

**DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM
PROPOSED THREE-YEAR OVERALL GOAL & METHODOLOGY SUBMISSION
TO FHWA FOR FEDERAL FISCAL YEARS 2018 THROUGH 2020
DRAFT FOR PUBLIC COMMENT**

Introduction

The Arizona Department of Transportation (ADOT) hereby submits its three-year overall Disadvantaged Business Enterprise (DBE) goal for federal fiscal years (FFYs) 2018 through 2020 to the Federal Highway Administration (FHWA) pursuant to [49 CFR Part 26, section 26.45](#).

Based on the results of a DBE Availability Study conducted in 2017 by Keen Independent Research (also provided to FHWA), ADOT is proposing a 9.55% DBE goal for FFYs 2018–2020 FHWA-funded contracts; 4.55% of which is projected to be accomplished through race- and gender-conscious means (DBE contract goals) and 5.00% which is expected to be accomplished through race-neutral means (ADOT outreach, training and program efforts). ADOT will seek additional public input on the final proposed goal during May and June 2017.

Step 1. Determining a Base Figure – Pursuant to 49 CFR Section 26.45(c)

ADOT began the process of determining its overall DBE goal by establishing a base figure. Consistent with USDOT regulations and guidance, ADOT established the base figure from a DBE availability analysis conducted by Keen Independent Research (Keen Independent) as part of the 2017 Availability Study. Keen Independent also prepared the 2014 Availability Study and the 2015 Disparity Study for ADOT.

The availability analysis determined the percentage of ADOT FHWA-funded contracts from July 2014 through June 2016 that might go to current or potential DBEs (defined on page 3) if they had the same chance of winning that work as any other available firm, after accounting for the type, size and location of those prime contracts and subcontracts.

July 2014 through June 2016 represents the two most recent complete state fiscal years at the time of the 2017 Availability Study. There were 592 ADOT- and local agency-awarded contracts and 3,970 associated subcontracts that were FHWA-funded during this time period. Contract dollars totaled approximately \$1,042,000,000.¹ Keen Independent examined availability for each prime contract and subcontract, and then dollar-weighted those results to determine overall percentage of contract dollars that might be expected to go to DBEs during that time period.

Except for one large project, discussed separately below, the types, sizes and locations of FHWA-funded contracts and subcontracts from July 2014 through June 2016 were similar to the work anticipated for FHWA-funded contracts for FFY 2018 through FFY 2020. Therefore, an availability analysis for those two years of FHWA-funded contracts provides a reasonable projection of the percentage of FHWA-funded contract dollars that might go to available DBEs for FFY 2018 through FFY 2020.

¹ Excluding the South Mountain Freeway project, which was examined separately as explained starting on page 8.

Keen Independent examined options for a database of available firms (DBEs and non-DBEs) to use when examining availability for individual July 2014 through June 2016 prime contracts and subcontracts.

- Based on analysis of FHWA-funded contracts for July 2014 through June 2016, Keen Independent determined that Arizona should be selected as the relevant geographic market area for the availability study.

At least 88% of ADOT and local agency FHWA-funded contract dollars from July 2014 through June 2016 went to firms with locations in Arizona. (If more information were examined about local addresses for firms, this percentage might be higher.)

Therefore, the availability analysis examined firms with locations in Arizona. (The geographic market area for the availability analysis is identical to the 2014 and 2015 studies.)

- Keen Independent also examined the types of work involved in FHWA-funded contracts from July 2014 through July 2016. There were 37 types of work that accounted for 97% of FHWA-funded contract dollars. The availability analysis focuses on firms performing these 37 types of work, the same as included in the 2015 Disparity Study.

In the 2014 Availability Study and the 2015 Disparity Study, Keen Independent conducted a comprehensive survey of firms that performed one or more of those 37 types of work that had Arizona locations. Because the availability survey was conducted fairly recently, the relevant geographic market area is the same and types of work involved are the same, it is appropriate to use the 2015 Disparity Study availability database when conducting the 2017 Availability Study.

Keen Independent updated the information about current DBE certification in the 2015 availability database. DBE status of firms in the database that became DBE-certified since 2015 was updated, as was the status of firms that grew too large to be certified or were de-certified.

Head Count Availability

Availability is expressed as the percentage of the associated contracting dollars that one might expect DBEs to receive based on various factors including the type of work involved, the location of the work and the size of the contract or subcontract. In the base figure analysis, firms considered as DBEs were those businesses that were DBE-certified or appeared that they could be DBE-certified based on revenue criteria described in federal regulations including 49 CFR Section 26.65.

Figure 1 presents the number of businesses included in the availability database for each racial, ethnic and gender group. The Disparity Study identified 1,429 businesses reporting that they were available for specific types, sizes and locations of ADOT and local agency transportation-related prime contracts and subcontracts. Of those businesses 500 (about 35%) were minority- or women-owned firms (MBE/WBEs).

Figure 1. Availability “Head Count” of Businesses Included in Availability Study

Race/ethnicity and gender	Number of firms	Percent of firms
African American-owned	26	1.8 %
Asian-Pacific American-owned	19	1.3
Subcontinent Asian American-owned	18	1.3
Hispanic American-owned	189	13.2
Native American-owned	37	2.6
Total MBE	289	20.2 %
WBE (white women-owned)	211	14.8
Total MBE/WBE	500	35.0 %
Total majority-owned firms	929	65.0
Total firms	1,429	100.0 %

Note: Numbers rounded to nearest tenth of 1%.

Source: Keen Independent 2015 DBE Availability and Disparity Study.

Keen Independent included potential DBEs in the availability calculations for FHWA-funded contracts as well as current DBEs. All minority- and women-owned firms that were not DBE-certified were counted as potential DBEs except for the following three groups:

- Firms that in recent years graduated from the DBE Program or had applied for DBE certification in Arizona and had been denied (based on information supplied by ADOT);
- Businesses in the availability interviews reported having average annual revenue over three years that exceeded the revenue limits for DBE certification for their subindustry; and
- MBE/WBEs that upon telephone and email follow-up by ADOT in 2015 indicated that they would not qualify for DBE certification or were not interested in certification.

The balance of the availability discussion includes both current and potential DBEs in the results for DBE availability.

Dollar-Weighted Availability

The “head count” data were further analyzed to produce “dollar-weighted” availability estimates, which represent the percentage of ADOT transportation contracting dollars that DBEs might be expected to receive based on their availability for specific types, sizes and locations of ADOT FHWA-funded prime contracts and subcontracts. This approach to calculating availability was a bottom-up, contract-by-contract process of “matching” available firms to specific prime contracts and subcontracts based on the types, sizes and locations of work they do. In other words, Keen Independent performed an availability analysis for each of the 4,562 FHWA-funded prime contracts and subcontracts during the study period, and then summarized results.

