

APPENDIX B.

Availability Analysis for Airport Contracting and Procurement

This appendix describes the study team steps to determining MBE/WBE availability for construction, engineering and material and equipment firms in Southern California. It expands on the information provided in Section III regarding the availability analysis.

Overall Approach

As discussed in Section II, BBC integrated responses from three sets of telephone interviews conducted by Customer Research International (CRI). The first interviews were conducted in 2006 and 2007 with transportation construction and engineering firms for the Caltrans Availability and Disparity Study completed in 2007. Appendix C from the Caltrans study provides a detailed overview of the approach and survey process for these interviews. The second set of interviews was conducted in 2008 and 2009 in conjunction with the Southern California Regional Disparity Study and consisted of two additional sets of firms not captured in the Caltrans survey important to the availability analysis for SDCRAA contracts:

- Firms in procurement areas not included in the Caltrans study; and
- Firms in the Caltrans industries founded since the telephone interviews for the Caltrans study.

The third set of interviews was conducted in 2008 and 2009 with firms in procurement areas relevant to Airport contracts that were not examined in the Caltrans study or Southern California Regional Disparity Study.

BBC identified firms for telephone interviews using a Dun & Bradstreet (D&B) database. The study team attempted to reach every business in the relevant 8-digit industry codes maintained by D&B rather than draw a sample of listings. In the 2008-2009 interviews, the study team attempted to reach 15,515 business establishments and completed interviews with 1,994. After screening for qualifications and interest in future work with government agencies, BBC analyzed MBE/WBE availability from a database of 2,020 firms.¹

Firms Interviewed in Southern California Studies

BBC identified the primary subindustries for firms engaged in FAA-funded procurement for SDCRAA. The study team used this information to select 8-digit industry codes representative of the procurement areas principally involved in transportation contracting. Many of these subindustries were included in the availability analysis for the Caltrans study and Southern California Regional Disparity Study.

¹ Including firms in the Caltrans study and firms interviewed in 2008-2009 as part of Southern California Regional Disparity Study and the SDCRAA study. BBC used “firms,” rather than “business establishments,” as the unit of analysis for availability calculations. A firm is a for-profit company, including all of its establishments. A business establishment is a place of business with an address and working phone number. A firm can have many business establishments.

BBC also purchased listings from D&B for subindustries that were not included in the previous studies. BBC only obtained listings of firms located in Southern California for the additional interviews.

Conducting the Availability Interviews

Interview instrument. The study team drafted telephone interview questions to collect business information from firms working in relevant subindustries based on the questionnaire used in the Caltrans study. The basic interview instrument for construction and engineering firms is provided at the end of this appendix. The questions were slightly modified for certain groups of firms based on line of work in order to use the terms commonly employed in those fields.

Fax and email versions of the interview instrument were also developed. These versions were faxed or emailed to firm owners or managers initially contacted by telephone who requested that a survey be faxed or emailed to them. They then returned the completed questionnaire to BBC via fax or email.

Interview process. BBC contracted with Customer Research International (CRI) to conduct the telephone interviews. CRI programmed and conducted the interviews and provided regular reports on results. BBC instructed CRI to make up to at least five attempts to reach a person at each phone number. This design is intentionally persistent to minimize non-response.

BBC instructed CRI staff to identify and interview an available company representative such as the owner, manager, chief financial officer or other key official who could answer questions about the company's line of business, past contracts, financial and employment figures, interest in work with various clients and ownership status. Interviews were conducted in late 2008 and early 2009.

Telephone Interview Performance and Completion for the Southern California Regional Disparity Study and SDCRAA Study

The interview process began with a very large number of D&B business listings for organizations in Southern California in certain lines of work potentially related to transportation contracting. At the end of the survey analysis process, firms reporting that they are available for, had bid on, or had performed transportation construction or engineering work were included in the database used for the availability analysis.

BBC obtained a list of 15,515 business establishments in Southern California. Of these businesses, 1,994 completed telephone interviews, as explained below.

Valid business listings. Some of the business listings purchased from D&B were:

- Duplicate numbers (90 listings);
- Non-working phone numbers (4,399 listings); or
- Wrong numbers for the desired businesses (1,152 listings that could not be reached through follow-up calls).

