

SECTION IV.

Utilization and Disparity Analysis for Caltrans and Local Assistance Contracts

The Federal DBE Program requires states to determine the percentage of the overall annual DBE goal that can be achieved through neutral means and the percentage, if any, to be achieved through race- and gender-based measures. Relative utilization of minority- and women-owned firms on state-funded transportation construction and engineering contracts, which do not have DBE contract goals, is one way of examining what is achieved through neutral means. Because Caltrans discontinued setting DBE goals on federally-funded contracts on May 1, 2006, analysis of DBE and MBE/WBE utilization after May 1 is also instructive. Utilization on state contracts, and for federally-funded contracts after May 1, 2006, can then be compared with utilization of minority- and women-owned firms for federally-funded contracts when DBE contract goals are in place.

As outlined in Figure IV-1, “utilization” of minority- and women-owned firms refers to the percentage of contract dollars going to MBE/WBEs. BBC examined utilization of minority- and women-owned firms as prime contractors and subcontractors in Caltrans, Local Assistance and SR 125 construction and engineering contracts. The study period was 2002 through 2006.

BBC’s analysis of MBE/WBE utilization goes far beyond what Caltrans currently reports to the USDOT:

- In addition to utilization of certified DBEs, BBC examined utilization of minority- and women-owned firms including firms that are too large to be certified as DBEs and those that have never sought DBE certification. (Reasons for studying MBE/WBEs including those not currently certified as DBEs are discussed in Section II.) The disparity analysis performed at the end of this section focuses solely on minority- and women-owned firms.

Figure IV-1. Defining and measuring “utilization”

“Utilization” of minority- and women-owned firms refers to the share of contract dollars going to these MBEs and WBEs. BBC reports results for both certified DBEs (firms certified as disadvantaged business enterprises in the year of the specific contract), and for all minority- and women-owned firms. BBC also examines results by race/ethnic/gender group.

Utilization is expressed as a percentage of prime contract and subcontract *dollars*. “Prime contract dollars” are total contract dollars less the money identified as going to subcontractors. For example, WBE utilization of 5 percent means that 5 percent of the contract dollars examined went to women-owned firms. Expressed another way, 5 cents of every contract dollar went to WBEs.

Information concerning utilization of minority- and women-owned firms is useful on its own, but is even more instructive when compared with a benchmark for the level of utilization expected given relative availability of minority- and women-owned firms for a particular set of contracts. BBC introduces this “disparity analysis” at the end of this section of the report.

Figure IV-2. MBE/WBE utilization and DBE utilization

To analyze the issues raised in implementing the Federal DBE Program, BBC examined minority- and women-owned in three ways:

Minority- and women-owned firms. Firms that reported they were owned and controlled by minorities or women (or identified as such in relevant databases) are counted as MBEs and WBEs in the utilization and availability analysis. “WBEs” refer to white women-owned firms.

Certified Disadvantaged Business Enterprises (DBE). BBC counted a firm as a certified DBE if it was identified as certified in the California Uniform Certification Program (CUCP) database in the year that a contract was awarded.

- The study team collected data on subcontractor utilization in a consistent fashion for both DBE/MBE/WBEs and majority-owned firms to be able to accurately report DBE and MBE/WBE share of subcontract dollars for sets of contracts with and without DBE contract goals. Data collection procedures are summarized in Figure IV-3 and explained in greater detail in Appendix D.
- Caltrans does not currently analyze DBE or MBE/WBE utilization on state-funded contracts. Because of the importance of this information to the disparity study, the study team developed and implemented a data collection program for these state-funded contracts and a parallel program for federally-funded contracts to be able to accurately compare utilization between the two sets of contracts.
- BBC worked with Caltrans to request similar information from cities, counties and other local governments that award transportation contracts with federal and state money administered through Caltrans (“Local Assistance” contracts for “subrecipients”). Because of the large number of Local Assistance contracts, BBC prepared a stratified random sample of contracts and worked with Caltrans to request prime contract and subcontract information for these contracts and associated subcontracts from local agencies (also discussed in Appendix D).

MBE/WBE and DBE Utilization

Federally-funded transportation contracts

when DBE goals were in place. Prior to moving to an all race- and gender-neutral implementation of the Federal DBE Program on May 1, 2006, Caltrans could set DBE contract goals for federally-funded contracts and Caltrans allowed local agencies with USDOT-funded contracts to set DBE contract goals. Prime contractors bidding on Caltrans projects would need to include DBE participation at a level to meet the goals or show good faith efforts to do so. Caltrans set 0 percent DBE goals on some federally-funded contracts.

Figure IV-3. Utilization data collection

The utilization information the BBC study team collected for construction contracts is based on dollars at time of award and requests to sublet to specific subcontractors. BBC obtained hard copy records of requests to sublet from Caltrans contract files, and requested similar information for construction contracts awarded by local agencies. Utilization based on dollars at time of award and request to sublet may not perfectly match utilization based on actual payments to prime contractors and subcontracts at the end of the project. These payment data were not consistently available for construction contracts, and BBC also sought to analyze information on construction contracts awarded after May 1, 2006 that might not have been completed and closed by December 2006, the end date for the utilization analysis.

BBC found that data for Caltrans engineering contracts based on monthly invoices for prime consultants and subconsultants were more reliable than award information because subconsultants, and their share of the work, might not be consistently identified at time of award. BBC sampled engineering contracts and the study team pulled contract administration files in districts to identify primes and subconsultants and their payments. In some cases, Caltrans districts had already compiled consultant invoice information into spreadsheets, which BBC analyzed without needing to sample. BBC also requested data from local agencies for prime and subcontract dollars for a sample of Local Assistance engineering contracts.

In total, BBC collected and analyzed information for more than 10,000 prime contracts and subcontracts pertaining to Caltrans, Local Assistance and SR 125 transportation construction and engineering projects. (SR 125 is a toll road receiving federal financial assistance located in the San Diego area.) Utilization on Caltrans construction contracts is based on BBC’s attempts to obtain information on all federally- and state-funded contracts for 2002 through 2006. Utilization for Caltrans engineering contracts is based on the population of engineering contracts for some districts and a very large sample of contracts for other districts (appropriately weighted in the utilization analysis). Utilization for Local Assistance contracts is based on a stratified random sample of contracts that focused on relatively large samples of the biggest federally- and state-funded contracts. BBC obtained information on 42 percent of the total Local Assistance contract dollars through this approach, as discussed in detail in Appendix D.

The BBC study team coded information concerning prime contract/subcontract status, type of work performed size of contract element, location of contract, and funding based on information collected for each contract element. Appendix D provides additional information as to how these data elements were collected.

BBC examined 6,673 prime contracts and subcontracts for federally-funded contracts from 2002 through April 2006, including Caltrans, Local Assistance and SR 125 contracts. Because the SR 125 project (a toll road in San Diego County) was subject to the Federal DBE Program, BBC included it with the Caltrans and Local Assistance federally-funded projects analyzed for 2002 through April 2006.

From 2002 through April 2006, total utilization of minority- and women-owned firms on federally-funded contracts was 14.7 percent. This utilization includes prime contracts and subcontracts. Of this 14.7 percent utilization, 9.0 percentage points represented firms certified as DBEs. The balance (5.7 percentage points) was minority- and women-owned firms not certified as DBEs in the year of the contract. In Figure IV-4 on the following page (and similar figures in Sections IV through VIII), DBE utilization is shown in the bottom portion of the bar. The difference between total MBE/WBE utilization (the statistic shown on top of the bar) and DBE utilization is utilization of MBE/WBEs that were not certified as DBEs at the time of the contract.

DBEs and MBE/WBE utilization on state-funded contracts. Since 1998, Caltrans has implemented only race- and gender-neutral measures on state-funded contracts. The 2002 through 2006 state-funded contracts awarded by Caltrans or by local agencies through the Caltrans Local Assistance program reflect MBE/WBE utilization on contracts without DBE contract goals. BBC studied MBE/WBE utilization for 4,305 state-funded transportation construction and engineering contracts and subcontracts for this time period.

