



The State of Minority- and Women-Owned Business Enterprise: Evidence from Memphis

Prepared for the Memphis-Shelby County Airport Authority

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Acknowledgments

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About the Project Team

NERA Economic Consulting is a global firm of experts dedicated to applying economic, finance, and quantitative principles to complex business and legal challenges. For half a century, NERA's economists have been creating strategies, studies, reports, expert testimony, and policy recommendations for government authorities and the world's leading law firms and corporations. We bring academic rigor, objectivity, and real world industry experience to bear on issues arising from competition, regulation, public policy, strategy, finance, and litigation.

NERA's clients value our ability to apply and communicate state-of-the-art approaches clearly and convincingly, our commitment to deliver unbiased findings, and our reputation for quality and independence. Our clients rely on the integrity and skills of our unparalleled team of economists and other experts backed by the resources and reliability of one of the world's largest economic consultancies. With its main office in New York City, NERA serves clients from over 20 offices across North America, Europe, and Asia Pacific.

NERA's employment and labor experts advise clients on a wide range of issues both inside and outside the courtroom. We have provided expert testimony on statistical issues both at the class certification phase (on issues of commonality and typicality) and at the liability phase (for class or pattern-and-practice cases). Our experts have extensive experience examining issues of statistical liability in discrimination and other wrongful termination claims. We also provide detailed statistical analyses of workforce composition to identify potential disparities in hiring, layoffs, promotions, pay, and performance assessments, and have conducted studies on labor union issues and on affirmative action programs for historically disadvantaged business enterprises.

NERA Senior Vice President Dr. Jon Wainwright led the NERA project team for this Study. Dr. Wainwright heads NERA's disparity study practice and is a nationally recognized expert on business discrimination and affirmative action. He has authored books, papers, and numerous research studies on the subject, and has been repeatedly qualified to testify on these and other issues as an expert in state and federal courts. At NERA, Dr. Wainwright directs and conducts economic and statistical studies of discrimination for attorneys, corporations, governments, and non-profit organizations. He also directs and conducts research and provides clients with advice on adverse impact and economic damage matters arising from their hiring, performance assessment, compensation, promotion, termination, or contracting activities.

About the Project Team

Abt SRBI is a New York-based business with a national reputation for excellence in computer assisted telephone interviewing. Abt SRBI provides analysis in the rapidly evolving markets and public policy areas of communications, financial services, utilities, transportation, media, health and business services. The firm was founded in 1981 for the explicit purpose of combining high quality analytic capabilities with in-house control of the research implementation to ensure accurate, timely and actionable research used by decision makers working in rapidly changing environments. Abt SRBI clients include the Eagleton Institute at Rutgers, the Annenberg Institute at the University of Pennsylvania, and the major networks. Abt SRBI has conducted numerous surveys of DBEs and non-DBEs on behalf of the NERA team. On this assignment, Abt SRBI conducted telephone surveys of race and gender misclassification and of mail survey non-response under the supervision of Abt SRBI Project Manager, Andrew Evans.

Colette Holt & Associates is an Oakland, California-based law practice specializing in public sector affirmative action programs. The firm provides legal and consulting services to governments and businesses relating to procurement and contracting; employment discrimination; regulatory compliance; organizational change; program development, evaluation and implementation; and issues relating to inclusion, diversity and affirmative action. On this Study, the firm provided a review of case law, conducted interviews with MSCAA personnel and with local business owners, and drafted selected study recommendations.

J&D Data Services is a small business enterprise owned by Mr. Joe Deegan and based in Plano, Texas. After a long career with ScanTron, Mr. Deegan started his own business to offer a solid and proven alternative to the time consuming and expensive job of key data entry long associated with mail surveys. The firm helps its clients conserve their surveying resources by designing and delivering survey instruments that can be electronically and automatically scanned upon return and sent directly to electronic format. J&D Data Services has conducted numerous surveys of DBEs and non-DBEs on behalf of the NERA team. On this assignment, they provided printing, postage, mail-out and mail-back service for the contract and subcontract data collection, the mail survey, and the business owner interviews.

Report qualifications/assumptions and limiting conditions

This report is for the exclusive use of the Memphis-Shelby County Airport Authority (“MSCAA”). There are no third party beneficiaries with respect to this report, and NERA Economic Consulting does not accept any liability to any third party.

Information furnished by others, upon which all or portions of this report are based, is believed to be reliable but has not been independently verified, unless otherwise expressly indicated. Public information and industry and statistical data, including contracting, subcontracting and procurement data, are from sources we deem to be reliable; however, we make no representation as to the accuracy or completeness of such information.

The opinions expressed in this report are valid only for the purpose stated herein and as of the date of this report. No obligation is assumed to revise this report to reflect changes, events or conditions, which occur subsequent to the date hereof.

All decisions in connection with the implementation or use of advice or recommendations contained in this report are the sole responsibility of the client.

In portions of this report, NERA has commented on legal issues. NERA’s comments are based on its understanding of relevant law and industry best practice, as informed by legal counsel retained by NERA. However, NERA’s comments are not, and should not, be construed as legal advice to the MSCAA. NERA recommends that MSCAA seek and obtain advice from its own legal counsel in connection with its affirmative action programs and with this report.

Contents

List of Tables	viii
Executive Summary	1
A. Introduction	1
B. Legal Standards for Government Affirmative Action Contracting Programs	1
C. Defining the Relevant Markets	3
D. M/W/DBE Availability in MSCAA's Market Area	4
E. Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings	6
F. Statistical Disparities in Credit/Capital Markets	8
G. M/W/DBE Public Sector Utilization vs. Availability in MSCAA's Contracting, Purchasing, and Concessions Markets, 2006–2011	10
H. Anecdotal Evidence	15
I. MSCAA's Contracting Affirmative Action Programs: Overview and Feedback Interviews	16
J. Recommendations for Revised Contracting Policies and Procedures	17
I. Introduction	18
A. Study Outline	19
II. Defining the Relevant Markets	21
A. Preparing the Master Contract/Subcontract Database	21
B. Geographic Market Definition for Contracting and Procurement	34
C. Product Market Definition for Contracting and Procurement	36
D. Concessions: Product and Geographic Markets	42
III. M/W/DBE Availability in MSCAA's Market Area	46
A. Introduction	46
B. Identifying Business Establishments in the Relevant Markets	48
C. Estimates of M/W/DBE Availability	71
IV. Market-Based Disparities in Business Formation and Business Owner Earnings	93
A. Introduction	93
B. Race and Gender Disparities in Earnings	97
C. Race and Gender Disparities in Business Formation	109
D. Expected Business Formation Rates—Implications for Current M/W/DBE Availability	119
E. Evidence from the Survey of Business Owners	121
V. Statistical Disparities in Capital Markets	131
A. Introduction	131
B. Theoretical Framework and Review of the Literature	133
C. Empirical Framework and Description of the Data	136
D. Qualitative Evidence	141
E. Differences in Loan Denial Rates by Race, Ethnicity or Gender	145

F. Differences in Interest Rates Charged on Approved Loans.....	155
G. Loan Approval Rates and Access to Credit.....	158
H. Analysis of Credit Market Discrimination in the U.S. in 1998	162
I. Analysis of Credit Market Discrimination in the U.S. in 2003	172
J. Further Analysis of Credit Market Discrimination: NERA Surveys 1999-2007.....	180
K. Conclusions.....	183
VI. DBE Utilization and Disparity in MSCAA Contracting Activity	188
A. Introduction.....	188
B. DBE Utilization	188
C. Disparity Analysis.....	194
D. Current Availability versus Expected Availability	203
VII. Anecdotal Evidence of Disparities in MSCAA's Market Area	206
A. Introduction.....	206
B. Business Experience Surveys	207
C. Business Owner Interviews.....	224
D. Conclusion	232
VIII. MSCAA's Contracting Affirmative Action Programs: Overview and Feedback Interviews.....	233
A. MSCAA's Race- and Gender-Neutral Procurement Policies and Procedures.....	233
B. M/W/DBE Program Administration.....	234
C. DBE Program Elements.....	235
D. Airport Concessionaire Disadvantaged Business Enterprise Program	238
E. Business Diversity Development Program	238
F. MSCAA Local Preference Program	239
G. Business Owner Interviews.....	239
H. Conclusion	257
IX. Recommendations for Revised Contracting Policies and Procedures.....	258
A. Augment Race- and Gender-Neutral Initiatives	258
B. Continue to Implement Narrowly Tailored DBE Goals for Federally-Assisted Contracts	261
C. Continue the Business Diversity Development Program for Locally-Funded Contracts	262
References.....	265
Appendix A. Glossary.....	273
Appendix B. Legal Standards for Government Affirmative Action Contracting Programs.....	278
D. General Overview of Constitutional Standards	278
E. MSCAA's Compelling Interest in Remediating Identified Discrimination in Its Contracting Market Area	290
F. Narrowly Tailoring MSCAA's M/W/DBE Programs	292

Appendix C. Master M/W/DBE Directory Sources	298
A. Entities with lists of M/W/DBE firms that were duplicative of previously collected lists	298
B. Entities that had no directory, or their directory did not identify race and gender	299
C. Entities that were non responsive to repeated contacts.....	301
D. Entities that declined to provide the requested information	301
Appendix D. Detailed Utilization, Availability & Disparity Tables	303

List of Tables

Table A. Overall Estimated M/W/DBE Availability Percentages in MSCAA’s Market Area	5
Table B1. M/W/DBE Utilization in Contracting at MSCAA (All Contracts) (Dollars Paid)	10
Table B2. DBE Utilization in MSCAA Concessions	11
Table C1. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Dollars Paid) (All Contracts).....	12
Table C2. Utilization, Availability, and Disparity Results for MSCAA Concessions	13
Table D. Current Availability and Expected Availability for MSCAA Contracting (Federally-Assisted Contracts).....	14
Table 2.1. Distribution of MSCAA Prime Contracts by Procurement Category.....	22
Table 2.2. Distribution of MSCAA Purchase Orders by Procurement Category	23
Table 2.3. Summary of Master Contract/Subcontract Database: MSCAA Contracts and Subcontracts by Procurement Category	25
Table 2.4. Summary of Master Contract/Subcontract Database: Federally-Assisted MSCAA Contracts and Subcontracts by Procurement Category	26
Table 2.5. Summary of Master Contract/Subcontract Database: Locally-Funded MSCAA Contracts and Subcontracts by Procurement Category	27
Table 2.6. Summary of Master Contract/Subcontract Database: Prime Contracts by Year, All Funding Sources.....	28
Table 2.7. Summary of Master Concessions Database: Revenues by Concessions Category, 2006-2011	30
Table 2.8. Summary of Master Concessions Database: Revenues by Category and Year	31
Table 2.9. Distribution of Contracting Dollars by Geographic Location	35
Table 2.10. Distribution of MSCAA Contracting Dollars by State and County, Inside the Market Area	35
Table 2.11. Distribution of Contract and Subcontract Dollars Awarded by Industry Group: Construction	37
Table 2.12. Distribution of Contract and Subcontract Dollars Awarded by Industry Group: AE-CRS	38

Table 2.13. Distribution of Contract and Subcontract Dollars Awarded by Industry Group: Services	39
Table 2.14. Distribution of Contract and Subcontract Dollars Awarded by Industry Group: CSE	40
Table 2.15. Distribution of Concessions Revenues by Industry	42
Table 2.16. Distribution of Concessions Revenues by Industry, Excluding Car Rental	45
Table 3.1. Construction—Number of Businesses and Industry Weight, by NAICS Code	50
Table 3.2. AE-CRS—Number of Businesses and Industry Weight, by NAICS Code	51
Table 3.3. Services—Number of Businesses and Industry Weight, by NAICS Code	52
Table 3.4. CSE—Number of Businesses and Industry Weight, by NAICS Code	53
Table 3.5. Concessions—Number of Business Establishments and Industry Weight (Including Car Rentals), by NAICS Code	55
Table 3.6. Concessions—Number of Business Establishments and Industry Weight (Excluding Car Rentals), by NAICS Code	56
Table 3.7. Construction—Number of Listed M/W/DBEs and Industry Weight (Dollars Awarded), by NAICS Code	58
Table 3.8. AE-CRS—Number of Listed M/W/DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code	59
Table 3.9. Services—Number of Listed M/W/DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code	60
Table 3.10. CSE—Number of Listed M/W/DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code	61
Table 3.11. Concessions—Number of Listed M/W/DBE Establishments and Industry Weight (Including Car Rentals), by NAICS Code	63
Table 3.12. Concessions—Number of Listed M/W/DBE Establishments and Industry Weight (Excluding Car Rentals), by NAICS Code	64
Table 3.13. Listed M/W/DBE Survey—Amount of Misclassification, by Putative M/W/DBE Type	66
Table 3.14. Listed M/W/DBE Survey—Amount of Misclassification, by Industry Grouping	67
Table 3.15. Unclassified Businesses Survey—By Race and Gender	68

Table 3.16. Unclassified Businesses Survey—By Industry Grouping	69
Table 3.17. Overall Estimated M/W/DBE Availability Percentages.....	72
Table 3.18. Detailed M/W/DBE Availability Percentages—Construction (All Contracts) (Dollars Awarded)	75
Table 3.19. Detailed M/W/DBE Availability Percentages—Construction (Federally-Assisted Contracts) (Dollars Awarded)	77
Table 3.20. Detailed M/W/DBE Availability Percentages—AE-CRS (All Contracts) (Dollars Awarded)	79
Table 3.21. Detailed M/W/DBE Availability Percentages—AE-CRS (Federally-Assisted Contracts) (Dollars Awarded)	80
Table 3.22. Detailed M/W/DBE Availability Percentages—Services (All Contracts) (Dollars Awarded)	81
Table 3.23. Detailed M/W/DBE Availability Percentages—Services (Federally-Assisted Contracts) (Dollars Awarded)	83
Table 3.24. Detailed M/W/DBE Availability Percentages—CSE (All Contracts) (Dollars Awarded)	84
Table 3.25. Detailed M/W/DBE Availability Percentages—CSE (Federally-Assisted Contracts) (Dollars Awarded)	88
Table 3.26. Detailed M/W/DBE Availability Percentages—Concessions (Including Car Rental)	89
Table 3.27. Detailed M/W/DBE Availability Percentages—Concessions (Excluding Car Rental)	91
Table 4.1. Annual Wage Earnings Regressions, All Industries, 2007-2011.....	101
Table 4.2. Annual Wage Earnings Regressions, Construction and Related Industries, 2007-2011	102
Table 4.3. Annual Wage Earnings Regressions, Goods and Services Industries, 2007-2011	103
Table 4.4. Annual Business Owner Earnings Regressions, All Industries, 2007-2011	106
Table 4.5. Business Owner Earnings Regressions, Construction and Related Industries, 2007-2011	107
Table 4.6. Business Owner Earnings Regressions, Goods and Services Industries, 2007-2011	108

Table 4.7. Self-Employment Rates in 2007-2011 for Selected Race and Gender Groups: United States and the MSCAA Market Area, All Industries	112
Table 4.8. Self-Employment Rates in 2007-2011 for Selected Race and Gender Groups: United States and the MSCAA Market Area, Construction Sector and Goods and Services Sector.....	113
Table 4.9. Business Formation Regressions, All Industries, 2007-2011	116
Table 4.10. Business Formation Regressions, Construction and Related Industries, 2007-2011	117
Table 4.11. Business Formation Regressions, Goods and Services Industries, 2007-2011	118
Table 4.12. Actual and Potential Business Formation Rates in the MSCAA Market Area	120
Table 4.13. Disparity Ratios from the 2007 Survey of Business Owners, United States, All Industries.....	123
Table 4.14. Disparity Ratios from the 2007 Survey of Business Owners, State of Tennessee, All Industries.....	124
Table 4.15. Disparity Ratios from the 2007 Survey of Business Owners, United States, Construction and AE-CRS.....	126
Table 4.16. Disparity Ratios from the 2007 Survey of Business Owners, State of Tennessee, Construction and AE-CRS.....	127
Table 4.17. Disparity Ratios from the 2007 Survey of Business Owners, United States, Goods and Services.....	129
Table 4.18. Disparity Ratios from the 2007 Survey of Business Owners, State of Tennessee, Goods and Services.....	130
Table 5.1. Selected Population-Weighted Sample Means of Loan Applicants from 1993 NSSBF Data.....	139
Table 5.2. Selected Sample Means of Loan Applicants—EWSC	140
Table 5.3. Problems Firms Experienced During Preceding 12 Months—USA	142
Table 5.4. Problems Firms Experienced During Preceding 12 Months—EWSC	142
Table 5.5. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months—USA	143
Table 5.6. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months—EWSC	143

Table 5.7. Types of Problems Facing Your Business, by Race and Gender	145
Table 5.8. Determinants of Loan Denial Rates—USA	148
Table 5.9. Determinants of Loan Denial Rates—EWSC Division	149
Table 5.10. Alternative Models of Loan Denials	153
Table 5.11. Models of Credit Card Use—USA	155
Table 5.12. Models of Credit Card Use—EWSC	155
Table 5.13. Models of Interest Rate Charged—USA	157
Table 5.14. Models of Interest Rate Charged—EWSC	158
Table 5.15. Racial Differences in Failing to Apply for Loans Fearing Denial	160
Table 5.16. Models of Failure to Obtain Credit Among Firms that Desired Additional Credit	162
Table 5.17. What is the Most Important Problem Facing Your Business Today?	163
Table 5.18. Determinants of Loan Denial Rates—USA	166
Table 5.19. Determinants of Loan Denial Rates—EWSC	167
Table 5.20. More Loan Denial Probabilities	169
Table 5.21. Models of Interest Rate Charged	171
Table 5.22. Racial Differences in Failing to Apply for Loans Fearing Denial	171
Table 5.23. Models of Credit Card Use	172
Table 5.24. What is the Most Important Problem Facing Your Business Today?	174
Table 5.25. Determinants of Loan Denial Rates—USA	176
Table 5.26. Determinants of Loan Denial Rates—EWSC	177
Table 5.27. Models of Interest Rate Charged	178
Table 5.28. Models of Credit Card Use	179
Table 5.29. Racial Differences in Failing to Apply for Loans Fearing Denial	180
Table 5.30. Determinants of Loan Denial Rates—Nine Jurisdictions	182

Table 5.31. Determinants of Interest Rates—Nine Jurisdictions.....	183
Table 6.1. M/W/DBE Utilization at MSCAA (All Contracts) (Dollars Awarded)	190
Table 6.2. M/W/DBE Utilization at MSCAA (All Contracts) (Dollars Paid)	190
Table 6.3. M/W/DBE Utilization at MSCAA (Federally-Assisted Contracts) (Dollars Awarded)	191
Table 6.4. M/W/DBE Utilization at MSCAA (Federally-Assisted Contracts) (Dollars Paid) ...	191
Table 6.5. M/W/DBE Utilization at MSCAA (Locally-Funded Contracts) (Dollars Awarded)	192
Table 6.6. M/W/DBE Utilization at MSCAA (Locally-Funded Contracts) (Dollars Paid).....	193
Table 6.7. M/W/DBE Utilization in MSCAA Concessions	193
Table 6.8. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (All Funds) (Dollars Awarded).....	196
Table 6.9. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (All Funds) (Dollars Paid)	197
Table 6.10. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Federally-Assisted Contracts) (Dollars Awarded)	198
Table 6.11. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Federally-Assisted Contracts) (Dollars Paid).....	199
Table 6.12. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Locally-Funded Contracts) (Dollars Awarded).....	200
Table 6.13. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Locally-Funded Contracts) (Dollars Paid)	201
Table 6.14. Utilization, Availability, and Disparity Results for MSCAA Concessions	202
Table 6.15. Current Availability and Expected Availability for MSCAA Contracting (All Funds)	204
Table 6.16. Current Availability and Expected Availability for MSCAA Contracting (Federally-Assisted Contracts).....	205
Table 7.1. Race, Gender and Contracting Category of Mail Survey Respondents.....	208
Table 7.2. Survey Respondents Indicating They Had Worked or Attempted to Work for Public Sector Agencies in the Last Five Years	209

Table 7.3. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Gender While Participating in Business Dealings	211
Table 7.4. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Gender While Participating in Business Dealings (Rankings)	213
Table 7.5. Prevalence of Disparate Treatment Facing M/W/DBEs.....	215
Table 7.6. Prevalence of Disparate Treatment Facing M/W/DBEs, by Type of Business Dealing.....	216
Table 7.7. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts—Sample Differences.....	218
Table 7.8. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts, Regression Results.....	219
Table 7.9. Percent of M/W/DBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with Goals Seldom or Never <i>Hire</i> Them on Projects without Such Goals	220
Table 7.10. Percent of M/W/DBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with Goals Seldom or Never <i>Solicit</i> Them on Projects without Such Goals	221
Table AD.1. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (All Funds) (Dollars Awarded)	304
Table AD.2. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (All Funds) (Dollars Paid).....	310
Table AD.3. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Federally-Funded) (Dollars Awarded).....	316
Table AD.4. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Federally-Funded) (Dollars Paid)	322
Table AD.5. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Locally-Funded) (Dollars Awarded).....	328
Table AD.6. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Locally-Funded) (Dollars Paid)	331
Table AD.7. Industry Group Utilization, Availability, and Disparity Results for MSCAA AE-CRS Contracting (All Funds) (Dollars Awarded).....	334
Table AD.8. Industry Group Utilization, Availability, and Disparity Results for MSCAA AE-CRS Contracting (All Funds) (Dollars Paid)	336

Table AD.9. Industry Group Utilization, Availability, and Disparity Results for MSCAA AE-CRS Contracting (Federally-Funded) (Dollars Awarded)	337
Table AD.10. Industry Group Utilization, Availability, and Disparity Results for MSCAA AE-CRS Contracting (Federally-Funded) (Dollars Paid).....	338
Table AD.11. Industry Group Utilization, Availability, and Disparity Results for MSCAA AE-CRS Contracting (Locally-Funded) (Dollars Awarded)	339
Table AD.12. Industry Group Utilization, Availability, and Disparity Results for MSCAA AE-CRS Contracting (Locally-Funded) (Dollars Paid).....	340
Table AD.13. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (All Funds) (Dollars Awarded)	341
Table AD.14. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (All Funds) (Dollars Paid)	348
Table AD.15. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (Federally-Funded) (Dollars Awarded).....	355
Table AD.16. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (Federally-Funded) (Dollars Paid)	357
Table AD.17. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (Locally-Funded) (Dollars Awarded).....	359
Table AD.18. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (Locally-Funded) (Dollars Paid)	366
Table AD.19. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (All Funds) (Dollars Awarded)	373
Table AD.20. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (All Funds) (Dollars Paid).....	389
Table AD.21. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (Federally-Funded) (Dollars Awarded).....	405
Table AD.22. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (Federally-Funded) (Dollars Paid)	406
Table AD.23. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (Locally-Funded) (Dollars Awarded).....	407
Table AD.24. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Locally-Funded) (Dollars Paid)	423

Table AD.25. Industry Group Utilization, Availability, and Disparity Results for MSCAA Concessions (Car Rental Included).....	439
Table AD.26. Industry Group Utilization, Availability, and Disparity Results for MSCAA Concessions (Car Rental Excluded).....	444

Executive Summary

A. Introduction

The Memphis-Shelby County Airport Authority (“MSCAA”) commissioned this Study to evaluate whether minority-owned and women-owned business enterprises and Disadvantaged Business Enterprises (“M/W/DBEs”) in MSCAA’s market area have full and fair opportunities to compete for its prime contracts, concessions contracts and associated subcontracts.

