

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM PROPOSED THREE-YEAR OVERALL GOAL & METHODOLOGY SUBMISSION TO FHWA FOR FEDERAL FISCAL YEARS 2021 THROUGH 2023 AUGUST 2020

Introduction

The Arizona Department of Transportation (ADOT) hereby submits its three-year overall Disadvantaged Business Enterprise (DBE) goal for federal fiscal years (FFYs) 2021 through 2023 to the Federal Highway Administration (FHWA) pursuant to [49 CFR Part 26, section 26.45](#).

Based on the results of a Disparity Study conducted in 2020 by Keen Independent Research (also provided to FHWA), ADOT proposes a 12.89% DBE goal for FFYs 2021 through 2023 for FHWA-funded contracts; 8.17 percentage points of which is projected to be accomplished through race- and gender-conscious means (DBE contract goals). ADOT projects that the remaining 4.72 percentage points will be accomplished through race-neutral means (ADOT outreach, training and program efforts).

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 2020 Disparity Study. Keen Independent also prepared the 2014 Availability Study, 2015 Disparity Study and 2017 Availability Study for ADOT. ADOT based its previous three-year goals for FHWA-funded contracts on these studies.

The availability analysis determined the percentage of ADOT FHWA-funded contracts from October 2013 through September 2018 that might go to current or potential DBEs (defined on page 2) 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. ADOT used a dollar-weighted approach to determine this overall availability estimate.

October 2013 through September 2018 were the five most recent completed federal fiscal years at the time of the 2020 Disparity Study. There were 1,537 ADOT- and local agency-awarded contracts and 10,372 associated subcontracts that were FHWA-funded during this time period. Contract dollars totaled about \$2.6 billion.¹

Except for one large project, discussed below, the types, sizes and locations of FHWA-funded contracts and subcontracts from October 2013 through September 2018 were similar to the work anticipated for FHWA-funded contracts for FFY 2021 through FFY 2023. Therefore, an availability analysis for those five fiscal 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 2021 through FFY 2023.

As presented in Chapter 5 of the Disparity Study report, one might expect current and potential DBEs to receive 16.15% of ADOT FHWA-funded transportation contract dollars based on analysis of FHWA-funded contracts from October 2013 through September 2018 (not including the South Mountain Freeway mega-project) and current availability of firms to perform that work.

This section explains how the relative availability of current and potential DBEs was calculated.

¹ Excluding the South Mountain Freeway project, which was examined separately as explained starting on page 6.

ADOT considered possible options for a database of available firms (DBEs and non-DBEs) to use when examining availability for individual October 2013 through September 2018 prime contracts and subcontracts.

- Based on analysis of FHWA-funded contracts for October 2013 through September 2018, Keen Independent determined that Arizona should be selected as the relevant geographic market area for the availability study.

At least 95% of ADOT and local agency FHWA-funded contract dollars from October 2013 through September 2018 went to firms with locations in Arizona.

Therefore, the availability analysis examined firms with locations in Arizona. (The geographic market area for the availability analysis is identical to the 2014, 2015 and 2017 studies.)

- Keen Independent also examined the types of work involved in FHWA-funded contracts from October 2013 through September 2018. There were 32 types of work that accounted for 99% of FHWA-funded contract dollars. The availability analysis focuses on firms performing these 32 types of work.

DBE Availability. As briefly set out below and explained in detail in Chapter 5 and Appendix D of the 2020 Disparity Study report, Keen Independent compiled a master availability database and calculated the relative availability of current and potential DBEs on a dollar-weighted basis. This analysis produced an availability figure of 16.15% for ADOT’s FHWA-funded transportation contracts.

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. ADOT followed up with potential DBEs to confirm that they might be eligible for and interested in certification as a DBE. Only those firms that passed those screens were counted as potential DBEs when calculating the overall DBE goal.

Master Availability Database. Keen Independent developed a master availability database (current and potential DBEs and non-DBEs) by contacting thousands of firms to collect information about availability for ADOT contracts. The firms contacted for the database came from sources including, but not limited to:

- Companies that had previously identified themselves to ADOT as interested in learning about future work by being prequalified for certain types of work or by being on bidding lists; and
- Businesses that Dun & Bradstreet (D&B) identified in certain transportation contracting-related subindustries in Arizona (D&B’s Hoover’s business establishment database). D&B’s Hoover’s database is accepted as the most comprehensive and complete source of business listings in the nation.

Keen Independent completed surveys with 4,859 Arizona businesses. After consolidating duplicate responses and removing companies that are no longer in business, not-for-profit, unable to perform transportation-related work, not located in Arizona or uninterested in discussing availability for ADOT work, the final database contains 996 businesses, of which 396 (about 40%) were minority- or women-owned (MBE or WBE). (See Figure 1 on the following page.)

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

Race/ethnicity and gender	Number of firms	Percent of firms
African American-owned	40	4.0 %
Asian-Pacific American-owned	12	1.2
Subcontinent Asian American-owned	11	1.1
Hispanic American-owned	143	14.4
Native American-owned	23	2.3
Total MBE	229	23.0 %
WBE (white women-owned)	167	16.8
Total MBE/WBE	396	39.8 %
Majority-owned firms	600	60.2
Total	996	100.0 %

Note: Numbers rounded to nearest tenth of 1%.