Comparison of MBE/WBE utilization on state-funded contracts with MBE/WBE utilization on federally-funded contracts suggests that, without goals, utilization of minority- and women-owned firms is lower than found when goals were applied. As shown in Figure IV-4, MBE/WBE utilization was 11.4 percent on state-funded contracts, below that identified for federally-funded contracts prior to April 2006.

One must caution that a difference in MBE/WBE utilization between federally-funded contracts and state-funded contracts could reflect factors other than the DBE goals program. Types of work, sizes of contracts and locations of the projects could explain some of the differences in MBE/WBE utilization. The disparity analysis at the close of this section controls for these and other factors.

Figure IV-4.
MBE/WBE share of prime contract/subcontract dollars for transportation construction and engineering contracts, federal vs. state funding

Note:

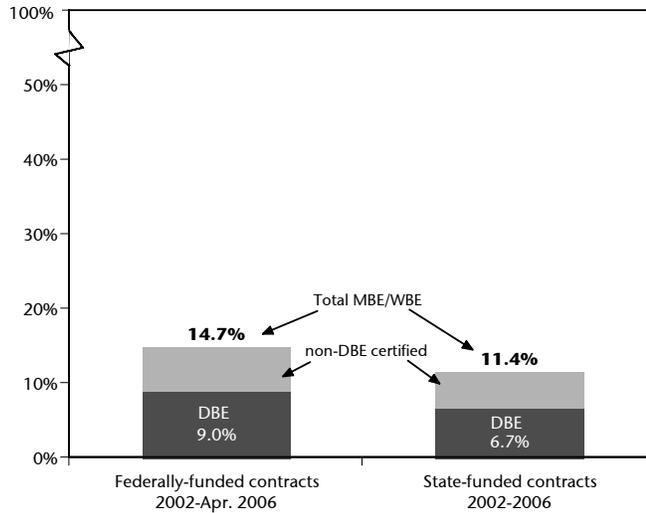
Statistics above each bar is total MBE/WBE utilization. Certified DBE utilization is noted in the bottom portion of each bar. The difference is utilization of MBE/WBEs that were not DBE certified.

For more detail, and for results by DBE group, see Figures E-24 and E-68 in Appendix E.

Number of contracts analyzed is 6,673 for federally-funded contracts and 4,305 for state-funded contracts.

Source:

BBC Research and Consulting from contract data on Caltrans, Local Assistance and SR 125 contracts.



Federally-funded contracts after May 1, 2006. Caltrans moved to an all race- and gender-neutral program on May 1, 2006. Based on the federally- funded construction and engineering contracts BBC identified between May 1 and the end of December 2006, ending contract goals on federally-funded contracts had little effect on overall MBE/WBE utilization. Utilization of certified DBEs substantially decreased.

Figure IV-5 portrays DBE and MBE/WBE utilization on federally-funded contracts before and after May 1, 2006. Again, the gross MBE/WBE utilization for these two time periods are not adjusted for differences in contract types, sizes and locations. The disparity analysis at the close of this report section makes comparisons in utilization after adjusting for these and other factors. In addition, the data for May through December 2006 are based on a small number of prime contracts and subcontracts (192). Most contracts for 2006 were let prior to May 1.

Figure IV-5.
MBE/WBE share of prime/subcontract dollars for federally-funded transportation construction and engineering contracts, before and after May 1, 2006

Note:

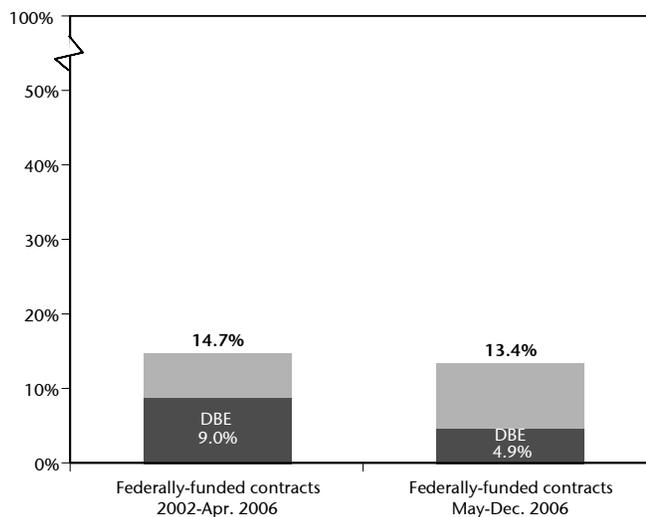
Statistics above each bar is total MBE/WBE utilization. Certified DBE utilization is noted in the bottom portion of each bar. The difference is utilization of MBE/WBEs that were not DBE certified.

For more detail, and for results by DBE group, see Figures E-24 and E-25 in Appendix E.

Number of contracts analyzed is 6,673 for 2002-April 2006 federally-funded contracts and 192 for May-December 2006 federally-funded contracts.

Source:

BBC Research and Consulting from contract data on Caltrans, Local Assistance and SR 125 contracts.



Utilization of firms by race and gender group. Hispanic American-owned firms and white women-owned firms received the largest share of prime/subcontract dollars on both federally-funded and state-funded contracts. Other minority groups received a much smaller share of contract dollars.

Hispanic American-owned firms. On federally-funded contracts from 2002 through April 2006, 6.6 percent of combined prime contract and subcontract dollars went to Hispanic American-owned firms. Utilization of Hispanic American-owned firms was higher for federally-funded contracts from May through December 2006 and among all state-funded contracts. Only including Hispanic American-owned firms certified as DBEs, utilization was 5.5 percent for federally-funded contracts from 2002 through April 2006 and was lower for federally-funded contracts after May 1, 2006 and for state-funded contracts (see Figure IV-6).

Women-owned firms. About 4.9 percent of federally-funded contract dollars from 2002 through April 2006 went to white women-owned firms. Utilization of WBEs was lower for federally-funded contracts after May 1, 2006 and for state-funded contracts. Only counting white women-owned firms that were DBE-certified, utilization of WBEs was less than 1 percent. (Note that “women-owned firms” means businesses owned by white women. Utilization of firms owned by minority women is included in the utilization figures for the specific race or ethnic group.)

The data suggest that relatively little of the utilization of WBEs is by firms certified as DBEs, regardless of whether DBE goals were in place (see Figure IV-6).

Asian-Pacific American-owned firms. For federally-funded contracts for 2002-April 2006, Asian-Pacific American-owned firms received 1.2 percent of total contract dollars. Utilization was lower for state-funded contracts. Most of the dollars going to Asian-Pacific American-owned firms are to firms that are DBE certified (regardless of whether the DBE goals program applied to the set of contracts).

Subcontinent Asian American-owned firms. Subcontinent Asian American-owned firms received 0.8 percent of federally-funded contract dollars for 2002-April 2006. Utilization was lower after May 1, 2006 and for state-funded contracts. Utilization was 0.5 percent for Subcontinent Asian American-owned firms that were certified as DBEs.

African American-owned firms. Utilization of African American-owned firms was 0.6 percent for federally-funded contracts and 0.3 percent for state-funded contracts. Most of the dollars going to African American-owned firms were to businesses certified as DBEs.

Native American-owned firms. Native American-owned firms received 0.6 percent of federally-funded contract dollars for 2002-April 2006 and almost none of these dollars for May through December 2006 based on the data analyzed by BBC. On state-funded contracts, Native American-owned firms accounted for 0.7 percent of the contract dollars. Almost all of the utilization of Native American-owned firms pertains to firms that are certified as DBEs (true for both federally-funded and state-funded contracts).

DBEs owned by white males. BBC identified one subcontract on a federally-funded construction contract and one subcontract on a federally-funded engineering contract that went to firms owned by white males that were DBE-certified. In terms of dollars, utilization was below one tenth of 1 percent.