To ensure compliance with constitutional mandates and M/W/DBE best practices, MSCAA commissioned NERA Economic Consulting to examine the past and current status of M/W/DBEs in its geographic and product markets for contracting, procurement and concessions. The results of the Study provide the evidentiary record necessary for MSCAA’s consideration of whether to implement renewed local funds M/W/DBE policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted M/W/DBEs to compete on a fair basis in MSCAA’s contracting and procurement activity.

Additionally, this Study provides information necessary for MSCAA to meet its regulatory and legal obligations under the U.S. Department of Transportation’s (“USDOT”) Disadvantaged Business Enterprise (“DBE”) and Airport Concessions Disadvantaged Business Enterprise (“ACDBE”) programs. For these programs, MSCAA is required, among other obligations, to: (1) compile statistical information concerning the past utilization of minority-owned and women-owned firms as prime contractors, consultants, subcontractors, and suppliers; and (2) estimate the percentage of minority- and women-owned business enterprises (which we will refer to as “M/W/DBEs” regardless of their certification status) in various industry categories that could potentially become certified. This Study will assist MSCAA to fulfill these two regulatory requirements.

This Study finds statistical evidence consistent with the presence of business discrimination against M/W/DBEs in the private sector of MSCAA’s market area. These findings are presented in Chapters IV and V. Statistical analyses of MSCAA’s own contracting and purchasing, which also document evidence consistent with business discrimination, are contained in Chapters II, III and VI. As a check on our statistical findings, documented in Chapter VII, we surveyed the contracting experiences of M/W/DBEs and non-M/W/DBEs in the market area and also conducted a series of in-depth personal interviews with business enterprises throughout the market area, both M/W/DBE and non-M/W/DBE.

B. Legal Standards for Government Affirmative Action Contracting Programs

To be legally defensible, a race-based program must meet the judicial test of constitutional strict scrutiny. Strict scrutiny is the highest level of judicial review and consists of two elements:

- The government must establish its “compelling interest”¹ in remedying race discrimination by showing “a strong basis in evidence”² of the persistence of discrimination. Such evidence may consist of demonstrating that the entity is a “passive participant” in a system of racial exclusion....³
- Any remedies adopted must be narrowly tailored to that discrimination; that is, “the means chosen to accomplish the government’s asserted purpose are specifically and narrowly framed to accomplish that purpose.”⁴

The compelling interest prong has been met through two types of proof:

- Statistical evidence of “identified discrimination in [the relevant] industry,”⁵ typically established by showing the underutilization of minority-owned firms relative to their availability in the jurisdiction’s market area known as disparity indexes or disparity ratios.⁶
- Anecdotal evidence of race-based barriers to the full and fair participation of minority-owned firms in the market area and in seeking contract opportunities with the agency.⁷

The narrow tailoring prong has been met through the assessment of several factors:

- Consideration of alternative, race-neutral means to increase M/W/DBE participation;⁸
- The flexibility of the program requirements, including the availability of waver provisions;⁹

¹ *Croson*, 488 U.S. at 492.

² *Id.* at 500, (citing *Wygant v. Jackson Board of Education*, 476 U.S. 267, 277 (1986)).

³ *Id.* at 492.

⁴ *Sherbrooke*, 345 F.3d at 971. (citing *Grutter v. Bollinger*, 539 U.S. 306, 333 (2003)).

⁵ *Croson*, 488 U.S. at 505.

⁶ See J. Wainwright and C. Holt, *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*, Transportation Research Board of the National Academies, NCHRP Report, Issue No. 644, 2010, pp. 5-6.

⁷ *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, 1520 (10th Cir. 1994) (“*Concrete Works II*”) (“Personal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a municipality’s institutional practices that exacerbate discriminatory market conditions are often particularly probative. Therefore, the government may include anecdotal evidence in its evidentiary mosaic of past or present discrimination.”) See also *Adarand VII* 228 F.3d at 1166 (“Both statistical and anecdotal evidence are appropriate in the strict scrutiny calculus, although anecdotal evidence by itself is not.”).

⁸ *Croson*, 488 U.S. at 507, citing *United States v. Paradise*, 480 U.S. 149, 171 (1987). See also *Adarand Constructors, Inc. v. Peña*, 515 U.S. 200, 237-238 (1995) (“*Adarand III*”).

⁹ *Paradise*, 480 U.S. at 171; *Adarand VII*, 228 F.3d at 1177.

- The duration of the proposed relief;¹⁰
- The relationship of numerical participation goals to the availability of M/W/DBEs in the relevant market;¹¹
- The impact of the relief on third parties;¹² and
- The overinclusiveness or underinclusiveness of the racial classifications.¹³

In *Adarand Constructors, Inc. v. Peña*,¹⁴ the Court extended the analysis of strict scrutiny to race-based federal enactments such as the DBE Program. Just as in the state and local government context, the national government must have a compelling interest for the use of race and the remedies adopted must be narrowly tailored to meet that interest.

Appendix B provides an overview of constitutional standards and case law and outlines the legal and program development issues the Airport should consider in evaluating its DBE, ACDBE, and BDD programs, with emphasis on critical issues and evidentiary concerns.

C. Defining the Relevant Markets

Chapter II describes how the relevant geographic and product markets were defined for this Study. These definitions were derived empirically, based on the Master Contract/Subcontract Database and Master Concessions Database assembled for the Study. The relevant geographic and product markets were then used to focus and frame the quantitative and qualitative analyses in the remainder of the Study.

The Master Concessions Database contains information on all Airport concessionaires from 2006 through 2011. Total concession revenues during this time period were \$706.2 million (see Tables 2.7, 2.8, 2.15, and 2.16).

The Master Contract/Subcontract Database contains information on 177 prime contracts, 762 associated subcontracts, and 17,003 purchase orders active during 2006-2011. These contracts and purchases had a total award value of \$498.6 million and a total payment value of \$445.3 million (see Table 2.3).¹⁵ Of these, 22 prime contracts and 133 associated subcontracts were awarded on federally-assisted projects, with a total award value of \$45.8 million and a total paid value of \$41.8 million (see Table 2.4). Another 155 prime contracts, 230 associated subcontracts

¹⁰ *Croson*, 488 U.S. at 498, 509. See also *Paradise*, 480 U.S. at 171.

¹¹ *Paradise*, 480 U.S. at 171.

¹² *Id.*

¹³ *Croson*, 488 U.S. at 506.

¹⁴ 515 U.S. 200 (1995) (“*Adarand III*”).

¹⁵ Payments on contracts that were not substantially complete at the time of the Study data collection were excluded from the paid dollar totals.

and 16,964 purchase orders were issued on locally-funded projects, with a total award value of \$172.5 million and a total paid value of \$148.7 million (see Table 2.5).

Contracts and subcontracts in the database were catalogued according to calendar year, whether they were federally-assisted or locally-funded, and whether they were for Construction; Architecture, Engineering and other Construction-related Professional Services (“AE-CRS”); Services; or Commodities, Supplies, and Equipment (“CSE”). The firms performing these contracts and subcontracts were catalogued according to geographic location, primary industry, race, and gender.

The Master Contract/Subcontract Database was analyzed to determine the geographic radius around MSCAA that accounts for at least 75 percent of aggregate contract and subcontract spending. MSCAA’s relevant geographic market area was determined to include the Memphis, TN-MS-AR Metropolitan Statistical Area (“MSA”). The Memphis, TN-MS-AR MSA includes the Crittenden County in Arkansas; DeSoto County, Marshall County, Tate County, and Tunica County in Mississippi; and Fayette County, Shelby County, and Tipton County in Tennessee (see Tables 2.9 and 2.10).

The Master Contract/Subcontract Database was also analyzed to determine those detailed industry categories that collectively account for 99 percent of contract and subcontract spending by MSCAA. We determined that MSCAA’s product market includes firms in 163 different North American Industrial Classification System (“NAICS”) Industry Groups and 336 NAICS Industries (see Tables 2.11 through 2.14).

D. M/W/DBE Availability in MSCAA’s Market Area

Chapter III estimates the percentage of firms in MSCAA’s relevant market area that are owned by minorities or women. For each industry category, M/W/DBE availability is defined as the number of M/W/DBEs divided by the total number of businesses in MSCAA’s contracting market area, weighted by the dollars attributable to each detailed industry. Determining the total number of establishments in the relevant market is more straightforward than determining the number of minority- or women-owned establishments in those markets. The latter task has three main parts: (1) identifying all listed M/W/DBEs in the relevant market; (2) verifying the ownership status of listed M/W/DBEs; and (3) estimating the number of unlisted M/W/DBEs in the relevant market.

Table A below provides an executive level summary of the current M/W/DBE availability estimates derived in the 2013 Study. Availability estimates for more detailed industries within the construction or consulting sectors appear in Tables 3.18 through 3.27.

Table A. Overall Estimated M/W/DBE Availability Percentages in MSCAA's Market Area

	African American	Hispanic	Asian/Pacific Islander	Native American	Minority	Non-minority Female	M/W/DBE	Non-M/W/DBE
OVERALL (ALL CONTRACTS)								
AWARD DOLLARS	13.63	2.02	1.02	1.00	17.66	12.23	29.89	70.11
PAID DOLLARS	13.84	2.11	0.99	0.95	17.88	12.52	30.40	69.60
OVERALL (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	11.31	1.76	1.13	1.21	15.40	10.57	25.97	74.03
PAID DOLLARS	11.13	1.81	1.11	1.17	15.21	10.72	25.94	74.06
CONSTRUCTION (ALL CONTRACTS)								
AWARD DOLLARS	10.85	1.78	0.62	1.38	14.64	10.49	25.12	74.88
PAID DOLLARS	10.66	1.85	0.57	1.35	14.43	10.61	25.04	74.96
CONSTRUCTION (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	11.01	1.80	0.68	1.35	14.84	10.23	25.06	74.94
PAID DOLLARS	10.75	1.85	0.63	1.32	14.56	10.39	24.95	75.05
AE-CRS (ALL CONTRACTS)								
AWARD DOLLARS	12.68	1.61	2.91	0.56	17.75	12.17	29.93	70.07
PAID DOLLARS	12.67	1.62	3.01	0.56	17.86	12.14	30.01	69.99
AE-CRS (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	12.73	1.63	3.00	0.56	17.92	12.09	30.02	69.98
PAID DOLLARS	12.73	1.62	3.01	0.56	17.92	12.12	30.04	69.96
SERVICES (ALL CONTRACTS)								
AWARD DOLLARS	21.69	3.00	0.57	0.28	25.54	16.93	42.47	57.53
PAID DOLLARS	21.78	3.00	0.55	0.28	25.60	17.03	42.64	57.36
SERVICES (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	11.81	1.70	1.81	0.63	15.96	13.90	29.85	70.15
PAID DOLLARS	11.50	1.68	1.85	0.62	15.65	13.77	29.42	70.58

	African American	Hispanic	Asian/ Pacific Islander	Native American	Minority	Non-minority Female	M/W/DBE	Non-M/W/DBE
CSE (ALL CONTRACTS)								
AWARD DOLLARS	9.22	1.29	2.58	1.35	14.44	10.02	24.46	75.54
PAID DOLLARS	9.44	1.35	2.59	1.26	14.64	10.07	24.71	75.29
CSE (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	6.57	0.00	2.38	2.83	11.78	9.90	21.68	78.32
PAID DOLLARS	12.28	0.00	1.99	1.75	16.02	14.15	30.17	69.83
CONCESSIONS								
INCLUDING CAR RENTAL	7.89	2.98	13.76	0.54	25.17	10.14	35.31	64.69
EXCLUDING CAR RENTAL	8.51	3.21	14.85	0.58	27.16	10.94	38.10	61.90

Source: See Table 4.17.

Notes: (1) “Award” indicates that the availability measures are weighted according to dollars awarded; (2) “Paid” indicates that the availability measures are weighted according to dollars paid; (3) For this Study, “Black” or “African American” refers to an individual having origins in any of the Black racial groups of Africa; “Hispanic” refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; “Asian” or “Asian/Pacific Islander” refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands; “Native American” refers to an individual having origins in any of the original peoples of North America or of Hawai’i. Businesses owned by members of these groups are collectively referred to as M/W/DBEs.

E. Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Chapter IV demonstrates that current M/W/DBE availability levels in the MSCAA market area, as measured in Chapter III, are substantially lower in most instances than those that we would expect to observe if commercial markets operated in a race- and gender-neutral manner and that these levels are statistically significant.¹⁶ In other words, minorities and women are substantially and significantly less likely to own their own businesses as the result of discrimination than would be expected based upon their observable characteristics, including age, education, geographic location, and industry. We find that these groups also suffer substantial and significant earnings disadvantages relative to comparable nonminority males, whether they work as employees or entrepreneurs.

For example, we found that annual average wages for African Americans in 2007–2011 in the construction sector were 35 percent lower in the MSCAA market area than for nonminority

¹⁶ Typically, for a given disparity statistic to be considered “statistically significant” there must be a substantial probability that the value of that statistic is unlikely to be due to chance alone. *See also fn. 77.*

males who were otherwise similar in terms of geographic location, industry, age, and education (see Tables 4.1 to 4.3). This difference is large and statistically significant. Large, adverse, and statistically significant wage disparities were also observed for Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting two or more races, and nonminority women. These disparities are consistent with the presence of market-wide discrimination. Observed disparities for these groups ranged from a low of -20 percent for Hispanics to a high of -45 percent for African Americans. Similar results were observed when the analysis was restricted to the goods and services sector or expanded to the economy as a whole. That is, large, adverse, and statistically significant wage disparities were observed for all minority groups and for nonminority women. All wage and salary disparity analyses were then repeated to test whether observed disparities in the MSCAA market area were different enough from elsewhere in the country or the economy to alter any of the basic conclusions regarding wage and salary disparities. They were not.

This analysis demonstrates that minorities and women earn substantially and significantly less than their nonminority male counterparts. Such disparities are symptoms of discrimination in the labor force that, in addition to its direct effect on workers, reduce the future availability of M/W/DBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are most likely to lead to entrepreneurial opportunities. These disparities reflect more than mere “societal discrimination” because they demonstrate the nexus between discrimination in the job market and reduced entrepreneurial opportunities for minorities and women. Other things equal, these reduced entrepreneurial opportunities in turn lead to lower M/W/DBE availability levels than would be observed in a race- and gender-neutral market area.

Next, we analyzed race and gender disparities in business owner earnings. We found, for example, that annual earnings for self-employed African Americans in 2007–2011 in the construction sector were 37 percent lower in the MSCAA market area than for nonminority males who were otherwise similar in terms of geographic location, industry, age, and education (see Tables 4.4 to 4.6). This difference is large and statistically significant. Large, adverse, and statistically significant wage disparities were also observed for Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting two or more races, and nonminority women. These disparities are consistent with the presence of market-wide discrimination. Observed disparities for these groups ranged from a low of -12 percent for Asians/Pacific Islanders to a high of -44 percent for nonminority women. Similar results were observed when the analysis was restricted to the goods and services sector or expanded to the economy as a whole. As with the wage and salary disparity analysis, we enhanced our basic statistical model to test whether minority and female business owners in the MSCAA market area differed significantly enough from business owners elsewhere in the U.S. economy to alter any of our basic conclusions regarding disparity. They did not.

As was the case for wage and salary earners, minority and female entrepreneurs earned substantially and significantly less from their efforts than similarly situated nonminority male entrepreneurs. These disparities are a symptom of discrimination in commercial markets that directly and adversely affect M/W/DBEs. Other things equal, if minorities and women cannot earn remuneration from their entrepreneurial efforts comparable to that of nonminority males,

growth rates will slow, business failure rates will increase, and business formation rates may decrease. Combined, these phenomena result in lower M/W/DBE availability levels than would otherwise be observed in a race- and gender-neutral market area.

Next, we analyzed race and gender disparities in business formation (see Tables 4.7 to 4.11). As with earnings, in most cases we observed large, adverse, and statistically significant disparities consistent with the presence of discrimination in these markets in the overall economy, in the construction sector, and in the goods and services sector. In the construction sector, for example, business formation rates for African Americans were 8.8 percentage points lower than for comparable nonminority males. For other groups, disparities ranged from a low of 1.2 percentage points higher for Asians/Pacific Islanders to a high of 20 percentage points lower for nonminority females. Overall, business formation rates for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting two or more races, and nonminority women, were substantially and statistically significantly lower than the corresponding nonminority male business formation rate. Similar results were observed in the goods and services sector and in the economy as a whole.¹⁷

As a further check on the statistical findings in this Chapter, we examined evidence from the Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO) (see Tables 4.13 to 4.16). These data show large, adverse, and statistically significant disparities between M/W/DBEs' share of overall revenues and their share of overall firms in the U.S. as a whole, and in the State of Tennessee. The size of the disparities facing minority-owned firms in Tennessee is very large. For example, although 8.61 percent of all firms in Tennessee are owned by African Americans, they earned only 1.47 percent of all sales and receipts. Hispanic-owned firms are 1.64 percent of all firms in Tennessee, yet they earned only 0.87 percent of all sales and receipts. Asian-owned firms are 2.10 percent of all firms in Tennessee, but earned only 1.75 percent of sales and receipts. Women-owned firms were 22.12 percent of all firms in Tennessee, but these firms earned only 9.91 percent of sales and receipts.

F. Statistical Disparities in Credit/Capital Markets

In Chapter V, we analyzed current and historical data from the Survey of Small Business Finances ("SSBF"), conducted by the Federal Reserve Board and the U.S. Small Business Administration, along with data from nine customized matching mail surveys we have conducted throughout the nation since 1999. This data examines whether discrimination exists in the small business credit market.

Credit market discrimination can have an important effect on the likelihood that M/W/DBEs will succeed. Moreover, discrimination in the credit market might even prevent such businesses from opening in the first place. This analysis has been held by the courts to be probative of a public entity's compelling interest in remedying discrimination. We provide qualitative and quantitative evidence supporting the view that M/W/DBE firms, particularly African American-owned firms, suffer discrimination in this market.

¹⁷ The sole exception to this was the result for Asians/Pacific Islanders in Goods and Services.