Source: Keen Independent Research 2020 Disparity Study (Chapter 5, page 7).

Head Count DBE Availability. The 40% figure represents a simple “head count” of MBE and WBE firms and is only the initial stage of calculating the DBE availability base figure. The availability calculation is further refined by dollar-weighting and by not counting as a potential DBE those MBE or WBE firms that appear to be ineligible to become DBE-certified.

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 11,909 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

² USDOT. *Tips for Goal-Setting in the Federal Disadvantaged Enterprise (DBE) Program as updated December 22, 2014* <http://www.dot.gov/osdbu/disadvantaged-business-enterprise/tips-goal-setting-disadvantaged-business-enterprise>

The type of work was taken into account by examining 32 different subindustries 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/or 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 (additional firms were counted as available for prime contract work because contract data for ADOT or local agencies indicated that they had prime contracts in the previous six years).
 - Only businesses that reported being qualified for and interested in working as subcontractors were counted as available for subcontracts (additional firms were counted as available for subcontract work because contract data for ADOT or local agencies indicated that they had subcontracts in the previous six years).
 - Businesses that reported being qualified for and interested in working as both prime contractors and subcontractors (or performed both prime contractor and subcontractor work for ADOT or local agencies in the previous six years) 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 six 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).

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.

³ The subindustries considered included: general road construction and widening; bridge work; electrical work including lighting and signals; structural steel work; excavation, site prep, grading and drainage; wrecking and demolition; landscaping and related work; installation of guardrails, fencing or signs (traffic or highway signs); asphalt paving; Portland cement concrete paving; concrete flatwork, including sidewalk, curb and gutter; drilling and foundations; concrete pumping; concrete cutting; pavement milling; structural concrete work; painting for road or bridge projects; striping or pavement marking; temporary traffic control; trucking and hauling; underground utilities; construction remediation and clean-up; construction management; architecture and engineering; soils and materials testing; transportation planning; environmental consulting; surveying and mapping; aggregate materials supply; asphalt, concrete or other paving materials; petroleum; and transit services.

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).

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 11,909 prime contracts and subcontracts was calculated by dividing the dollars for that prime contract/subcontract by \$2,700,000,000 (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 \$27 million prime contract would receive a weight of 1% ($\$27,000,000 \div \$2,700,000,000 = 1.0\%$). 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. Availability calculations were first done for minority- and women-owned firms and then refined to show results for current and potential DBEs.

Figure 2. Example of an Availability Calculation

One of the subcontracts examined was for landscaping (\$72,296) on a 2015 FHWA-funded contract for ADOT in Northern 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 landscaping work on transportation-related projects;
- c. Reported working or bidding on subcontracts in Arizona in the past six years;
- d. Reported bidding on work of similar or greater size in the past six years;
- e. Reported ability to perform work in Northern Arizona; and
- f. Reported qualifications and interest in working as a subcontractor on state and local government transportation projects.

There were 46 businesses in the availability database that met those criteria. Of those businesses, 22 were current or potential DBEs. Therefore, DBE availability for the subcontract was 48% (i.e., $22 \div 46 = 48\%$).

The weight applied to this contract was $\$72,296 \div \$2.7 \text{ billion} = 0.026\%$. (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 Research Availability Analysis from 2020 Disparity Study (Chapter 5, page 10).

Summing the Dollar-Weighted Availability. Keen Independent performed the calculations shown in Figure 2 for 11,909 FHWA-funded prime contracts and subcontracts for the study period. When Keen Independent summed the results for all contracts, overall dollar-weighted MBE/WBE availability for FHWA-funded contracts was 29.84%.

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 3 on the following page presents overall dollar-weighted availability by MBE/WBE group for ADOT FHWA-funded contracts. Keen Independent’s availability analysis for ADOT and local agency FHWA-funded contracts (not including South Mountain Freeway) indicates that MBE/WBEs might be expected to receive about 30% of these contract dollars, somewhat less than the “headcount” availability in Figure 1. Dollar-

weighted availability was highest for Hispanic American-owned (7.07%) and Native American-owned companies (10.09%).

Keen Independent did not include South Mountain Freeway prime contracts and subcontracts in the analysis of ADOT’s future overall DBE goal for FHWA-funded contracts, but did include this project in the disparity analysis for FHWA-funded contracts.⁸ Including the South Mountain Freeway, dollar-weighted availability for MBE/WBEs was 25.63%, as shown in the second column of Figure 3.

Figure 3. Overall Dollar-Weighted Availability Estimates by MBE/WBE Group for ADOT FHWA-Funded Contracts, October 2013–September 2018

Race/ethnicity and gender	FHWA	
	Excludes South Mountain Freeway contracts	Includes South Mountain Freeway contracts
African American-owned	1.63 %	2.15 %
Asian-Pacific American-owned	4.17	3.83
Subcontinent Asian American-owned	0.59	0.55
Hispanic American-owned	7.07	5.75
Native American-owned	10.09	8.02
Total MBE	23.54 %	20.30 %
WBE (white women-owned)	6.30	5.33
Total MBE/WBE	29.84 %	25.63 %
Total majority-owned	70.16	74.38
Total	100.00 %	100.00 %

Note: Results for FHWA-funded contracts include potential DBEs.