Figure IV-6.
DBE and MBE/WBE share of prime/subcontract dollars for transportation construction and engineering contracts, by race/ethnicity/gender

	Federally-funded		State-funded contracts 2002–2006
MBE/WBEs			
African American-owned	0.6%	0.5%	0.3%
Asian-Pacific American-owned	1.2	1.4	0.6
Subcontinent Asian American-owned	0.8	0.7	0.5
Hispanic American-owned	6.6	8.3	6.6
Native American-owned	<u>0.6</u>	<u>0.0</u>	<u>0.7</u>
Total MBE	9.8%	10.9%	8.8%
WBE (white women-owned)	<u>4.9</u>	<u>2.6</u>	<u>2.7</u>
Total MBE/WBE	14.7%	13.4%	11.4%
DBEs			
African American-owned	0.5%	0.5%	0.2%
Asian-Pacific American-owned	1.0	1.3	0.5
Subcontinent Asian American-owned	0.5	0.2	0.4
Hispanic American-owned	5.5	2.7	4.3
Native American-owned	<u>0.6</u>	<u>0.0</u>	<u>0.7</u>
Total MBE	8.2%	4.7%	6.0%
WBE (white women-owned)	0.9	0.1	0.7
White male-owned DBE	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Total DBE	9.0%	4.9%	6.7%

Note: Numbers rounded to nearest tenth of 1 percent. Numbers may not add to totals due to rounding.

For more detail, see Figures E-24, E-25 and E-68 in Appendix E.

Number of contracts analyzed is 6,673 for 2002-April 2006 federally-funded and 192 for May-December 2006 federally-funded and 4,305 for 2002-2006 state-funded contracts.

Source: BBC Research and Consulting from contract data on Caltrans, Local Assistance and SR 125 contracts.

Overall Disparity Analysis

Interpreting any differences in MBE/WBE utilization for contracts with and without goals is difficult because the types, sizes and locations of contracts and subcontracts may differ between federally-funded contracts for 2002 through April 2006 and state-funded contracts for 2002 through 2006. Federally-funded contracts for May through December 2006 could be different from contracts prior to May 1, 2006.

In addition, simple comparisons of MBE/WBE utilization for contracts with and without goals do not show whether minority- and women-owned firms are under- or over-utilized relative to the utilization expected based on MBE/WBE availability for those specific sets of contracts and subcontracts. It may be that utilization of MBE/WBEs is below what would be expected even with goals in place. Alternatively, MBE/WBE utilization could exceed availability for contracts without goals.

The following disparity analysis controls for differences in types, sizes and locations of contracts and subcontracts. By comparing actual utilization with the relative availability of minority- and women-owned firms to perform that set of prime contracts and subcontracts, BBC can determine how contract goals affect MBE/WBE utilization and whether current neutral remedies are sufficient to bring MBE/WBE utilization in line with relative MBE/WBE availability. If disparities exist, disparity analysis helps to identify the types of contracts and subcontracts and the race/ethnicity/gender groups showing disparities.

Methodology. BBC compared percentage utilization of minority- and women-owned firms by race/ethnicity/gender with the share of contract dollars that might go to minority- and women-owned firms based on BBC availability analysis.

Example of a disparity analysis table. The balance of this section of the report, and the disparity results presented in the sections that follow, are based on the detailed disparity tables found in Appendix E. Therefore, it is useful to describe the detailed analysis from which BBC draws results.

Figure IV-7 on the following page presents an example of a disparity table from Appendix E. This disparity table pertains to Caltrans, Local Assistance and SR 125 federally-funded construction and engineering contracts awarded from 2002 through April 2006. It includes dollars for prime contractors and subcontractors (and suppliers when data were available). DBE contract goals were applied during this time period for federally-funded contracts. Each of the disparity tables include the same columns and rows.

Figure IV-7.
MBE/WBE utilization, availability and disparity analysis for prime contracts/subcontracts on federally-funded transportation construction and engineering contracts, 2002–April 2006

Firm Type	(a) Number of contracts (subcontracts) in sample	(b) Dollars in sample (thousands)	(c) Estimated total dollars (thousands)	(d) Actual utilization (column c/c1) %	(e) Utilization benchmark (availability) %	(f) Difference (column d-e) %	(g) Disparity index (d/e)x100
(1) All firms	6,673	\$5,882,603	\$8,216,123				
(2) MBE/WBE	2,780	\$831,414	\$1,205,425	14.7	17.6	-2.9	83.4
(3) WBE	731	\$305,766	\$398,715	4.9	4.7	0.2	103.7
(4) MBE	2,052	\$525,907	\$806,969	9.8	12.9	-3.1	76.0
(5) African American-owned	108	\$39,689	\$47,382	0.6	2.4	-1.8	24.5
(6) Total Asian American-owned	434	\$92,532	\$170,462	2.1	2.6	-0.6	79.0
(7) Asian-Pacific American-owned	232	\$54,641	\$98,160	1.2	2.1	-0.9	56.4
(8) Subcontinent Asian American-owned	187	\$36,501	\$69,397	0.8	0.5	0.3	165.9
(9) Hispanic American-owned	893	\$350,936	\$538,700	6.6	7.2	-0.7	90.9
(10) Native American-owned	212	\$21,903	\$50,426	0.6	0.7	-0.1	86.1
(11) Unknown MBE	405	\$20,847					
(12) DBE-certified	2,184	\$508,010	\$742,215	9.0			
(13) Women-owned DBE	441	\$60,978	\$71,587	0.9			
(14) Minority-owned DBE	1,722	\$440,012	\$670,548	8.2			
(14) African American-owned DBE	99	\$34,249	\$41,513	0.5			
(16) Total Asian American-owned DBE	338	\$74,765	\$127,278	1.5			
(17) Asian-Pacific American-owned DBE	202	\$47,748	\$83,914	1.0			
(18) Subcontinent Asian American-owned DBE	133	\$26,995	\$43,301	0.5			
(19) Hispanic American-owned DBE	702	\$291,690	\$451,413	5.5			
(20) Native American-owned DBE	205	\$21,184	\$50,081	0.6			
(21) White male-owned DBE	2	\$78	\$339	0.0			
(22) Unknown DBE-MBE	375	\$17,864					
(23) Unknown DBE	22	\$7,202					

Note: Includes Caltrans, Local Assistance and SR 125 contracts. Spreadsheet rounds numbers to nearest thousand dollars or tenth of one percent. WBE is white women-owned firms.

Source: BBC Research and Consulting Disparity Analysis.

Utilization. Column (a) of this table notes the number of prime contracts and subcontracts in the sample (6,673 total). Column (b) identifies the combined dollars of prime contracts and subcontracts in the sample of contract elements. (Prime contract dollars refer to the dollars retained by the prime contractor after subtracting subcontract dollars.) Dollars are reported in thousands. This disparity table examines contract dollars totaling \$5.9 billion.

Column (c) is the estimated total dollars going to each group if BBC had been able to examine all Caltrans, Local Assistance and SR 125 federally-funded contracts during this time period. Sampling procedures and weighting of contract dollars are described in Appendix D. BBC had to sample Local Assistance contracts (and a small portion of Caltrans engineering contracts), which is why BBC needed to estimate total dollars of contracts after appropriate weighting of the sampled contracts.

Column (d) divides the estimated dollars for each group by the estimated total amount of contract dollars to calculate percentage utilization for each group.

Figure IV-7 also has rows for each firm type. “All firms” in row (1) pertains to combined majority-, minority- and women-owned firms. “MBEs” refers to all minority-owned firms, whether or not they are DBE-certified. “WBEs” are white women-owned firms. “Total Asian American-owned firms” in row (7) provides a total for Asian-Pacific American-owned firms and Subcontinent Asian-owned firms. This subtotal is provided because there are occasionally some Asian American-owned firms included in the analysis that had no further race/ethnicity information. Note that one should add values for total Asian American-owned firms to other minority groups when calculating total MBE utilization or availability (and not also add values for Asian-Pacific American-owned and Subcontinent Asian American-owned firms).