The SSBF datasets are constructed for the nation as a whole and for nine Census divisions. The MSCAA market area is part of the East and West South Central divisions (EWSC), which include the State of Tennessee and seven surrounding states.¹⁸ To render the results as narrowly tailored as possible, we included indicator variables in our statistical analyses to determine whether the results for the EWSC were different from those for the nation as a whole. We determined that the national results also apply in general to the EWSC.

The main results are as follows:

- Minority-owned firms were particularly likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied (see Tables 6.15, 6.22, 6.29).
- When minority-owned firms did apply for a loan, their loan requests were substantially more likely to be denied than non-minorities, even after accounting for differences like firm size and credit history (see Tables 6.8, 6.9, 6.18, 6.19, 6.25, 6.26).
- When minority-owned firms did receive a loan they were obligated to pay higher interest rates on the loans than comparable nonminority-owned firms (see Tables 6.13, 6.14, 6.21, 6.27).
- Far more minority-owned firms report that credit market conditions are a serious concern than is the case for nonminority-owned firms (see Tables 6.3, 6.4, 6.5, 6.6, 6.7, 6.17, 6.24).
- A greater share of minority-owned firms believed that the availability of credit was the most important issue likely to confront the firm in the near future (see Tables 6.5, 6.6).
- Judging from the analysis done using data from the SSBF, there is no reason to believe that evidence of discrimination in the market for credit is different in the EWSC, which includes the MSCAA market area, than in the nation as a whole. The evidence from NERA's own credit surveys in a variety of states and metropolitan areas across the country is entirely consistent with the results from the SSBF.

We conclude that there is evidence of discrimination against M/W/DBEs in the MSCAA market area in the small business credit market. This discrimination is particularly acute for African American-owned small businesses where, even after adjusting for differences in assets, liabilities, and creditworthiness, the loan denial rate ranges from 6.4 to 1.9 percentage points higher than for nonminority male-owned small businesses.

¹⁸ The EWSC includes Tennessee, Arkansas, Mississippi, Alabama, Kentucky, Louisiana, Texas, and Oklahoma.

G. M/W/DBE Public Sector Utilization vs. Availability in MSCAA's Contracting, Purchasing, and Concessions Markets, 2006–2011

Chapter VI analyzes the extent to which M/W/DBEs were utilized on contracts active at MSCAA during 2006-2011 and compares this utilization rate to the availability of M/W/DBEs in the relevant market area. It also analyzes M/W/DBE utilization in airport concessions between 2006-2011.

Table B1 provides an executive summary of the utilization findings for the Study by industry category and M/W/DBE type. Table B includes all MSCAA contract and procurement spending during the study period regardless of the source of funds.¹⁹ Comparable results for concessions appear in Table B2.

Table B1. M/W/DBE Utilization in Contracting at MSCAA (All Contracts) (Dollars Paid)

M/W/DBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	CSE (%)	Overall (%)
African American	9.42	11.33	26.36	2.43	11.47
Hispanic	0.04	0.00	0.56	0.18	0.12
Asian/Pacific Islander	0.39	8.33	0.23	0.25	1.28
Native American	1.71	0.00	0.00	0.00	1.12
Minority Total	11.57	19.66	27.16	2.86	13.99
Nonminority female	10.96	6.34	2.26	4.74	8.65
M/W/DBE Total	22.53	26.00	29.41	7.60	22.64
Non-M/W/DBE Total	77.47	74.00	70.59	92.40	77.36
Total (%)	100.00	100.00	100.00	100.00	100.00
Total(\$)	291,838,297	51,671,732	63,773,523	38,048,057	445,331,609

Source and Notes: See Table 6.1.

¹⁹ Chapter VI provides additional breakdowns for both federally-assisted and locally-funded contracts and procurements. Comparable results using dollars awarded (as opposed to dollars actually paid) also appear below in Chapter VI.

Table B2. DBE Utilization in MSCAA Concessions

M/W/DBE Type	Category	
	Including Car Rental (%)	Excluding Car Rental (%)
African American	8.12	18.97
Hispanic	0.00	0.00
Asian/Pacific Islander	0.00	0.00
Native American	0.00	0.00
Minority Total	8.12	18.97
Nonminority female	1.56	3.64
M/W/DBE Total	9.68	22.60
Non-M/W/DBE Total	90.32	77.40
Total (%)	100.00	100.00
Total (\$)	706,202,578	302,375,692

Source and Notes: See Table 6.7.

Next, we compared the use of M/W/DBEs on MSCAA contracts and subcontracts to our measure of M/W/DBE availability in MSCAA's market area. We performed this analysis for airport concessions as well. If M/W/DBE utilization is lower than measured availability in a given category, we report this result as a disparity. Table C1 provides a top-level summary of our disparity findings for the Study for each major procurement category.²⁰ Table C2 provides comparable results for concessions.

²⁰ Additional results for federally-assisted and locally-funded contracts and procurements are provided in Chapter VI, as are results showing dollars awarded as opposed to dollars paid.

Table C1. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Dollars Paid) (All Contracts)

Contracting Category & M/W/DBE Type	Utilization	Availability	Disparity Ratio
OVERALL			
African American	11.47	13.84	82.91
Hispanic	0.12	2.11	5.81 ****
Asian/Pacific Islander	1.28	0.99	
Native American	1.12	0.95	
Minority	13.99	17.88	78.26
Nonminority female	8.65	12.52	69.07
M/W/DBE total	22.64	30.40	74.48 **
CONSTRUCTION			
African American	9.42	10.66	88.34
Hispanic	0.04	1.85	2.18 ****
Asian/Pacific Islander	0.39	0.57	69.02
Native American	1.71	1.35	
Minority	11.57	14.43	80.18
Nonminority female	10.96	10.61	
M/W/DBE total	22.53	25.04	89.97
AE-CRS			
African American	11.33	12.67	89.41
Hispanic	0.00	1.62	0.00 ****
Asian/Pacific Islander	8.33	3.01	
Native American	0.00	0.56	0.00 ****
Minority	19.66	17.86	
Nonminority female	6.34	12.14	52.20 **
M/W/DBE total	26.00	30.01	86.63
SERVICES			
African American	26.36	21.78	
Hispanic	0.56	3.00	18.83 ****
Asian/Pacific Islander	0.23	0.55	42.35
Native American	0.00	0.28	0.00 ****
Minority	27.16	25.60	
Nonminority female	2.26	17.03	13.25 ****
M/W/DBE total	29.41	42.64	68.99 ****
CSE			
African American	2.43	9.44	25.77 ****
Hispanic	0.18	1.35	13.26 **
Asian/Pacific Islander	0.25	2.59	9.57 ****
Native American	0.00	1.26	0.00 ****
Minority	2.86	14.64	19.53 ****
Nonminority female	4.74	10.07	47.08 **
M/W/DBE total	7.60	24.71	30.76 ****

Source: Table 6.9.

Notes: (1) “*” indicates an adverse disparity that is statistically significant at the 15% level or better (85% confidence). “**” indicates an adverse disparity that is statistically significant at the 10% level or better (90% confidence). “***” indicates the disparity is significant at a 5% level or better (95% confidence). “****” indicates significance at a 1% level or better (99% confidence). (2) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

Table C2. Utilization, Availability, and Disparity Results for MSCAA Concessions

Contracting Category & M/W/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
INCLUDING CAR RENTAL			
African American	8.12	7.89	
Hispanic	0.00	2.98	0.0 ***
Asian/Pacific Islander	0.00	13.76	0.0 ***
Native American	0.00	0.54	0.0 ***
Minority	8.12	25.17	32.3 ***
Nonminority female	1.56	10.14	15.4 ***
M/W/DBE total	9.68	35.31	27.4 ***
EXCLUDING CAR RENTAL			
African American	18.97	8.51	
Hispanic	0.00	3.21	0.0 ***
Asian/Pacific Islander	0.00	14.85	0.0 ***
Native American	0.00	0.58	0.0 ***
Minority	18.97	27.16	69.8 **
Nonminority female	3.64	10.94	33.2 ***
M/W/DBE total	22.60	38.10	59.3 ***

Source and Notes: Table 6.14.

Finally, Chapter VI compares current levels of M/W/DBE availability in MSCAA's market area with what we would expect to observe in a race- and gender-neutral market area. If there is full parity in the relevant market area, then the expected M/W/DBE availability rate (that is, the M/W/DBE availability level that would be observed in a non-discriminatory market area) will be equal to the actual current M/W/DBE availability rate. If there are adverse disparities facing M/W/DBEs in the market area, however, as documented in Chapters IV, V, VI and VII of this Study, then expected availability will *exceed* current availability. Expected availability percentages for MSCAA's overall contracting and by major contracting category are presented below in Table D. Expected availability exceeds actual current availability in 26 of the 28 cases observed.

Table D. Current Availability and Expected Availability for MSCAA Contracting (Federally-Assisted Contracts)

Contracting Category & M/W/DBE Type	Award Dollar Weights		Paid Dollar Weights	
	Current Availability (%)	Expected Availability (%)	Current Availability (%)	Expected Availability (%)
OVERALL				
African American	11.31	22.36	11.13	22.00
Hispanic	1.76	2.56	1.81	2.63
Asian/Pacific Islander	1.13	1.28	1.11	1.26
Native American	1.21	1.47	1.17	1.42
Minority	15.40	29.23	15.21	28.87
Nonminority female	10.57	14.22	10.72	14.43
M/W/DBE total	25.97	45.13	25.94	45.08
CONSTRUCTION				
African American	11.01	14.58	10.75	14.24
Hispanic	1.80	2.93	1.85	3.01
Asian/Pacific Islander	0.68	0.80	0.63	0.74
Native American	1.35	1.69	1.32	1.65
Minority	14.84	20.50	14.56	20.11
Nonminority female	10.23	26.35	10.39	26.76
M/W/DBE total	25.06	36.57	24.95	36.41
AE-CRS				
African American	12.73	16.86	12.73	16.86
Hispanic	1.63	2.66	1.62	2.64
Asian/Pacific Islander	3.00	3.52	3.01	3.53
Native American	0.56	0.70	0.56	0.70
Minority	17.92	24.75	17.92	24.75
Nonminority female	12.09	31.14	12.12	31.22
M/W/DBE total	30.02	43.81	30.04	43.83
SERVICES				
African American	11.81	26.47	11.50	25.77
Hispanic	1.70	2.65	1.68	2.61
Asian/Pacific Islander	1.81	1.63	1.85	1.66
Native American	0.63	0.83	0.62	0.82
Minority	15.96	31.08	15.65	30.48
Nonminority female	13.90	18.96	13.77	18.78
M/W/DBE total	29.85	49.68	29.42	48.97

Table D. Current Availability and Expected Availability for MSCAA Contracting (Federally-Assisted Contracts) (cont'd)

Contracting Category/ DBE Type	Award Dollar Weights		Paid Dollar Weights	
	Current Availability (%)	Expected Availability (%)	Current Availability (%)	Expected Availability (%)
CSE				
African American	6.57	14.72	12.28	27.52
Hispanic	0.00	0.00	0.00	0.00
Asian/Pacific Islander	2.38	2.14	1.99	1.79
Native American	2.83	3.74	1.75	2.32
Minority	11.78	22.94	16.02	31.20
Nonminority female	9.90	13.50	14.15	19.30
M/W/DBE total	21.68	36.09	30.17	50.22

Source: Table 6.16.

H. Anecdotal Evidence

Chapter VII presents the results of a large scale mail survey we conducted of M/W/DBEs and non-M/W/DBEs about their experiences and difficulties in obtaining contracts. The survey quantified and compared anecdotal evidence on the experiences of M/W/DBEs and non-M/W/DBEs as a method to examine whether any differences might be due to discrimination.

We found that M/W/DBEs that have been hired in the past by non-M/W/DBE prime contractors to work on public sector contracts with M/W/DBE goals are rarely hired—or even solicited—by these prime contractors to work on projects without M/W/DBE goals. The relative lack of M/W/DBE hiring and, moreover, the relative lack of solicitation of M/W/DBEs in the absence of affirmative efforts by MSCAA and other public entities in the market area shows that business discrimination continues to fetter M/W/DBE business opportunities in MSCAA’s relevant markets.

We found that M/W/DBEs in MSCAA’s market area, and African Americans in particular, report suffering business-related discrimination in large numbers and with statistically significantly greater frequency than non-M/W/DBEs. These differences remain statistically significant when firm size and other “capacity”-related owner characteristics are held constant. Some of the largest disparities were observed in applying for commercial loans, applying for commercial insurance, applying for surety bonds, obtaining price quotes from suppliers or subcontractors, and in working or attempting to work on private sector prime contracts and subcontracts.

We also found that M/W/DBEs in these markets are more likely than similarly situated non-M/W/DBEs to report that specific aspects of the regular business environment make it harder for them to conduct their businesses, and less likely than similarly situated non-M/W/DBEs to report that specific aspects of the regular business environment make it easier for them to conduct their businesses.

Chapter VIII also presents the results from a series of in-depth personal interviews conducted with M/W/DBEs and non-M/W/DBEs from the Airport's market area. Similar to the survey responses, the interviews strongly suggest that minorities and women continue to suffer discriminatory barriers to full and fair access to MSCAA, other public sector, and private sector contracts. Participants reported discriminatory attitudes and negative perceptions and expectations of minorities' and women's competence; jobsite harassment; exclusion from industry and information networks; discrimination in access to surety bonds; not being paid on equal terms; barriers to obtaining public sector contracts; and barriers to obtaining work on contracts without goals or private sector projects.

We conclude that the statistical evidence presented in this report is consistent with these anecdotal accounts of contemporary business discrimination. The results of the surveys and the personal interviews are the types of anecdotal evidence that, especially in conjunction with the Study's extensive statistical evidence, the courts have found to be highly probative of whether, without affirmative interventions, MSCAA would be a passive participant in a discriminatory local market area. It is also highly relevant for narrowly tailoring any M/W/DBE goals that are established.

I. MSCAA's Contracting Affirmative Action Programs: Overview and Feedback Interviews

Chapter VIII provides a review MSCAA's DBE Program, ACDBE Program, and BDD Program, followed by a summary of business owner experiences with these policies and procedures obtained from our interviews. We interviewed 125 business owners and representatives, as well as Airport staff, to solicit their feedback regarding these programs. Our interviews covered the following subjects:

- Access to information about upcoming opportunities
- Contract size, specifications and procurement methods
- Small business set-asides
- M/W/DBEs' perceptions of the programs' overall effectiveness
- Certification standards and processes
- Meeting M/W/DBE goals at contract award
- Monitoring of goal commitments
- Payment
- Assistance programs for M/W/DBEs and small firms
- Mentor-Protégé initiatives
- The ACDBE program

J. Recommendations for Revised Contracting Policies and Procedures

Finally, in Chapter IX we present the following suggested recommendations for revised contracting policies and procedures, based upon the Study's results and findings and upon our views on best practices contracting diversity programs:

1. Augment Race- and Gender-Neutral Initiatives

- Review Surety Bonding, Insurance and Experience Requirements
- Continue to Review Contract Size and Specifications to Increase Contract "Unbundling"
- Review MSCAA Payment Policies
- Partner with Other Agencies to Increase Supportive Services Programs for DBEs
- Enhance the Small Business Participation Program
- Implement a Guaranteed Surety Bonding Program for Small Firms
- Appoint a DBE and BDD Programs Advisory Committee

2. Continue to Implement Narrowly Tailored DBE Goals for Federally-Assisted Contracts

- Continue Using the Study to Set the Overall Annual DBE Goal and ACDBE Goals
- Continue Using the Study to Set DBE Contract Goals
- Review and Enhance Program Compliance Procedures
- Consider Adopting a Mentor- Protégé Program

3. Continue the Business Diversity Development Program for Locally-Funded Contracts

I. Introduction

The Memphis-Shelby County Airport Authority (“MSCAA”) commissioned this Study to evaluate whether minority-owned and women-owned business enterprises and Disadvantaged Business Enterprises (“M/W/DBEs”) in MSCAA’s market area have full and fair opportunities to compete for its prime contracts, concessions contracts and associated subcontracts.

To ensure compliance with constitutional mandates and M/W/DBE best practices, MSCAA commissioned NERA Economic Consulting to examine the past and current status of M/W/DBEs in its geographic and product markets for contracting, procurement and concessions. The results of the Study provide the evidentiary record necessary for MSCAA’s consideration of whether to implement renewed local funds M/W/DBE policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted M/W/DBEs to compete on a fair basis in MSCAA’s contracting and procurement activity.

Additionally, this Study provides information necessary for MSCAA to meet its regulatory and legal obligations under the U.S. Department of Transportation’s (“USDOT”) Disadvantaged Business Enterprise (“DBE”) and Airport Concessions Disadvantaged Business Enterprise (“ACDBE”) programs. For these programs, MSCAA is required, among other obligations, to: (1) compile statistical information concerning the past utilization of minority-owned and women-owned firms as prime contractors, consultants, subcontractors, and suppliers; and (2) estimate the percentage of minority- and women-owned business enterprises (which we will refer to as “M/W/DBEs” regardless of their certification status) in various industry categories that could potentially become certified. This Study will assist MSCAA to fulfill these two regulatory requirements.

This Study finds statistical evidence consistent with the presence of business discrimination against M/W/DBEs in the private sector of MSCAA’s market area. These findings are presented in Chapters IV and V. Statistical analyses of MSCAA’s own contracting and purchasing, which also document evidence consistent with business discrimination, are contained in Chapters II, III and VI. As a check on our statistical findings, documented in Chapter VII, we surveyed the contracting experiences of M/W/DBEs and non-M/W/DBEs in the market area and also conducted a series of in-depth personal interviews with business enterprises throughout the market area, both M/W/DBE and non-M/W/DBE.

Like many recipients of federal transportation funding, MSCAA has a long record of commitment to including minority-owned and women-owned firms in its contracting activities. As will be documented in this Study, during 2006 through 2011 MSCAA has continued to be a source of demand in the regional economy for the products and services provided by M/W/DBEs—demand that, in general, is found to be lacking in the private sector, and to a large degree elsewhere in the public sector, of the Memphis economy and the surrounding region.

As documented below in Chapter VI, MSCAA’s prior efforts have produced positive results—M/W/DBEs earned approximately 26.7 percent of MSCAA’s contracting and subcontracting dollars on contracts active during 2006 through 2011. Some federal courts outside the Sixth Circuit have indicated that in order to implement a race- and gender-based program that is

effective, enforceable and legally defensible, a USDOT funding recipient must meet the judicial test of constitutional “strict scrutiny”²¹ to determine the legality of such initiatives. Strict scrutiny requires a “strong basis in evidence”²² for concluding that discrimination persists, and “narrowly tailored”²³ measures to address that discrimination. These legal principles guide and inform our work for MSCAA in this Study.

A. Study Outline

To ensure compliance with constitutional mandates and M/W/DBE best practices, MSCAA commissioned NERA to examine the past and current status of M/W/DBEs in its geographic and product markets for Construction, AE-CRS, Services, Commodities, and Concessions. The results of the 2013 Study provide the evidentiary record necessary for MSCAA’s consideration of whether to implement renewed DBE and Business Diversity Development policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted M/W/DBEs to participate on a fair basis in MSCAA’s contracting activity.

The 2013 Study finds both statistical and anecdotal evidence of business discrimination against M/W/DBEs in the private sector of the MSCAA market area. As a check on our statistical findings, we surveyed the contracting experiences and credit access experiences of M/W/DBEs and non-M/W/DBEs in the market area and we also conducted a series of in-depth personal interviews with local business enterprises, both M/W/DBE and non-M/W/DBE. Statistical analyses of MSCAA’s public sector contracting behavior appear below in Chapters II, III and VI.

The Study is presented in eight chapters, and is designed to answer the following questions:

- Chapter I: Introduction
- Chapter II: What is the relevant geographic market for MSCAA and how is it defined? What are the relevant product markets for MSCAA and how are they defined?
- Chapter III: What percentage of all businesses in the MSCAA’s market area are owned by minorities and/or women? How are these availability estimates constructed?

²¹ *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 493-494 (1989).

²² *Id.* at 500, citing *Wygant v. Jackson Board of Education*, 476 U.S. 267, 277 (1986).

²³ *Id.*, 488 U.S. at 506-508. *See also*, *Wygant*, 476 U.S. at 274.

- Chapter IV: Do minority and/or female wage and salary earners earn less than similarly situated nonminority males? Do minority and/or female business owners earn less from their businesses than similarly situated nonminority males? Are minorities and/or women in the MSCAA market area less likely to be self-employed than similarly situated nonminority males? How do the findings in the MSCAA market area differ from the national findings on these questions? How have these findings changed over time?
- Chapter V: Do minorities and/or women face discrimination in the market for commercial capital and credit compared to similarly situated nonminority males? How, if at all, do findings locally differ from findings nationally?
- Chapter VI: To what extent have M/W/DBEs been utilized by MSCAA on contracts and purchases active during 2006-2011, and how does this utilization compare to the availability of M/W/DBEs in the relevant market area?
- Chapter VII: How many M/W/DBEs experienced disparate treatment in the study period? What types of discriminatory experiences are most frequently encountered by M/W/DBEs? How do the experiences of M/W/DBEs differ from those of similar non-M/W/DBEs regarding difficulties in obtaining prime contracts and subcontracts?
- Chapter VIII: What general policies and procedures govern MSCAA's DBE program and BDD Program? What were some of the most frequently encountered comments from M/W/DBEs and non-M/W/DBEs concerning MSCAA's contracting affirmative action programs?

