revenues for Avondale Resulting from Right-of-way Acquisition, Future Land Uses (in $), by Action Alternative

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Primary Property Tax Revenue Reductions							
W101EFR	3,644	2,664	—[a]	1,336	6,131	6,243	20,018
W101EPR	—	—	—	—	—	—	—
W101CFR	3,644	2,664	—	1,336	6,131	6,243	20,018
W101CPR	—	—	—	—	—	—	—
W101WFR	3,644	2,664	—	1,336	6,131	6,243	20,018
W101WPR	—	—	—	—	—	—	—
Secondary Property Tax Revenue Reductions							
W101EFR	—	682	1,185	3,167	3,641	6,377	15,052
W101EPR	—	—	—	—	—	—	—
W101CFR	—	682	1,185	3,167	3,641	6,377	15,052
W101CPR	—	—	—	—	—	—	—
W101WFR	—	682	1,185	3,167	3,641	6,377	15,052
W101WPR	—	—	—	—	—	—	—

Note: Avondale has no land uses that would be taxable and would be acquired under the W59, W71, or E1 Alternatives. Therefore, implementing any of these action alternatives would cause no loss of revenues within these communities.

[a] not applicable

Table 20. Reductions in Primary and Secondary Tax Revenues for Tolleson Resulting from Right-of-way Acquisition, Future Land Uses (in $), by Action Alternative

Action Alternative/ Option	Maricopa County	Community Colleges	Other	City	School District	Elementary School	Local Annual Property Tax Revenues
Primary Property Tax Revenue Reductions							
W101EFR	217,158	158,798	—[a]	215,252	365,393	372,099	1,328,701
W101EPR	230,230	168,357	—	228,209	387,388	394,497	1,408,680
W101CFR	217,158	158,798	—	215,252	365,393	372,099	1,283,652
W101CPR	230,230	168,357	—	228,209	387,388	394,497	1,408,680
W101WFR	177,859	130,060	—	176,298	298,268	304,760	1,088,245
W101WPR	189,829	138,813	—	188,162	319,408	325,270	1,161,482
Secondary Property Tax Revenue Reductions							
W101EFR	—	40,635	70,615	387,834	217,006	380,104	1,096,193
W101EPR	—	43,081	74,865	411,179	230,068	402,984	1,162,177
W101CFR	—	40,635	70,615	387,834	217,006	380,104	1,096,193
W101CPR	—	43,081	74,865	411,179	230,068	402,984	1,162,177
W101WFR	—	33,281	57,836	317,648	177,734	311,316	897,815
W101WPR	—	35,521	61,728	339,024	189,695	332,267	958,235

Note: Tolleson has no land uses that would be taxable and would be acquired under the W59, W71, or E1 Alternatives. Therefore, implementing any of these action alternatives would cause no loss of revenues within this community.

[a] not applicable

Sales Tax on Retail Sales, Future Land Uses

Similar to property taxes, impacts on local retail sales tax revenues under future land use conditions would be many times the magnitude of those under current conditions (Table 21). For Phoenix, future sales tax impacts would range from about 5 to 33 times those under current conditions. (The higher multiplier is related more to small initial conditions than to an extreme impact.) The W59 Alternative would, by a large margin, show the greatest adverse impact because of projected future land uses in that R/W. The City of Phoenix's reductions in sales tax revenues resulting from R/W acquisition, based on future land uses, are estimated to be about $3.6 million for the E1 Alternative (Table 21). These reductions would be nearly inconsequential when considered in the context of total sales tax revenues the City now collects and anticipates collecting in the future.

For Tolleson, the increase in retail sales tax impact is striking for the W101 Alternative and Options. Impacts would change from approximately $1 million per year to a range of approximately $5 million to $5.9 million. These configurations apparently would preclude considerable commercial development and corresponding retail sales tax revenues. Similarly, for Avondale, estimated annual sales tax impacts would jump from the approximately $250,000 under existing land uses to approximately $376,000 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 Phoenix.