Figure B-1, on the following page, shows how the beginning set of 15,515 listings was reduced to 9,874 because of these factors. Some non-working phone numbers and some wrong numbers for the desired businesses reflect firms going out of business or changing their names and phone numbers between the time that D&B listed them in its database and the time when the study team attempted to contact them.

Figure B-1 also shows the final disposition of the 9,874 business establishments that CRI attempted to contact:

- About 20 percent of these business establishments could not be reached after a minimum of five phone calls (1,926 establishments). Call-backs to these business establishments were made at different times of day and different days of the week in order to maximize response.
- About 18 percent of these business establishments could not provide a staff member to answer the survey after a minimum of five phone calls (1,743 establishments).
- Interviews were only conducted in English. About 2 percent of these business establishments could not communicate with the interviewer due to language barriers (194 establishments).
- About 22 percent refused to participate in the interview (2,140 establishments).
- About 19 percent asked the study team to send the survey via fax or e-mail but did not successfully obtain the fax or e-mail (after multiple attempts) or received the survey but did not return a completed survey to BBC (1,877 establishments).

In sum, BBC obtained completed interviews with 1,994 business establishments, or about 20 percent of the business establishments with valid phone listings. The very large number of responses and the relatively high response rate add to the statistical validity of the results.

Figure B-1.
Disposition of
attempts to survey
D&B business listings

Note:

* After multiple attempts to complete survey.

Source:

BBC Research & Consulting from
2008/2009 Availability Survey.

	Number of firms	Percent of business listings
Beginning list	15,515	
Less duplicate numbers	90	
Less non-working phone numbers	4,399	
Less wrong number/business	<u>1,152</u>	
Unique business listings with working phone numbers	9,874	100.0%
Less no answers*	1,926	19.5%
Less couldn't reach responsible staff member*	1,743	17.7%
Less language barriers*	194	2.0%
Less refused to answer	2,140	21.7%
Less unreturned fax/e-mail*	<u>1,877</u>	<u>19.0%</u>
Firms that completed telephone interviews	1,994	20.2%

Firms that report being available for local agency work in Southern California. Among the D&B listings successfully contacted, only a portion is deemed available for any type of local agency contracting work, as explained below:

- Slightly more than one-quarter of the firms that completed an interview indicated they did not perform transportation contracting work (546 establishments). The interview ended when a business owner or manager reported that the business did not do this type of work.
- About 1 percent of the surveyed establishments were excluded because they were an organization other than a for-profit business (19 establishments). Non-profit and public sector agencies were not to be included in the survey as the availability analysis focuses on for-profit firms. The survey ended when a respondent reported that the establishment was something other than a for-profit business.
- About 6 percent of surveyed firms had multiple establishments that were also contacted during the Availability Survey effort (110 establishments). Responses from multiple surveys for one business establishment were combined and reconciled so only one survey from each business establishment was included in the final data set.
- About 4 percent of surveyed establishments indicated that they were involved in transportation contracting but reported main lines of work that were well outside the scope of the Availability Survey (73 establishments). For example, some firms identified by D&B as highway construction or concrete firms reported in the survey that they did transportation construction-related work, but that their primary line of business was single family homebuilding or other specialty outside the scope of the study. CRI completed the full survey with these firms. Prior to analyzing results, BBC excluded them from the final data set.
- Among firms available for transportation-related work, 519 said they were not interested in either prime contracting or subcontracting opportunities on such projects, had never bid or received an award for similar projects in any sector in Southern California or because they did not provide valid responses to the questions about geographic scope.

After these exclusions, the survey effort produced a database of 727 for-profit firms in California that were in the lines of business pertinent to the survey and reported they performed contracting work for local agencies in Southern California (see Figure B-2).

**Figure B-2.
Screening of
completed business
telephone interviews
for possible inclusion
in the availability
analysis**

Source:
BBC Research & Consulting from
2008/2009 Availability Survey.

	Number of firms	Percent of business listings
Firms that completed surveys	1,994	100.0%
Less no transportation-related work	546	27.4%
Less not a business	19	1.0%
Less multiple establishments	110	5.5%
Less line of work outside of scope	73	3.7%
Firms available for transportation contracting work	1,246	62.5%
Less no interest in future work, no past bid/award, or missing geographic scope	519	
Firms available for Southern California local agency work	727	

Summary of Firms Potentially Available for SDCRAA Contracts.