Row (11) shows “unknown MBE.” These firms were identified as minority-owned but could not be further classified. They are allocated among each race/ethnic group of MBEs in proportion to the known dollars for each group.

The bottom half of Figure IV-7 reports utilization for firms that were certified as DBEs in the years in which the contract was awarded. Row (22) and row (23) pertain to certified DBEs for which specific race/ethnicity/gender was not known. Dollars for firms listed under “unknown DBE-MBE” were allocated among other DBE-certified minority-owned firms in proportion to the known dollars for each group. A similar process was used for “unknown DBE,” except that dollars were also apportioned to women-owned DBEs and white male-owned DBEs in proportion to the known dollars for those groups.

Relative availability. BBC developed an estimate of relative availability of firms for each race/ethnicity/gender group following the procedures described in Section II. Availability is also represented as a percentage. The availability figure for a particular group represents a benchmark with which to evaluate relative utilization for that group for a particular set of contracts. BBC separately calculated relative availability for each group and set of contracts and subcontracts according to the procedures outlined in Section II (and described in more detail in Appendix D).

Column (e) of Figure IV-7 reports relative availability for this disparity table. Based on the types of work involved in the prime contracts and subcontracts included in the Figure IV-7 analysis, plus the sizes of these contract elements and their geographic location, BBC estimated that 17.6 percent of the contract dollars would go to minority- and women-owned firms after considering each firm’s

specialization, interest and qualifications in prime versus subcontract work, geographic reach and bid capacity of firms to perform this work.

Differences between utilization and availability. The first step in analyzing whether there was a disparity between the relative utilization of a particular group and its relative availability is to subtract percentage utilization from percentage availability. When examining all MBE/WBEs in Figure IV-7, utilization was 2.9 percentage points below availability. This difference is reported in column (f).

It is sometimes difficult to interpret absolute differences between relative utilization and relative availability, especially when utilization and availability are very small. Therefore, BBC also calculated a “disparity index,” which divides percentage utilization by percentage availability and multiplies the result by 100. An index of “100” means that there is “parity” between relative utilization and availability for a particular group. An index below 100, especially below 80, may indicate a substantial disparity. Column (g) in the disparity tables provides the disparity index for each group.

Note that all percentages in the disparity tables were rounded to the nearest tenth of 1 percent after making all calculations. Percentages correctly add and subtract, even though the rounding may make actual sums appear to differ by one tenth of 1 percent. In addition, the disparity index is derived from the detailed data for percentage utilization and availability before any rounding.

The DBE utilization statistics at the bottom of Figure IV-7 are provided as reference. BBC did not conduct disparity analyses for certified DBEs for the reasons described in Section II.

Results of a disparity analysis. The disparity analysis shown in Figure IV-7 reflects the influence of DBE contract goals, as goals were typically set on federally-funded contracts prior to May 1, 2006. Any lack of disparity for a particular MBE/WBE group could suggest that the DBE contract goals program was effective in increasing utilization for that group.

Column (d) indicates that the combined prime contract and subcontract utilization of MBE/WBEs was 14.7 percent for these contracts. This utilization was below what would be anticipated based on relative availability to perform the work involved in these contracts — 17.6 percent — as shown in column (e). Utilization of MBE/WBEs was 3 percentage points below availability, a statistic presented in column (f). (Note that all statistics in the disparity analysis are rounded to the nearest tenth of 1 percent.)

Dividing 14.7 percent utilization by 17.6 percent availability and multiplying by 100 yields a disparity index of 83.4. There is a disparity between overall utilization and availability of minority- and women-owned firms even with the DBE contract goals program in place. Minority- and women-owned firms received about 83 cents out of every dollar of utilization expected based on relative MBE/WBE availability for this work.

Figure IV-7, and the other disparity tables in Appendix E, allow exploration of the components of any overall disparity for MBE/WBEs. As Figure IV-7 demonstrates, utilization of women-owned firms (4.9 percent) is very close to relative availability of women-owned firms to perform the work involved in this set of contracts (4.7 percent). The disparity index for women-owned firms is approximately 104. There is no disparity for the utilization of women and firms for this set of contracts.

On the other hand, African American-owned firms received only 0.6 percent of contract dollars, less than the 2.4 percent relative availability to perform the work included in Figure IV-7. The disparity index for African American-owned firms is 24.5, indicating that African American-owned firms received one-quarter of the dollars on these contracts that would be anticipated based on relative availability of African American-owned firms to perform this work. There were also relatively large disparities for Asian-Pacific American-owned firms.

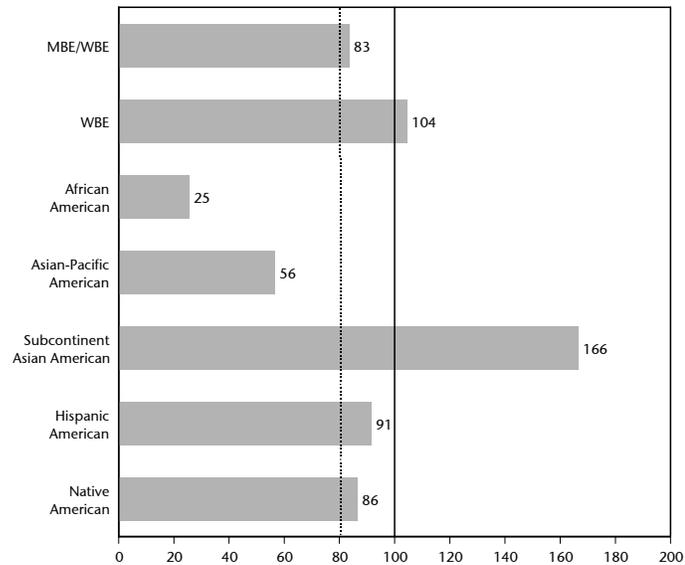
Subcontinent Asian American-owned firms, shown in row (8) of Figure IV-7, had utilization considerably greater than their relative availability to perform the work. About 0.8 percent of the dollars of these contracts went to Subcontinent Asian American-owned firms, more than the 0.5 percent relative availability of Subcontinent Asian American-owned firms to perform this work. The disparity index for Subcontinent Asian American-owned firms was 166. Because the DBE contract goals program applied to these contracts, it is difficult to interpret utilization exceeding availability for any group potentially benefiting from the DBE contract goals.

Figure IV-8 summarizes the disparity indices from Figure IV-7. A line down the center of the graph shows an index of 100, which indicates “parity” between relative utilization and relative availability for a group. Indices under 100 may indicate a disparity between utilization and availability. The graph ends at a disparity index of 200 even though, in some cases, disparity indices exceed 200. For reference, a line is drawn at an index of 80. In the context of employment law, some courts use 80 as a benchmark for what may indicate a substantial disparity. Although this may not be as important a benchmark for evaluating disparities between utilization and availability of minority- and women-owned firms, BBC provides it here as a reference point MBE/WBE.

As Figure IV-8 shows, minority- and women-owned firms, overall, have utilization that is 83 percent of what would be expected based on overall MBE/WBE availability for these contracts. Utilization of each MBE/WBE group except for WBEs and Subcontinent Asian American-owned firms is below relative availability for that group, resulting in disparity indices below 100. Because DBE contract goals were typically in place for these contracts, it is difficult to interpret the disparity indices for WBEs and Subcontinent Asian American-owned firms.

Similarly, disparities for Hispanic American-owned firms and Native American-owned firms are relatively small for federally-funded contracts prior to May 1, 2006 (disparity indices are between 80 and 100).