Table 21. Reductions in Annual Retail Sales Tax Revenues Resulting from Right-of-Way Acquisition, Future Land Use (in $), by Action Alternative

Action Alternative/ Option	Land Use								Total
	Agricultural	Commercial	Industrial	Mining	Residential Single-family	Residential Multifamily	Vacant	Desert	
Phoenix									
Western Section									
W59	—[a]	18,634,968	1,795,979	—	—	—	—	—	20,430,947
W71	—	7,363,818	2,107,912	—	—	—	—	—	9,471,730
W101EFR	—	7,063,254	718,392	—	—	—	—	—	7,781,646
W101EPR	—	7,063,254	765,654	—	—	—	—	—	7,828,908
W101CFR	—	7,063,254	727,844	—	—	—	—	—	7,791,098
W101CPR	—	7,063,254	775,107	—	—	—	—	—	7,838,361
W101WFR	—	10,720,116	973,610	—	—	—	—	—	11,693,726
W101WPR	—	10,720,116	1,020,872	—	—	—	—	—	11,740,988
Eastern Section									
E1	—	3,506,580	103,978	—	—	—	—	—	3,610,558
Tolleson									
Western Section									
W59	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—
W101EFR	—	3,882,285	1,512,403	—	—	—	—	—	5,394,688
W101EPR	—	4,320,608	1,606,928	—	—	—	—	—	5,927,536
W101CFR	—	3,882,285	1,512,403	—	—	—	—	—	5,394,688
W101CPR	—	4,320,608	1,606,928	—	—	—	—	—	5,927,536
W101WFR	—	3,882,285	1,075,224	—	—	—	—	—	4,957,509
W101WPR	—	4,320,608	1,157,934	—	—	—	—	—	5,478,541
Avondale									
Western Section									
W59	—	—	—	—	—	—	—	—	—
W71	—	—	—	—	—	—	—	—	—
W101EFR	—	375,705	—	—	—	—	—	—	375,705
W101EPR	—	—	—	—	—	—	—	—	—
W101CFR	—	375,705	—	—	—	—	—	—	375,705
W101CPR	—	—	—	—	—	—	—	—	—
W101WFR	—	375,705	—	—	—	—	—	—	375,705
W101WPR	—	—	—	—	—	—	—	—	—

[a] not applicable

Other Types of Fiscal Impacts on the Cities of Phoenix, Avondale, and Tolleson

Other types of fiscal impacts were considered in this analysis, but were not quantitatively estimated because they represent a relatively small portion of total revenues to the communities.

Sales Tax on Power Purchases

Sales tax is charged on power purchases by all power users. Although measurable and important to the respective communities, these would not be their primary revenue sources and would account for only a small percentage of jurisdictional operating revenues. A precise estimate of this percentage would be uncertain because the affected municipalities do not report revenues from this specific source. However, based on the spending patterns of households and most commercial businesses, this category of sales tax revenues would account for between 1 and 5 percent of the municipalities' total sales tax receipts.

Sales Tax on Commercial Leasing Revenues

Sales tax is charged on commercial leasing revenues. As land uses intensify in the region, this source of revenue would likely become increasingly important. Similar to sales tax on power purchases, these revenues are measurable and important to the respective communities, but do not represent the primary source of sales tax revenues. For commercial properties, this category of sales tax revenue would account for approximately 5 to 15 percent of the total sales tax receipts.

Construction Sales Tax

Construction sales tax impacts were identified on the basis that the different land use patterns resulting from selecting the W71 Alternative or the W101 Alternative rather than the W59 Alternative would result in less intensive building construction needs. As a result, sales tax generated from purchases of construction materials within the city's boundaries would be less for the W71 Alternative or the W101 Alternative than if the W59 Alternative were selected. Because these revenues stem from future construction and not current conditions, these impacts were not estimated in this economic analysis.