This approach to availability is much more precise than a simple “head count” of businesses because it considers the following factors:

1. Type of Work. USDOT suggests calculating availability based on businesses’ abilities to perform specific types of work and gives the following example in Part II F of “Tips for Goal-Setting in the Disadvantaged Business Enterprise (DBE) Program”:

For instance, if 90% of your contract dollars will be spent on heavy construction and 10% on trucking, you should weight your calculation of the relative availability of firms by the same percentages.²

The type of work was taken into account by examining 37 different sub-industries related to transportation construction and engineering as part of estimating availability for ADOT and local agency work.³

2. Qualifications and Interest in Transportation-Related Prime Contract and Subcontract Work. Information was collected on whether businesses are qualified and interested in working as prime contractors, subcontractors, or both on ADOT and local agency transportation work, in addition to the consideration of several other factors related to prime contracts and subcontracts (e.g., contract types, sizes and locations):

- Only businesses that reported being qualified for and interested in working as prime contractors were counted as available for prime contracts.
- Only businesses that reported being qualified for and interested in working as subcontractors were counted as available for subcontracts.
- Businesses that reported being qualified for and interested in working as both prime contractors and subcontractors were counted as available for both prime contracts and subcontracts.

3. Size of Prime Contracts and Subcontracts. Also considered was the size, in terms of dollar value, of the prime contracts and subcontracts that a business bid on or received in the seven years prior to the survey (i.e., “bid capacity”) when determining whether to count that business as available for a specific prime contract or subcontract.

This approach is consistent with many recent court decisions that have found relative capacity measures to be important to measuring availability (e.g., *Associated General Contractors of America, San Diego Chapter, Inc. v. California Department of Transportation, et al.*;⁴ *Western States Paving Company v. Washington State DOT*;⁵ *Rothe Development Corp. v. U.S. Department of Defense*;⁶ and *Engineering Contractors Association of S. Fla. Inc. vs. Metro Dade County*⁷).

² USDOT. *Tips for Goal-Setting in the Federal Disadvantaged Enterprise (DBE) Program as updated June 25, 2013*

<http://www.dot.gov/osdbu/disadvantaged-business-enterprise/tips-goal-setting-disadvantaged-business-enterprise>.

³ *The sub-industries considered included: general road construction and widening; asphalt paving; pavement surface treatment; design engineering; bridge work; guardrail, signs or fencing; trucking and hauling; steel work; structural concrete work; concrete flatwork; temporary traffic control; electrical work including lighting and signals; landscaping and related work; excavation, grading and drainage; Portland cement concrete paving; drilling and foundations; soils and materials testing; concrete cutting; surveying and mapping; underground utilities; striping or pavement marking; milling; transportation planning; environmental consulting; construction management; erosion control; painting for road or bridge projects; wrecking and demolition; concrete pumping; asphalt, concrete or other paving materials; petroleum; and fence, guardrail materials.*

⁴ *Associated General Contractors of America, San Diego Chapter, Inc. v. California Department of Transportation, et al.*, 713 F. 3d 1187, 2013 WL 1607239 (9th Cir. April 16, 2013).

⁵ *Western States Paving Co. v. Washington State DOT*, 407 F.3d 983 (9th Cir. 2005), cert. denied, 546 U.S. 1170 (2006).

⁶ *Rothe Development Corp. v. U.S. Department of Defense*, 545 F.3d 1023 (Fed. Cir. 2008).

⁷ *Engineering Contractors Association of S. Fla. Inc. vs. Metro Dade County*, 943 F. Supp. 1546 (S.D. Fla. 1996).

4. Geographic Location of the Work. This was determined by using the location where work was performed for ADOT and local agency contracts (Northern, Central or Southern Arizona). Only firms reporting that they were able to work in a region were counted as available for contracts in that region.
5. Dollar-Weighted Results. Relative availability was determined on a contract-by-contract basis and then dollar-weighted to determine overall DBE availability for FHWA-funded contracts. For each prime contract and subcontract, Keen Independent calculated (a) the number of DBEs available for that type, size and location of work, (b) the total number of firms available for that work, and (c) the percentage DBE availability for that prime contract or subcontract, calculated by dividing (a) by (b). The factor used to dollar-weight the availability results for each of the 4,562 prime contracts and subcontracts was calculated by dividing the dollars for that prime contract/subcontract by \$1,042,000,000 (the total FHWA-funded contract dollars examined). Small prime contracts or subcontracts received small weights and the largest contracts received the highest weights. For example, availability results for a \$10 million prime contract would receive a weight of 1% ($\$10,000,000 \div \$1,042,000,000 = 1.0\%$). Thus, the results of relatively large contract elements contributed more to overall availability estimates than those of relatively small contract elements. Once weighted, the DBE availability percentage results for each prime contract and subcontract were added to develop the overall availability figure. This approach is consistent with USDOT's "Tips for Goal-Setting in the Disadvantaged Business Enterprise (DBE) Program," which suggests a dollar-weighted approach to calculating availability.

Figure 2 below provides an example of the contract-by-contract dollar-weighted availability calculation that was conducted on each prime and subcontract during the study period.

Figure 2. Example of an Availability Calculation

One of the subcontracts examined was for electrical work (\$39,400) on a 2015 FHWA-funded contract for ADOT in Southern Arizona. To determine the number of DBEs and other firms available for that subcontract, Keen Independent identified businesses in the availability database that:

- a. Were in business in 2015;
- b. Indicated that they performed electrical work on transportation-related projects;
- c. Reported working or bidding on subcontracts in Arizona;
- d. Reported bidding on work of similar or greater size;
- e. Reported ability to perform work in Southern Arizona; and
- f. Reported qualifications and interest in working as a subcontractor on ADOT transportation projects.

There were 160 businesses in the availability database that met those criteria. Of those businesses, 21 were current or potential DBEs. Therefore, DBE availability for the subcontract was 13% (i.e., $21/160 = 13\%$).

The weight applied to this contract was $\$39,400 \div \$1,042,000,000 = 0.0038\%$. (Weights are applied by multiplying the availability result for a prime contract or subcontract by the weight, and then adding results for all prime contracts and subcontracts.)

Source: Keen Independent Availability Analysis from 2017 Availability Study

Additional Explanation of Process to Calculate Dollar-Weighted Availability

In addition to the explanation of the availability process in the 2017 Availability Study (see Chapter 3 and Appendix C), below is a more detailed description of the dollar-weighting process used by Keen Independent to determine overall availability of DBEs for ADOT contracts.