Figure IV-8.
Disparity indices for MBE/WBE utilization as prime contractors and subcontractors on federally-funded transportation construction and engineering contracts, 2002-April 2006



Note:

Includes Caltrans, Local Assistance and SR 125 contracts. Utilization and availability includes non-DBE-certified firms.

For more detailed information, see Figure E-24 in Appendix E.

Number of contracts analyzed is 6,673 for federally-funded contracts.

Source:

BBC Research and Consulting.

Disparity analysis for contracts with and without DBE contract goals. BBC first presents results for federally-funded contracts with DBE contract goals and state-funded contracts, which do not have DBE goals. The analysis then turns to federally-funded contracts after the DBE contract goals program was discontinued (May 1, 2006).

State-funded contracts. BBC was able to examine a large number of prime contracts and subcontracts on state-funded contracts for 2002 through 2006 (4,305 contract elements). No DBE contract goals applied to these contracts.

The disparity indices for state-funded contracts reflect calculations of MBE/WBE availability, by group, specific to the types, roles, sizes and locations of the work involved in these contracts (overall MBE/WBE availability was 19.3 percent, somewhat higher than for federally-funded contracts for 2002-April 2006). However, utilization of MBE/WBEs was only 11.4 percent, lower than for federally-funded contracts with DBE goals. The resulting disparity index is 59, suggesting that, without race- and gender-based measures, utilization of minority- and women-owned firms will only reach 59 percent of the level expected based on availability for those contracts (59 cents out of every dollar of utilization expected based on MBE/WBE availability for that work). The disparity index for state-funded contracts is considerably lower than the disparity index for federally-funded contracts from 2002 through April 2006 (83).

State-funded contracts consistently showed lower values for disparity indices for WBEs and each MBE group:

- The disparity index of 48 for WBEs suggests that utilization was less than one-half of what would be anticipated from the relative availability of women-owned firms.
- Disparity indices for African American- and Asian-Pacific American-owned firms indicated large disparities for state-funded contracts.
- The disparity index for Native American-owned firms was 65, indicating a more substantial disparity than for federally-funded contracts.

- As with federally-funded contracts, utilization of Subcontinent Asian American-owned firms on state-funded contracts was considerably above what would be anticipated from relative availability of these firms.
- The disparity index for Hispanic American-owned firms for state-funded contracts was 81, similar to the index for contracts with DBE goals.

Figure IV-9 presents the results for state-funded contracts.

Figure IV-9.
Disparity indices for MBE/WBE utilization as prime contractors and subcontractors on federally- and state-funded transportation construction and engineering contracts

Note:

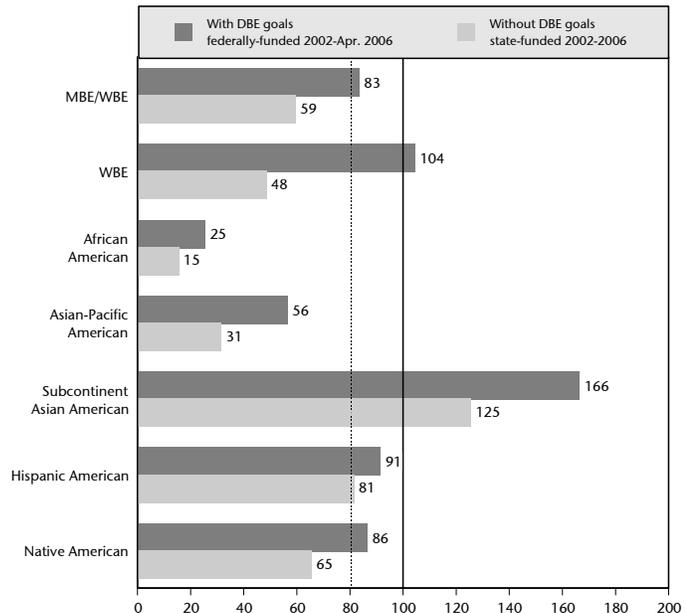
Includes Caltrans, Local Assistance and SR 125 contracts. Utilization and availability includes non-DBE-certified firms.

For more detailed information, see Figure E-24 and Figure E-68 in Appendix E.

Number of contracts analyzed is 6,673 for federally-funded and 4,305 for state-funded contracts.

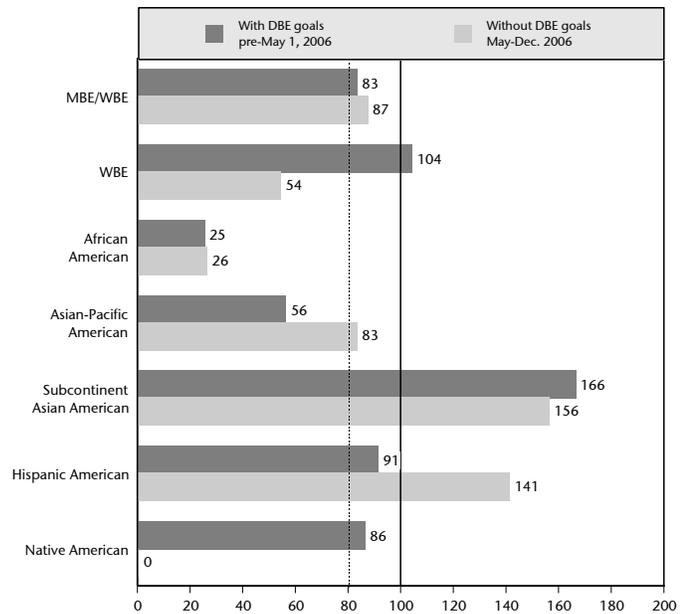
Source:

BBC Research and Consulting.



Federally-funded contracts after May 1, 2006. Figure IV-10 presented disparity indices for a group of federally-funded contracts that typically had DBE contract goals. Figure IV-10 compares these indices with the disparity indices for federally-funded contracts after May 1, 2006, which did not include DBE contract goals. The data on post-May 1, 2006 contracts is limited — there were only 192 contract elements (prime contracts and subcontracts) in the contract data collected for this time period. (Figure E-25 in Appendix E presents utilization and availability figures that lead to the disparity indices for post-May 1, 2006 contracts in Figure IV-10.)

Figure IV-10.
Disparity indices for MBE/WBE utilization as prime contractors and subcontractors on federally-funded transportation construction and engineering contracts, 2002-April 2006 and May-December 2006



Note:

Includes Caltrans, Local Assistance and SR 125 contracts. Utilization and availability includes non-DBE-certified firms.

For more detailed information, see Figure E-24 and Figure E-25 in Appendix E.

Number of contracts analyzed is 6,673 for 2002-April 2006 federally-funded and 192 for May-December 2006 federally-funded contracts.

Source:

BBC Research and Consulting.

As the disparity indices in Figure IV-10 indicate, discontinuing the DBE contract goals program on May 1, 2006 had no negative effect on overall MBE/WBE utilization for May through December 2006. With DBE contract goals, MBE/WBEs were receiving 83 cents of every contract dollar expected based on MBE/WBE availability for that work. From the data collected for May through December 2006, MBE/WBEs received 87 cents of every contract dollar of utilization expected based on availability for those contracts.

Discontinuing the DBE goals may have had little impact on some groups and a larger effect on others. The disparity index for African American-owned firms, already low for federally-funded contracts prior to May 1, 2006, remained low after this date. The disparity index for Asian-Pacific American-owned firms was 83 for federally-funded contracts after May 1, 2006. Results for Subcontinent Asian American-owned firms showed utilization exceeding relative availability for federally-funded contracts without DBE contract goals. Utilization of Hispanic American-owned firms exceeded relative availability for the May-December 2006 contracts (disparity index of 141).

The study team identified only two subcontracts that went to Native American-owned firms on federally-funded contracts after May 1, 2006, amounting to very little dollars. The disparity index rounded to “0” for this group for the May-December 2006 contracts.

Also note that there may be a carryover effect of the DBE contract goals program in the last half of 2006 that may not hold after 2006.