Source: Keen Independent Research 2020 ADOT Disparity Study (Chapter 5, page 13).

Potential and Certified DBE Availability Adjustments. To determine the DBE base figure, which focuses on availability of currently certified DBEs and firms that could be certified as DBEs, Keen Independent refined the 29.84% dollar-weighted availability figure by not counting any MBE or WBE firms as potential DBEs that appear to be ineligible for certification. The following groups of MBE/WBEs did not count as potential DBEs when calculating the base figure:

- 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 and information from the USDOT Decertified, Denials and DBE Appeals Decisions website);
- Businesses in the availability interviews reported having average annual revenue over three years that exceeded the revenue limits for DBE certification for their subindustry;
- MBE/WBEs that, upon telephone and email follow-up by ADOT in 2019, indicated that they would not qualify for DBE certification or were not interested in certification, or could not be reached when ADOT attempted to follow up with them; and
- Firms that did not have an active account in the Arizona Corporation Commission.

⁸ The South Mountain Freeway was a mega-project (design-build) that is not indicative of future work. Due to its large size and unique characteristics, ADOT set a separate DBE project goal for South Mountain Freeway for FFY 2018 through 2020. ADOT excluded this project when considering its overall DBE goal for FFY 2021 through FFY 2023.

After subtracting the availability of these three categories of MBE/WBEs, the dollar-weighted availability for current and potential DBEs is 16.15%, or 13.69 percentage points lower than total MBE/WBE availability. This information is shown in Figure 4.

Figure 4. Overall Dollar-Weighted Availability Estimates for DBEs for ADOT FHWA-Funded Contracts, October 2013–September 2018

Calculation of base figure	FHWA
Total MBE/WBE	29.84 %
Less firms that graduated from the DBE Program or were denied DBE certification in recent years or exceed revenue thresholds or indicated that they were not interested in DBE certification or did not have an active account with the Arizona Corporation Commission	13.69
Subtotal	<u>16.15 %</u>
Plus white male-owned DBEs	<u>--</u>
Current and potential DBEs	16.15 %

Note: Does not include South Mountain Freeway projects.

Source: Keen Independent Research 2020 Disparity Study (Chapter 5, page 15).

Base Figure. The base figure representing potential and certified DBEs available for ADOT’s FHWA-funded contracts is 16.15%. Figure 5 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 and 2017 Availability Study.

Figure 5. Comparison of Overall Dollar-Weighted Availability Estimates for DBEs for ADOT FHWA-Funded Contracts

	2015 Disparity Study	2017 Availability Study	2020 Disparity Study
FHWA	8.90 %	9.25 %	16.15 %

Note: Results include potential DBEs.

Source: Keen Independent Research 2017 ADOT Availability Study; Keen Independent Research 2020 ADOT Disparity Study.

Step 2. Consideration of Possible Adjustments — 49 CFR Section 26.45(d)

In accordance with DBE Program regulations, after the base figure was calculated, ADOT considered available evidence to determine whether or not the figure should be adjusted higher or lower than the base figure (a “step 2 adjustment”). The regulations indicate that an agency must consider the following:

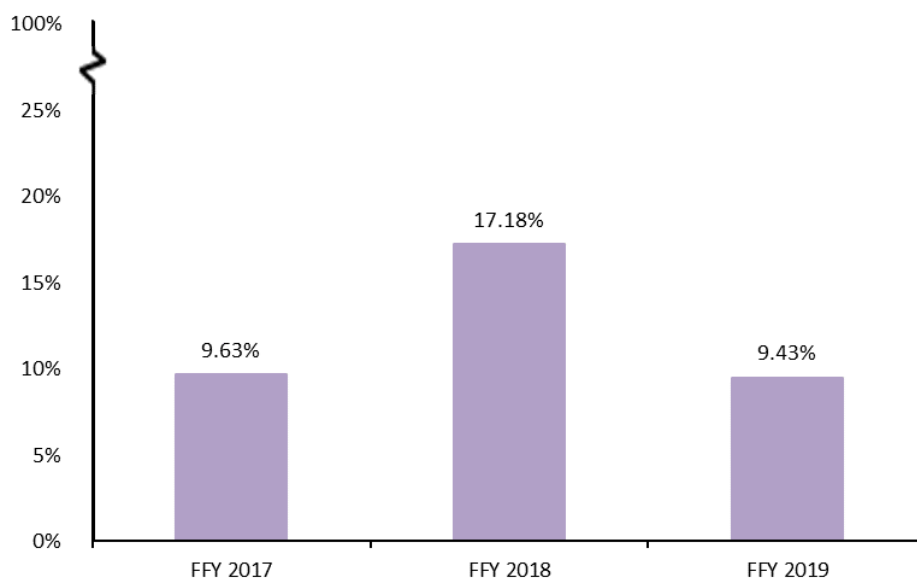
- Current capacity of DBEs to perform work, as measured by the volume of work DBEs have performed in recent years;
- Information related to employment, self-employment, education, training and unions;
- Any disparities in the ability of DBEs to get financing, bonding and insurance; and
- Other relevant factors.⁹

Considering relevant information from the 2020 Disparity Study, ADOT reviewed each of the factors listed above in determining whether or not to adjust the base figure.