Steps to Dollar-Weighting and Combining Availability Results for Individual Prime Contracts and Subcontracts. Figure 3 on the following page shows availability calculations and dollar weighting for four examples of prime contracts and subcontracts and then the totals when all 4,562 FHWA-funded prime contracts and subcontracts are considered.

Availability for an Individual Prime Contract or Subcontract – Columns A-J. Most of Figure 3 shows how availability for an individual prime contract or subcontract is calculated:

- Columns A through G present basic information about the prime contract or subcontract.
- Based on these characteristics, Keen Independent identified the firms in the availability database that met the criteria to be available for that prime contract or subcontract (see Chapter 3 of the 2017 Availability Study). Column I presents the total number of firms available for the contract or subcontract, and Column H shows the number of those firms that were current or potential DBEs.
- Percentage availability for that contract is shown in Column J (Column H divided by Column I). For example, in the first record there were nine firms that met the availability criteria in the database and none were DBEs (it was a large road construction prime contract). This means that DBE availability was 0% for that contract. For Record 2, relative DBE availability was 12 DBEs divided by 64 total firms available for a value of 18.8% ($12 \div 64 = 18.8\%$).
- Figure 3 provides examples of individual contracts and subcontracts in Record 1 through Record 4. Individual results for Records 5 through 4,562 are not shown, but Keen Independent provides a summary line for those other prime contracts and subcontracts. Dollar values for the records not shown sum to \$1,006,298,791.

Chapter 3 in the 2017 Availability Study provides much more information about this process.

Dollar Weighting – Columns K-L. The final two columns in Figure 3 (K and L) show the dollar-weighting process. Column K in Figure 3 provides the weight applied to the availability results for the individual contract.

- The weight for each prime contract or subcontract is calculated by dividing its value (Column G) by the total dollars for all of the contracts (the sum of Column G, or about \$1 billion for these FHWA-funded contracts).
- For example, the dollar weight for the \$35 million prime contract in Record 1 is close to 3% because it represents about 3% of the total dollars of FHWA-funded contracts in the study (\$35 million divided by \$1.0 billion is about 3%). The actual weight is 3.38822%, as shown in Column K.
- As another example (Record 2), the dollar weight for a \$12,584 subcontract in Northern Arizona is 0.0121% (\$12,584 divided by \$1,041,976,561). In other words, the value of this contract is about one-hundredth of 1% of the total contract dollars.

Figure 3. Additional Explanation of Process to Calculate Dollar-Weighted Availability in 2017 ADOT Availability Study

A Record	B Prime/ Subcontract	C Type of work	D ADOT/LPA	E Region	F Year	G Value	H Available DBEs and potential DBEs	I Total firms available	J % DBE availability	K Amount as % of total dollars	L Dollar-weighted DBE availability
1	Prime	General road construction and widening	ADOT	Central	2015	\$ 35,304,617	0	9	0.0%	3.38822%	0.00000%
2	Sub	Concrete pumping	ADOT	Northern	2015	\$ 12,584	12	64	18.8%	0.00121%	0.00023%
3	Sub	Electrical work	ADOT	Southern	2016	\$ 18,337	21	160	13.1%	0.00176%	0.00023%
4	Prime	Design engineering	LPA	Central	2014	\$ 342,232	14	115	12.2%	0.03284%	0.00400%
5 to 4,562	All other prime and subcontracts					Sums to	\$ 1,006,298,791			Sums to 96.57596%	Sums to 9.24986%
	Total						\$ 1,041,976,561			100.00000%	9.25432%

Source: Keen Independent Research 2017 ADOT Availability Study

Once the dollar weight is calculated, Keen Independent multiplied the availability results for each prime contract or subcontract (Column J) by the weight (Column K). Column L shows the resulting value.

- For example, the dollar-weighted availability for the \$35 million prime contract in Record 1 is 0% (Column L) because DBE availability for this contract was 0% (Column J).
- For the \$12,584 subcontract in Northern Arizona shown in Record 2, dollar-weighted availability is 0.00023%. It is calculated by multiplying the 18.8% DBE availability for this contract by 0.00121%.
- Even though small subcontracts individually do not receive much weight in the overall availability calculations, there were many of them, which made them collectively important to the overall availability calculation.

Summing the Dollar-weighted Availability. Keen Independent performed these calculations for 4,562 FHWA-funded prime contracts and subcontracts for the study period. (Imagine 4,558 more rows to the table in addition to the four contract examples shown.) Column G summed to the total FHWA-funded contract dollars (about \$1,042,000,000) and Column K summed to 100%. When Keen Independent summed the results for Column L, overall dollar-weighted DBE availability for FHWA-funded contracts was 9.25%.

Keen Independent used the approach described above to estimate the availability of current and potential DBEs for FHWA-funded prime contracts and subcontracts that ADOT and local agencies awarded during the study period. Figure 4 below compares overall dollar-weighted availability estimates for those contracts (right-hand column) with the same analysis for FHWA-funded contracts in the 2015 Disparity Study. DBE availability for FHWA-funded contracts was 9.25% in the 2017 Availability Study, which is slightly higher than reported in the 2015 Disparity Study because of updated information on certification status of companies and a slightly different mix of contracts and subcontracts from July 2014 through June 2016.

Figure 4. Comparison of Overall Dollar-weighted Availability Estimates for DBEs for ADOT FHWA-funded Contracts, July 2014–June 2016

	2015 Disparity Study	2017 Availability Study
FHWA	8.90 %	9.25 %

Note: Results for FHWA-funded contracts include potential DBEs

Source: Keen Independent 2017 ADOT Availability Study

Calculation of Final Base Figure for ADOT’s Overall DBE Goal

Consideration of South Mountain Freeway in the Base Figure for FHWA-funded Contracts. The South Mountain Freeway is a unique project unlike other contracts examined in the July 2014 through June 2016 time frame. As discussed in Chapter 2 of the 2017 Availability Study, one-quarter of total ADOT FHWA-funded contract dollars expended in state fiscal years 2018, 2019 and 2020 will be associated with this project. Combining the goals for the design and construction portions of the project, there is an 11.85% DBE contract goal for the South Mountain Freeway. ADOT’s DBE goal for this contract is the best estimate of future DBE participation on the contract.

For these reasons, Keen Independent separately examined DBE availability for this project based on the combined design and construction DBE contract goal established for this contract.

Analysis of the base figure for FHWA-funded contracts weights the results of the availability analysis for FHWA-funded contracts (9.25%) and the DBE contract goal for the project (11.85%). The calculation is as follows:

- Three quarters of the base figure for FHWA-funded contracts is based on the 9.25% DBE availability result from the analyses of July 2014 through June 2016 FHWA-funded contracts not including South Mountain Freeway.
- One quarter of the base figure for FHWA-funded contracts is based on the 11.85% DBE contract goal for the South Mountain Freeway project.
- The combined base figure for FHWA-funded contracts is $(0.75 * 9.25\%) + (0.25 * 11.85\%) = 9.90\%$.