About 1,293 firms included in the 2007 Caltrans study meet the criteria to be included as potentially available for SDCRAA contracts. For more information on the 2006 survey, see Appendix C of the 2007 Caltrans Disparity Study.

Of the firms successfully interviewed in the 2007 Caltrans study and the 2008-2009 interviews, 2,020 were for-profit firms meeting the criteria to be considered for local agency transportation contracting work in Southern California. These fundamental availability criteria include:

- Willingness to perform work related to transportation contracting (in the lines of business pertinent to this study and after combining multiple responses for firms with more than one office);
- Are qualified and interested in performing work for local agencies in the future, as a prime contractor and/or subcontractor (or supplier or trucker);
- Have performed or bid on work in the past (in the public or private sector); and
- Indicated they are willing to work (or have worked) in Southern California and have an office in Southern California.

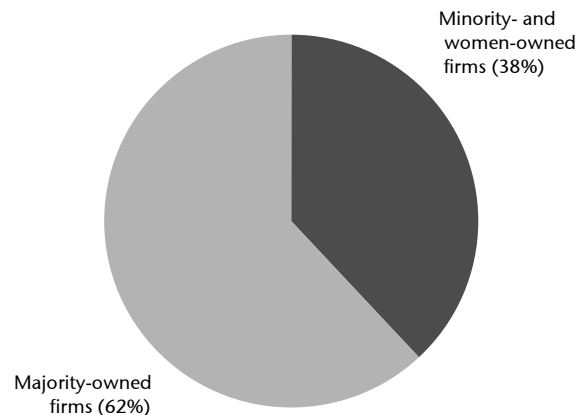
Percentage of Firms Interviewed that are MBE/WBEs

As noted above, 2,020 firms in the transportation contracting industry reported qualifications and interest in future government transportation work and had performed or bid on such work in the past. Of these firms, 38 percent reported that they were minority- or women-owned (see Figure B-3). As this percentage is based on a simple “headcount” of firms, it is just a starting point for the availability analysis.

Figure B-3.
MBE/WBEs as a share of firms
available for Southern California
transportation contracting work

Note:
Unweighted.

Source:
BBC Research and Consulting from 2006 Availability Interviews
and 2008-2009 Availability Interviews.



Determining Availability for Specific Contract Elements

BBC screened firms for the availability analysis by applying two types of criteria:

- Fundamental criteria that a firm must meet to be considered in the analysis, regardless of the contract; and
- Criteria that a firm must meet to be considered for a particular contract element.

Fundamental availability criteria. A firm must meet the fundamental availability criteria listed above to be counted in the availability analysis for any contract element.

Contract specific screening criteria. Firm availability for a particular set of contracts was determined contract-by-contract for each element of a contract (i.e., prime portion and subcontract portions).

Firms were counted as available for some prime contracts or subcontracts and not for others depending upon the characteristics of the contract element and the characteristics of the firm.

For each contract element, the study team identified:

- Contract role (prime contractor or subcontractor);
- Contract size or contract element size;
- Award date for the contract; and
- Work specialty.

Contract role. To be counted as available for a prime contract element, the firm must qualify for prime contractor roles according to the criteria discussed above. Similarly, to be counted as available for a subcontract element, a firm must qualify for a subcontractor role.

Contract amounts. Available firms for subcontract elements were required to have a largest contract status greater than or equal to the size of the contract element. For prime contract elements, available firms needed a largest contract status equal to or greater than the entire contract amount.²

Contract date. To be counted as available for a contract element, firms were required to have an establishment date during or before the year in which that prime contract began.

Contract location. Available firms were required to be willing to work in the San Diego area.

Work specialty. Each contract element was assigned a “work specialty code” based on the main line of work of the firm that actually performed the contract element. For utilized firms, BBC determined the work specialty based on the following information:

- Industry code from Dun & Bradstreet;
- Availability or utilization survey response;
- Feedback from SDCRAA staff; and
- Contract description.

For the majority of contract elements, firms were only counted as available if they were in the same subindustry as the contract element under consideration. In some cases, the subindustry code of a contract element was outside the core areas that were studied in the Availability Survey. For types of work coded as other building construction, other heavy construction, other construction materials and other construction services, firms in related subindustries were counted as available.