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).

DBE Participation Based on ADOT Uniform Reports to FHWA. Based on payments data from ADOT Uniform Reports of DBE Awards or Commitments and Payments reported to the FHWA, the median DBE participation from FFY 2017 through FFY 2019 was 9.63%. This value suggests a possible downward step 2 adjustment based on this factor. These results are presented in Figure 6.

Figure 6. DBE Participation on FHWA-Funded Contracts Based on ADOT Uniform Reports to FHWA, Fiscal Years 2017 through 2019



Source: ADOT Uniform Reports of DBE Award or Commitments and Payments.

⁹ 49 CFR Section 26.45.

DBE Participation Based on Keen Independent Utilization Analysis for FHWA- and State-Funded Contracts. Based on Keen Independent analysis of DBEs on contracts during the study period, the median DBE participation from FFY 2014 through FFY 2018 was 8.97%. This value suggests a possible downward step 2 adjustment based on this factor.

2. Information Related to Employment, Self-Employment, Education, Training and Unions. Chapter 4 of the 2020 Disparity Study report summarizes information about conditions in the Arizona transportation contracting industry for minorities, women and MBE/WBEs. Detailed quantitative analyses of marketplace conditions in Arizona are presented in Appendices E through H. Keen Independent’s analyses indicate 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 2020 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 report provides detailed results of the business ownership regression analyses).¹⁰

- Those analyses revealed that African Americans, Asian Americans, Native Americans and white women working in construction were less likely than nonminorities and white men to own construction businesses, even after accounting for various gender-neutral personal characteristics. Each of these disparities was statistically significant.
- In addition, there was a statistically significant disparity in firm ownership for other minorities and white women in the Arizona engineering industry.

Keen Independent analyzed the impact that barriers in business ownership would have on the base figure if African Americans, Asian Americans, Native Americans, white women and other minorities owned businesses at the same rate as similarly situated nonminorities 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.

As the explanation of these calculations are somewhat complex, ADOT provides Figure 7 to document how the upward adjustment was determined. A detailed explanation of each portion of the calculation follows the figure.

Figure 7 calculates the impact on overall MBE/WBE availability, resulting in a possible upward adjustment of the base figure to 22.94%. 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 October 2013 through September 2018). Calculations are explained below.

¹⁰ 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.

Figure 7. Potential Step 2 Adjustment to ADOT’s Overall DBE Goal for FHWA-Funded Contracts Considering Disparities in the Rates of Business Ownership

Current and potential DBEs	a. Current availability	b. Disparity index for business ownership	c. Availability after initial adjustment*	d. Availability after scaling to 100%	e. Components of overall DBE availability**
Construction					
African American	0.26 %	61	0.43 %	0.40 %	
Asian American	4.19	65	6.45 %	6.04 %	
Native American	1.54	36	4.28	4.01	
Other minorities	4.94	n/a	4.94	4.63	
White women	3.49	69	5.06	4.74	
Minorities and women	14.42 %	n/a	21.15 %	19.81 %	17.64 %
All other businesses	85.58	n/a	85.58	80.19	
Total firms	100.00 %	n/a	106.73 %	100.00 %	
Engineering and other subindustries					
Hispanic American	5.23 %	n/a	5.23 %	3.87 %	
Other minorities	18.79	37	50.78	37.61	
White women	6.13	67	9.15	6.78	
Minorities and women	30.15 %	n/a	65.16 %	48.26 %	5.31 %
All other businesses	69.85	n/a	69.85	51.74	
Total firms	100.00 %	n/a	135.01 %	100.00 %	
Total for current and potential DBEs	16.15 %	n/a	n/a		22.94 %
Difference from base figure					6.79 %

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 goal 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 = 89%, engineering = 11%).

Source: Keen Independent Research 2020 Disparity Study (Chapter 9, page 5).

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 October 2013 through September 2018 (i.e., an 89% weight for construction and 11% weight for engineering).¹¹ The rows and columns of Figure 7 present the following information from Keen Independent’s “but for” analyses.

1. **Current Availability.** Column (a) presents the current availability of DBEs by group for construction and for engineering and other subindustries. Each row presents the percentage availability for minority- and women-owned DBEs. The current combined availability of DBEs for ADOT FHWA-funded transportation contracts for October 2013 through September 2018 is 16.15%, as shown in the bottom row of column (a).

¹¹ Analysis does not include South Mountain Freeway contracts.

2. Disparity Indices for Business Ownership. As presented in Appendix F of the 2020 Disparity Study report, African Americans, Asian Americans, Native Americans and white women were less likely to own construction firms than similarly situated nonminorities and white men. This difference was statistically significant for each of those groups.