In assessing these questions, we present in Chapters II through VII a series of quantitative and qualitative analyses that compare minority and/or female outcomes to nonminority male outcomes in all of these business-related areas. The Executive Summary, above, provides a brief overview of our key findings and conclusions.

II. Defining the Relevant Markets

A. Preparing the Master Contract/Subcontract Database

1. Overview

In the *Croson* decision, the Supreme Court indicated that the *national* findings by Congress of minority business discrimination in construction and related industries were not specific enough, or “narrowly tailored” enough, standing alone, to support an MBE program in the City of Richmond. For this reason, the first step in our evaluation of M/W/DBE availability and participation for the MSCAA is to define the relevant market area for its contracting and procurement activity. Markets have both a geographic dimension and a product, or industry, dimension.²⁴ Both aspects of market definition are considered in this chapter. For this Study, we define the relevant geographic market area based on MSCAA’s historical contracting and subcontracting records. This market dimension is determined empirically by examining the zip code distribution of utilized contractors and subcontractors.

Narrow tailoring also applies to product markets. The extent of disparity may differ from industry to industry just as it does among geographic locations.²⁵ Documenting the specific industries that comprise MSCAA’s contracting activities and the relative importance of each to contract and subcontract spending is important because it allows for: (1) implementation of more narrowly tailored availability estimation methods, (2) contract-level goal-setting, and (3) overall DBE availability estimates and annual goals that are a weighted average of underlying industry-level availability estimates, rather than a simple average. The weights used are the proportion of dollars awarded or paid within each industry and allow the overall availability measure to be influenced more heavily by availability in those industries where more contracting dollars are spent, and less heavily by availability in those industries where relatively fewer contracting dollars are spent.

We define the product market dimension by estimating which North American Industrial Classification System (NAICS) codes best describe each identifiable contractor, subcontractor, subconsultant, or supplier in those records.²⁶ In both cases, the definitions are weighted according to how many dollars were spent with firms from each zip code or NAICS code, respectively, so that locations and industries, respectively, receiving relatively more contracting dollars receive relatively more weight in the estimation of DBE availability. Once the geographic and industry parameters of MSCAA’s market area have been defined, we can restrict our subsequent analyses to business enterprises and other phenomena within this market area. Restricting our analyses in this manner narrowly tailors our findings to MSCAA’s specific

²⁴ See, for example, Areeda, P., L. Kaplow, and A. Edlin (2004).

²⁵ See Wainwright (2000), documenting that, in general, the similarities in the amount of discrimination present in different industries and geographic locations significantly outweigh the differences.

²⁶ Executive Office of the President, Office of Management and Budget (2007).

market area and contracting circumstances. We conduct a related exercise in evaluating the appropriate market area for Airport Concessions.

2. MSCAA Contracting and Purchasing

With assistance from MSCAA, NERA collected prime contract and purchase order records for MSCAA's Construction, Architecture-Engineering and Other Construction-Related Professional Services ("AE-CRS"); Other Professional and General Services ("Services"); and Commodities, Supplies, and Equipment ("CSE") contracts that were active between January 2006 and December 2011.²⁷ We also collected data on airport concessions revenues, spanning the same time period. These data were retrieved from several financial management information systems at MSCAA, including the accounts payable system and the contract compliance system. The four major procurement categories were assigned based primarily on MSCAA records.

For each prime contract and purchase order from the study period, we identified the prime contractor or vendor business name and address, telephone number, contract or purchase description, project number or purchase order number, federal funding status, M/W/DBE goal (if applicable), start date, initial award amount, and total amount paid to date. Additionally, we cross-referenced contractor business names and addresses with MSCAA vendor lists and lists of certified M/W/DBE firms to obtain contractor and vendor race and gender information. Additionally, available data was obtained for associated subcontractors, subconsultants, suppliers, and truckers (collectively "subcontractors" or "subcontracts"), including business name and address, telephone number, race and gender, award amount, and total amount paid to date. We worked with MSCAA to obtain all missing subcontractor information from the relevant prime contractors or vendors. Information collected included subcontractor name and address, telephone number, race and gender, description of work performed, final award amount, and final amount paid.

Table 2.1. Distribution of MSCAA Prime Contracts by Procurement Category

Procurement Category	Number of Contracts	Percentage	Cumulative Percentage
Construction	65	23.81	23.81
AE-CRS	42	15.38	39.19
Services	69	25.27	64.47
CSE	97	35.53	100.00
TOTAL	273	100.00	

Source: NERA calculations from Master Contract/Subcontract Database.

²⁷ Purchase orders under \$10,000 were only available after July 2007.

Table 2.2. Distribution of MSCAA Purchase Orders by Procurement Category

Procurement Category	Number of Contracts	Percentage	Cumulative Percentage
Construction	6	0.04	0.04
AE-CRS	17	0.10	0.14
Services	743	4.40	4.53
CSE	16,160	95.47	100.00
TOTAL	16,926	100.00	

Source: See Table 2.1.

In this manner, a total of 273 prime contracts and 16,926 purchase orders during the study period were identified from MSCAA records. Collectively, the prime contracts had an award value of \$531.8 million and a paid to date value of \$349.7 million. The purchase orders, collectively, had an award (and paid) value of \$23.3 million. From Table 2.1, we see that of all the prime contracts in the study universe for MSCAA, approximately 24 percent were for Construction, 15 percent were for AE-CRS, 25 percent were for Services, and 36 percent were for CSE.²⁸ From Table 2.2, we see that of the 16,926 purchase orders in the study universe for MSCAA, less than 0.15 percent were for Construction or AE-CRS, approximately 4 percent were for Services, and approximately 95 percent were for CSE.

Combined, we examined 17,199 prime contracts and purchase orders with a combined award value of \$649.2 million and a combined paid to date value of \$373.2 million. Not all of these contracts were likely to have subcontract opportunities, however. In particular, contracts for CSE rarely have subcontract opportunities; nor do contracts valued at less than \$25,000. Of all the prime contracts in the file, we identified 196 prime contracts in the MSCAA files that potentially had subcontract opportunities. This is approximately 72 percent of all prime contracts identified, but it accounts for 97 percent of all prime contract dollars in the file.

Next, we reviewed all of the available subcontract data for these 196 records. As a result of this review, we determined that the available subcontract records were possibly incomplete in many cases. In consultation with MSCAA, NERA developed a plan to directly contact the prime contractors associated with these contracts in order to verify the existing data and supplement it with additional subcontract records where appropriate. As noted above, we attempted to include prime contracts valued at \$25,000 or greater in Construction, AE-CRS, and Services in this data collection effort. Prime contracts and purchases of CSE, or in amounts less than \$25,000, were not included due to the limited opportunities for subcontracting in these areas. These contracts do, however, remain in the study universe.

After an intensive data collection effort and with the assistance of MSCAA, we were ultimately able to obtain the associated subcontract information for 177 prime contracts, or 90 percent of all

²⁸ Contracts for Commodities typically do not have subcontracting opportunities. Nor is it common to see subcontracting activity on contracts valued at less than \$25,000.

prime contracts sampled, and 762 associated subcontracts. The total dollar value of the 177 prime contracts, according to MSCAA records, was \$477.9 million, or 93 percent of all awarded prime contract dollars and 94 percent of all paid to date contract dollars during the study period. These percentages are sufficiently large to be well representative of the entire universe of MSCAA contracts and subcontracts being examined for this Study.

Dollar values reported by prime contractors did not always match MSCAA records exactly. According to prime-reported amounts, the total awarded dollar value of the 177 prime contracts was \$459.8 million. In order to achieve consistency with the subcontract dollar values we collected, we use prime reported dollar amounts for the remainder of the relevant analyses in this report.

These 177 prime contracts and 762 associated subcontracts were then combined with the 17,003 prime contracts and purchase orders without significant subcontracting opportunities to form the Master Contract/Subcontract Database for the Study. Together, as shown below in Tables 2.3 through 2.5, these prime contracts and subcontracts comprise the Master Contract/Subcontract Database compiled for this Study.

Tables 2.3 through 2.5 show the total number of prime contracts (including purchase orders), subcontracts, dollars awarded, and dollars paid, by major procurement category. Table 2.3 shows all contracts, Table 2.4 shows only federally-assisted contracts, and Table 2.5 shows just locally-funded contracts.

Table 2.3. Summary of Master Contract/Subcontract Database: MSCAA Contracts and Subcontracts by Procurement Category

CONTRACT CATEGORY	NUMBER OF AWARDED CONTRACTS	NUMBER OF PAID CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
<i>CONSTRUCTION</i>			318,247,312	291,838,297
<i>Prime Contracts</i>	58	56	127,635,140	102,243,641
<i>Subcontracts</i>	448	448	190,612,172	189,594,656
<i>AE-CRS</i>			69,289,989	51,671,732
<i>Prime Contracts</i>	59	51	48,574,209	32,749,958
<i>Subcontracts</i>	192	192	20,715,780	18,921,774
<i>SERVICES</i>			70,360,754	63,773,523
<i>Prime Contracts</i>	808	806	57,193,582	51,675,369
<i>Subcontracts</i>	121	121	13,167,172	12,098,154
<i>CSE</i>			40,721,165	38,048,057
<i>Prime Contracts</i>	16,255	16,255	40,720,462	38,047,354
<i>Subcontracts</i>	1	1	703	703
<i>GRAND TOTAL</i>			498,619,219	445,331,609
<i>Prime Contracts</i>	17,180	17,168	274,123,393	224,716,323
<i>Subcontracts</i>	762	762	224,495,826	220,615,287

Source: NERA calculations from Master Contract/Subcontract Database.

Note: Prime Contract dollar amounts are net of subcontract amounts.

Table 2.4. Summary of Master Contract/Subcontract Database: Federally-Assisted MSCAA Contracts and Subcontracts by Procurement Category

CONTRACT CATEGORY	NUMBER OF AWARDED CONTRACTS	NUMBER OF PAID CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
<i>CONSTRUCTION</i>			273,004,203	250,081,554
<i>Prime Contracts</i>	29	28	97,637,585	75,850,267
<i>Subcontracts</i>	378	378	175,366,618	174,231,286
<i>AE-CRS</i>			45,810,443	41,813,606
<i>Prime Contracts</i>	22	17	29,209,342	26,652,913
<i>Subcontracts</i>	133	133	16,601,102	15,160,692
<i>MAINTENANCE</i>			2,308,524	2,245,251
<i>Prime Contracts</i>	4	4	1,439,055	1,417,253
<i>Subcontracts</i>	21	21	869,469	827,998
<i>IT</i>			5,003,760	2,496,826
<i>Prime Contracts</i>	6	6	5,003,760	2,496,826
<i>Subcontracts</i>	0	0	0	0
<i>SERVICES</i>			326,126,931	296,637,236
<i>Prime Contracts</i>	61	55	133,289,742	106,417,260
<i>Subcontracts</i>	532	532	192,837,189	190,219,976
<i>CSE</i>			273,004,203	250,081,554
<i>Prime Contracts</i>	29	28	97,637,585	75,850,267
<i>Subcontracts</i>	378	378	175,366,618	174,231,286
<i>GRAND TOTAL</i>			45,810,443	41,813,606
<i>Prime Contracts</i>	22	17	29,209,342	26,652,913
<i>Subcontracts</i>	133	133	16,601,102	15,160,692

Source: See Table 2.3.

Table 2.5. Summary of Master Contract/Subcontract Database: Locally-Funded MSCAA Contracts and Subcontracts by Procurement Category

CONTRACT CATEGORY	NUMBER OF AWARDED CONTRACTS	NUMBER OF PAID CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
<i>CONSTRUCTION</i>			45,243,109	41,756,744
<i>Prime Contracts</i>	29	28	29,997,555	26,393,374
<i>Subcontracts</i>	70	70	15,245,553	15,363,370
<i>AE-CRS</i>			23,479,545	9,858,126
<i>Prime Contracts</i>	37	34	19,364,868	6,097,045
<i>Subcontracts</i>	59	59	4,114,678	3,761,082
<i>SERVICES</i>			68,052,230	61,528,272
<i>Prime Contracts</i>	804	802	55,754,527	50,258,116
<i>Subcontracts</i>	100	100	12,297,703	11,270,156
<i>CSE</i>			35,717,404	35,551,231
<i>Prime Contracts</i>	16,249	16,249	35,716,701	35,550,528
<i>Subcontracts</i>	1	1	703	703
<i>GRAND TOTAL</i>			172,492,288	148,694,373
<i>Prime Contracts</i>	17,119	17,113	140,833,652	118,299,063
<i>Subcontracts</i>	230	230	31,658,637	30,395,310

Source: See Table 2.3.

Table 2.6 shows the total number of prime contracts awarded during each year of the Study period and total dollar payments associated with those contracts, by major procurement category.

Table 2.6. Summary of Master Contract/Subcontract Database: Prime Contracts by Year, All Funding Sources

PROCUREMENT CATEGORY & YEAR	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED (\$)	DOLLARS PAID (\$)
<i>CONSTRUCTION</i>			
2006	14	99,061,820	97,859,212
2007	10	14,059,516	14,062,072
2008	10	20,532,308	19,340,385
2009	8	48,937,029	49,511,235
2010	11	134,464,688	113,622,166
2011	5	1,191,952	1,139,563
TOTAL	58	318,247,312	295,534,633
<i>AE-CRS</i>			
2006	17	29,714,955	19,832,904
2007	11	22,227,844	21,888,035
2008	6	4,639,149	4,244,003
2009	12	2,275,222	1,856,568
2010	6	8,351,988	6,650,998
2011	7	2,080,831	1,855,242
TOTAL	59	69,289,989	56,327,750
<i>SERVICES</i>			
2006	43	47,074,031	47,384,077
2007	89	138,081	138,081
2008	241	14,608,838	14,132,176
2009	166	727,961	727,961
2010	170	6,816,432	2,601,600
2011	99	995,411	743,677
TOTAL	808	70,360,754	65,727,571

Table 2.6. Summary of Master Contract/Subcontract Database: Prime Contracts by Year, All Funding Sources (cont'd)

PROCUREMENT CATEGORY & YEAR	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED (\$)	DOLLARS PAID (\$)
<i>CSE</i>			
2006	40	8,759,775	7,504,889
2007	2,312	3,308,673	3,294,950
2008	4,232	9,323,575	9,310,777
2009	3,810	6,939,475	6,764,238
2010	3,977	6,850,185	5,625,179
2011	1,884	5,539,482	5,548,024
TOTAL	16,255	40,721,165	38,048,057
<i>GRAND TOTAL</i>			
2006	114	184,610,581	172,581,081
2007	2,422	39,734,113	39,383,138
2008	4,489	49,103,870	47,027,342
2009	3,996	58,879,686	58,860,002
2010	4,164	156,483,293	128,499,943
2011	1,995	9,807,676	9,286,506
TOTAL	17,180	498,619,219	455,638,012

Source: See Table 2.1.

3. Airport Concessions

Unlike contracting for Construction, AE-CRS, Services, and CSE, contracts for Airport Concessions generate revenue for MSCAA. Rather than paying a contractor or vendor directly for goods or services supplied, the Airport grants each concessionaire the right to conduct business at the Memphis International Airport for a set period of time in exchange for an agreed-upon percentage of the revenues generated by each concessionaire. For this reason, in the concession context, the type of data required to determine product markets, geographic markets, and in later chapters, availability, utilization, and disparity, is different from that required for other types of MSCAA contracts and purchases.

We worked with MSCAA to obtain all gross reportable revenue figures for each concessions category from 2006 through 2011. MSCAA reports Airport Concessions gross revenues in six different categories: (1) Food/Beverage, (2) Retail, (3) Advertising, (4) Passenger Services, (5) Phone Services, (6) Off Airport Parking, (7) Rental Car, (8) Limousines, and (9) Taxis.

The Airport Concessions revenue data for the study period totaled approximately \$706.6 million and contained the type of concession category being provided, the business name of the concessionaire, and the reportable revenues by month and year for each business in each concession category. We combined this information with research on existing concessions contracts at the Airport to determine the M/W/DBE status of each concessionaire, and the race and sex of ownership. As shown below in Tables 2.7 and 2.8, these data comprise the Master Concessions Database compiled for this Study.

Table 2.7 shows total revenues over the six-year period by type of concession.

Table 2.7. Summary of Master Concessions Database: Revenues by Concessions Category, 2006-2011

CONCESSIONS CATEGORY	GROSS REVENUES (\$)
FOOD & BEVERAGE	165,141,342
RETAIL	83,214,329
ADVERTISING	755,231
PASSENGER SERVICES	30,282,288
PHONE SERVICES	790,521
OFF AIRPORT PARKING	20,896,010
RENTAL CAR	403,826,887
LIMOUSINES	861,973
TAXIS	867,846
GRAND TOTAL	706,636,425

Source: NERA calculations from Master Concessions Database.

Table 2.8 shows annual revenues for each major concession category.

Table 2.8. Summary of Master Concessions Database: Revenues by Category and Year

CONCESSIONS CATEGORY & YEAR	GROSS REVENUES (\$)
FOOD & BEVERAGE	
2006	26,929,596
2007	29,516,818
2008	30,128,831
2009	27,436,540
2010	28,496,552
2011	22,633,006
TOTAL	165,141,343
RETAIL	
2006	14,221,020
2007	15,050,075
2008	14,484,243
2009	13,488,024
2010	13,391,529
2011	12,579,440
TOTAL	83,214,331
ADVERTISING	
2006	323,287
2007	331,831
2008 ²⁹	64,524
2009	16,985
2010	18,603
2011	—
TOTAL	755,230

²⁹ Advertising revenues dropped significantly between 2007-2009 due to the MSCAA's 2008 termination of its major outside advertising contract. The remaining outside contract in this category ended in by 2011.

Table 2.8. Summary of Master Concessions Database: Revenues by Category and Year (cont'd)

CONCESSIONS CATEGORY & YEAR	GROSS REVENUES (\$)
PASSENGER SERVICES	
2006	4,074,514
2007	6,372,445
2008	6,077,622
2009	5,338,977
2010	5,539,598
2011	2,879,132
TOTAL	30,282,288
PHONE SERVICES ³⁰	
2006	202,461
2007	151,260
2008	158,400
2009	158,400
2010	80,000
2011	40,000
TOTAL	790,521
OFF AIRPORT PARKING	
2006	3,262,877
2007	3,924,276
2008	3,817,437
2009	3,251,201
2010	3,438,935
2011	3,201,284
TOTAL	20,896,010

³⁰ Figures for 2008-2011 are estimated maximum revenue amounts. Phone services usage has declined steadily in recent years and MSCAA's concessionaire has been paying a Minimum Agreed Guarantee (MAG) commission since 2008. This agreement originally called for a MAG rate of \$23,760 per year or 15 percent of gross annual revenues, whichever was greater. In 2008 and 2009, the concessionaire paid the MAG rate, implying that revenues were no more than \$158,400 in each year. In 2010, MSCAA agreed to drop the MAG rate to \$12,000 per year, implying maximum revenues of no more than \$80,000. In 2011, the rate was dropped again to \$6,000 per year, implying maximum revenues of no more than \$40,000.

Table 2.8. Summary of Master Concessions Database: Revenues by Category and Year (cont'd)

CONCESSIONS CATEGORY & YEAR	GROSS REVENUES (\$)
RENTAL CAR	
2006	76,386,900
2007	76,579,397
2008	68,101,135
2009	59,315,653
2010	60,779,201
2011	62,664,600
TOTAL	403,826,886
LIMOUSINES ³¹	
2006	235,298
2007	215,415
2008	220,614
2009	50,000
2010	76,062
2011	64,583
TOTAL	861,973
TAXIS	
2006	108,986
2007	131,496
2008	100,216
2009	147,716
2010	228,711
2011	150,720
TOTAL	867,845

Source: NERA calculations from Master Concessions Database.

³¹ Figures for 2009-2011 are estimated maximum gross revenue amounts. Limousine services usage has declined steadily in recent years and MSCAA's concessionaires have been paying a minimum guaranteed concession fee of \$125 per month or 6 percent of gross revenues, whichever was greater, up to an annual maximum of \$6,000. Gross revenues for 2009-2011 are estimated totals based on this arrangement.

B. Geographic Market Definition for Contracting and Procurement

To determine the geographic dimension of MSCAA's contracting and procurement markets, we used the Master Contract/Subcontract Database, as described in the previous section, to obtain the zip codes and thereby the county and state for each contractor and subcontractor establishment identified in the database. Using this location information, we then calculated the percentage of MSCAA contract and subcontract dollars awarded to establishments by state and county during the study period.