Construction of any of the action alternatives would require purchase of millions of dollars of materials, including aggregates, fuels, machinery parts, and other potentially taxable items. However, there are tax exemptions for materials purchased for government projects, including roadways. As a result, tax revenues from this source were not considered.

State Shared Sales Tax Revenues

In addition to local option sales tax revenues, some portion of sales tax revenue paid to the State of Arizona is shared with local entities. The State annually allocates 25 percent of the applicable distribution share for each source of sales tax revenue to cities and towns. Using Phoenix as an example, State retail sales tax revenues were multiplied by 40 percent—the applicable distribution share—and then by 25 percent. Potential impacts to these revenues would follow the respective sales tax impacts.

Combined Property and Sales Tax Impacts on Phoenix, Avondale, and Tolleson, Current and Future Conditions

Tables 22 and 23 summarize the projected, combined property tax and retail sales tax impacts on the communities under current and future land use conditions.

Table 22. Estimates of Phoenix's Total Tax Revenue Impacts

Action Alternative/ Option	Current Land Use Conditions	Future Land Use Conditions
Property and Sales Tax Revenue Reductions Combined, $/year		
Western Section		
W59	5,104,300	27,513,800
W71	6,325,900	17,946,500
W101EFR	4,331,400	15,707,100
W101EPR	4,261,700	15,811,500
W101CFR	4,430,900	15,605,000
W101CPR	4,361,800	15,709,400
W101WFR	5,081,800	19,954,700
W101WPR	5,018,900	20,059,100
Eastern Section		
E1	4,301,900	7,182,100

Table 23. Estimates of Tolleson and Avondale's Total Tax Revenue Impacts

Action Alternative/ Option	City of Tolleson		City of Avondale	
	Current Land Use Conditions	Future Land Use Conditions	Current Land Use Conditions	Future Land Use Conditions
Property and Sales Tax Revenue Reductions Combined, $/year				
Western Section				
W59	—[a]	—	—	—
W71	—	—	—	—
W101EFR	2,396,800	7,819,600	273,900	410,800
W101EPR	2,430,100	8,498,400	—	—
W101CFR	2,396,800	7,819,600	273,900	410,800
W101CPR	2,430,100	8,498,400	—	—
W101WFR	2,600,200	6,943,600	273,900	410,800
W101WPR	2,633,500	7,598,300	—	—

[a] not applicable

Phoenix

For the City of Phoenix, under existing land uses, the W71 Alternative would show 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 greatest 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.

With future land uses, reductions in total tax revenues under the E1 Alternative 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 Tolleson, under either current or future conditions, the W101 Alternative and Options would have far greater impacts because considerably more of this community's land would be needed for R/W. Impacts on Tolleson under future land use conditions would, therefore, be adverse and highly significant. This is because of the removal of developable lands from the tax base for the R/W.

Avondale

Avondale would be affected by only the W101 Alternative and Options. Current impacts are estimated to be small in relation to total City revenues, although under future land use conditions the impacts would likely become relatively greater. Again, this is because of the removal of developable lands from the tax base for R/W.

No-Action Alternative

With selection of the No-Action Alternative, conflicts would occur with local area and jurisdictions' land use plans that have incorporated a freeway. (See discussion of impacts of the No-Action Alternative in the *Land Use* technical report.) Fiscal impacts of not implementing a freeway would mean land would become available for taxable uses, if the communities were to choose to change their zoning plans. The communities would have to amend their existing plans to implement alternatives for land that has been owned by ADOT or that has otherwise been protected for a future transportation use. Projections of fiscal impacts on these communities that would result from expanding their tax base are too uncertain to make without knowing the specific zoning changes that would occur and the rate of conversion of the land to those new, possibly taxable, uses.

Mitigation

No mitigation measures are proposed for projected fiscal impacts.