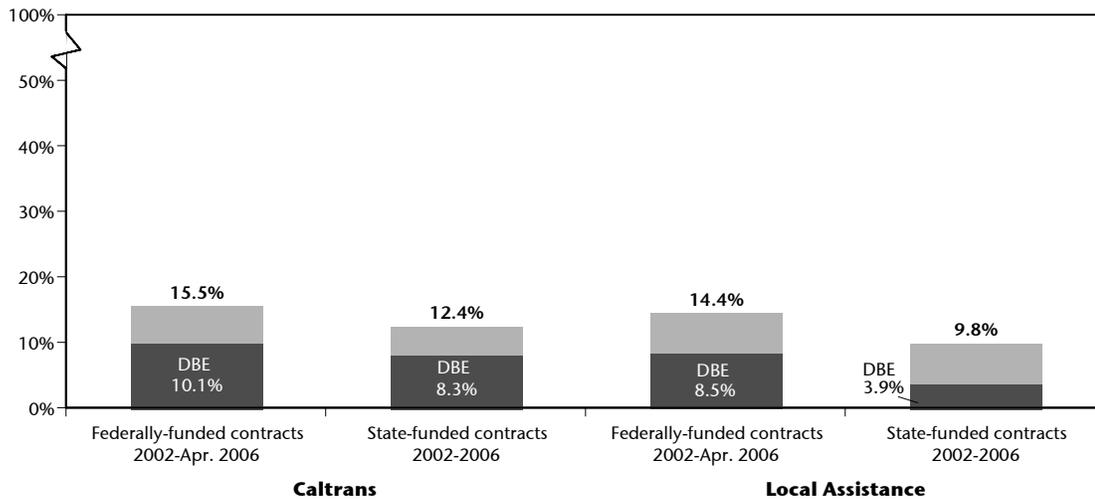
Differences between Caltrans Contracts and Local Assistance Contracts

Before considering relative utilization and availability by construction versus engineering contracts and for subcontracts versus prime contracts, the subjects of the following four sections of this report, BBC examined whether there were differences in disparity results depending on whether Caltrans directly let the contract or whether a local agency awarded the contract (“Local Assistance” contracts).

Federally-funded versus state-funded contracts. As illustrated in Figure IV-11 on the following page, DBE and MBE/WBE utilization for Local Assistance contracts was lower than

Caltrans contracts for both federally-funded contracts and state-funded contracts. (Results for Local Assistance contracts reflect a sample of 1,204 federally-funded prime contracts and subcontracts, and 458 state-funded prime contracts and subcontracts.)

Figure IV-11.
DBE and MBE/WBE share of prime/subcontract dollars for federally- and state-funded transportation construction and engineering contracts, Caltrans vs. Local Assistance



Note: Statistics above each bar is total MBE/WBE utilization. Certified DBE utilization is noted in the bottom portion of each bar. The difference is utilization of MBE/WBEs that were not DBE certified.

For more detail on Caltrans contracts, and for results by DBE group, see Figures E-2 and E-54 in Appendix E. For more detail on Local Assistance contracts, and for results by DBE group, see Figures E-12 and E-61 in Appendix E.

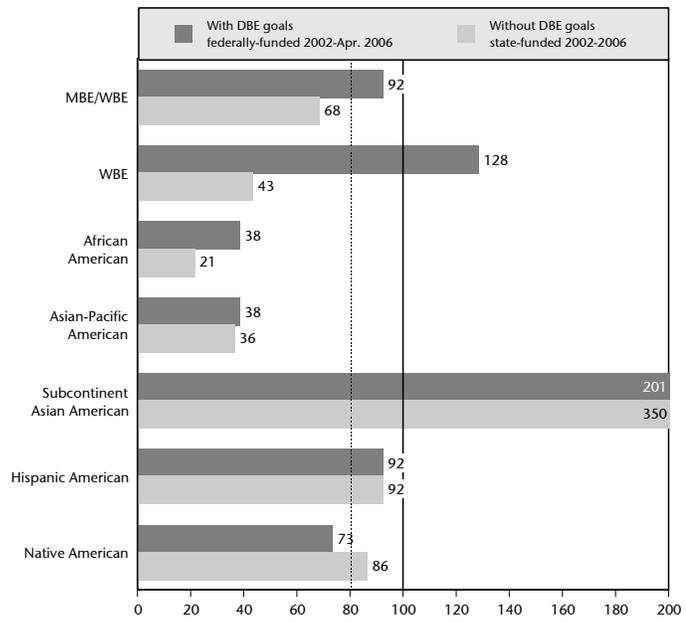
Number of contracts analyzed is 5,346 for 2002-April 2006 federally-funded Caltrans and 3,847 for 2002-2006 state-funded Caltrans and 1,204 for 2002-April 2006 federally-funded Local Assistance and 458 for 2002-2006 state-funded Local Assistance contracts.

Source: BBC Research and Consulting from contract data on Caltrans, Local Assistance contracts

Disparity analysis for Caltrans federally-funded versus state-funded contracts. On federally-funded Caltrans contracts prior to May 1, 2006, utilization of minority- and women-owned firms was 92 percent of what would be expected based on MBE/WBE availability for these contracts (based on 15.5 percent MBE/WBE utilization and 16.9 percent MBE/WBE availability). Among MBE groups, however, disparities were identified for African American-owned firms (disparity index of 39), Asian-Pacific American-owned firms (disparity index of 38) and Native American-owned firms (disparity index of 73). These disparities are similar to what was found for Caltrans and Local Assistance contracts combined.

On state-funded contracts awarded by Caltrans, overall MBE/WBE utilization was 68 percent of what would be expected based on relative MBE/WBE availability for these contracts. There were large disparities for WBEs, African American-owned firms and Asian-Pacific American-owned firms. The disparity index for Native American-owned firms was 86. Results were similar to those for all state-funded contracts, including Local Assistance contracts.

Figure IV-12.
Disparity indices for MBE/WBE utilization as prime contractors and subcontractors on Caltrans federally- and state-funded transportation construction and engineering contracts, 2002-April 2006 and 2002-2006



Note:

Utilization and availability includes non-DBE-certified firms.

For more detailed information, see Figure E-2 and Figure E-54 in Appendix E.

Number of contracts analyzed is 5,346 for federally-funded and 3,847 for state-funded contracts.

Source:

BBC Research and Consulting.

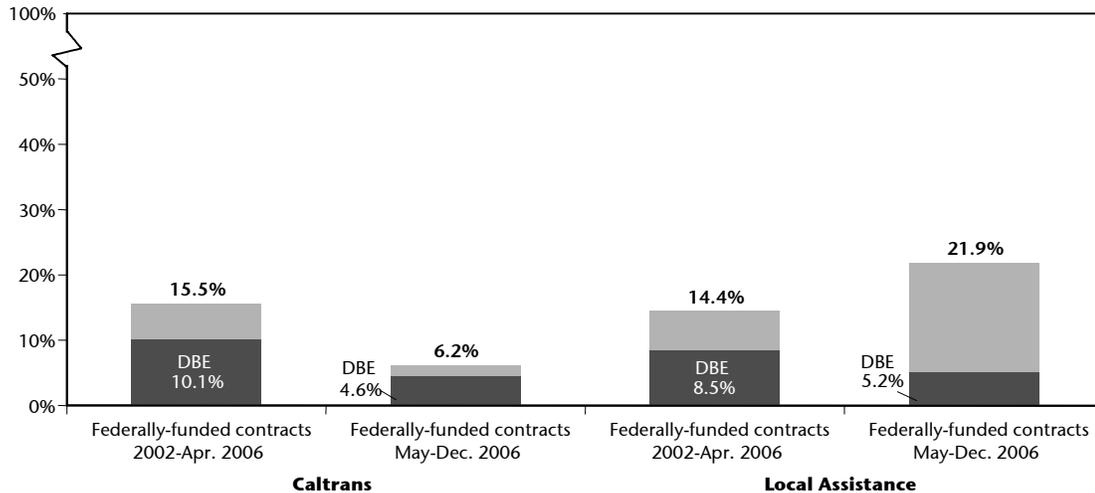
Disparity analysis for Local Assistance federally-funded versus state-funded contracts. There were disparities between utilization and availability for each MBE/WBE group for state-funded contracts awarded by local agencies. Overall, MBE/WBE utilization was only 46 percent of the level expected based on relative MBE/WBE availability for this work. Figure E-61 in Appendix E provides these results.