As discussed above, the geographic market area is defined as that region which accounts for approximately 75 percent of overall contracting and procurement spending by a given state or local government. Contractors and vendors with locations in the Memphis, TN-MS-AR Metropolitan Statistical Area (MSA) account for the large majority of contracting and procurement expenditures by MSCAA during the study period.³² As shown in Table 2.9, the overall share of expenditures inside this market area is 76.2 percent of dollars awarded and 75.1 percent of dollars paid. The share is highest in AE-CRS, followed by Services, Construction, and CSE.³³ For purposes of this Study, therefore, we define the primary geographic market area to be the Memphis MSA.

³² The Memphis, TN-MS-AR MSA includes the Crittenden County in Arkansas; DeSoto County, Marshall County, Tate County, and Tunica County in Mississippi; and Fayette County, Shelby County, and Tipton County in Tennessee.

³³ For informational purposes, Table 2.9 also shows the share of awards and payments inside and outside the State of Tennessee.

Table 2.9. Distribution of Contracting Dollars by Geographic Location

Location	Construction (%)	AE-CRS (%)	Services (%)	CSE (%)	Total (%)
<i>Dollars Awarded</i>					
Inside MSCAA Market Area	76.4	83.7	80.5	53.7	76.2
Outside MSCAA Market Area	23.6	16.3	19.5	46.3	23.8
<i>Dollars Paid</i>					
Inside MSCAA Market Area	76.5	80.6	78.5	51.0	75.1
Outside MSCAA Market Area	23.5	19.4	21.5	49.0	24.9
<i>Dollars Awarded</i>					
Inside Tennessee	75.1	84.4	93.1	54.4	77.3
Outside Tennessee	24.9	15.6	6.9	45.6	22.7
<i>Dollars Paid</i>					
Inside Tennessee	74.7	81.0	92.9	51.7	76.1
Outside Tennessee	25.3	19.0	7.1	48.3	23.9

Source: See Table 2.1.

Within the market area, the geographic distribution of contract and procurement dollars across all procurement categories is shown in Table 2.10.

Table 2.10. Distribution of MSCAA Contracting Dollars by State and County, Inside the Market Area

STATE	COUNTY	AMOUNT (\$)	PERCENT	CUMULATIVE PERCENT
TN	Shelby	348,417,053	96.60	96.60
MS	DeSoto	8,111,546	2.25	98.85
AR	Crittenden	1,351,639	0.37	99.22
MS	Tunica	1,271,181	0.35	99.58
TN	Tipton	819,472	0.23	99.80
TN	Fayette	425,677	0.12	99.92
MS	Marshall	286,240	0.08	100.00

Source: See Table 2.1.

Outside the market area, areas with a significant amount of spending activity (defined somewhat arbitrarily, as counties that accounted for more than approximately 0.25% of total spending among three or more vendors) included:

CONSTRUCTION

Fulton County, GA
Davison County, TN

AE-CRS

Orange County, CA
Hennepin County, MN
Davison County, TN
Cook County, IL

SERVICES

Davison County, TN
Fulton County, GA
Travis County, TX
New York County, NY
Cook County, IL
Pinellas County, FL
Palm Beach County, FL

CSE

Davidson County, TN
Franklin County, OH

CSE, cont'd

Hartford County, CT
Cook County, IL
Fulton County, GA
Hennepin County, MN
Lake County, IL
Madison County, TN
Dallas County, TX
Johnson County, KS
Boulder County, CO
Cuyahoga County, OH
Harris County, TX
Rutherford County, TN
DeKalb County, GA
Saint Louis County, MO
Jefferson County, AL
Pulaski County, AR
Fairfield County, CT
Knox County, TN
San Diego County, CA

C. Product Market Definition for Contracting and Procurement

Using the major procurement categories for each prime contract and the primary NAICS codes assigned by NERA to each prime contractor and subcontractor in the Master Contract/Subcontract Database, we identified the most important Industry Groups within each contracting and procurement category, as measured by total dollars expended. The relevant NAICS codes and their associated dollar weights appear below in Tables 2.11 through 2.14 for Construction, AE-CRS, Services, and CSE, respectively.

Each Industry Group (four-digit NAICS) identified in Tables 2.11 through 2.14 consists of several more detailed Industries (five- and six-digit NAICS) and, as well, is part of a more

aggregated Industry Sub-sector (three-digit NAICS). Overall, MSCAA contracting expenditures occur in 65 NAICS Industry Sub-sectors, 163 NAICS Industry Groups and 336 NAICS Industries. In Construction, MSCAA contract spending occurs across 29 NAICS Industry Sub-sectors, 50 NAICS Industry Groups and 80 NAICS Industries. In AE-CRS, spending occurs across 13 NAICS Industry Sub-sectors, 21 NAICS Industry Groups and 35 NAICS Industries. In Services, spending occurs across 40 NAICS Industry Sub-sectors, 86 NAICS Industry Groups and 129 NAICS Industries. In CSE, spending occurs across 54 NAICS Industry Sub-sectors, 131 NAICS Industry Groups and 257 NAICS Industries.

Although numerous industries play a role in MSCAA's contracting activities, it is clear from Tables 2.11 through 2.14 that actual contracting and subcontracting opportunities are not distributed evenly among them. The distribution of contract expenditures is, in fact, highly skewed.

In Construction, for example, we see from Table 2.11 that just three Industry Groups alone (NAICS 2373, 2362, and 2382) account for over three-fifths of all award dollars, and nine Industry Groups account for over 90 percent, with the remainder distributed among 41 additional Industry Groups.

Table 2.11. Distribution of Contract and Subcontract Dollars Awarded by Industry Group: Construction

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
2373	Highway, Street, and Bridge Construction	39.66	39.66
2362	Nonresidential Building Construction	11.72	51.38
2382	Building Equipment Contractors	11.14	62.52
2381	Foundation, Structure, and Building Exterior Contractors	8.85	71.37
2389	Other Specialty Trade Contractors	6.17	77.54
2371	Utility System Construction	4.50	82.04
2383	Building Finishing Contractors	4.06	86.10
3273	Cement and Concrete Product Manufacturing	2.96	89.06
3323	Architectural and Structural Metals Manufacturing	1.77	90.83
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	1.13	91.97
4841	General Freight Trucking	0.96	92.92
3339	Other General Purpose Machinery Manufacturing	0.91	93.83
4236	Electrical and Electronic Goods Merchant Wholesalers	0.73	94.57
2379	Other Heavy and Civil Engineering Construction	0.72	95.29
8111	Automotive Repair and Maintenance	0.68	95.97

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
4233	Lumber and Other Construction Materials Merchant Wholesalers	0.67	96.64
5617	Services to Buildings and Dwellings	0.52	97.15
5413	Architectural, Engineering, and Related Services	0.50	97.65
3399	Other Miscellaneous Manufacturing	0.42	98.08
1151	Support Activities for Crop Production	0.29	98.37
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	0.27	98.63
5613	Employment Services	0.25	98.88
5629	Remediation and Other Waste Management Services	0.21	99.09
	Balance of industries (27 industry groups)	0.91	100.00
	<i>TOTAL - \$318,247,312</i>		

Source: See Table 2.1.

In AE-CRS (Table 2.12), we see an even more concentrated pattern—one Industry Group alone (NAICS 5413) accounts for over 97 percent of all award dollars, with the balance distributed among 20 additional Industry Groups.

Table 2.12. Distribution of Contract and Subcontract Dollars Awarded by Industry Group: AE-CRS

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
5413	Architectural, Engineering, and Related Services	97.36	97.36
5416	Management, Scientific, and Technical Consulting Services	1.48	98.84
2389	Other Specialty Trade Contractors	0.17	99.01
	Balance of industries (18 industry groups)	0.91	100.00
	<i>TOTAL - \$69,289,989</i>		

Source: See Table 2.1.

In Services (Table 2.13), two Industry Groups account for half of all awards, three Industry Groups account for three-fourths, and eight Industry Groups account for 90 percent, with the remainder distributed among 78 additional Industry Groups.

Table 2.13. Distribution of Contract and Subcontract Dollars Awarded by Industry Group: Services

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
5617	Services to Buildings and Dwellings	25.05	25.05
5616	Investigation and Security Services	24.97	50.02
8129	Other Personal Services	24.21	74.23
5242	Agencies, Brokerages, and Other Insurance Related Activities	4.85	79.08
5411	Legal Services	3.30	82.38
5241	Insurance Carriers	3.18	85.56
5416	Management, Scientific, and Technical Consulting Services	2.85	88.41
5419	Other Professional, Scientific, and Technical Services	1.91	90.32
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	1.33	91.65
5239	Other Financial Investment Activities	1.11	92.76
5413	Architectural, Engineering, and Related Services	0.94	93.69
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	0.93	94.63
8123	Drycleaning and Laundry Services	0.88	95.51
8139	Business, Professional, Labor, Political, and Similar Organizations	0.79	96.29
5622	Waste Treatment and Disposal	0.74	97.03
5222	Nondepository Credit Intermediation	0.32	97.35
4881	Support Activities for Air Transportation	0.23	97.58
2382	Building Equipment Contractors	0.22	97.81
3333	Commercial and Service Industry Machinery Manufacturing	0.20	98.01
2389	Other Specialty Trade Contractors	0.18	98.19
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	0.15	98.34
5322	Consumer Goods Rental	0.14	98.48
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	0.10	98.58
5415	Computer Systems Design and Related Services	0.10	98.68
5619	Other Support Services	0.10	98.78
5182	Data Processing, Hosting, and Related Services	0.10	98.87
3339	Other General Purpose Machinery Manufacturing	0.08	98.96
3231	Printing and Related Support Activities	0.08	99.04
	Balance of industries (58 industry groups)	0.96	100.00
	<i>TOTAL - \$70,360,754</i>		

Source: See Table 2.1.

Finally, in CSE (Table 2.14), we see that five Industry Groups account for more than half of all awards, 14 Industry Groups account for three-fourths, and 30 Industry Groups together account for 90 percent, with the remainder distributed among 101 additional Industry Groups.

Table 2.14. Distribution of Contract and Subcontract Dollars Awarded by Industry Group: CSE

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
4236	Electrical and Electronic Goods Merchant Wholesalers	14.14	14.14
4247	Petroleum and Petroleum Products Merchant Wholesalers	12.05	26.18
4411	Automobile Dealers	9.62	35.81
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	8.26	44.07
3325	Hardware Manufacturing	8.24	52.31
3331	Agriculture, Construction, and Mining Machinery Manufacturing	5.23	57.53
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	3.29	60.82
3351	Electric Lighting Equipment Manufacturing	3.14	63.96
5112	Software Publishers	2.20	66.16
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	2.07	68.22
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	1.92	70.15
3341	Computer and Peripheral Equipment Manufacturing	1.81	71.95
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	1.58	73.53
3273	Cement and Concrete Product Manufacturing	1.55	75.08
3362	Motor Vehicle Body and Trailer Manufacturing	1.40	76.47
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	1.32	77.79
5415	Computer Systems Design and Related Services	1.16	78.95
2382	Building Equipment Contractors	1.14	80.08
3255	Paint, Coating, and Adhesive Manufacturing	1.13	81.21
4246	Chemical and Allied Products Merchant Wholesalers	1.00	82.21
2373	Highway, Street, and Bridge Construction	0.98	83.19
4233	Lumber and Other Construction Materials Merchant Wholesalers	0.94	84.14
3333	Commercial and Service Industry Machinery Manufacturing	0.94	85.08
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	0.81	85.90
4413	Automotive Parts, Accessories, and Tire Stores	0.77	86.66
3323	Architectural and Structural Metals Manufacturing	0.73	87.39
3399	Other Miscellaneous Manufacturing	0.72	88.11

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
2389	Other Specialty Trade Contractors	0.69	88.81
8111	Automotive Repair and Maintenance	0.67	89.47
5418	Advertising, Public Relations, and Related Services	0.60	90.07
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	0.57	90.64
4422	Home Furnishings Stores	0.56	91.20
5612	Facilities Support Services	0.55	91.75
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	0.55	92.30
4441	Building Material and Supplies Dealers	0.53	92.83
4539	Other Miscellaneous Store Retailers	0.51	93.34
4431	Electronics and Appliance Stores	0.50	93.83
2381	Foundation, Structure, and Building Exterior Contractors	0.40	94.23
3339	Other General Purpose Machinery Manufacturing	0.37	94.60
5182	Data Processing, Hosting, and Related Services	0.36	94.96
4541	Electronic Shopping and Mail-Order Houses	0.32	95.28
5629	Remediation and Other Waste Management Services	0.31	95.59
4239	Miscellaneous Durable Goods Merchant Wholesalers	0.29	95.88
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	0.27	96.15
8112	Electronic and Precision Equipment Repair and Maintenance	0.26	96.41
4471	Gasoline Stations	0.24	96.65
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	0.22	96.87
4442	Lawn and Garden Equipment and Supplies Stores	0.21	97.09
4241	Paper and Paper Product Merchant Wholesalers	0.21	97.30
5616	Investigation and Security Services	0.19	97.48
5619	Other Support Services	0.15	97.63
3353	Electrical Equipment Manufacturing	0.15	97.78
5171	Wired Telecommunications Carriers	0.13	97.91
3272	Glass and Glass Product Manufacturing	0.13	98.04
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.12	98.16
3119	Other Food Manufacturing	0.12	98.28
2371	Utility System Construction	0.11	98.39
3231	Printing and Related Support Activities	0.11	98.50
4412	Other Motor Vehicle Dealers	0.10	98.60
4511	Sporting Goods, Hobby, and Musical Instrument Stores	0.10	98.70

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
3342	Communications Equipment Manufacturing	0.09	98.79
5322	Consumer Goods Rental	0.09	98.88
3359	Other Electrical Equipment and Component Manufacturing	0.08	98.96
4532	Office Supplies, Stationery, and Gift Stores	0.08	99.04
	Balance of industries (67 industry groups)	0.96	100.00
	<i>TOTAL - \$40,721,165</i>		

Source: See Table 2.1.

The resulting percentage weights from these NAICS Sub-sectors, Groups, and Industries are used below in Chapter III to calculate average M/W/DBE availability figures for Construction, AE-CRS, Services, and CSE.³⁴

D. Concessions: Product and Geographic Markets

The product market for Concessions is determined in a manner analogous to that for Contracting and Procurement—a primary NAICS code is assigned to each concessionaire and the distribution of Concession revenues is then tabulated by NAICS code.

Table 2.15. Distribution of Concessions Revenues by Industry

NAICS Industry	NAICS Description	Percentage	Cumulative Percentage
5321	Automotive Equipment Rental and Leasing	57.15	57.15
7222	Limited-Service Eating Places	19.75	76.90
4512	Book, Periodical, and Music Stores	8.95	85.85
7221	Full-Service Restaurants	3.91	89.76
8129	Other Personal Services	3.00	92.76
7211	Traveler Accommodation	2.55	95.31
5223	Activities Related to Credit Intermediation	1.57	96.88
4511	Sporting Goods, Hobby, and Musical Instrument Stores	1.27	98.15
4481	Clothing Stores	0.74	98.89
4483	Jewelry, Luggage, and Leather Goods Stores	0.27	99.16
4452	Specialty Food Stores	0.15	99.31

³⁴ After re-normalizing the percentage weights to sum to 100.

NAICS Industry	NAICS Description	Percentage	Cumulative Percentage
4853	Taxi and Limousine Service	0.12	99.43
5221	Depository Credit Intermediation	0.12	99.56
4859	Other Transit and Ground Passenger Transportation	0.11	99.66
5418	Advertising, Public Relations, and Related Services	0.11	99.77
5322	Consumer Goods Rental	0.09	99.86
5171	Wired Telecommunications Carriers	0.09	99.95
4539	Other Miscellaneous Store Retailers	0.02	99.97
5152	Cable and Other Subscription Programming	0.02	99.98
8112	Electronic and Precision Equipment Repair and Maintenance	0.01	99.99
5179	Other Telecommunications	0.00	100.00
8121	Personal Care Services	0.00	100.00
<i>TOTAL - \$706,636,425</i>			

Source: See Table 2.7.

As with contracting and procurement, revenues are not distributed evenly across the various NAICS codes. For example, we see from Table 2.15 that the Automotive Equipment Rental and Leasing Industry Group alone (NAICS 5321), which includes the Passenger Car Rental industry, accounts for almost three-fifths of all revenues. Overall in Concessions, spending occurs across 14 NAICS Industry Sub-sectors, 22 NAICS Industry Groups and 27 NAICS Industries.

Certain Concessions categories, such as Car Rental, are dominated by a small number of large national chains with local establishments. Similarly, much of the Food/Beverage and News/Gifts market is dominated by a small number of nationwide companies such as Hudson News, Delaware North, and The Paradies Shops. These firms enjoy exclusive co-branding agreements with well known national or regional companies whose goods and services are in high demand from the traveling public.

In Car Rental, opportunities for participation by minority-owned and women-owned firms have been limited. One reason for this is that most of the major car rental companies do not offer franchising opportunities within the United States. There is, therefore, scant opportunity for minority or female ownership of car rental establishments. Only one of the major national chains, The Dollar Thrift Group, offers franchising opportunities within the United States. Two other smaller chains, Payless Car Rental and Advantage Car Rental, also offer domestic franchising. One potential avenue for future M/W/DBE participation in the Car Rental field, therefore, is through franchising. Dollar Thrift Group and Advantage are both currently represented at the Memphis International Airport.

Another potential avenue for M/W/DBE participation in the Car Rental field is similar to that for all other contracting and procurement—through subcontracting and supplier arrangements. Car

Rental establishments purchase a wide variety of goods in support of their day-to-day operations, including vehicles, petroleum products, auto parts, tires, uniforms, and office supplies. They purchase services as well, including auto repair, towing, building maintenance and pest control, advertising, IT, and a variety of construction services, such as plumbing and electrical contracting, in order to build and/or maintain their facilities. However, many, if not most, of these goods and services are purchased through national or regional agreements arranged by the parent company.³⁵ Consequently, future M/W/DBE participation in the Car Rental field may best be achieved if USDOT can facilitate DBE participation at the national level with the major Car Rental chains, similar to the current arrangements with Transit Vehicle Manufacturers.³⁶

Table 2.16 shows the distribution of concessions revenues by industry excluding car rental. Outside of Car Rental, opportunities for participation by M/W/DBEs in MSCAA concessions have occurred through the establishment of joint venture agreements or similar partnerships between M/W/DBEs and one or more large concessionaires, facilitated by the Airport. Five such agreements are currently in place at MSCAA, in Food/Beverage with Anton Airfood, Delaware North, and SSP America; and in News/Gifts with Hudson Group and The Paradies Shops. To a smaller extent, there have also been some opportunities during the study period for M/W/DBEs in Passenger Services, including business services, barber and shoeshine, phone services, and advertising.

Therefore, in some important ways the market for certain key Concessions is national in scope. Determining nationwide M/W/DBE availability under a methodology comparable to that used for contracting and procurement, however, would be prohibitively costly for MSCAA to undertake and is beyond the scope of our Study.

On the other hand, as shown above in Table 2.9, MSCAA draws on the Memphis MSA market area for approximately 75 percent of its overall contracting and procurement expenditures. Given the prohibitive expense of calculating M/W/DBE availability nationwide for dozens of detailed NAICS codes, it is reasonable to use the MSCAA market area as a proxy geographic market for availability levels, so that MSCAA may set ACDBE contract goals that are narrowly tailored to the specifics of its needs in the area of Concessions.

Now that the geographic and industry parameters of MSCAA's contracting and concessions markets have been established, we will restrict our subsequent analyses, in Chapter III and beyond, to business enterprises and other phenomena within MSCAA's own market area so as to narrowly tailor our findings to MSCAA's specific contracting circumstances.

³⁵ An examination of national and local expenditures made on behalf of the local car rental establishments at the Airport was beyond the scope of the present Study.

³⁶ See 49 CFR §26.49.

Table 2.16. Distribution of Concessions Revenues by Industry, Excluding Car Rental

NAICS Industry	NAICS Description	Percentage	Cumulative Percentage
7222	Limited-Service Eating Places	46.09	46.09
4512	Book, Periodical, and Music Stores	20.89	66.98
7221	Full-Service Restaurants	9.13	76.11
8129	Other Personal Services	6.99	83.10
7211	Traveler Accommodation	5.95	89.05
5223	Activities Related to Credit Intermediation	3.67	92.72
4511	Sporting Goods, Hobby, and Musical Instrument Stores	2.97	95.69
4481	Clothing Stores	1.73	97.42
4483	Jewelry, Luggage, and Leather Goods Stores	0.62	98.04
4452	Specialty Food Stores	0.35	98.39
4853	Taxi and Limousine Service	0.29	98.68
5221	Depository Credit Intermediation	0.28	98.96
4859	Other Transit and Ground Passenger Transportation	0.25	99.21
5418	Advertising, Public Relations, and Related Services	0.25	99.46
5322	Consumer Goods Rental	0.22	99.68
5171	Wired Telecommunications Carriers	0.20	99.88
4539	Other Miscellaneous Store Retailers	0.04	99.92
5152	Cable and Other Subscription Programming	0.04	99.96
8112	Electronic and Precision Equipment Repair and Maintenance	0.02	99.98
5179	Other Telecommunications	0.01	99.99
8121	Personal Care Services	0.01	100.00
<i>TOTAL - \$302,809,539</i>			

Source: See Table 2.7.