Final Step 1 Determination Based on Required Factors

In summary, after considering the impact of the South Mountain Freeway project on the mix of FHWA-funded contracts for FFY 2018 through FFY 2020, ADOT chose to consider 9.90% as its base figure.

Step 2. Determining if an Adjustment is Needed – 49 CFR Section 26.45(d)

After establishing the base figure, ADOT considered information from the 2017 Availability Study and the 2015 Disparity Study to determine whether any step 2 adjustment was needed to the base figure to determine the overall DBE goal. In considering an adjustment to the base figure, ADOT evaluated factors that the Federal DBE Program indicates that an agency must consider when assessing whether to make any Step 2 adjustment to the base figure. These factors include:

- Current capacity of DBEs to perform work, as measured by the volume of work DBEs have performed in recent years;
- Information related to employment, self-employment, education, training and unions;
- Any disparities in the ability of DBEs to get financing, bonding and insurance; and
- Other relevant factors.⁸

Keen Independent completed an analysis of each of the above step 2 factors in the 2017 Availability Study and the 2015 Disparity Study, and was able to quantify the effect of certain factors on the base figure. Other information examined was not as easily quantifiable but was still relevant in ADOT's determination of whether to make any step 2 adjustments.

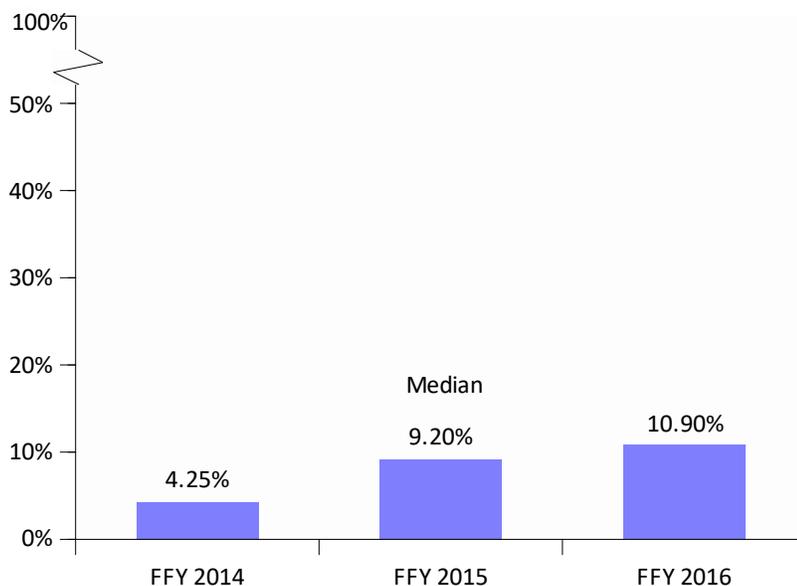
1. Current Capacity of DBEs to Perform Work, as Measured by the Volume of Work DBEs have Performed in Recent Years

USDOT's "Tips for Goal-Setting" suggests that agencies should examine data on past DBE participation on their USDOT-funded contracts in recent years (i.e., the percentage of contract dollars going to DBEs). At the time of the 2017 Availability Study, the most recent full federal fiscal year for which ADOT had reported data was FFY 2016 (ending September 2016).

⁸ 49 CFR Section 26.45.

DBE Participation Based on ADOT Uniform Reports to FHWA. Figure 5 presents information about past DBE participation based on payments from ADOT Uniform Reports of DBE Awards or Commitments and Payments reported to the FHWA. Participation is shown for FFYs 2014, 2015 and 2016, the three most recent complete federal fiscal years at the time of the Availability Study. Median-year DBE participation was 9.20%.

Figure 5. Past DBE Participation on FHWA-funded Contracts based on Payments, FFYs 2014, 2015 and 2016



Source: ADOT Uniform Reports of DBE Awards/Commitments and Payments. Payments for FFY 2015–FFY 2016 are from ongoing projects; payments from FFY 2014 are from completed projects as data were not available for ongoing projects.

Based on the payments data in Figure 5, ADOT could make a downward step 2 adjustment based on this factor, as explained later in this document. (For purposes of examining current capacity of DBEs, results based on payments for this three-year period may be more informative than commitments and awards, which showed somewhat lower DBE participation.)

2. Information Related to Employment, Self-Employment, Education, Training and Unions

The 2015 Disparity Study report summarizes information about conditions in the Arizona transportation contracting industry for minorities, women and minority- and women-owned firms. Detailed quantitative analyses of marketplace conditions in Arizona are presented in Appendices E through H of that report. Keen Independent’s analyses in the 2015 Disparity Study indicated that there are barriers that certain minority groups and women face related to entry and advancement and business ownership in the Arizona construction and engineering industries. Such barriers may affect the availability of MBE/WBEs to obtain and perform ADOT and local agency transportation contracts.

It may not be possible to quantify the cumulative effect that barriers in employment, education and training may have had in depressing the availability of minority- and women-owned firms in the Arizona transportation contracting industry. However, the effects of barriers in business ownership can be quantified, as explained below.

In the 2015 Disparity Study, the study team used regression analyses to investigate whether race, ethnicity and gender affected rates of business ownership among workers in the Arizona construction and engineering industries. The regression analyses allowed the study team to examine those effects while statistically

controlling for various personal characteristics including education and age (Appendix F of the 2015 Disparity Study provides detailed results of the business ownership regression analyses).⁹ Those analyses revealed that African Americans, Native Americans and white women working in construction were less likely than non-minorities and white men to own construction businesses, even after accounting for various gender-neutral personal characteristics. Each of these disparities was statistically significant.

Keen Independent analyzed the impact that barriers in business ownership would have on the base figure if African Americans, Native Americans and white women owned businesses at the same rate as similarly-situated non-minorities and white men. This type of inquiry is sometimes referred to as a “but for” analysis because it estimates the availability of MBE/WBEs but for the effects of race- and gender-based discrimination.

Figure 6 calculates the impact on overall MBE/WBE availability in the 2017 Availability Study if the groups showing disparities in business ownership rates owned companies at the same rate as similarly situated non-minorities and men. The availability of MBE/WBEs would be 3.51 percentage points higher (shown in the bottom right-hand corner of the figure). The analysis included the same contracts that the study team analyzed to determine the base figure (i.e., FHWA-funded construction and engineering prime contracts and subcontracts that ADOT and local agencies awarded from July 2014 through June 2016). Calculations are explained below.