Potential Limitations

The study team explored several possible limitations in its approach to estimating relative availability. These include:

- Assessing relative MBE/WBE availability and not providing a count of all available firms;
- Use of D&B data;
- Selection of specific subindustry codes (e.g., NAICS or SIC codes) to include in the availability study;
- Non-response bias; and
- Reliability of answers to survey questions.

² For firms in the “vehicle body repair” subindustry, firms meeting other availability requirements were available for any size of contract. For firms in “security services,” firms reporting availability for contracts greater than \$1 million were considered available for all sizes of contracts.

Not providing a count of all firms available for agency work. The purpose of the telephone interviews is to estimate the *percentage* of firms available for transportation contracting work that are minority- and women-owned and controlled (i.e., “relative” MBE/WBE availability). The interviews provide such information. The interviews do not provide a comprehensive listing of every firm available for transportation work and should not be used as such.

The survey approach of measuring relative availability has been approved by federal courts (see, for example, the Seventh Circuit decision on *Northern Contracting*) when considering local implementation of the Federal DBE Program.³ Use of a survey is recommended as an approach to measuring availability in the USDOT guidance on goal-setting.⁴

Use of D&B data. Dun & Bradstreet provides the most comprehensive private database of business listings in the United States. Even so, this database does not include all establishments operating in the relevant geographic market area:

- **New firms.** There can be a lag between formation of a new business and inclusion in the database. This means that the newest firms may be underrepresented. Based on the firms successfully interviewed in the availability surveys, newly formed firms are more likely than older firms to be minority- or women-owned, which suggests that MBEs and WBEs might be slightly underrepresented in the final database of interviewed firms.
- **Home-based businesses.** The D&B database is more likely to miss a business working out of the home than a firm with a distinct business office. Small, home-based firms are more likely than large firms to be minority- or women-owned, which again suggests that MBEs and WBEs might be underrepresented in the availability data.

Selection of specific subindustry codes. Defining an industry based on specific subindustry codes (e.g., NAICS or SIC codes) is a standard step when analyzing an economic sector. Government and private sector economic data are typically organized according to these industry codes. As with any such research, there are limitations when choosing the specific subindustry codes to define in the transportation contracting industry.

A further limitation to the use of subindustry codes to classify businesses, or any other work type classification method, is that some subindustry codes are imprecise and overlap with other business specialties. Even though BBC used D&B’s own 8-digit subindustry codes, D&B does not maintain a detailed 8-digit code for each firm in its database. In addition, businesses often span several types of work, even at a lower level of specificity. This overlapping makes classifying businesses into a single line of business difficult and imprecise. When firm owners and managers were asked to identify primary lines of business, they often gave broad answers. For these reasons, BBC collapsed many of the subindustry codes into broader work categories in the final database of firms available for transportation contracting work. This presents a more accurate assessment of MBE/WBE availability by work field than possible at a finer level of detail.

³ *N. Contracting, Inc. v. Illinois DOT*, 473 F.3d 715 (7th Cir. 2007)

⁴ USDOT. *Tips for Goals Setting in the Disadvantaged Business Enterprise (DBE) Program* (<http://osdbu.dot.gov/?TabId=133>)

Non-response bias. Analysis of non-response bias considers whether firms not successfully surveyed are different from those successfully surveyed and included in the final data set for availability analysis. There are opportunities for non-response bias in any survey. The study team considered the potential for non-response bias due to:

- Survey sponsorship;
- Work specializations; and
- Language barriers.

Survey sponsorship and introduction. Interviewers introduced the survey by identifying SDCRAA as one of the survey sponsors in order to encourage firms that performed transportation contracting work and related suppliers to participate in the interview. Firms would be less likely to answer somewhat sensitive business questions asked by an interviewer unable to identify the sponsor of the survey. In fact, some firms asked to check with SDCRAA to verify its sponsorship prior to answering the survey.

Analysis of survey refusal rates suggests that sponsorship had an overwhelmingly positive effect on response rates. Only 22 percent of business listings potentially contacted refused to answer the survey.

Work specializations. Businesses in highly-mobile fields, such as trucking, may be more difficult to reach than firms more likely to work out of a fixed office (e.g., engineering firms). This suggests that survey response rates will differ by business specialization.