III. M/W/DBE Availability in MSCAA's Market Area

A. Introduction

Estimates of M/W/DBE availability are an important element of MSCAA's disparity study since they provide benchmarks for assessing the effectiveness of MSCAA's efforts to encourage M/W/DBE participation in public contracting and procurement. Furthermore, they provide a means by which to establish overall goals as well as contract-level goals for M/W/DBE participation that are tailored to MSCAA's relevant market area.

For this Study, NERA used M/WBE availability as a proxy for DBE availability. The M/WBE and DBE populations have a high degree of correlation and overlap. There are two differences worth noting, however. First, to be certified as a DBE a business owner's personal net worth cannot exceed \$1,320,000, exclusive of equity in the owner's primary residence and in the business seeking certification.³⁷ Hence, not all M/WBEs can become DBEs. In practice, however, very few households—especially minority households—have net worth levels in excess of \$1,320,000. According to the Federal Reserve's *2003 Survey of Small Business Finances* (the most recent available), about 1.4 percent of nonminority female-owned small businesses, and 4.2 percent of minority-owned small businesses have business equity in excess of \$1,320,000.³⁸ Census Bureau data from 2004 (the most recent available) show that the median net worth of African American and Hispanic households is much less than the median for nonminority households. Very few African American or Hispanic households have net worth levels above even \$500,000. Only 3.2 percent of African American households and 4.0 percent of Hispanic households have a net worth greater than \$500,000—compared to a figure of 14.3 percent for nonminority households. Overall, the median net worth for nonminority households is over 11 times higher than that of African American households and over 7 times higher than that of Hispanic households.³⁹ More recent data also document that the net worth of nonminority households is much greater than that of African American or Hispanic households. Furthermore, the recent recession has reduced minority household wealth disproportionately more than nonminority household wealth. According to a 2011 Pew Research Center Study, using data from the Census Bureau's *Survey of Income and Program Participation*, the median net worth of nonminority households fell 16.2 percent between 2005 and 2009. For African American households, the decline was 53.2 percent, while for Hispanic households the decline was 65.5 percent.⁴⁰

Second, it is possible for businesses owned by nonminority males to become certified DBEs if they can establish that they are socially and economically disadvantaged under the regulations.⁴¹

³⁷ 49 C.F.R. § 26.67.

³⁸ Calculations by NERA from 2003 SSBF data.

³⁹ See U.S. Census Bureau (2004a) and (2004b).

⁴⁰ See Taylor, Paul, Rakesh Kochhar, Richard Fry, Gabriel Velasco, and Seth Motel (2011), "Twenty-to-One: Wealth Gaps Rise to Record Highs Between Whites, Blacks and Hispanics," Washington, DC: Pew Research Center.

⁴¹ 49 C.F.R. § 26.67 and Appendix E.

Hence, not all DBEs are necessarily M/WBEs. On balance, since so few M/WBEs have net worth levels in excess of \$1,320,000 and since a significant number of businesses owned by socially and economically disadvantaged nonminority males could potentially seek DBE certification (*e.g.*, disabled persons, nonminority residents of Labor Surplus Areas, nonminority residents of HUB Zones), NERA's method may understate DBE availability to a small degree.⁴²

NERA's approach to availability measurement reflects USDOT's own compliance advice. According to the USDOT's guidance, "... if you have data about the number of minority and women-owned businesses (regardless of whether they are certified as DBEs) in your market area, or DBEs in your market area that are in other recipients' Directories but not yours, you can supplement your Directory data with this information. *Doing so may provide a more complete picture of the availability of firms to work on your contracts than the data in your Directory alone.*"⁴³

Many approaches to estimating availability suffer from internal inconsistency since the data employed to construct the availability numerator (*i.e.*, the total number of DBE establishments in the market area) are measured differently than the data employed to construct the availability denominator (*i.e.*, the total number of establishments in the market area). For example, the numerator might be drawn from an agency's internal list of certified DBEs while the denominator might be drawn from Census data. Since the methods used to identify and certify firms as DBEs are different from the methods used by the Census Bureau to count business establishments, such approaches inevitably compare "apples to oranges."

In this Study, we employ a method for measuring availability that ensures an "apples to apples" comparison between the availability numerator and denominator. This "Custom Census" method was pioneered by NERA and has been favorably reviewed by each court that has examined it to date. The Tenth Circuit found the custom census approach to be "a more sophisticated method to calculate availability than the earlier studies [by the other consultant in this case]."⁴⁴ Likewise, this method was successful in the defense of the DBE programs for Minnesota DOT⁴⁵ and Illinois DOT,⁴⁶ as well as the M/WBE construction program for the City of Chicago.⁴⁷

In addition to its favorable reception in the courts, when properly executed, the Custom Census method is superior to other approaches for at least three reasons. First, it provides an internally consistent and rigorous "apples to apples" comparison between establishments in the availability numerator and those in the denominator. Second, it comports with the remedial nature of most

⁴² For ease of exposition, we shall generally use the term M/W/DBE throughout the remainder of the report.

⁴³ See INTERNET: <http://www.osdbu.dot.gov/dbeprogram/hottips.cfm> (emphasis added). This information was released as official guidance by USDOT at 49 C.F.R. §26.9. See also Wainwright, J. and C. Holt (2010), pp. 33-44.

⁴⁴ *Concrete Works of Colorado, Inc. v. City and County of Denver*, 321 F.3d 950, 966 (10th Cir. 2003) ("*Concrete Works IV*"), *cert. denied*, 540 U.S. 1027 (2003).

⁴⁵ *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d 964 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004).

⁴⁶ *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 (7th Cir. 2007).

⁴⁷ *Builders Ass'n of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725 (N.D. Ill. 2003).

DBE policies by measuring overall DBE availability in the relevant market area as opposed to only those businesses currently certified by an agency.⁴⁸ Third, when properly executed, the Custom Census is less likely to be tainted by the effects of past and present discrimination than other methods.⁴⁹

The Custom Census method has seven steps. These are:

1. Create a database of representative and recent MSCAA contracts in Construction, AE-CRS, Services, CSE, and Concessions;
2. Identify MSCAA relevant geographic market from this database;
3. Identify MSCAA relevant product market from this database;
4. Count all business establishments in the relevant market area;
5. Identify listed M/W/DBE establishments in the relevant market area;
6. Verify the ownership status of listed M/W/DBEs; and
7. Verify the ownership status of all other firms in the relevant market area.

Steps 1-3 were described above in Chapter II. Steps 4-7 are described in more detail below.

B. Identifying Business Establishments in the Relevant Markets

M/W/DBE availability (unweighted) is defined as the number of M/W/DBEs divided by the total number of business establishments in MSCAA's contracting market area—what we will refer to as the Baseline Business Universe.⁵⁰ Determining the total number of business establishments in the market area, however, is more straightforward than determining the number of minority- or women-owned establishments in those markets. The latter task has three main parts: (1) identify all listed M/W/DBEs in the relevant market; (2) verify the ownership status of listed M/W/DBEs; and (3) estimate the number of unlisted M/W/DBEs in the relevant market. This section describes how these tasks were accomplished for MSCAA.

It is important to note that NERA's availability analysis is free from variables tainted by discrimination. Our approach recognizes that discrimination may impact many of the variables that contribute to a firm's success in obtaining work as a prime or a subcontractor. Factors such as firm size, time in business, qualifications, and experience are all adversely affected by discrimination if it is present in the market area. Despite the obvious relationship, some commentators argue that disparities should only be assessed between firms with similar

⁴⁸ See *Northern Contracting* 473 F.3d at 723 (“We agree with the district court that the remedial nature of the federal scheme militates in favor of a method of DBE availability calculation that casts a broader net”).

⁴⁹ See Section B.5., below, for further discussion of this point.

⁵⁰ To yield a percentage, the resulting figure is multiplied by 100.

“capacities.”⁵¹ However, some courts have properly refused to make the results of discrimination the benchmark for non-discrimination.⁵² They have acknowledged that M/W/DBEs may be smaller, newer, and otherwise less competitive than non-M/W/DBEs because of the very discrimination sought to be remedied by race-conscious contracting programs. Racial and gender differences in these “capacity” factors are the *outcomes* of discrimination and it is therefore inappropriate as a matter of economics and statistics to use them as “control” variables in a disparity study.⁵³

1. Estimate the Total Number of Business Establishments in the Market

We used data supplied by Dun & Bradstreet to determine the total number of business establishments operating in the relevant geographic and product markets (these markets were discussed in the previous chapter). Dun & Bradstreet produces the most comprehensive publicly available database of business establishments in the U.S. This database contains over 15 million records and is updated continuously. Each record in Dun & Bradstreet represents a business establishment and includes the business name, address, telephone number, NAICS code, SIC code, business type, DUNS Number (a unique number assigned to each establishment by Dun & Bradstreet), and other descriptive information. Dun & Bradstreet gathers and verifies information from many different sources. These sources include, among others, annual management interviews, payment experiences, bank account information, filings for suits, liens, judgments and bankruptcies, news items, the U.S. Postal Service, utility and telephone service, business registrations, corporate charters, Uniform Commercial Code filings, and records of the Small Business Administration and other governmental agencies.

We used the Dun & Bradstreet database to identify the total number of businesses in each NAICS code that was identified as part of the MSCAA product market. Table 3.1 shows the number of businesses identified in each NAICS Industry Group within the Construction category, along with the associated industry weight according to dollars awarded. Comparable data for AE-CRS, Services, and CSE appear in Tables 3.2 through 3.4.⁵⁴ Comparable data for

⁵¹ See, e.g., La Noue (2006). Most of La Noue’s expert report in *Gross Seed Company v. Nebraska Department of Roads*, No. 02-3016 (D. Neb. 2002), including his views on “capacity,” was rejected by the court on the basis that it was legal opinion and not expert analysis. According to the court, “[legal analysis] is an issue solely for the Court and not for the presentation of expert testimony....” (see Defendants-Appellees’ Brief, *Gross Seed Company v. Nebraska Department of Roads*, on appeal to the Eighth Circuit Court of Appeals).

⁵² *Concrete Works of Colorado, Inc. v. City and County of Denver, et al.*, 321 F.3d 950, 981, 983 (10th Cir. 2003), cert. denied, 124 S.Ct. 556 (2003) (“MWBE construction firms are generally smaller and less experienced because of discrimination.... Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract*.” (emphasis in the originals)). See also *Northern Contracting, Inc. v. State of Illinois, et al.*, 473 F.3d 715, 723 (7th Cir. 2007) (“We agree with the district court that the remedial nature of the federal scheme militates in favor of a method of DBE availability calculation that casts a broader net [than a simple count of the number of registered and prequalified DBEs].”).

⁵³ *Concrete Works*, 321 F.3d at 981 (emphasis in the original). See also Wainwright and Holt (2010), Appendix B “Understanding Capacity,” and Section B.5, below.

⁵⁴ Analogous sets of weights using paid dollars, as well as weights restricted to federally-assisted contracts, were also produced. They are similar and not published here due to space considerations.

Concessions appear in Tables 3.5 and 3.6.⁵⁵

Although numerous industries play a role in MSCAA's Baseline Business Universe, contracting and subcontracting opportunities are not distributed evenly among them. The distribution of contract expenditures is, in fact, highly skewed, as documented above in Chapter II.

Table 3.1. Construction—Number of Businesses and Industry Weight, by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Cumulative Industry Weight
2373	Highway, Street, and Bridge Construction	87	40.02	40.02
2362	Nonresidential Building Construction	242	11.83	51.84
2382	Building Equipment Contractors	1,229	11.24	63.08
2381	Foundation, Structure, and Building Exterior Contractors	397	8.93	72.01
2389	Other Specialty Trade Contractors	624	6.23	78.23
2371	Utility System Construction	43	4.54	82.77
2383	Building Finishing Contractors	685	4.07	86.84
3273	Cement and Concrete Product Manufacturing	24	2.99	89.83
3323	Architectural and Structural Metals Manufacturing	31	1.72	91.55
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	77	1.14	92.69
4841	General Freight Trucking	800	0.96	93.66
3339	Other General Purpose Machinery Manufacturing	5	0.92	94.58
4236	Electrical and Electronic Goods Merchant Wholesalers	143	0.74	95.32
2379	Other Heavy and Civil Engineering Construction	37	0.72	96.04
8111	Automotive Repair and Maintenance	143	0.69	96.73
4233	Lumber and Other Construction Materials Merchant Wholesalers	60	0.56	97.29
5617	Services to Buildings and Dwellings	804	0.52	97.81
3399	Other Miscellaneous Manufacturing	89	0.43	98.24
5413	Architectural, Engineering, and Related Services	74	0.40	98.64
1151	Support Activities for Crop Production	20	0.29	98.93
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	43	0.26	99.18
5613	Employment Services	147	0.25	99.44
5629	Remediation and Other Waste Management Services	6	0.21	99.65
3231	Printing and Related Support Activities	58	0.20	99.85
3259	Other Chemical Product and Preparation Manufacturing	16	0.15	100.00

Source: Dun & Bradstreet/Hoovers; M/W/DBE business directory information compiled by NERA; Master Contract/Subcontract Database.

Note: the dollar-based industry weight and cumulative industry weight are expressed as percentages.

⁵⁵ Weights for concessions are calculated based on gross revenues. Two sets of weights are used, one including car rental revenues and one excluding them.

Table 3.2. AE-CRS—Number of Businesses and Industry Weight, by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Cumulative Industry Weight
5413	Architectural, Engineering, and Related Services	774	98.27	98.27
5416	Management, Scientific, and Technical Consulting Services	1,281	1.29	99.56
2389	Other Specialty Trade Contractors	539	0.17	99.73
3231	Printing and Related Support Activities	6	0.14	99.87
5419	Other Professional, Scientific, and Technical Services	81	0.13	100.00

Source: See Table 3.1.

Table 3.3. Services—Number of Businesses and Industry Weight, by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Cumulative Industry Weight
5617	Services to Buildings and Dwellings	1,601	25.30	25.30
5616	Investigation and Security Services	282	25.20	50.50
8129	Other Personal Services	24	24.44	74.94
5242	Agencies, Brokerages, and Other Insurance Related Activities	887	4.87	79.81
5411	Legal Services	1,289	3.33	83.14
5241	Insurance Carriers	48	3.21	86.35
5416	Management, Scientific, and Technical Consulting Services	1,560	2.87	89.22
5419	Other Professional, Scientific, and Technical Services	40	1.84	91.06
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	330	1.34	92.41
5239	Other Financial Investment Activities	198	1.12	93.53
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	351	0.93	94.46
5413	Architectural, Engineering, and Related Services	330	0.91	95.37
8123	Drycleaning and Laundry Services	5	0.88	96.25
8139	Business, Professional, Labor, Political, and Similar Organizations	103	0.79	97.05
5622	Waste Treatment and Disposal	11	0.74	97.79
5222	Nondepository Credit Intermediation	9	0.32	98.11
4881	Support Activities for Air Transportation	59	0.24	98.35
2382	Building Equipment Contractors	1,244	0.23	98.57
3333	Commercial and Service Industry Machinery Manufacturing	13	0.21	98.78
2389	Other Specialty Trade Contractors	539	0.18	98.96
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	178	0.15	99.10
5322	Consumer Goods Rental	61	0.14	99.24
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	54	0.10	99.35
5619	Other Support Services	6,948	0.10	99.45
5182	Data Processing, Hosting, and Related Services	91	0.10	99.54
3339	Other General Purpose Machinery Manufacturing	5	0.08	99.63
5415	Computer Systems Design and Related Services	120	0.08	99.71
4241	Paper and Paper Product Merchant Wholesalers	44	0.08	99.78
4246	Chemical and Allied Products Merchant Wholesalers	60	0.07	99.86
3231	Printing and Related Support Activities	148	0.05	99.91
8114	Personal and Household Goods Repair and Maintenance	259	0.05	99.95
6211	Offices of Physicians	1,535	0.05	100.00

Source: See Table 3.1.

Table 3.4. CSE—Number of Businesses and Industry Weight, by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Cumulative Industry Weight
4236	Electrical and Electronic Goods Merchant Wholesalers	217	14.28	14.28
4247	Petroleum and Petroleum Products Merchant Wholesalers	52	12.17	26.45
4411	Automobile Dealers	267	9.72	36.16
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	525	8.34	44.51
3325	Hardware Manufacturing	4	8.32	52.83
3331	Agriculture, Construction, and Mining Machinery Manufacturing	18	5.28	58.11
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	281	3.32	61.42
3351	Electric Lighting Equipment Manufacturing	9	3.17	64.59
5112	Software Publishers	38	2.22	66.81
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	135	2.07	68.88
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	5	1.92	70.80
3341	Computer and Peripheral Equipment Manufacturing	18	1.82	72.62
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	178	1.59	74.21
3273	Cement and Concrete Product Manufacturing	24	1.56	75.77
3362	Motor Vehicle Body and Trailer Manufacturing	12	1.41	77.18
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	20	1.33	78.52
5415	Computer Systems Design and Related Services	325	1.16	79.68
2382	Building Equipment Contractors	1,244	1.15	80.83
3255	Paint, Coating, and Adhesive Manufacturing	17	1.14	81.97
4246	Chemical and Allied Products Merchant Wholesalers	72	1.01	82.98
2373	Highway, Street, and Bridge Construction	87	0.99	83.97
4233	Lumber and Other Construction Materials Merchant Wholesalers	155	0.94	84.91
3333	Commercial and Service Industry Machinery Manufacturing	13	0.92	85.83
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	210	0.82	86.65
4413	Automotive Parts, Accessories, and Tire Stores	387	0.78	87.43
3323	Architectural and Structural Metals Manufacturing	77	0.73	88.16
2389	Other Specialty Trade Contractors	539	0.70	88.86
3399	Other Miscellaneous Manufacturing	176	0.70	89.56
8111	Automotive Repair and Maintenance	901	0.65	90.21
5418	Advertising, Public Relations, and Related Services	61	0.59	90.80
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	14	0.56	91.36
4422	Home Furnishings Stores	163	0.56	91.92
5612	Facilities Support Services	26	0.56	92.48
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	349	0.54	93.01
4441	Building Material and Supplies Dealers	241	0.52	93.53
4539	Other Miscellaneous Store Retailers	762	0.52	94.05
4431	Electronics and Appliance Stores	304	0.49	94.54

M/W/DBE Availability in MSCAA's Market Area

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Cumulative Industry Weight
2381	Foundation, Structure, and Building Exterior Contractors	220	0.38	94.92
5182	Data Processing, Hosting, and Related Services	91	0.36	95.28
3339	Other General Purpose Machinery Manufacturing	30	0.33	95.61
4541	Electronic Shopping and Mail-Order Houses	42	0.32	95.93
5629	Remediation and Other Waste Management Services	32	0.30	96.23
4239	Miscellaneous Durable Goods Merchant Wholesalers	237	0.29	96.53
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	20	0.26	96.79
8112	Electronic and Precision Equipment Repair and Maintenance	108	0.25	97.04
4471	Gasoline Stations	309	0.24	97.28
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	77	0.23	97.51
4442	Lawn and Garden Equipment and Supplies Stores	14	0.22	97.73
4241	Paper and Paper Product Merchant Wholesalers	44	0.21	97.94
5616	Investigation and Security Services	59	0.19	98.13
5619	Other Support Services	6,948	0.15	98.28
3353	Electrical Equipment Manufacturing	3	0.14	98.42
5171	Wired Telecommunications Carriers	57	0.14	98.56
3272	Glass and Glass Product Manufacturing	8	0.13	98.69
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	76	0.12	98.81
3119	Other Food Manufacturing	1	0.12	98.93
2371	Utility System Construction	3	0.11	99.04
4412	Other Motor Vehicle Dealers	15	0.10	99.14
4511	Sporting Goods, Hobby, and Musical Instrument Stores	142	0.10	99.23
3231	Printing and Related Support Activities	148	0.09	99.32
5322	Consumer Goods Rental	66	0.09	99.41
4532	Office Supplies, Stationery, and Gift Stores	53	0.08	99.49
3342	Communications Equipment Manufacturing	6	0.07	99.57
3359	Other Electrical Equipment and Component Manufacturing	21	0.07	99.64
2383	Building Finishing Contractors	579	0.06	99.70
3262	Rubber Product Manufacturing	1	0.06	99.76
3372	Office Furniture (including Fixtures) Manufacturing	4	0.05	99.80
5414	Specialized Design Services	159	0.04	99.85
3329	Other Fabricated Metal Product Manufacturing	3	0.04	99.89
5417	Scientific Research and Development Services	61	0.03	99.92
5323	General Rental Centers	6	0.03	99.95
3326	Spring and Wire Product Manufacturing	8	0.03	99.97
7222	Limited-Service Eating Places	1,056	0.03	100.00

Source: See Table 3.1.