Keen Independent calculated simulated business ownership rates if those groups owned businesses at the same rate as nonminorities 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 7 presents disparity indices related to business ownership for the different racial/ethnic and gender groups. For example, as shown in column (b), Asian Americans own construction businesses at 65% of the rate that would be expected based on the simulated business ownership rates of white males who share similar personal characteristics. Appendix F of the 2020 Disparity Study report 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 Asian Americans shown for construction was calculated in the following way: $(6.45\% \div 106.73\%) \times 100 = 6.04\%$.
5. Components of Overall DBE Goal with Upward Adjustment. Column (e) of Figure 7 shows the component of the total base figure attributed to the adjusted MBE and WBE availability for construction versus engineering and other subindustries. The study team calculated each component by taking the total availability estimate shown in column (d) for construction and for engineering/other subindustries — and multiplying it by the proportion of total FHWA-funded contract dollars in each industry (i.e., 89% for construction and 11% for engineering). For example, the study team used the 19.81% shown for MBE/WBE availability for construction firms in column (d) and multiplied it by 89% for a result of 17.64%. A similar weighting of MBE/WBE availability for engineering/other subindustries produced a value of 5.31%.

The values in column (e) were then summed to equal the overall base figure adjusted for barriers in business ownership, which is 22.94% as shown in the bottom of column (e).

Finally, Keen Independent calculated the difference between the "but for" MBE/WBE availability (22.94%) and the current availability (16.15%) to calculate the potential upward adjustment. This difference, and potential upward adjustment, is 6.79 percentage points $(22.94\% - 16.15\% = 6.79\%)$.

3. Any Disparities in the Ability of DBEs to Secure Financing, Bonding and Insurance. Analysis of access to financing and bonding 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 MBE/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 2020 Disparity Study.

There was also evidence in the 2020 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 appears to affect small businesses, which might disproportionately impact minority- and women-owned firms. Additionally, MBEs and WBEs were somewhat more likely to report that insurance requirements on contracts were a barrier to bidding.

The information about financing, bonding and insurance 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.¹²

Among the “other factors” ADOT examined was the information in the 2020 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 are less successful than majority-owned firms, and face 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 suggests that discrimination on the basis of race, ethnicity and gender affected minority- and women-owned firms in the Arizona transportation contracting industry.

There is no straightforward way to project the number of MBE/WBEs available for ADOT work but for the effects of these other factors.

¹² 49 CFR Section 26.45.

Summary of Approaches for Making Step 2 Adjustments. Quantification of potential downward or upward step 2 adjustments is summarized 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 if ADOT analyzed its estimates of past DBE participation (based on payments) — for recent years, the median DBE participation on FHWA-funded contracts was 9.63% (from Figure 6).

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 16.15% base figure and 9.63% DBE participation is 6.52 percentage points (16.15% - 9.63% = 6.52%). One-half of this difference is a downward adjustment of 3.26 percentage points (6.52% ÷ 2 = 3.26%). The goal would then be calculated as follows: 16.15% – 3.26% = 12.89%. (These calculations are presented in Figure 8.)

2. Information Related to Employment, Self-Employment, Education, Training and Unions. The study team was not able to quantify all of the information regarding barriers to entry for MBE/WBEs. Quantification of the business ownership factor indicates an upward step 2 adjustment of 6.79 percentage points to reflect the “but-for” analyses of business ownership rates presented in Figure 7. If ADOT made this adjustment, the overall DBE goal for FHWA-funded contracts would be 22.94% (16.15% + 6.79% = 22.94%). Figure 8 summarizes these calculations.

Figure 8. Potential Step 2 Adjustments to ADOT’s Overall DBE Goal for FHWA-Funded Contracts, FFY 2021–FFY 2023

Step 2 adjustment component	Value	Explanation
Lower range of overall DBE goal		
Base figure	16.15 %	From base figure analysis
Evidence of current capacity	- 9.63	DBE Uniform Reports
Difference	6.52 %	
	÷ 2	Reduce by one-half
Adjustment	3.26 %	Downward adjustment for current capacity
Base figure	16.15 %	From base figure analysis
Adjustment for current capacity	- 3.26	Downward step 2 adjustment
Overall DBE goal	12.89 %	Lower range of DBE goal
Upper range of overall DBE goal		
Base figure	16.15 %	From base figure analysis
Adjustment for "but for" factors	+ 6.79	"But for" step 2 adjustment for business ownership
Overall DBE goal	22.94 %	Upper range of DBE goal