If all surveyed firms were simply counted to determine relative MBE/WBE availability, this would lead to estimates that relied too heavily on fields that could be easily contacted by telephone. This potential non-response bias is minimal in this study because the availability analysis compares firms within work fields before determining an MBE/WBE availability figure. In other words, the potential for trucking firms to be less likely to complete a survey is less important because the number of MBE/WBE trucking firms completing surveys is compared with total number of trucking firms, not all firms across all fields.

Language barriers. SDCRAA contracting documents are in English and not other languages. The study team made the decision to only include businesses able to complete the survey in English in the availability analysis so to remove language barriers as a potential explanation for any differences in outcomes observed between MBE/WBEs and majority-owned firms.

Individuals who could not communicate in English well enough to complete the interview and could not locate another individual to answer survey questions in English were not captured in the survey research. There were 194 firms out of 9,874 that could not be interviewed due to language barriers. Choosing to conduct the study in English and not translate it into other languages may have a very small effect on the relative number of minority-owned firms that completed interviews.

Response reliability. Firm owners and managers were asked questions that may be difficult to answer, including firm revenues and employment. For this reason, the study team prompted them with D&B information for their establishment when available, and asked them to confirm that information or provide more accurate estimates. Further, respondents were typically not asked to give absolute figures for difficult questions such as firm revenues. Rather, they were given ranges of dollar figures or employment levels.

Summary. BBC examined several potential sources of non-response bias. It is possible that MBEs and WBEs were somewhat under-represented in the final database of available firms. However, BBC concludes that this potential under-representation of MBE/WBEs does not significantly affect the analyses.

Review of Interview Information

The study team utilized information collected in other portions of the study to review certain aspects of the data collected in the availability interviews. These data include:

- SDCRAA contracting records;
- MBE/WBE/DBE status from the California Unified Certification Program; and
- Information from previous disparity study work including the 2007 Caltrans Study and the 2009 Southern California Regional Disparity Study.

The study team used data from these four sources to review responses to questions regarding firm ownership, past contracting amounts, contract role and geographic availability when these data were missing from a firm interview. The study team only changed an interview response when an availability response conflicted with the above records.

MBE/WBE status and ethnicity classification. BBC determined the race/ethnicity/gender ownership of every interviewed firm using the following information:

- Information from the Caltrans documents collected for the 2007 Caltrans Study;
- Information on firms from the California Unified Certification Program;
- MBE/WBE status and ethnicity classification from the availability survey;
- D&B MBE/WBE status and ethnicity (primarily for firms missing information from SDCRAA records, the CUCP database or the Availability Survey); and
- Information collected during the 2009 Southern California Regional Disparity Study.

BBC resolved conflicts between the sources of data on a case-by-case basis, including calling the firm again or by discussing the firm with SDCRAA staff.

Contract role. BBC assigned each firm a contract role as prime contractor, subcontractor, or prime and subcontractor using:

- The contract role as indicated from the availability interviews.
- The contract role from SDCRAA contracting records if the firm participated in a transportation contract and did not mention that role during the availability survey. For example, a firm might have indicated only prime contractor status in their availability survey response, but appeared as a subcontractor for an SDCRAA contract. The final role classification for that firm would be “prime and subcontractor.”

Geographic availability. BBC determined whether a firm was available to work in the San Diego area using:

- An appropriate response in the availability interview; and
- Performance of work in the San Diego area for the airport, an agency in the Southern California Regional Disparity Study or past work performed for Caltrans or local agencies in Caltrans District 11.

Largest contract. BBC determined the largest contract or subcontract amount each firm had performed or bid on using:

- The largest contract amount reported in the availability interview; and
- The largest amount each firm won according to SDCRAA contracting records if this exceeded the amount reported in the availability interview. For example, if SDCRAA listed a firm’s largest contract during the study period at \$1 million, but the firm only reported availability for contracts under \$500,000, BBC would consider the firm available for contracts up to \$1 million.

Establishment date. BBC used the establishment date reported in the availability interview where available. Firms that could not recall or did not report an establishment date were counted as having been founded before the study period.

Work specialty. The work specialty code for each firm is based on the description of the main line of business confirmed or identified by the firm owner or manager in the availability interview along with information from SDCRAA contracts and input from SDCRAA contracts and staff.