Table 3.5. Concessions—Number of Business Establishments and Industry Weight (Including Car Rentals), by NAICS Code

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
5321	Automotive Equipment Rental and Leasing	38	57.15	57.15
7222	Limited-Service Eating Places	1,056	19.75	76.90
4512	Book, Periodical, and Music Stores	76	8.95	85.85
7221	Full-Service Restaurants	1,244	3.91	89.76
8129	Other Personal Services	282	3.00	92.76
7211	Traveler Accommodation	355	2.55	95.31
5223	Activities Related to Credit Intermediation	362	1.57	96.88
4511	Sporting Goods, Hobby, and Musical Instrument Stores	230	1.27	98.15
4481	Clothing Stores	452	0.74	98.89
4483	Jewelry, Luggage, and Leather Goods Stores	7	0.27	99.16
4452	Specialty Food Stores	55	0.15	99.31
4853	Taxi and Limousine Service	13	0.12	99.43
5221	Depository Credit Intermediation	443	0.12	99.56
4859	Other Transit and Ground Passenger Transportation	20	0.11	99.66
5418	Advertising, Public Relations, and Related Services	18	0.11	99.77
5322	Consumer Goods Rental	33	0.09	99.86
5171	Wired Telecommunications Carriers	57	0.09	99.95
4539	Other Miscellaneous Store Retailers	762	0.02	99.97
5152	Cable and Other Subscription Programming	25	0.02	99.98
8112	Electronic and Precision Equipment Repair and Maintenance	108	0.01	99.99
5179	Other Telecommunications	63	0.00	100.00
8121	Personal Care Services	216	0.00	100.00

Source and Notes: See Table 3.1.

Table 3.6. Concessions—Number of Business Establishments and Industry Weight (Excluding Car Rentals), by NAICS Code

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
7222	Limited-Service Eating Places	1,056	46.09	46.09
4512	Book, Periodical, and Music Stores	76	20.89	66.98
7221	Full-Service Restaurants	1,244	9.13	76.11
8129	Other Personal Services	282	6.99	83.10
7211	Traveler Accommodation	355	5.95	89.05
5223	Activities Related to Credit Intermediation	362	3.67	92.72
4511	Sporting Goods, Hobby, and Musical Instrument Stores	230	2.97	95.69
4481	Clothing Stores	452	1.73	97.42
4483	Jewelry, Luggage, and Leather Goods Stores	7	0.62	98.04
4452	Specialty Food Stores	55	0.35	98.39
4853	Taxi and Limousine Service	13	0.29	98.68
5221	Depository Credit Intermediation	443	0.28	98.96
4859	Other Transit and Ground Passenger Transportation	20	0.25	99.21
5418	Advertising, Public Relations, and Related Services	18	0.25	99.46
5322	Consumer Goods Rental	33	0.22	99.68
5171	Wired Telecommunications Carriers	57	0.20	99.88
4539	Other Miscellaneous Store Retailers	762	0.04	99.92
5152	Cable and Other Subscription Programming	25	0.04	99.96
8112	Electronic and Precision Equipment Repair and Maintenance	108	0.02	99.98
5179	Other Telecommunications	63	0.01	99.99
8121	Personal Care Services	216	0.01	100.00

Source and Notes: See Table 3.1.

2. Identify Listed M/W/DBEs

While extensive, Dun & Bradstreet does not sufficiently identify all businesses owned by minorities or women. Although many such businesses *are* correctly identified in Dun & Bradstreet, experience has demonstrated that many are also missed. For this reason, several additional steps were required to identify the appropriate percentage of M/W/DBEs in the relevant market.

First, NERA completed an intensive regional search for information on minority-owned and woman-owned businesses in and around Memphis and the tri-state area. Beyond the information already in Dun & Bradstreet, NERA collected lists of M/W/DBEs from other public and private entities. Specifically, directories were included from: the Uniform Certification Agency (Mid-South Minority Business Council); Tennessee UCP (Tennessee Department of Transportation); Arkansas Economic Development Commission; American Indian Search; Austin Peay State University; Arkansas State Highway and Transportation Department; Business Research Services, Inc.; Chattanooga State Community College; Columbia State Community College; Cleveland State Community College; DiversityBusiness.com; Diversity Information Resources;

The DMWBE Directory; Dyersburg State Community College; East Tennessee State University; Greater Memphis Chamber; Jackson, TN Chamber of Commerce; Jonesboro, AR Regional Chamber of Commerce; Jackson State Community College; City of Knoxville, TN; City of Little Rock, AR; Marion, AR Chamber of Commerce; Memphis Business Academy; Minority Business Development Agency; U.S. Department of Commerce; Marshall County, MS Industrial Development Authority; Mississippi Development Authority; City of Memphis, TN; Metropolitan Government of Nashville and Davidson County, TN; Metropolitan Nashville Airport Authority; Motlow State Community College; Mississippi Procurement Technical Assistance Program; Mississippi Department of Transportation; Noxubee County, MS School District; Pellissippi State Community College; Tennessee Department of General Services; Tennessee Governor's Office of Diversity Business Enterprise; Tennessee Technological University; Tunica County, MS Chamber of Commerce; U.S. Small Business Administration; University of Tennessee System; Volunteer State Community College; and Walters State Community College.⁵⁶

If the listed M/W/DBEs identified in Tables 3.7-3.12 are in fact *all* M/W/DBEs and are the *only* M/W/DBEs among all of the establishments in the relevant market identified in Tables 3.1-3.6, then an estimate of "listed" M/W/DBE availability is simply the number of listed M/W/DBEs divided by the total number of establishments in the relevant market. However, as we shall see below, neither of these two conditions holds true in practice and this is therefore *not* an appropriate method for measuring M/W/DBE availability.

There are two reasons for this. First, it is likely that some proportion of the M/W/DBEs listed in the tables is not actually minority-owned or women-owned. Second, it is likely that there are additional "unlisted" M/W/DBEs among all of the establishments included in Tables 3.1-3.12. Such businesses do not appear in any of the directories we gathered and are therefore not included as M/W/DBEs in these tables. Additional steps are required to test these two conditions and to arrive at a more accurate representation of M/W/DBE availability within the Baseline Business Universe. We discuss these steps below in Sections 3.a and 3.b.

⁵⁶ We also obtained information from certain entities that was duplicative of either Dun & Bradstreet or one or more of the other sources listed above. These entities are listed below in Appendix C. We were unable to obtain relevant lists or directories from a number of entities. The reasons for this include: (1) the entity did not have a list or the entity's list did not include race and sex information; (2) the entity was unresponsive to repeated attempts at contacts; or, (3) the entity simply declined to provide us the list. These entities, as well, are listed in Appendix C.

Table 3.7. Construction—Number of Listed M/W/DBEs and Industry Weight (Dollars Awarded), by NAICS Code

NAICS Industry Group	NAICS Description	Number of Listed M/W/DBEs	Industry Weight	Industry Weight (Cumulative)
2373	Highway, Street, and Bridge Construction	4	40.02	40.02
2362	Nonresidential Building Construction	35	11.83	51.84
2382	Building Equipment Contractors	96	11.24	63.08
2381	Foundation, Structure, and Building Exterior Contractors	38	8.93	72.01
2389	Other Specialty Trade Contractors	48	6.23	78.23
2371	Utility System Construction	6	4.54	82.77
2383	Building Finishing Contractors	36	4.07	86.84
3273	Cement and Concrete Product Manufacturing	0	2.99	89.83
3323	Architectural and Structural Metals Manufacturing	1	1.72	91.55
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	1	1.14	92.69
4841	General Freight Trucking	52	0.96	93.66
3339	Other General Purpose Machinery Manufacturing	0	0.92	94.58
4236	Electrical and Electronic Goods Merchant Wholesalers	11	0.74	95.32
2379	Other Heavy and Civil Engineering Construction	9	0.72	96.04
8111	Automotive Repair and Maintenance	8	0.69	96.73
4233	Lumber and Other Construction Materials Merchant Wholesalers	5	0.56	97.29
5617	Services to Buildings and Dwellings	40	0.52	97.81
3399	Other Miscellaneous Manufacturing	15	0.43	98.24
5413	Architectural, Engineering, and Related Services	11	0.40	98.64
1151	Support Activities for Crop Production	0	0.29	98.93
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	6	0.26	99.18
5613	Employment Services	26	0.25	99.44
5629	Remediation and Other Waste Management Services	2	0.21	99.65
3231	Printing and Related Support Activities	8	0.20	99.85
3259	Other Chemical Product and Preparation Manufacturing	3	0.15	100.00

Source and Notes: See Table 3.1.

Table 3.8. AE-CRS—Number of Listed M/W/DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code

NAICS Industry Group	NAICS Description	Number of Listed M/W/DBEs	Industry Weight	Industry Weight (Cumulative)
5413	Architectural, Engineering, and Related Services	63	98.27	98.27
5416	Management, Scientific, and Technical Consulting Services	208	1.29	99.56
2389	Other Specialty Trade Contractors	35	0.17	99.73
3231	Printing and Related Support Activities	0	0.14	99.87
5419	Other Professional, Scientific, and Technical Services	3	0.13	100.00

Source and Notes: See Table 3.1.

Table 3.9. Services—Number of Listed M/W/DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code

NAICS Industry Group	NAICS Description	Number of Listed M/W/DBEs	Industry Weight	Industry Weight (Cumulative)
5617	Services to Buildings and Dwellings	215	25.30	25.30
5616	Investigation and Security Services	29	25.20	50.50
8129	Other Personal Services	2	24.44	74.94
5242	Agencies, Brokerages, and Other Insurance Related Activities	47	4.87	79.81
5411	Legal Services	68	3.33	83.14
5241	Insurance Carriers	2	3.21	86.35
5416	Management, Scientific, and Technical Consulting Services	249	2.87	89.22
5419	Other Professional, Scientific, and Technical Services	5	1.84	91.06
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	18	1.34	92.41
5239	Other Financial Investment Activities	4	1.12	93.53
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	34	0.93	94.46
5413	Architectural, Engineering, and Related Services	36	0.91	95.37
8123	Drycleaning and Laundry Services	0	0.88	96.25
8139	Business, Professional, Labor, Political, and Similar Organizations	1	0.79	97.05
5622	Waste Treatment and Disposal	1	0.74	97.79
5222	Nondepository Credit Intermediation	1	0.32	98.11
4881	Support Activities for Air Transportation	1	0.24	98.35
2382	Building Equipment Contractors	97	0.23	98.57
3333	Commercial and Service Industry Machinery Manufacturing	4	0.21	98.78
2389	Other Specialty Trade Contractors	35	0.18	98.96
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	6	0.15	99.10
5322	Consumer Goods Rental	6	0.14	99.24
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	5	0.10	99.35
5619	Other Support Services	83	0.10	99.45
5182	Data Processing, Hosting, and Related Services	17	0.10	99.54
3339	Other General Purpose Machinery Manufacturing	0	0.08	99.63
5415	Computer Systems Design and Related Services	18	0.08	99.71
4241	Paper and Paper Product Merchant Wholesalers	9	0.08	99.78
4246	Chemical and Allied Products Merchant Wholesalers	5	0.07	99.86
3231	Printing and Related Support Activities	21	0.05	99.91
8114	Personal and Household Goods Repair and Maintenance	10	0.05	99.95
6211	Offices of Physicians	75	0.05	100.00

Source and Notes: See Table 3.1.

Table 3.10. CSE—Number of Listed M/W/DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code

NAICS Industry Group	NAICS Description	Number of Listed M/W/DBEs	Industry Weight	Industry Weight (Cumulative)
4236	Electrical and Electronic Goods Merchant Wholesalers	17	14.28	14.28
4247	Petroleum and Petroleum Products Merchant Wholesalers	6	12.17	26.45
4411	Automobile Dealers	9	9.72	36.16
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	51	8.34	44.51
3325	Hardware Manufacturing	0	8.32	52.83
3331	Agriculture, Construction, and Mining Machinery Manufacturing	1	5.28	58.11
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	33	3.32	61.42
3351	Electric Lighting Equipment Manufacturing	1	3.17	64.59
5112	Software Publishers	3	2.22	66.81
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	10	2.07	68.88
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	0	1.92	70.80
3341	Computer and Peripheral Equipment Manufacturing	1	1.82	72.62
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	6	1.59	74.21
3273	Cement and Concrete Product Manufacturing	0	1.56	75.77
3362	Motor Vehicle Body and Trailer Manufacturing	0	1.41	77.18
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	3	1.33	78.52
5415	Computer Systems Design and Related Services	65	1.16	79.68
2382	Building Equipment Contractors	97	1.15	80.83
3255	Paint, Coating, and Adhesive Manufacturing	0	1.14	81.97
4246	Chemical and Allied Products Merchant Wholesalers	7	1.01	82.98
2373	Highway, Street, and Bridge Construction	4	0.99	83.97
4233	Lumber and Other Construction Materials Merchant Wholesalers	9	0.94	84.91
3333	Commercial and Service Industry Machinery Manufacturing	4	0.92	85.83
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	10	0.82	86.65
4413	Automotive Parts, Accessories, and Tire Stores	9	0.78	87.43
3323	Architectural and Structural Metals Manufacturing	9	0.73	88.16
2389	Other Specialty Trade Contractors	35	0.70	88.86
3399	Other Miscellaneous Manufacturing	24	0.70	89.56
8111	Automotive Repair and Maintenance	39	0.65	90.21
5418	Advertising, Public Relations, and Related Services	21	0.59	90.80
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	4	0.56	91.36
4422	Home Furnishings Stores	9	0.56	91.92
5612	Facilities Support Services	4	0.56	92.48

M/W/DBE Availability in MSCAA's Market Area

NAICS Industry Group	NAICS Description	Number of Listed M/W/DBEs	Industry Weight	Industry Weight (Cumulative)
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	18	0.54	93.01
4441	Building Material and Supplies Dealers	12	0.52	93.53
4539	Other Miscellaneous Store Retailers	47	0.52	94.05
4431	Electronics and Appliance Stores	19	0.49	94.54
2381	Foundation, Structure, and Building Exterior Contractors	20	0.38	94.92
5182	Data Processing, Hosting, and Related Services	17	0.36	95.28
3339	Other General Purpose Machinery Manufacturing	2	0.33	95.61
4541	Electronic Shopping and Mail-Order Houses	13	0.32	95.93
5629	Remediation and Other Waste Management Services	0	0.30	96.23
4239	Miscellaneous Durable Goods Merchant Wholesalers	15	0.29	96.53
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	3	0.26	96.79
8112	Electronic and Precision Equipment Repair and Maintenance	7	0.25	97.04
4471	Gasoline Stations	10	0.24	97.28
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	1	0.23	97.51
4442	Lawn and Garden Equipment and Supplies Stores	2	0.22	97.73
4241	Paper and Paper Product Merchant Wholesalers	9	0.21	97.94
5616	Investigation and Security Services	7	0.19	98.13
5619	Other Support Services	83	0.15	98.28
3353	Electrical Equipment Manufacturing	1	0.14	98.42
5171	Wired Telecommunications Carriers	2	0.14	98.56
3272	Glass and Glass Product Manufacturing	1	0.13	98.69
8113	Comm. & Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	6	0.12	98.81
3119	Other Food Manufacturing	0	0.12	98.93
2371	Utility System Construction	0	0.11	99.04
4412	Other Motor Vehicle Dealers	1	0.10	99.14
4511	Sporting Goods, Hobby, and Musical Instrument Stores	5	0.10	99.23
3231	Printing and Related Support Activities	21	0.09	99.32
5322	Consumer Goods Rental	7	0.09	99.41
4532	Office Supplies, Stationery, and Gift Stores	9	0.08	99.49
3342	Communications Equipment Manufacturing	0	0.07	99.57
3359	Other Electrical Equip. & Component Manufacturing	1	0.07	99.64
2383	Building Finishing Contractors	31	0.06	99.70
3262	Rubber Product Manufacturing	0	0.06	99.76
3372	Office Furniture (including Fixtures) Manufacturing	2	0.05	99.80
5414	Specialized Design Services	37	0.04	99.85
3329	Other Fabricated Metal Product Manufacturing	1	0.04	99.89
5417	Scientific Research and Development Services	6	0.03	99.92
5323	General Rental Centers	0	0.03	99.95
3326	Spring and Wire Product Manufacturing	0	0.03	99.97
7222	Limited-Service Eating Places	41	0.03	100.00

Source and Notes: See Table 3.1.

Table 3.11. Concessions—Number of Listed M/W/DBE Establishments and Industry Weight (Including Car Rentals), by NAICS Code

NAICS Industry Group	NAICS Description	Number of Listed M/W/DBEs	Industry Weight	Industry Weight (Cumulative)
5321	Automotive Equipment Rental and Leasing	0	57.15	57.15
7222	Limited-Service Eating Places	41	19.75	76.90
4512	Book, Periodical, and Music Stores	17	8.95	85.85
7221	Full-Service Restaurants	89	3.91	89.76
8129	Other Personal Services	40	3.00	92.76
7211	Traveler Accommodation	24	2.55	95.31
5223	Activities Related to Credit Intermediation	18	1.57	96.88
4511	Sporting Goods, Hobby, and Musical Instrument Stores	17	1.27	98.15
4481	Clothing Stores	61	0.74	98.89
4483	Jewelry, Luggage, and Leather Goods Stores	1	0.27	99.16
4452	Specialty Food Stores	2	0.15	99.31
4853	Taxi and Limousine Service	0	0.12	99.43
5221	Depository Credit Intermediation	5	0.12	99.56
4859	Other Transit and Ground Passenger Transportation	6	0.11	99.66
5418	Advertising, Public Relations, and Related Services	0	0.11	99.77
5322	Consumer Goods Rental	4	0.09	99.86
5171	Wired Telecommunications Carriers	2	0.09	99.95
4539	Other Miscellaneous Store Retailers	47	0.02	99.97
5152	Cable and Other Subscription Programming	1	0.02	99.98
8112	Electronic and Precision Equipment Repair and Maintenance	7	0.01	99.99
5179	Other Telecommunications	5	0.00	100.00
8121	Personal Care Services	20	0.00	100.00

Source and Notes: See Table 3.1.

Table 3.12. Concessions—Number of Listed M/W/DBE Establishments and Industry Weight (Excluding Car Rentals), by NAICS Code

NAICS Industry Group	NAICS Description	Number of Listed M/W/DBEs	Industry Weight	Industry Weight (Cumulative)
7222	Limited-Service Eating Places	41	46.09	46.09
4512	Book, Periodical, and Music Stores	17	20.89	66.98
7221	Full-Service Restaurants	89	9.13	76.11
8129	Other Personal Services	40	6.99	83.10
7211	Traveler Accommodation	24	5.95	89.05
5223	Activities Related to Credit Intermediation	18	3.67	92.72
4511	Sporting Goods, Hobby, and Musical Instrument Stores	17	2.97	95.69
4481	Clothing Stores	61	1.73	97.42
4483	Jewelry, Luggage, and Leather Goods Stores	1	0.62	98.04
4452	Specialty Food Stores	2	0.35	98.39
4853	Taxi and Limousine Service	0	0.29	98.68
5221	Depository Credit Intermediation	5	0.28	98.96
4859	Other Transit and Ground Passenger Transportation	6	0.25	99.21
5418	Advertising, Public Relations, and Related Services	0	0.25	99.46
5322	Consumer Goods Rental	4	0.22	99.68
5171	Wired Telecommunications Carriers	2	0.20	99.88
4539	Other Miscellaneous Store Retailers	47	0.04	99.92
5152	Cable and Other Subscription Programming	1	0.04	99.96
8112	Electronic and Precision Equipment Repair and Maintenance	7	0.02	99.98
5179	Other Telecommunications	5	0.01	99.99
8121	Personal Care Services	20	0.01	100.00

Source and Notes: See Table 3.1.

3. Verify Listed M/W/DBEs

a. Introduction

It is likely that information on M/W/DBEs from Dun & Bradstreet and other M/W/DBE directories is not correct in all instances. Phenomena such as ownership changes, associate or mentor status, recording errors, or even outright misrepresentation, will lead to businesses being listed as M/W/DBEs in a particular directory even though they may actually be owned by nonminority males. Other things equal, this type of error would cause our availability estimate to be biased upward from the actual availability number.