6. Impacts on the Traveling Public

A major objective of the proposed SMTC project is to improve travel conditions in and around the Phoenix metropolitan area. Alternatively stated, the proposed action alternatives would reduce auto and truck travel times throughout the region. The projected time savings, valuable to the traveling public, are estimated to be approximately $18.65 per hour. This dollar per hour figure is 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 the period 2020 through 2035. The present value of this future benefit is an estimate of the benefits to the traveling public resulting from implementation of the proposed project.

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 and options are designed to accomplish the same objective in the region: reduce congestion and reduce travel times. The action alternatives and options would have slight differences in travel time savings. In 2035, travel time savings for the action alternatives would be approximately 15 million hours annually.

During construction, the traveling public would experience some adverse impacts resulting from modifications to I-10 (at the respective termini) and from crossings of surface arterial streets. However, these impacts would be temporary, and, because the freeway 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 develops the dollar per hour figure in more detail and presents the calculations for determining the economic impacts.

Estimating the Value of Motorists' Time

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). Therefore, estimates of the total value of time spent in traffic congestion focus first on valuations of a person-hour spent in congestion.

Factors to be considered when estimating the value of motorists' time include average household income levels; the amount of local, intercity, and truck travel; and the distribution of personal and business travel. In a manner consistent with U.S. Department of Transportation (USDOT) guidelines, this analysis estimates the value of time for regional personal travel, for regional business travel, and regional truck travel (USDOT 1997). These values are then weighted by the volume of each on the road, as estimated at the national level by USDOT (1997).

Value of Personal Travel

Value of time for personal travel is based on an estimate of the cost to an individual of spending an hour in traffic congestion. It is estimated by expressing household income in terms of earnings per hour and

then multiplying this number by 0.50 (USDOT 1997). (The value of local personal travel is considered to be 50 percent of that of business travel.) Based on the U.S. Census American Community Survey (U.S. Census Bureau 2008), the median household income of Maricopa County, Arizona, in 2008 was $56,555. The estimated 2008 household income level was then divided by 2,080 hours, a benchmark number of work hours in a year, to calculate the personal earnings per hour rate for Maricopa County. Personal earnings per hour are assumed to be the same for both local and intercity travel and are estimated to be $27.30 per person-hour (Table 24).

Multiplying $27.30 by 0.50 yields about $13.65 per person-hour. USDOT also recommends that the value of personal intercity travel is 70 percent of earnings per hour. In Maricopa County, the value of personal intercity travel is $19.11 per person-hour.

Value of Business Travel

Value of travel time for business travel is the cost to business per person-hour spent in congestion. The value of business travel time is also estimated as a percentage of earnings per hour.

Earnings per hour rates for business travelers were retrieved from the U.S. Bureau of Labor Statistics using Employer Costs for Employee Compensation. The cost of compensation per hour worked was extrapolated from the data for mountain region workers of the United States in private industry. The most recent per hour data were collected from the third quarter 2009. The earnings per hour of business travelers were assumed to be the same as the total cost to employers per hour worked. The value obtained for this study, $29.40 per person-hour, was used for both local and intercity travel.

USDOT advises that business travel time is valued at 100 percent of business earnings per hour. For this study the value of $29.40 per person-hour is used for the business value of travel time for both local and intercity travel.

Value of Truck Travel

One hundred percent of the earnings per hour of truck drivers are considered a cost of congestion as recommended by USDOT. Any time that truckers must spend in traffic is a cost to the trucking business. The earnings per hour rates for truck drivers were retrieved from the U.S. Bureau of Labor Statistics Employer Cost for Compensation using the total cost of compensation per hour worked for Transportation and Material Moving Occupations. The most recent total employer cost per hour value was published for the third quarter 2009. This value, $23.08 per person-hour, is assumed to be equal to earnings per hour of truck drivers.