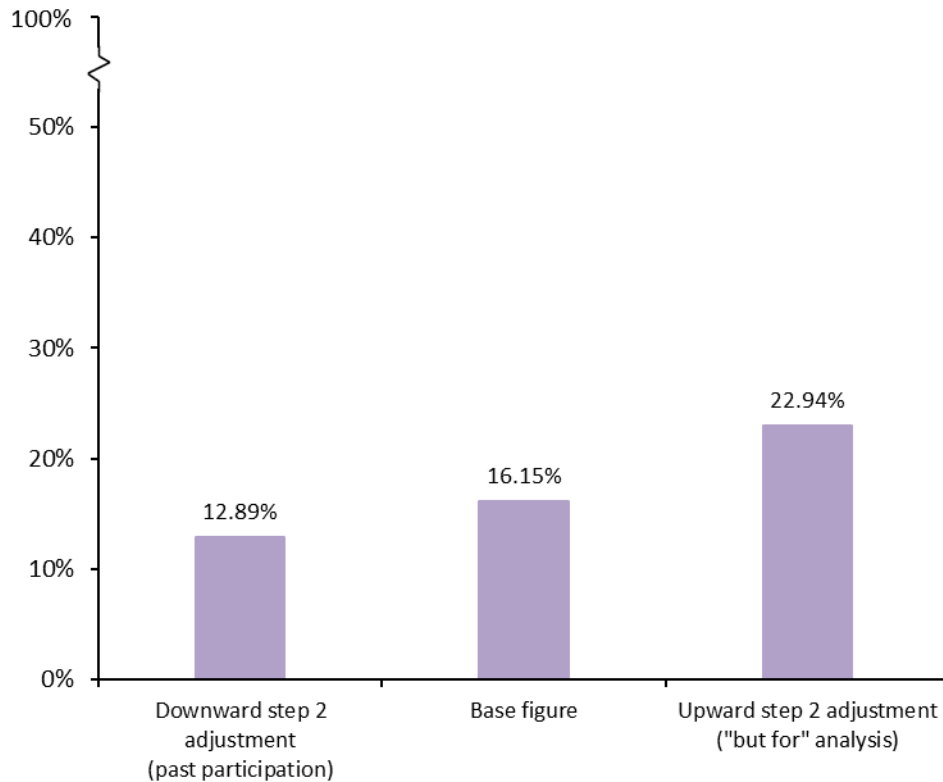
Source: Keen Independent Research 2020 Disparity Study (Chapter 9, page 8).

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 2020 Disparity Study.

4. Other Factors. Impact of the barriers to success of MBE/WBEs in Arizona could not be quantified in the 2020 Disparity Study. However, evidence supports an upward adjustment.

Summary. ADOT considered whether to make a downward, upward or no step 2 adjustment when determining its overall DBE goal. If ADOT were to make a downward step 2 adjustment reflecting current capacity to perform work, its overall DBE goal for FHWA-funded contracts would be 12.89%. If ADOT decided to not make a downward adjustment and to make an upward adjustment that reflects analyses of business ownership rates, its overall DBE goal would be 22.94%. Figure 9 summarizes the potential adjustments described in this document.

Figure 9. Potential Step 2 Adjustments to ADOT’s Overall DBE Goal for FHWA-Funded Contracts



Source: Keen Independent Research 2020 Disparity Study (Chapter 9, page 9).

Adjustments Summary. For FHWA-funded contracts from FFY 2021 through FFY 2023, ADOT proposes utilizing a downward adjustment of the base figure, for an overall DBE goal of 12.89%. ADOT proposes a downward adjustment for the following reasons:

- The 12.89% goal best reflects current capacity of certified DBEs to perform related work.
- The 12.89% represents an achievable increase over ADOT’s current 9.55% goal.
- Only in recent years has ADOT been able to meet its overall DBE goal for FHWA-funded contracts. In the fiscal years studied for the 2015 Disparity Study and the 2017 Availability Study, ADOT often fell short of its DBE goal, even when it was considerably lower than the proposed downward-adjusted figure of 12.89%.

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

To comply with the Federal DBE Program, ADOT must meet the maximum feasible portion of its overall DBE goal using race- and gender-neutral measures.¹³ Race- and gender-neutral measures are initiatives that encourage the participation of all businesses, or all small businesses, and are not specifically limited to MBE/WBEs or DBEs. ADOT has considered whether it can meet its overall DBE goal solely through neutral means or whether race- and gender-conscious measures — such as DBE contract goals — are also needed. As part of doing so, ADOT has projected the portion of its overall DBE goals that it expects to meet (a) through race- and gender-neutral means, and (b) through race- and gender-conscious programs (if any).

USDOT offers guidance concerning how transportation agencies should project the portions of their overall DBE goals that will be met through race- and gender-neutral, and race- and gender-conscious measures, including the following:

- USDOT Questions and Answers about 49 CFR Part 26 addresses factors for federal aid recipients to consider when projecting the portion of their overall DBE goals that they will meet through race- and gender-neutral means.¹⁴
- USDOT “Tips for Goal-Setting” also suggests factors for federal aid recipients to consider when making such projections.¹⁵
- An FHWA template for how it considers approving DBE goal and methodology submissions includes a section on projecting the percentage of overall DBE goals to be met through neutral and conscious means. An excerpt from that template is provided in Figure 10.