Figure 6. Potential Step 2 Adjustment Considering Disparities in the Rates of Business Ownership

Subindustry and group	a. Current availability	b. Disparity index for business ownership	c. Availability after initial adjustment*	d. Availability after scaling to 100%	e. Components of overall MBE/WBE availability**
Construction					
African American	1.21 %	77	1.57 %	1.49 %	
Native American	1.95	33	5.91	5.61	
Other minorities	8.21	n/a	8.21	7.79	
White women	<u>5.34</u>	84	<u>6.36</u>	<u>6.04</u>	
MBE/WBEs	16.71 %	n/a	22.05 %	20.93 %	18.21 %
Majority-owned businesses	<u>83.29</u>	n/a	<u>83.29</u>	<u>79.07</u>	
Total firms	100.00 %	n/a	105.34 %	100.00 %	
Engineering and other subindustries					
MBE/WBEs	22.03 %	n/a	22.03 %	22.03 %	2.86 %
Majority-owned businesses	<u>77.97</u>	n/a	<u>77.97</u>	<u>77.97</u>	
Total firms	100.00 %	n/a	100.00 %	100.00 %	
Total for MBE/WBEs	17.56 %	n/a	n/a		21.07 %
Difference from current availability					3.51 %

Note: Numbers may not add to 100.00% due to rounding.

* Initial adjustment is calculated as current availability divided by the disparity index for business ownership.

** Components of the base figure were calculated as the value after adjustment and scaling to 100%, multiplied by the percentage of total FHWA-funded contract dollars in each industry (construction = 87%, engineering = 13%).

Source: Keen Independent based on FHWA-funded contracts for July 2014 through June 2016, 2017 availability analysis, and statistical analysis of U.S. Census Bureau American Community Survey data for Arizona for 2008-2012 as reported in the 2015 Disparity Study.

⁹ The study team examined U.S. Census data on business ownership rates using methods similar to analyses examined in court cases involving state departments of transportation in California, Illinois, and Minnesota.

The study team completed these “but for” analyses separately for construction and engineering contracts and then weighted the results based on the proportion of FHWA-funded contract dollars that ADOT awarded for construction and engineering for June 2014–June 2016 (i.e., an 87% weight for construction and 13% weight for engineering). The rows and columns of Figure 6 present the following information from Keen Independent’s “but for” analyses (see 2017 Availability Study).

1. **Current Availability.** Column (a) presents the current availability of MBE/WBEs by group for construction and for engineering and other subindustries. Each row presents the percentage availability for MBEs and WBEs. The current combined availability of MBE/WBEs for ADOT FHWA-funded transportation contracts for July 2014–June 2016 is 17.56%, as shown in the bottom row of column (a). This includes DBEs, potential DBEs and minority- and women-owned firms not counted as current or potential DBEs.
2. **Disparity Indices for Business Ownership.** As presented in Appendix F of the 2015 Disparity Study, African Americans, Native Americans and white women were significantly less likely to own construction firms than similarly-situated non-minorities and white men.

Keen Independent calculated simulated business ownership rates if those groups owned businesses at the same rate as non-minorities and white males who share similar personal characteristics. The study team then calculated a business ownership disparity index for each group by dividing the observed business ownership rate by the benchmark business ownership rate and then multiplying the result by 100.

Column (b) of Figure 6 presents disparity indices related to business ownership for the different racial/ethnic and gender groups. For example, as shown in column (b), white women own construction businesses at 84% of the rate that would be expected based on the simulated business ownership rates of white males who share similar personal characteristics. Appendix F explains how the study team calculated the disparity indices.

3. **Availability after Initial Adjustment.** Column (c) presents availability estimates for MBEs and WBEs by industry after initially adjusting for statistically significant disparities in business ownership rates. The study team calculated those estimates by dividing the current availability in column (a) by the disparity index for business ownership in column (b) and then multiplying by 100.
4. **Availability after Scaling to 100%.** Column (d) shows adjusted availability estimates that were re-scaled so that the sum of the availability estimates equals 100% for each industry. The study team re-scaled the adjusted availability estimates by taking each group’s adjusted availability estimate in column (c) and dividing it by the sum of availability estimates shown under “Total firms” in column (c) - and multiplying by 100. For example, the re-scaled availability estimate for white women shown for construction was calculated in the following way: $(6.36\% \div 105.34\%) \times 100 = 6.04\%$.
5. **Components of Overall DBE Goal with Upward Adjustment.** Column (e) of Figure 6 shows the component of the total base figure attributed to the adjusted MBE and WBE availability for construction versus engineering and other sub-industries. The study team calculated each component by taking the total availability estimate shown in column (d) for construction and for engineering/other — and multiplying it by the proportion of total FHWA-funded contract dollars in each industry (i.e., 87% for construction and 13% for engineering). For example, the study team used the 20.93% shown for MBE/WBE availability for construction firms in column (d) and multiplied it by 87% for a result of 18.21%. A similar weighting of MBE/WBE availability for engineering/other produced a value of 2.86%.

The values in column (e) were then summed to equal the overall base figure adjusted for barriers in business ownership, which is 21.07% as shown in the bottom of column (e).

Finally, Keen Independent calculated the difference between the “but for” MBE/WBE availability (21.07%) and the current availability (17.56%) to calculate the potential upward adjustment. This difference, and potential upward adjustment, is 3.51 percentage points (21.07% - 17.56% = 3.51%).

Therefore, based on information related to business ownership, ADOT could consider an upward adjustment to its overall DBE goal of up to 3.51 percentage points. The overall DBE goal would be 13.41% as the 3.51 percentage point adjustment would be from a base figure of 9.90% calculated after subtracting availability for MBE/WBEs that are not potential DBEs and adding white male-owned DBEs (9.90% + 3.51% = 13.41%).

3. Any Disparities in the Ability of DBEs to Secure Financing, Bonding and Insurance.

Analysis of access to financing and bonding in the 2015 Disparity Study revealed quantitative and qualitative evidence of disadvantages for minorities, women and MBE/WBEs.

- Any barriers to obtaining financing and bonding might affect opportunities for minorities and women to successfully form and operate construction and engineering businesses in the Arizona marketplace.
- Any barriers that MBEs/WBEs face in obtaining financing and bonding would also place those businesses at a disadvantage in obtaining ADOT and local agency construction and engineering prime contracts and subcontracts.

Note that financing and bonding are closely linked, as discussed in Chapter 4 and Appendix J of the 2015 Disparity Study.

There was also evidence in the 2015 Disparity Study that some firms cannot bid on certain public sector projects because they cannot afford the levels of insurance required by the agency. This barrier appeared to affect small businesses, which might disproportionately impact minority- and women-owned firms.