Federally-funded contracts before and after May 1, 2006. Based on data for 68 Caltrans prime contracts and subcontracts, MBE/WBE utilization on federally-funded contracts was 6.2 percent for May through December 2006, lower than the 15.5 percent found for 2002 through April 2006.

Based on the 124 prime contracts and subcontracts BBC was able to examine for Local Assistance contracts, MBE/WBEs received 21.9 percent of federally-funded contract dollars for May through December 2006 (see Figure IV-13 on the following page).

BBC further investigated why overall MBE/WBE utilization was higher for Local Assistance contracts after May 1, 2006. The increase in overall MBE/WBE utilization came from a small number of MBE/WBE prime contractors. MBE/WBE utilization as subcontractors declined after May 1, 2006 (comparison of Figures E-18 and E-19 in Appendix E).

Figure IV-13.
DBE and MBE/WBE share of prime/subcontract dollars for federally-funded transportation construction and engineering contracts, Caltrans vs. Local Assistance



Note: Statistics above each bar is total MBE/WBE utilization. Certified DBE utilization is noted in the bottom portion of each bar. The difference is utilization of MBE/WBEs that were not DBE certified.

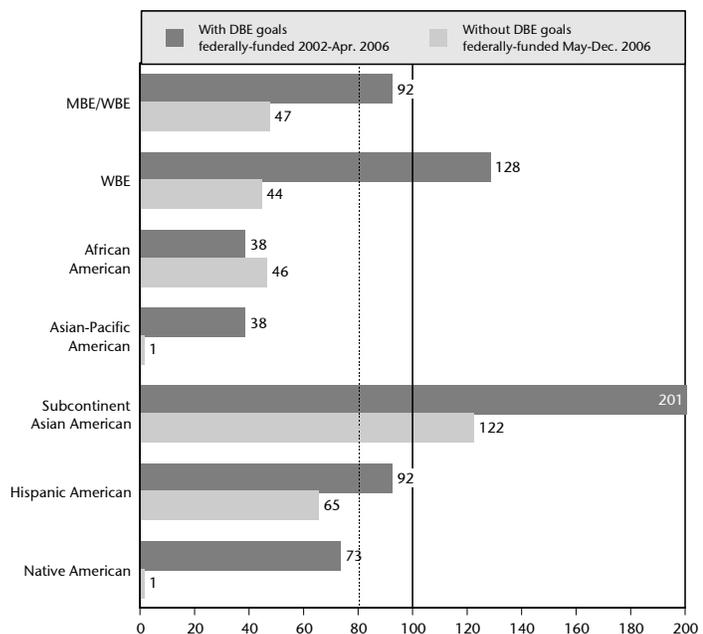
For more detail on Caltrans contracts, and for results by DBE group, see Figures E-2 and E-3 in Appendix E. For more detail on Local Assistance contracts, and for results by DBE group, see Figures E-12 and E-13 in Appendix E.

Number of contracts analyzed is 5,346 for 2002-April 2006 Caltrans and 68 for May-December 2006 Caltrans and 1,204 for 2002-April 2006 Local Assistance and 124 for May-December 2006 Local Assistance contracts.

Source: BBC Research and Consulting from contract data on Caltrans, Local Assistance contracts.

Disparity analysis for Caltrans federally-funded contracts after May 1, 2006. Disparities were found for each MBE/WBE group except for Subcontinent Asian American-owned firms for Caltrans contracts for May through December 2006 (see Figure IV-14). As previously mentioned, these results are based on relatively few contracts.

Figure IV-14.
Disparity indices for MBE/WBE utilization as prime contractors and subcontractors on Caltrans federally-funded transportation construction and engineering contracts, 2002-April 2006 and May-December 2006



Note:

Includes Caltrans and SR 125 contracts. Utilization and availability includes non-DBE-certified firms. For more detailed information.

See Figure E-2 and Figure E-3 in Appendix E.

Number of contracts analyzed is 5,346 for 2002-April 2006 and 68 for May-December 2006 contracts.

Source:

BBC Research and Consulting.

Local Assistance federally-funded contracts before and after May 1, 2006. Overall, the disparity index for MBE/WBE utilization on federally-funded Local Assistance contracts after May 1, 2006 was 120, indicating utilization that exceeded availability. However, there were disparities for women-, African American- and Native American-owned firms (see Figure E-13 in Appendix E). As with Caltrans contracts after May 1, 2006, these results are based on relatively few contracts.

Analysis of Statistical Significance of Any Disparities

Statistical significance of any disparities relates to the degree a researcher can reject “random chance” as a cause of the disparities. Often, chance in sampling of data is the factor that researchers consider in determining statistical significance of results. BBC’s availability analysis, however, attempted to contact every firm identified in California related to transportation construction or engineering identified by Dun & Bradstreet, as described in Appendix C. Much of the utilization data analysis also uses data that approach a “population” of contracts. Nearly any disparity when comparing overall utilization with availability would be “statistically significant.” Reasons why BBC went beyond this type of analysis of statistical significance are outlined in Figure IV-15.

Monte Carlo simulation. BBC went beyond examining “random chance” in sampling as an explanation of any disparities to analyze “random chance” in contract and subcontract awards. If each prime contract and subcontract element were the same dollar value, standard difference of proportions statistical tests could be used to explore chance in contract awards. BBC could simply

Figure IV-15.
Consideration of sampling in the availability and utilization analysis

BBC attempted to collect all Caltrans construction contracts, and for some districts, all engineering contracts. By necessity, BBC drew a sample of Local Assistance contracts to be reported on by local agencies. Even with the sample, BBC obtained contracts that comprised an estimated 42 percent of all Local Assistance construction and engineering contract dollars. Therefore, statistical confidence in the results for the overall utilization figure of 14.7 percent for federally-funded and 11.4 percent for state funded contracts is high (+/- 1.8 and +/- 1.4 percentage points confidence interval respectively at the 95 percent confidence level).

BBC conducted telephone interviews with 18,675 such business establishments, a number of completed interviews that is so large as to often be treated as a “population,” not a sample. BBC’s analysis of the confidence interval around the estimate of MBE/WBEs representation among all firms available for Caltrans and local government transportation work, 32.3 percent, is accurate within about +/- 1 percentage point at the 95 percent confidence level (BBC applied the finite population correction factor when determining confidence intervals). At this level of accuracy in the availability analysis, a disparity index of 96 could technically be “statistically significant.” BBC’s availability figures for most minority groups are even more accurate (+/- two tenths of a percentage point). By comparison, most survey results for proportions reported in the popular press are +/- 5 percentage points or, at best, +/- 3 percentage points.

determine whether the percentage of dollars received by MBE/WBEs was sufficiently different from percentage availability (given the number of contract elements in the data) that random chance could be rejected as the cause of the disparity at the 95 percent confidence level.

However, some contract elements are for millions of dollars and others may be only a few thousand dollars. More sophisticated statistical techniques must be used. “Monte Carlo” simulation analysis is a useful tool because there are many individual chances at winning work and each has a different payoff.

The technique works as follows:

- The statistical analysis starts by examining an individual contract element (a prime contract or subcontract).
- BBC determined from the Availability Survey the individual firms “available” for that contract element based on type of work, prime versus subcontract role, size of the prime contract or subcontract, and location of the work. Each firm meeting those criteria in the Availability Survey were assumed to have an equal chance of receiving that contract element.