Figure 10. **Excerpt from Explanation of Approval of [State] DBE Goal Setting Process for FY [Year]**

You must also explain the basis for the State’s race-neutral/race-conscious division and why it is the State’s best estimate of the maximum amount of participation that can be achieved through race-neutral means. There are a variety of types of information that can be relied upon when determining a recipient’s race-neutral/race-conscious division. Appropriate information should give a sound analysis of the recipient’s market, the race-neutral measures it employs and information on contracting in the recipient’s contracting area. Information that could be relied on includes: the extent of participation of DBEs in the recipient’s contracts that do not have contract goals; past prime contractors’ achievements; excess DBE achievements over past goals; how many DBE primes have participated in the state’s programs in the past; or information about state, local or private contracting in similar areas that do not use contracting goals and how many minority and women’s businesses participate in programs without goals.

Source:

FHWA, Explanation for Approval of [State] DBE Program Goal Setting Process for FY [Year].

¹³ 49 CFR Section 26.51.

¹⁴ See <http://www.dotcr.ost.dot.gov/Documents/Dbc/49CFRPART26.doc>

¹⁵ 49 CFR Section 26.51.

Based on 49 CFR Part 26 and the resources above, ADOT considered the following questions:

1. Is there evidence of discrimination within the local transportation contracting marketplace for any racial, ethnic or gender groups?
2. What has been the agency's past experience in meeting its overall DBE goal?
3. What has DBE participation been when ADOT did not use DBE contract goals (or other race- or gender-conscious measures)?¹⁶
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?

The balance of this section is organized around each of those general areas of questions.

1. Is There Evidence of Discrimination within the Local Transportation Contracting Marketplace for any Racial, Ethnic or Gender Groups? The 2020 Disparity Study considered conditions in the local marketplace to address this question. Quantitative and qualitative information is summarized below.

Marketplace Conditions. As discussed in Chapter 4 of the 2020 Disparity Study, Keen Independent 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. Qualitative information indicated some evidence that discrimination may have been a factor in these outcomes.

Results of the Disparity Analysis for FHWA- and State-Funded Contracts. Chapter 6 of the 2020 Disparity Study report examines disparity in ADOT contracting. Keen Independent compared utilization and availability of minority- and women-owned firms on FHWA- and state-funded transportation contracts for which DBE goals were not applied. There were substantial disparities for each MBE group and a disparity for white women-owned firms. The disparity was substantial for white women-owned firms if a specific firm that identifies as a WBE is properly considered as majority-owned. (Chapter 6 of the 2020 Disparity Study presents complete results.)

¹⁶ 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.

Summary. ADOT reviewed the information about marketplace conditions presented in Chapter 4 and Appendices E through J of the 2020 Disparity Study, as well as other information it has, when considering the extent to which it can meet its overall DBE goal through neutral measures. The combined information from the marketplace analyses and the disparity analyses indicates evidence of disparate outcomes for each group of businesses included in the Federal DBE Program: African American-, Asian-Pacific American-, Hispanic American-, Subcontinent Asian American-, Native American- and women-owned firms.

2. What has been the Agency’s Past Experience in Meeting its Overall DBE Goal? ADOT’s reported certified DBE participation based on DBE commitments/awards on FHWA-funded contracts is summarized in Figure 12 on the following page. As shown, reported DBE participation based on DBE commitments/awards on FHWA-funded contracts was higher than the goal for FFY 2017 through FFY 2019.

ADOT also reported participation based on payments to DBEs. As presented in the far-right column of Figure 11, ADOT exceeded its overall DBE goals in two of the three fiscal years examined when participation was measured based on payments. ADOT fell short of its DBE goal in FFY 2019 but was within one-half of a percentage point of achieving its goal.

Figure 11. ADOT Overall DBE Goal and Reported DBE Participation on FHWA-Funded Contracts, FFY 2017 through FFY 2019

Federal fiscal year	DBE goal	DBE commitments/ awards	DBE payments	Difference from DBE goal	
				Awards	Payments
2017	8.90 %	16.37 %	9.63 %	7.47 %	0.73 %
2018	9.55	12.76	17.18	3.21	7.63
2019	9.55	11.46	9.43	1.91	-0.12

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

3. What has DBE Participation been when ADOT has not Applied DBE Contract Goals (or other Race- or Gender-Conscious Measures)? Keen Independent examined three sources of information to assess race-neutral DBE participation:

- ADOT-reported race-neutral DBE participation on FHWA-funded contracts for the most recent years;
- Keen Independent estimates of DBE participation on FHWA- and state-funded contracts for which no DBE contract goals applied; and
- Information concerning DBE participation as prime contractors on FHWA-funded contracts.

The following discussion examines these three sets of participation figures.

Race-Neutral DBE Participation in Recent ADOT Uniform Reports. Per USDOT instructions, ADOT counts as “neutral” participation any prime contracts, as well as subcontracts, going 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 median race-neutral participation of 4.72%. Figure 12 presents these results.

Figure 12. ADOT-Reported Race-Neutral and Race-Conscious DBE Participation on FHWA-Funded Contracts for FFY 2017 through FFY 2019

Federal fiscal year	DBE commitments/awards		
	Total	Race-neutral	Race-conscious
2017	16.37 %	6.88 %	9.49 %
2018	12.76	4.72	8.04
2019	11.46	3.35	8.11

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

DBE Participation on Contracts Without DBE Contract Goals. Keen Independent also analyzed DBE participation on ADOT’s FHWA- and state-funded contracts without DBE contract goals. As reported in Chapter 7 of the 2020 Disparity Study, ADOT achieved 3.9% DBE participation on these contracts from October 2013 through September 2018.