The information about financing, bonding and insurance in the 2015 Disparity Study supports an upward step 2 adjustment in ADOT’s overall annual goal for DBE participation in FHWA-funded contracts.

4. Other Factors

The Federal DBE Program suggests that federal aid recipients also examine “other factors” when determining whether to make any step 2 adjustments to their base figure.¹⁰

Success in the Arizona marketplace. Among the “other factors” examined in this study was the information in the 2015 Disparity Study about the comparative success of MBE/WBEs and majority-owned businesses in the Arizona marketplace. There was quantitative evidence that certain groups of MBE/WBEs were less successful than majority-owned firms, and faced greater barriers in the marketplace, even after considering neutral factors. There was also qualitative evidence of barriers to the success of minority- and women-owned businesses. Some of this qualitative information suggested that discrimination on the basis of race, ethnicity and gender affected minority- and women-owned firms in the Arizona transportation contracting industry.

¹⁰ 49 CFR Section 26.45.

Approaches for Making Step 2 Adjustments.

Quantification is discussed below.

1. Current Capacity of DBEs to Perform Work, as Measured by the Volume of Work DBEs have Performed in Recent Years. Analysis of this factor might indicate a downward step 2 adjustment based on past DBE participation. The median DBE participation for FHWA-funded contracts for FFY 2014, FFY 2015 and FFY 2016 (based on payments) was 9.20%.

USDOT “Tips for Goal-Setting” suggests taking one-half of the difference between the base figure and evidence of current capacity as one approach to calculate the step 2 adjustment for that factor. The difference between the 9.90% base figure and the 9.20% median past participation is 0.70 percentage points, so one-half of that difference is 0.35 percentage points. Subtracting 0.35 from 9.90% produces an overall DBE goal of 9.55%.

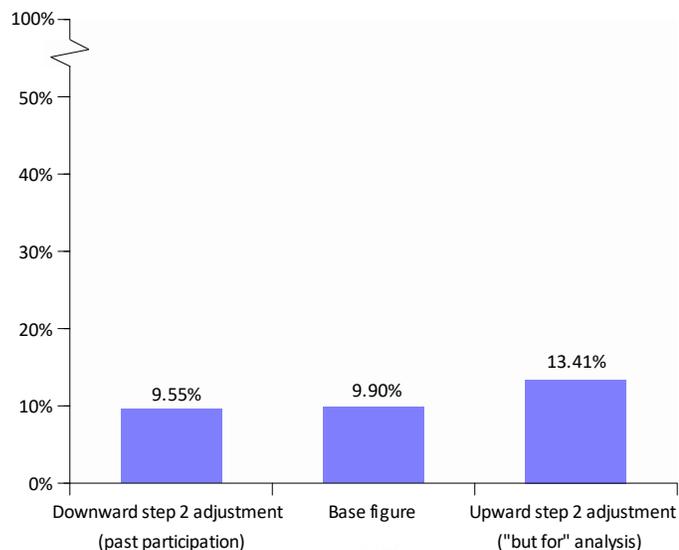
2. Information Related to Employment, Self-Employment, Education, Training and Unions. The 2015 Disparity Study was not able to quantify all of the information regarding barriers to entry for MBE/WBEs. The one factor for which the impact could be quantified was business ownership rates. Disparities in business ownership rates indicate an upward step 2 adjustment of up to 3.51 percentage points to reflect the “but-for” analyses of business ownership rates presented in Figure 6. If ADOT made this adjustment, the overall DBE goal for FHWA-funded contracts would be 13.41% ($9.90\% + 3.51\% = 13.41\%$).

3. Any Disparities in the Ability of DBEs to Secure Financing, Bonding and Insurance. Analysis of financing, bonding and insurance indicates that an upward adjustment is appropriate. However, impact of these factors on availability could not be quantified in the 2015 Disparity Study.

4. Other Factors. Impact of the barriers to success of MBE/WBEs in Arizona could not be quantified in the 2015 Disparity Study. However, evidence supports an upward adjustment.

Figure 7 illustrates the potential downward and upward step 2 adjustments based on the above information.

Figure 7. Potential Step 2 Adjustments to Overall DBE Goal for FHWA-Funded Contracts



Step 2 Adjustment Resulting in Proposed DBE Goal

ADOT considered the available information and has decided to make a downward adjustment of 0.35% to its base-figure (9.90%) to select 9.55% as its final overall DBE goal for FFY 2018–FFY 2020 for FHWA-funded contracts (9.90% - 0.35% = 9.55%).

ADOT chose to make a downward adjustment for a number of reasons including:

- The 9.55% goal best reflects the current capacity of certified DBEs to perform work.
- The 9.55% goal represents an achievable increase over ADOT’s current 8.90% DBE goal.
- The total volume of work for DBEs will be substantial for FFY 2018 through FFY 2020 considering the South Mountain Freeway project.
- Only in recent years has ADOT been able to meet the overall DBE goal, even when the goal was considerably lower.
- Achievement of this 9.55% goal is contingent upon potential DBEs obtaining certification, which could take several years to achieve assuming that these firms are willing to become certified and can meet the “DBE Certification” requirements.
- ADOT did not choose to make an upward adjustment of 13.41% as it is considerably higher than the current capacity of existing and potential newly-certified DBEs to perform work on ADOT FHWA-funded contracts and would be difficult to achieve based on the reasons stated above.

Race-/Gender-Neutral and Race/Gender-Conscious Split – 49 CFR Section 26.51 (c)

In accordance with federal regulations and USDOT guidance, ADOT proposes to meet the maximum feasible portion of its proposed 9.55% overall DBE goal by using race- and gender-neutral measures. As part of the current 2017 Availability Study, Keen Independent analyzed a number of factors related to ADOT’s race- and gender-neutral DBE program component based on 49 CFR Part 26, including:

- Is there evidence of discrimination within the local transportation contracting marketplace for any racial, ethnic or gender groups?
- What has been the agency’s past experience in meeting its overall DBE goal?
- What has DBE participation been when the agency did not use race- or gender-conscious measures?¹¹
- What is the extent and effectiveness of race- and gender-neutral measures that the agency could have in place for the next fiscal year?

¹¹ USDOT guidance suggests evaluating (a) certain DBE participation as prime contractors if the DBE contract goals did not affect utilization, (b) DBE participation as prime contractors and subcontractors for agency contracts without DBE goals, and (c) overall utilization for other state, local or private contracting where contract goals are not used.

1. Is There Evidence of Discrimination within the Local Transportation Contracting Marketplace for any Racial, Ethnic or Gender Groups?