- The Monte Carlo simulation randomly chooses a firm for a contract element from the pool of available firms for that element. For example, the odds of a woman-owned firm receiving that contract element are equal to the number of women-owned firms available for that work divided by the total number of firms available for that contract element based on what is known about the contract element and the firms in the Availability Survey that meet those criteria.
- A single Monte Carlo simulation run then repeats the above process for all other contract elements in that set of contracts. The output of a single Monte Carlo run is simulated utilization of minority- and women-owned firms, by group, for that set of contract elements for that run.
- The Monte Carlo simulation is then repeated 1 million times for each set of contracts (1 million “runs” of the simulation).

The output of a Monte Carlo simulation is the number of runs out of 1 million that produce a result observed in the actual data. For state-funded contracts, none of the 1 million runs produced a level of overall MBE/WBE utilization that was equal to or below the actual utilization of 11.4 percent. However, for just Hispanic American-owned firms, about 150,000 of the 1 million simulation runs replicated a level of Hispanic American-owned firms of 6.6 percent or below.

BBC applied a 95 percent confidence level statistical standard, which is equivalent to a “two standard deviation test” sometimes applied by the courts when evaluating the statistical significance of the disparity results. Applying a two-tailed test, the maximum number of simulations that could equal or fall below actual utilization is 25,000 out of 1 million, or 2.5 percent of total simulation runs, for a result to found to be statistically significant. Because none of the 1 million simulation runs for MBE/WBEs were equal to or below actual utilization of 11.4 percent, the overall disparity for MBE/WBEs is statistically significant.

Results for state-funded contracts. Figure IV-16 presents results of these statistical significance tests for state-funded contracts. In addition to overall MBE/WBE utilization, BBC’s Monte Carlo simulation rejected chance in contract and subcontract awards as an explanation of observed disparities on state-funded contracts for women-, African American-, and Asian-Pacific American-owned firms.

Lack of “statistical significance” in the disparity for Native American-owned firms for state-funded contracts must be interpreted with caution. The observed disparity is about the same as for MBE/WBEs overall (disparity index of 65). However, 20 percent of the Monte Carlo runs showed a level of utilization for Native American-owned firms at or below the 0.7 percent utilization found for these firms (0.7 percent utilization is equivalent to less than 1 cent out of every contract dollar). One of the reasons that the simulations showed that chance could not be rejected as an explanation for the disparity for Native American-owned firms is the small number of firms available for this work. There were relatively few chances for Native American-owned firms to be chosen for a contract element in the simulation due to the small number of Native American-owned firms. This is an issue with any statistical significance test for disparities involving small numbers. Some courts have recognized this issue when interpreting statistical results.

Figure IV-16.
Statistical significance of any observed disparities in MBE/WBE utilization for state-funded construction and engineering contracts, 2002-2006

				Reject chance in awards of contract elements as cause of disparity?
MBE/WBE	59	0	*	Yes
WBE	48	4	*	Yes
African American	15	149	0.01%	Yes
Asian Pacific American	31	713	0.07%	Yes
Subcontinent Asian American	125	n/a	n/a	n/a
Hispanic American	81	146,764	14.68%	No
Native American	65	198,160	19.82%	No

Note: Includes Caltrans and Local Assistance contracts. Utilization and availability includes non-DBE-certified firms.
 *=less than one hundredth of 1 percent.

Source: BBC Research and Consulting.

Results for federally-funded contracts. BBC also performed Monte Carlo simulation analysis for federally-funded contracts before May 1, 2006, recognizing that these contracts typically had DBE subcontracting goals. BBC rejected chance in contract and subcontract awards as an explanation of observed disparities for African American-owned firms. Results for Hispanic American- and Subcontinent Asian American-owned firms are similar to state results. Figure IV-17 presents results for federally-funded contracts before May 1, 2006.

Figure IV-17.
Statistical significance of any observed disparities in MBE/WBE utilization for federally-funded construction and engineering contracts, 2002-April 2006

				Reject chance in awards of contract elements as cause of disparity?
MBE/WBE	83	39,748	3.97%	No
WBE	104	n/a	n/a	No
African American	25	2,977	0.30%	Yes
Asian-Pacific American	56	102,362	10.24%	No
Subcontinent Asian American	166	n/a	n/a	n/a
Hispanic American	91	216,989	21.70%	No
Native American	86	471,337	47.13%	No

Note: Includes Caltrans and Local Assistance contracts. Utilization and availability includes non-DBE-certified firms.

Source: BBC Research and Consulting.

Results for federally-funded contracts after May 1, 2006 are presented in Figure IV-18. Note that while none of the disparities are “statistically significant,” the disparity indices for women-owned firms and Native American-owned firms were lower than reported in Figure IV-17. The lack of “statistical significance” is due in part to the number of contract elements analyzed for Figure IV-18 (192 total contract elements, compared with 6,673 for Figure IV-17).

Figure IV-18.
Statistical significance of any observed disparities in MBE/WBE utilization for federally-funded construction and engineering contracts, May-December 2006

				Reject chance in awards of contract elements as cause of disparity?
MBE/WBE	87	419,718	41.97%	No
WBE	54	255,275	25.53%	No
African American	26	398,116	39.81%	No
Asian-Pacific American	83	662,393	66.24%	No
Subcontinent Asian American	156	n/a	N/a	n/a
Hispanic American	141	n/a	N/a	No
Native American	0	45,924	4.59%	No

Note: Includes Caltrans and Local Assistance contracts. Utilization and availability includes non-DBE-certified firms.

Source: BBC Research and Consulting.

Summary

Key information from the DBE and MBE/WBE utilization analysis includes:

- Firms certified as DBEs obtained 9.0 percent of contract dollars for federally-funded contracts from 2002 through April 2006. Including MBE/WBEs not certified as DBEs, utilization was 14.7 percent. (Some of the MBE/WBEs that were not certified presumably could be DBE certified if they applied for the certification.)
- Minority- and women-owned firms that are not DBE-certified account for a substantial portion of total MBE/WBE utilization, especially for federally-funded contracts after May 1, 2006 and for state-funded contracts.
- Utilization of DBEs is substantially lower for contracts without DBE contract goals (federally-funded contracts after May 1, 2006 and state-funded contracts for 2002-2006).
- Total MBE/WBE utilization is lower on state-funded contracts (11.4 percent) than federally-funded contracts (14.7 percent).
- Based on limited data for May through December, 2006, MBE/WBE utilization declined little once Caltrans and local agencies discontinued DBE contract goals than found for 2002 through April 2006. It is not known whether this pattern continued after December 2006.
- Hispanic American- and white women-owned firms represent much of the total utilization of MBE/WBEs for both federally-funded and state-funded contracts.

From the overall disparity analysis, BBC concludes that:

- Even with DBE contract goals, there are overall disparities between MBE/WBE utilization and availability on federally-funded contracts (disparity index of 83). Disparities are relatively large for African American- and Asian-Pacific American-owned firms.
- For state-funded contracts, which did not have DBE contract goals, there were disparities for each group except for Subcontinent Asian American-owned firms (overall disparity index for MBE/WBEs of 59). Disparities were relatively large for WBEs and African American-, Asian-Pacific American and Native American-owned firms.
- Limited data are available on MBE/WBE utilization on federally-funded contracts awarded after Caltrans discontinued DBE contract goals. BBC's analysis suggests disparities for some MBE/WBE groups, but that overall levels of disparities for MBE/WBEs were about the same as found as for contracts prior to May 1, 2006. It is too early to determine whether overall MBE/WBE utilization on federally-funded contracts will remain at this level without DBE contract goals.

Appendix E provides considerable additional information concerning utilization of MBE/WBEs and certified DBEs on Caltrans, Local Assistance and SR 125 projects. Appendix E also analyzes MBE/WBE and DBE utilization for each Caltrans district.