DBE Participation as Prime Contractors. Keen Independent also analyzed DBE participation based on FHWA- and state-funded prime contract dollars. From October 2013 through September 2018, the median DBE participation on prime contracts was about 1% for FHWA-funded contracts.

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.

Keen Independent’s analysis of neutral remedies in Chapter 7 of the 2020 Disparity Study indicates that ADOT has implemented an extensive set of neutral measures. At this time, it is difficult to quantify how much those initiatives can further increase race-neutral participation of DBEs in ADOT’s FHWA-funded contracts.

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 still needed. ADOT considered the information in the 2020 Disparity Study, 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). If ADOT implements its proposed overall DBE goal for FHWA-funded contracts of 12.89%, the evidence presented in this report indicates that ADOT might not meet its DBE goal solely through neutral means.

- There is information indicating disparities in outcomes for minority- and women-owned firms, supported by some qualitative evidence of discrimination within the local transportation contracting marketplace, as summarized in Chapter 4 of the 2020 Disparity Study.
- For the past three federal fiscal years, ADOT’s reported race-neutral participation has been 6.88% (FFY 2017), 4.72% (FFY 2018) and 3.35% (FFY 2019). Each of these figures for race-neutral participation is well below a future overall DBE goal in the range of 12.89%.
- ADOT has extensive neutral measures in place, and there are many small business assistance programs offered by other institutions throughout the state. Any additional measures ADOT might be able to immediately institute would probably have only a small impact in comparison with what already exists. It is unlikely that ADOT could increase its neutral participation of DBEs to reach an overall DBE goal of 12.89% solely through additional neutral measures.

For the following reasons, ADOT proposes a race-neutral projection of 4.72 percentage points for its overall DBE goal for FFY 2021 through FFY 2023.

- The median race-neutral portion of ADOT’s DBE participation was 4.72% based on ADOT’s reports for FFY 2017 through FFY 2019 (presented earlier in this chapter).
- ADOT neutral initiatives are already considerable and will continue to expand.
- Keen Independent’s analysis of DBE participation on FHWA- and state-funded contracts without contract goals indicated 3.93% race-neutral DBE utilization, which is within one percentage point of the proposed race-neutral projection.

ADOT projected a 5.01 percentage point neutral and 4.54 percentage point race-conscious split when it prepared its overall DBE goal of 9.55% for FFY 2018 through FFY 2020 after the 2017 Availability Study. The first column Figure 13 presents these recent projections.

The second column of numbers in Figure 13 presents projections using an overall DBE goal of 12.89% and a 4.72 percentage point race-neutral projection for FFY 2021 through FFY 2023. The race-conscious portion of the goal is 8.17 percentage points.

Figure 13. ADOT Overall DBE Goal and Projections of Race-Neutral Participation for FHWA-Funded Contracts for FFY 2021 through FFY 2023

Component of overall DBE goal	FFY 2018-FFY 2020	FFY 2021-FFY 2023
Overall goal	9.55 %	12.89 %
Neutral projection	- 5.01	- 4.72
Race-conscious projection	4.54 %	8.17 %

Source: Keen Independent Research 2020 Disparity Study (Chapter 9, page 16).

Public Participation — 49 CFR Section 26.45(g)

As it did with the 2014 Availability Study, the 2015 Disparity Study and the 2017 Availability Study, ADOT published its DBE Goal and Methodology and the draft 2020 Disparity Study report for public comment in April 2020 before submitting final versions of these documents to FHWA. The public comment period for the draft report and proposed overall DBE goals remained open through June 30, 2020.

ADOT also held two webinars concerning the Disparity Study and ADOT’s proposed DBE goals:

- Tuesday, May 12, 2020 from 1:00 to 2:30 pm; and
- Monday, May 18, 2020 from 4:00 to 5:30 pm.

The public was encouraged to comment on the size of the proposed overall DBE goals, the methodology used to develop the goals, the results of the 2020 Disparity Study, as well as suggestions on how to improve contracting opportunities for DBEs and other small businesses, including what ADOT and the industry could do to enhance support of the Federal DBE Program.

Information about the webinars was available at www.azdot.gov/DBEDisparityStudy. In addition, the public was able to submit feedback and provide written comments through the following means:

- (a) During the webinars;
- (b) Online at the above web address;
- (c) By calling the study telephone hotline at 602-730-0466;
- (d) Via email at adotdisparitystudy2019@keenindependent.com; and
- (e) By regular mail sent to Keen Independent Research LLC, 701 N. 1st St., 2nd Floor, Phoenix, AZ 85004.

After distribution of the draft report and proposed overall DBE goals, 18 individuals submitted comments on behalf of themselves or their organizations during the comment period. Section G in Appendix J of the 2020 Disparity Study summarizes the comments. These and other comments received during the webinars and through other communications were reviewed and incorporated into the Disparity Study final report. ADOT also reviewed this additional information before formally submitting its proposed overall DBE goal calculation to FHWA.