The 2015 Availability Study considered conditions in the local marketplace to address this question. Quantitative and qualitative information is summarized below.

Marketplace Conditions. The 2015 Disparity Study examined conditions in the Arizona marketplace, including:

- Entry and advancement;
- Business ownership;
- Access to capital, bonding and insurance; and
- Success of businesses.

There was quantitative evidence of disparities in outcomes for minority- and women-owned firms in general and for certain MBE/WBE groups concerning the above issues. Disparities for women and women-owned firms include:

- Low entry into construction and engineering jobs;
- Lower construction business formation rates (regression analysis controlling for neutral factors);
- Lower business loan approval rates;
- Higher rate of not applying for business loans due to fear of loan denial (regression analysis controlling for neutral factors);
- Lower mean loan values;
- Higher interest rates;
- More likely to report difficulty in obtaining lines of credit or loans;
- More likely to report difficulty obtaining bonding;
- More likely to report insurance requirements as a barrier;
- Relatively few firms awarded contracts or subcontracts of \$1 million or more (after controlling for subindustry); and
- Lower business earnings (regression analysis after controlling for neutral factors).

Qualitative information indicated some evidence that discrimination may have been a factor in these outcomes. (It is important to note that some minority and female business owners interviewed did not think they had been affected by race or gender discrimination.)

ADOT reviewed the information about marketplace conditions presented in the 2015 Disparity Study when considering the extent to which it can meet the overall DBE goal through neutral measures.

Disparity Analysis. The 2015 Disparity Study found that utilization of each racial/ethnic group of minority-owned businesses on ADOT FHWA- and state-funded contracts was substantially below what might be expected from the availability analysis. Based on further statistical analysis, Keen Independent could reject chance in the contracting process as an explanation for the disparities for MBEs.

For white women-owned firms, some of the analyses indicated disparities and some did not. The 2015 Disparity Study explores all of these results.

Summary. The combined information from the marketplace and the disparity analyses in the 2015 Disparity Study indicated evidence of discrimination against minorities and women, and minority- and women-owned firms, relevant to the Arizona transportation contracting industry.

2. What has been the Agency’s Past Experience in Meeting its Overall DBE Goal?

ADOT’s reported certified DBE participation for FFY 2014 through FFY 2016 is summarized in Figure 8. As shown, reported DBE participation based on DBE commitments/awards on FHWA-funded contracts has been below ADOT’s overall DBE goals for FFY 2014 through FFY 2016.

ADOT also reported participation based on payments to DBEs. These data show participation of slightly more than 4% in FFY 2014, about 9% in FFY 2015 and about 11% in FFY 2016.

Figure 8. ADOT Overall DBE Goal and Reported DBE Participation on FHWA-funded Contracts, FFY 2014 through FFY 2016

Federal fiscal year	DBE goal	DBE commitments/ awards	DBE payments	Difference from DBE goal	
				Awards	Payments
2014	7.76 %	5.46 %	4.25 %	-2.30 %	-3.51 %
2015	9.38	5.69	9.20	-3.69	-0.18
2016	8.90	6.63	10.90	-2.27	2.00

Source: ADOT Uniform Reports of DBE Awards/Commitments and Payments. Payments for 2015-2016 are from ongoing projects; payments from 2014 are from completed projects as data were not available for ongoing projects.

3. What has DBE Participation been when ADOT has not Applied DBE Contract Goals (or other Race-conscious Remedies)?

Keen Independent examined multiple sources of information to assess race-neutral DBE participation:

- DBE participation on FHWA-funded contracts in the most recent three years in which ADOT did not apply DBE contract goals (FFY 2008 through FFY 2010);
- ADOT-reported race-neutral DBE participation on FHWA-funded contracts for the most recent years (FFY 2014 through FFY 2016);
- Keen Independent estimates of DBE participation on FHWA- and state-funded contracts for which no DBE contract goals applied (from the 2015 Disparity Study); and
- Information concerning DBE participation as prime contractors (for FFY 2014 through FFY 2016).

The discussion in the following two pages examines these four sets of participation figures.

DBE Participation in Recent Years in which ADOT did not Apply DBE Contract Goals. ADOT did not apply race- or gender-conscious program elements from the beginning of 2006 until well into FFY 2011. For FFYs 2008, 2009 and 2010, the last three full fiscal years for which DBE contract goals were not applied, reported DBE utilization ranged from 1.21% to 2.08% based on DBE commitments/awards (median of 2.02%). ADOT reported DBE participation ranging from 0.87 to 4.30% for those fiscal years based on payments data (median of 4.19%), as reported in Figure 9.

Figure 9. DBE Participation on FHWA-funded Contracts for most Recent Three Years when DBE Contract Goals did not Apply (FFY 2008–FFY 2010)

Federal fiscal year	Commitments/awards	Payments
2008	1.21 %	4.19 %
2009	2.02	4.30
2010	2.08	0.87

Source: ADOT Uniform Reports of DBE Awards/Commitments and Payments.

Race-neutral DBE Participation in Recent ADOT Uniform Reports. Per USDOT instructions, ADOT counts as “neutral” participation any prime contracts going to DBEs as well as subcontracts to DBEs beyond what was needed to meet DBE contract goals set for a project or that were otherwise awarded in a race-neutral manner.

ADOT’s Uniform Reports of DBE Awards/Commitments and Payments submitted to FHWA for the three most recent federal fiscal years indicate race-neutral participation of:

- 2.32% in FFY 2014;
- 1.97% in FFY 2015; and
- 1.30% in FFY 2016.

Figure 10 presents these results.

Figure 10. Race-neutral and Race-conscious DBE Participation on FHWA-funded Contracts for FFY 2014, FFY 2015 and FFY 2016

Federal fiscal year	DBE commitments/awards		
	Total	Race-neutral	Race-conscious
2014	5.46 %	2.32 %	3.14 %
2015	5.69	1.97	3.72
2016	6.63	1.30	5.33

Source: ADOT Uniform Reports of DBE Awards/Commitments and Payments.

ADOT also prepared these analyses based on payments on completed projects (see Figure 11). ADOT reported race-neutral participation from a high of about 2% in FFY 2015 to a low of about 0.5% in FFY 2016.

Figure 11. Race-neutral and Race-conscious DBE Payments for Completed FHWA-funded Contracts for FFY 2014 through FFY 2016

Federal fiscal year	DBE payments on completed projects		
	Total	Race-neutral	Race-conscious
2014	4.25 %	1.85 %	2.40 %
2015	7.98	2.11	5.87
2016	9.48	0.49	8.99

Source: ADOT Uniform Reports of DBE Awards/Commitments and Payments.