Table 24. Estimate of the Value of Motorists' Time in Dollars Per Hour

Share of Person-hours in Traffic[a] (percentage)		Travel Distribution (percentage[b])		Total Hours		Valuation of Travel Time (percentage)		Local Earnings ($/hour)		Value of Travel Time		Weighted Average Value of Travel Time, by Type
		Personal	Business	Personal[c]	Business[d]	Personal[e]	Business	Personal[f]	Business[g]	Personal	Business	
Local travel	35	94.4	5.6	0.33	0.02	50	100	$27.30	$29.40	$13.65	$29.40	$14.53[h]
Intercity travel	55	86.9	13.1	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 SMTC is assumed to be 35% for local travel, 55% for intercity travel, and 10% for trucks.

[b] The travel distribution shares are from the U.S. Department of Transportation and derive from online 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% × 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% × 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 1000 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.

Travel Distribution Proportions

Travel distribution percentages are the estimated amounts of travel that are personal travel and business travel. Travel distribution percentages are different for local, intercity, and truck travel. For the travel distribution percentages in this study, the USDOT *Departmental Guidelines for the Valuation of Travel Time in Economic Analysis*-recommended percentages were applied. For local travel, 94.4 percent is for personal reasons and 5.6 percent is for business purposes. For intercity travel, 86.9 percent of travel is personal and 13.1 percent of travel is conducted for business.

Overall Value of Motorists' Time Weighted by Type of Travel

Table 24 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 values 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 is 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, Arizona, the total weighted average time value of congestion is $18.65 per person-hour. The total weighted average time value of congestion in Maricopa County was the basis for estimating the total value of time-savings achievable through relieved congestion for each action alternative and option.

Net Travel Delay Reductions Attributable to the South Mountain Transportation Corridor Project

Table 25 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 project 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.

Impact on Traveling Public

Using the weighted average travel time value of congestion ($18.65/person-hour), the total value of travel time savings was calculated for each action alternative, as shown in Table 26. The present value of travel time savings for each action alternative between 2020 and 2035 would be between $3 billion and $3.4 billion. These benefits compare favorably with the estimated total project cost of $1.9 billion. (All valuations in this paragraph are in 2010 dollars.)

Table 25. Reductions in Delay Compared with No-Action Alternative

Year	Reductions in Delay (hours per year)		
	W59/E1	W71/E1	W101/E1
2020	5,639,220	5,713,470	6,660,630
2021	6,243,894	6,318,144	7,265,304
2022	6,848,568	6,922,818	7,869,978
2023	7,453,242	7,527,492	8,474,652
2024	8,057,916	8,132,166	9,079,326
2025	8,662,590	8,736,840	9,684,000
2026	9,267,264	9,341,514	10,288,674
2027	9,871,938	9,946,188	10,893,348
2028	10,476,612	10,550,862	11,498,022
2029	11,081,286	11,155,536	12,102,696
2030	11,685,960	11,760,210	12,707,370
2031	12,290,634	12,364,884	13,312,044
2032	12,895,308	12,969,558	13,916,718
2033	13,499,982	13,574,232	14,521,392
2034	14,104,656	14,178,906	15,126,066
2035	14,709,330	14,966,100	14,911,020

Source: Maricopa Association of Governments, 2010; extrapolated analysis
Note: Number of days per year with congestion was assumed to equal 270

Table 26. Economic Benefit Associated with Reduction in Traffic Congestion

Year	Economic Benefit (millions of dollars per year, 2010)		
	W59/E1	W71/E1	W101/E1
2020	$105	$107	$124
2021	116	118	135
2022	128	129	147
2023	139	140	158
2024	150	152	169
2025	162	163	181
2026	173	174	192
2027	184	185	203
2028	195	197	214
2029	207	208	226
2030	218	219	237
2031	229	231	248
2032	240	242	260
2033	252	253	271
2034	263	264	282
2035	274	279	278
Total	**3,036**	**3,062**	**3,326**

Note: Value of motorists' time caught in congestion was assumed to equal $18.65

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