DBE Participation on Contracts without DBE Contract Goals for July 2007 through June 2013. In the 2015 Disparity Study, Keen Independent also analyzed DBE participation on ADOT’s FHWA- and state-funded contracts without DBE contract goals. ADOT achieved 5.0% DBE participation on these contracts from July 2007 through June 2013.

DBE Participation as Prime Contractors. Focusing just on participation as prime contractors for FFY 2014 through FFY 2016, DBEs obtained 1% of prime contract dollars on FHWA -funded contracts based on Uniform Reports.

4. What is the Extent and Effectiveness of Race- and Gender-Neutral Measures That ADOT Currently has in Place and Will Put in Place for the Next Fiscal Year?

When determining the extent to which it could meet its overall DBE goal through the use of neutral measures, ADOT reviewed the race- and gender-neutral measures that it and other organizations currently have in place, and those it has planned or could consider for future implementation.

ADOT Initiatives. Keen Independent’s analysis of neutral remedies in the 2015 Disparity Study indicated that ADOT had implemented an extensive set of neutral measures. Activities since then include the following:

- ADOT had conducted substantial outreach to encourage eligible firms to become DBE certified. This is one way to increase reported DBE participation through neutral means, as some of these companies may already be doing business with ADOT. Certification will allow this participation to count toward ADOT’s overall DBE goal.
- ADOT substantially expanded its online information available to small businesses, including DBEs, through a ADOT Business Coach on Demand website.
- ADOT has a “Just One More” campaign to encourage prime contracts to use one more DBE than needed to meet a DBE contract goal.

In the 2015 Disparity Study, Keen Independent also examined other potential neutral measures. Research into expanded SBC programs, such as SBC contract goals and an SBC set-aside program, indicate that ADOT might not have the authority under state law to implement such measures.

Proposed Projection of the Portion of the Overall DBE Goal to be Achieved through Neutral Means

ADOT considered whether it can achieve 100% of its overall DBE goal through neutral means or whether race-conscious programs are needed. ADOT consider the information in the 2017 Availability Study, the 2015 Disparity Study and other sources when reaching its decision on any use of race- and gender-conscious programs (such as DBE contract goals).

- There is information in the 2015 Disparity Study indicating disparities in outcomes for minorities and women and some qualitative evidence of discrimination within the local transportation contracting marketplace, as summarized in Chapter 4 of that report.
- Median annual DBE participation for the last three full federal fiscal years in which ADOT operated a 100% neutral program was 2.02% based on awards/commitments and 4.19% based on payments. This level of participation is considerably below an overall DBE goal of 9.55%.
- The 2015 Disparity Study estimated 5.0% DBE utilization on FHWA- and state-funded contracts without DBE contract goals from July 2007 through June 2013. Therefore, the most recent data on participation without DBE contract goals suggests DBE participation well below a goal of 9.55%.
- ADOT has extensive neutral measures in place and there are many small business assistance programs offered by other institutions throughout the state. It is unlikely that ADOT could increase its neutral participation of DBEs to reach an overall DBE goal in the range of 9.55% solely through additional neutral measures.

For the following reasons, ADOT chose a race-neutral projection of 5 percentage points for its overall DBE goal for FFY 2018 through FFY 2020.

- Median DBE participation was 4.19% for the three most recent federal fiscal years in which ADOT operated a 100% neutral program.
- The race-neutral portion of ADOT's DBE participation was in the range of 0.5 to 3.1% based on ADOT's reports for FFY 2014 through FFY 2016.
- ADOT neutral initiatives are already considerable.
- The 2015 Disparity Study's analysis of DBE participation on ADOT FHWA- and state-funded contracts without DBE contract goals indicated 5.0% utilization of DBEs.

Although there are lower measures of neutral participation discussed above, the 5.0% DBE participation is the most accurate projection of DBE participation in FHWA-funded contracts if ADOT operated a solely neutral program. ADOT chooses 5.00% as its projection of neutral achievement for FFY 2018 through FFY 2020.

ADOT projects the remaining portion of the overall DBE goal, 4.55%, will be achieved through race-conscious means. ADOT will continue to employ DBE contract goals for certain FHWA-funded contracts (9.55% - 5.00% = 4.55%).

The second column of numbers in Figure 12 presents the race-neutral and race-conscious projections for FFY 2018 through FFY 2020. As shown, a 4.55 percentage point projection of DBE participation through race-conscious measures is similar to ADOT’s 3.90 percentage point race-conscious projection currently in place.

Figure 12. Current ADOT Overall DBE Goal and Race-Conscious and Neutral Projections for FHWA-funded Contracts for FFY 2018 through FFY 2020 and Proposed Revised Overall Goal and Projections

Component of overall DBE goal for FHWA	FFY 2015-FFY 2017	FFY 2018-FFY 2020
Overall goal	8.90 %	9.55 %
Neutral projection	5.00 %	5.00 %
Race-conscious projection	3.90 %	4.55 %

Public Participation – 49 CFR Section 26.45(g)

As it did with the 2014 Availability Study and 2015 Disparity Study, ADOT is publishing the proposed overall DBE goal and the draft 2017 Availability Study report for public comment before submitting these documents to FHWA. The public comment period for the report and proposed overall DBE goal will be open through June 22, 2017.

The public is encouraged to comment on the size of the proposed overall DBE goals, the methodology used to develop the goals, the results of the 2017 Availability Study, as well as suggestions on how to improve contracting opportunities for DBEs and other small businesses, including what ADOT and the industry can do to enhance support of the Federal DBE Program.

The public comment period runs from May 15 through June 22. As part of the comment period, ADOT will be holding public hearings on the following dates:

- June 13, 4 to 6 p.m. at Ellie Towne Community Center, 1660 W. Ruthrauff Rd. in Tucson.
- June 15, 4 to 6 p.m. at the ADOT Business Engagement and Compliance Office, 1801 W. Jefferson St. in Phoenix.

All documents related to the proposed goal and methodology and draft Availability Study will be available for review from May 15 through June 22 online at <https://www.azdot.gov/business/business-engagement-and-compliance>. The documents will also be available for review at the ADOT Business Engagement and Compliance Office, 1801 W. Jefferson St, Phoenix during normal business hours.

At any time during the public comment period, comments can also be provided in the following ways:

- Verbal testimony: At public meetings.
- At the BECO website <https://www.azdot.gov/business/business-engagement-and-compliance>.
- Email: info@keenindependent.com.
- By mail: ADOT Business Engagement and Compliance, 1801 W. Jefferson St, Phoenix, AZ 85007.
- Via fax: 602-712-8429.

All public comments received by June 22, 2017 will be reviewed before ADOT submits the final DBE goal request to FHWA.