The second likelihood that must be addressed is that not all M/W/DBE businesses are necessarily listed—either in Dun & Bradstreet or in any of the other directories we collected. Such phenomena as geographic relocation, ownership changes, directory compilation errors, fear of stigmatization, and limitations in M/W/DBE outreach, could all lead to M/W/DBEs being

unlisted. Other things equal, this type of error would cause our availability estimate to be biased downward from the actual availability number.

In our experience, we have found that both types of bias are not uncommon. For this Study, we corrected for the effect of these biases using statistical sampling procedures. We surveyed a large, stratified random sample of 5,000 establishments drawn from the Baseline Business Universe and measured how often they were misclassified (or unclassified) by race and/or gender.⁵⁷

Strata were defined according to NAICS sectors and listed M/W/DBE status.⁵⁸ In the telephone survey, up to 10 attempts were made to reach each business and speak with an appropriate respondent. Attempts were scheduled for a mix of day and evening, weekdays and weekends, and appointments were scheduled for callbacks when necessary. Of the 5,000 firms in our sample, 1,447 (28.9%) were listed M/W/DBEs and 3,553 (71.1%) were unclassified by race or gender. Of these 5,000 firms, however, 481 (9.6%) were excluded as “unable to contact.” Exclusions resulted primarily from firms that were no longer in business.⁵⁹ Of the remaining 4,519 firms, 1,429 (29.4%) were listed M/W/DBEs and the remaining 3,192 establishments (70.6%) were unclassified.

The first part of the survey tested whether our sample of listed M/W/DBEs was correctly classified by race and/or gender. The second part of the survey tested whether the unclassified firms (that is, firms putatively owned by nonminority males) could all be properly classified as non-M/W/DBEs. Both elements of the survey are described in more detail below.⁶⁰

b. Survey of Listed M/W/DBEs

We selected a stratified random sample of 1,447 listed M/W/DBEs to verify the race and gender status of their owner(s). Of these, 120 (8.3 percent) were excluded as “unable to contact.” Of the 1,327 remaining establishments, we obtained complete interviews from 641, for a response rate of 48.3 percent.

Of the 641 establishments interviewed, 117 (18.25 percent) were actually owned by nonminority males. Misclassification varied by putative race and gender, as shown in Table 3.13. Misclassification was highest among putative Native American-owned firms, followed by putative Asian/Pacific Islander-owned firms, nonminority female-owned firms, Hispanic-owned

⁵⁷ A similar method was employed by the Federal Reserve Board to deal with similar problems in designing and implementing the National Survey of Small Business Finances for 1993 and 1998. See Haggerty, C., K. Grigorian, R. Harter and J. D. Wolken (2000).

⁵⁸ Thirteen separate industry strata were created based on NAICS code. All 13 strata were then split according to listed M/W/DBE status to create a total of 26 strata. Generally, listed M/W/DBEs were sampled at a higher rate than unclassified establishments.

⁵⁹ Putative M/W/DBEs were not more likely to be affected by this than putative non-M/W/DBEs.

⁶⁰ By “putative,” we mean the race and gender that we initially assigned to each firm based on the information provided by MSCAA, by Dun & Bradstreet, by our master M/W/DBE directory, or from other sources.

firms, and finally African American-owned firms.⁶¹ Misclassification was also observed in every NAICS stratum, ranging from a high of 53.3 percent to a low of 10.00 percent as shown in Table 3.14.

Table 3.13. Listed M/W/DBE Survey—Amount of Misclassification, by Putative M/W/DBE Type

Putative Race/Gender	Misclassification (Percentage Nonminority Male)	Misclassification (Percentage Other M/W/DBE Type)	Percentage Correctly Classified	Number of Businesses Interviewed
African American (either gender)	7.60	1.76	90.64	171
Hispanic (either gender)	13.79	48.28	37.93	29
Asian/Pacific Islander (either gender)	22.22	0.00	77.78	9
Native American (either gender)	61.54	23.08	15.38	13
Nonminority Female	21.48	17.66	60.86	419
All M/W/DBE Types	18.25	14.67	67.08	641

Source: NERA telephone surveys.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Similar calculations, not shown here, were performed within each stratum.

The race and gender status of the listed M/W/DBEs responding to the survey was changed, if necessary, according to the survey results. For example, if a business originally listed as African American-owned was actually nonminority male-owned, then that business was counted as nonminority male-owned for purposes of calculating M/W/DBE availability.

But what about the remaining putatively African American-owned establishments that we did not interview? For these businesses, we estimate the race and gender of their ownership based on the amount of misclassification we observed among the putatively African American-owned firms that we did interview. In this example, our interviews show that 90.64 percent of these firms are indeed actually African American-owned, 7.60 percent are actually nonminority male-owned, and 1.76 percent are actually nonminority female-owned. Therefore, we assign each of the remaining putative African American-owned firms a 90.64 percent probability of actually being African American-owned, a 7.60 percent probability of actually being nonminority male-owned,

⁶¹ For this study, “Black” or “African American” refers to an individual having origins in any of the Black racial groups of Africa; “Hispanic” refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; “Asian” or “Asian/Pacific Islander” refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands; “Native American” refers to an individual having origins in any of the original peoples of North America or of Hawai’i.

and a 1.76 percent chance of being nonminority female-owned. We repeated this procedure within each sample stratum and for all putative race and gender categories.

Table 3.14. Listed M/W/DBE Survey—Amount of Misclassification, by Industry Grouping

Listed M/W/DBE By NAICS Code Grouping	Misclassification (Percentage Nonminority Male)	Percentage Actually M/W/DBE-owned	Number of Businesses Interviewed
NAICS 237	16.67	83.33	6
NAICS 238	18.39	81.61	87
NAICS 541	11.46	88.54	157
NAICS 236	14.29	85.71	14
NAICS 72	11.11	88.89	45
NAICS 45	10.00	90.00	20
NAICS 56	12.50	87.50	88
NAICS 42	29.58	70.42	71
NAICS 81	23.40	76.60	47
NAICS 32	14.29	85.71	14
NAICS 5 (Balance)	35.29	64.71	34
NAICS 3 (Balance)	53.33	46.67	15
Balance	18.60	81.40	43
All NAICS Codes	18.25	81.75	641

Source and Notes: See Table 3.13.

4. Verify Putative Non-M/W/DBEs

a. Survey of Unclassified Businesses

In the same manner as our survey of listed M/W/DBEs, we also examined unclassified businesses, *i.e.*, any business that was not originally identified as a M/W/DBE, either in Dun & Bradstreet or in one or more of the other directories, and that would otherwise appear to be a non-M/W/DBE.

We selected a stratified random sample of 3,553 unclassified businesses from the Baseline Business Universe to verify the race and gender status of their owner(s). Of these, 361 (10.2 percent) were excluded as “unable to contact.” Of the 3,192 remaining establishments, we obtained 1,321 complete interviews, for a response rate of 41.4 percent.

As shown in Table 3.15, of the 1,321 establishments interviewed, 991 (75.0 percent) were owned by nonminority males. Clearly, a large majority of unclassified businesses in the Baseline

Business Universe are nonminority male-owned. Nevertheless, the survey results indicate that 25.0 percent are *not* nonminority male-owned. Among the latter, the largest group was nonminority female-owned (10.7 percent), with descending size shares accounted for by African American-owned (8.6 percent), Asian/Pacific Islander-owned (3.4 percent), Hispanic-owned (1.4 percent), and Native American-owned (0.9 percent).

Table 3.15. Unclassified Businesses Survey—By Race and Gender

Verified Race/Gender	Number of Businesses Interviewed	Percentage of Total
Nonminority male	991	75.02
Nonminority female	141	10.67
African American (either gender)	113	8.55
Hispanic (either gender)	19	1.44
Asian/Pacific Islander (either gender)	45	3.41
Native American (either gender)	12	0.91
TOTAL	1,321	100.00

Source and Notes: See Table 3.13.

As in the survey of Listed M/W/DBEs, misclassification was again observed within each industry stratum, as shown in Table 3.16. The actual share of nonminority male-owned firms ranged from a low of 55.81 percent to a high of 88.89 percent. In the same manner as the survey of listed M/W/DBEs, the race and gender status of unclassified businesses was changed, if necessary, according to the survey results. For example, if an interviewed business that was originally unclassified indicated that it was actually nonminority male-owned, then that business was counted as nonminority male-owned for purposes of the M/W/DBE availability calculation. If it indicated it was nonminority female-owned, it was counted as nonminority female, and so on. For unclassified businesses that were not interviewed, we assigned probability values (probability actually nonminority male-owned, probability actually nonminority female-owned, probability actually African American-owned, *etc.*) based on the interview responses. We again carried out the probability assignment procedure within each stratum.

Table 3.16. Unclassified Businesses Survey—By Industry Grouping

Listed M/W/DBE By NAICS Grouping	Percentage Actually Nonminority Male-owned	Percentage M/W/DBE	Number of Businesses Interviewed
NAICS 237	81.58	18.42	38
NAICS 238	79.58	20.42	142
NAICS 541	76.07	23.93	163
NAICS 236	85.71	14.29	77
NAICS 72	63.64	36.36	176
NAICS 45	70.00	30.00	140
NAICS 56	55.81	44.19	43
NAICS 42	85.05	14.95	107
NAICS 81	62.77	37.23	94
NAICS 32	70.89	29.11	79
NAICS 5 (Balance)	88.89	11.11	90
NAICS 3 (Balance)	80.20	19.80	101
Balance	78.87	21.13	71
All NAICS Codes	75.02	24.98	1,321

Source and Notes: See Table 3.13.

5. Understanding “Capacity”

As noted in the beginning of this chapter, some observers, primarily opponents of efforts to address discrimination in contracting, have argued that, in order to be accurate, availability estimates must be adjusted for “capacity.” These assertions are rarely accompanied by specific suggestions about how such adjustments could be made consistent with professional social science standards. This Study does adjust for certain appropriate characteristics of firms related to capacity (such as industry affiliation, geographic location, owner labor market experience, and educational attainment); however, we are careful to not adjust for capacity factors that are themselves likely to be influenced by discrimination. In our view, all of the “capacity” indicators recommended by program opponents (e.g., firm age, annual individual firm revenues, number of employees, largest contract received, bonding limits) are subject to the impact of discrimination.

Further, the reality is that large, adverse statistical disparities between minority-owned or women-owned businesses and nonminority male-owned businesses have been documented in numerous research studies and reports since *Croson*.⁶² Business outcomes, however, can be

⁶² See Enchautegui, et al. (1996). More recently, see Wainwright (2012), Wainwright (2010).

influenced by multiple factors, and it is important that disparity studies examine the likelihood of whether discrimination is an important contributing factor to observed disparities.

Moreover, terms such as “capacity,” “qualifications,” and “ability,” are not well defined in any statistical sense. Does “capacity” mean the level of annual individual firm revenues, employment size, bonding limits, or number of contracts bid or awarded? Does “qualified” or “able” mean possession of a business license, certain amounts of training, types of work experience, or the number of contracts a firm can perform at a given moment? What mix of business attributes properly reflects “capacity”? Does the meaning of such terms differ from industry to industry, locality to locality, or through time? Where and how might such data be reliably gathered? Even if capacity is well-defined and adequate data are gathered, when measuring the existence of discrimination, the statistical method used should not improperly limit the availability measure by incorporating factors that are themselves impacted by discrimination, such as firm age, annual individual firm revenues, bonding limits, or number of employees.

Consider an extreme example where discrimination has prevented the emergence of any minority owned firms. Suppose that racial discrimination was ingrained in a city's construction market. As a result, few minority construction employees are given the opportunity to gain managerial experience in the business; minorities who do end up starting construction firms are denied the opportunity to work as subcontractors for nonminority prime contractors; and nonminority prime contractors refuse to work with minority firms and put pressure on bonding companies and banks to prevent minority owned construction firms from securing bonding and capital. In this example, discrimination has prevented the emergence of a minority highway construction industry with “capacity.” Those M/W/DBEs that exist at all will be smaller and less experienced and have lower annual individual firm revenues, bonding limits, and employees (*i.e.*, “capacity”) because of discrimination than firms that have benefited from the exclusionary system.

Using annual individual firm revenues as the measure of qualifications illustrates the point. If M/W/DBEs are subject to market area discrimination, their annual individual firm revenues will be smaller than nonminority, male-owned businesses because they will be less successful at obtaining work. Annual individual firm revenues measure the extent to which a firm has succeeded in the market area, perhaps in spite of discrimination—it does not measure the ability to succeed in the absence of discrimination and should not be used to evaluate the effects of discrimination.

Therefore, focusing on the “capacity” of businesses in terms of employment, annual individual firm revenues, bonding limits, number of trucks, and so forth, is simply wrong as a matter of economics because it can obscure the existence of discrimination. A truly “effective” discriminatory system would lead to a finding of no “capacity,” and under the “capacity” approach, a finding of no discrimination. Excluding firms from an availability measure based on their “capacity” in a discriminatory market merely affirms the results of discrimination rather than ameliorating them. A capacity requirement could preclude MSCAA from doing anything to rectify its passive participation through public dollars in a clearly discriminatory system. The capacity argument fails to acknowledge that discrimination has obstructed the emergence of “qualified, willing, and able” minority firms. Without such firms, there can be no statistical disparity.

Further, in dynamic business environments, and especially in the construction sector, such “qualifications” or “capacity” can be obtained relatively easily. It is well known that small construction companies can expand rapidly as needs arise by hiring workers and renting equipment, and many general contractors subcontract the majority of a project. Firms grow quickly when demand increases and shrink quickly when demand decreases. Subcontracting is one important source of this elasticity, as has been noted by several academic studies.⁶³ Other industry sectors, especially in this era of Internet commerce and independent contractors, can also quickly grow or shrink in response to demand.

Finally, even where “capacity”-type factors have been controlled for in statistical analyses, results consistent with business discrimination are still typically observed. For example, large and statistically significant differences in commercial loan denial rates between minority and nonminority firms are evident throughout the country, even when detailed balance sheet and creditworthiness measures are held constant.⁶⁴ Similarly, economists using decennial census data have demonstrated that statistically significant disparities in business formation and business owner earnings between minorities and nonminorities remain even after controlling for a host of additional relevant factors, including educational achievement, labor market experience, marital status, disability status, veteran status, interest and dividend income, labor market attachment, industry, geographic location, and local labor market variables such as the unemployment rate, population growth rate, government employment rate, or per capita income.⁶⁵

To summarize, the statistical analysis of the availability of minority firms compared to nonminority firms to examine the existence and effects of discrimination in disparity studies should not adjust for inappropriate “capacity” factors because:

- “Capacity” has been ill-defined; and reliable data for measurement are generally unavailable;
- Small firms, particularly in the construction industry, are highly elastic with regard to ability to perform;
- Many disparity studies have shown that even when “capacity” and “qualifications”-type factors are held constant in statistical analyses, evidence of disparate impact against M/W/DBE firms persists; and
- Most important, identifiable indicators of “capacity” are themselves impacted by discrimination.

C. Estimates of M/W/DBE Availability

Top-level estimates of M/W/DBE availability appear below in Table 3.17. Four sets of weighted availability measures are provided for each of the four major procurement categories of

⁶³ See Bourdon and Levitt (1980); *see also* Eccles (1981); and Gould (1980).

⁶⁴ See Wainwright (2008).

⁶⁵ Wainwright (2000).

Construction, AE-CRS, Services, and CSE. The first set is weighted by award dollars for all contracts. The second set is weighted by paid dollars for all contracts. The third set is weighted by award dollars for federally-assisted contracts. The fourth and final set is weighted by paid dollars for federally-assisted contracts.

In Construction, AE-CRS and Concessions all four weighting procedures yield similar results. In some cases within Services and CSE, there is more variation in the estimates due to larger differences between award amounts and paid amounts in certain contracts and due to differences in the mix of NAICS codes between all contracts and federally-assisted contracts.

Table 3.17. Overall Estimated M/W/DBE Availability Percentages

	African American	Hispanic	Asian/ Pacific Islander	Native American	Minority	Non-minority Female	M/W/DBE	Non-M/W/DBE
OVERALL (ALL CONTRACTS)								
AWARD DOLLARS	13.63	2.02	1.02	1.00	17.66	12.23	29.89	70.11
PAID DOLLARS	13.84	2.11	0.99	0.95	17.88	12.52	30.40	69.60
OVERALL (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	11.31	1.76	1.13	1.21	15.40	10.57	25.97	74.03
PAID DOLLARS	11.13	1.81	1.11	1.17	15.21	10.72	25.94	74.06
CONSTRUCTION (ALL CONTRACTS)								
AWARD DOLLARS	10.85	1.78	0.62	1.38	14.64	10.49	25.12	74.88
PAID DOLLARS	10.66	1.85	0.57	1.35	14.43	10.61	25.04	74.96
CONSTRUCTION (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	11.01	1.80	0.68	1.35	14.84	10.23	25.06	74.94
PAID DOLLARS	10.75	1.85	0.63	1.32	14.56	10.39	24.95	75.05
AE-CRS (ALL CONTRACTS)								
AWARD DOLLARS	12.68	1.61	2.91	0.56	17.75	12.17	29.93	70.07
PAID DOLLARS	12.67	1.62	3.01	0.56	17.86	12.14	30.01	69.99

Table 3.17. Overall Estimated M/W/DBE Availability Percentages (cont'd)

	African American	Hispanic	Asian/Pacific Islander	Native American	Minority	Non-minority Female	M/W/DBE	Non-M/W/DBE
AE-CRS (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	12.73	1.63	3.00	0.56	17.92	12.09	30.02	69.98
PAID DOLLARS	12.73	1.62	3.01	0.56	17.92	12.12	30.04	69.96
SERVICES (ALL CONTRACTS)								
AWARD DOLLARS	21.69	3.00	0.57	0.28	25.54	16.93	42.47	57.53
PAID DOLLARS	21.78	3.00	0.55	0.28	25.60	17.03	42.64	57.36
SERVICES (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	11.81	1.70	1.81	0.63	15.96	13.90	29.85	70.15
PAID DOLLARS	11.50	1.68	1.85	0.62	15.65	13.77	29.42	70.58
CSE (ALL CONTRACTS)								
AWARD DOLLARS	9.22	1.29	2.58	1.35	14.44	10.02	24.46	75.54
PAID DOLLARS	9.44	1.35	2.59	1.26	14.64	10.07	24.71	75.29
CSE (FEDERALLY-ASSISTED CONTRACTS)								
AWARD DOLLARS	6.57	0.00	2.38	2.83	11.78	9.90	21.68	78.32
PAID DOLLARS	12.28	0.00	1.99	1.75	16.02	14.15	30.17	69.83
CONCESSIONS								
INCLUDING CAR RENTAL	7.89	2.98	13.76	0.54	25.17	10.14	35.31	64.69
EXCLUDING CAR RENTAL	8.51	3.21	14.85	0.58	27.16	10.94	38.10	61.90

Sources: Dun & Bradstreet; M/W/DBE business directory information compiled by NERA; Master Contract/Subcontract Database; Master Concessions Database.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Overall, M/W/DBE availability in the construction sector is between 24.95 and 25.12 percent. Non-M/W/DBE availability is between 74.88 and 75.05 percent. Among M/W/DBEs, availability of African American-owned businesses is between 10.66 and 11.01 percent, availability of Hispanic-owned businesses is between 1.78 and 1.85 percent, availability of Asian/Pacific Islander-owned businesses is between 0.57 and 0.68 percent, and availability of Native American-owned businesses is between 1.32 and 1.38 percent. Availability of minority-

owned businesses as a group is between 14.43 and 14.84 percent. Availability of nonminority female-owned businesses is between 10.23 and 10.61 percent.

Overall, M/W/DBE availability in the AE-CRS sector is between 29.93 and 30.04 percent. Non-M/W/DBE availability is between 69.96 and 70.07 percent. Among M/W/DBEs, availability of African American-owned businesses is between 12.67 and 12.73 percent, availability of Hispanic-owned businesses is between 1.61 and 1.63 percent, availability of Asian/Pacific Islander-owned businesses is between 2.91 and 3.01 percent, and availability of Native American-owned businesses is 0.56 percent. Availability of minority-owned businesses as a group is between 17.75 and 17.92 percent. Availability of nonminority female-owned businesses is between 12.09 and 12.17 percent.

Overall, M/W/DBE availability in the Services sector is between 29.42 and 42.64 percent. Non-M/W/DBE availability is between 57.36 and 70.58 percent. Among M/W/DBEs, availability of African American-owned businesses is between 11.50 and 21.78 percent, availability of Hispanic-owned businesses is between 1.68 and 3.00 percent, availability of Asian/Pacific Islander-owned businesses is between 0.55 and 1.85 percent, and availability of Native American-owned businesses is between 0.28 and 0.63 percent. Availability of minority-owned businesses as a group is between 15.65 and 25.60 percent. Availability of nonminority female-owned businesses is between 13.77 and 17.03 percent.

Overall, M/W/DBE availability in the CSE sector is between 21.68 and 30.17 percent. Non-M/W/DBE availability is between 69.83 and 75.54 percent. Among M/W/DBEs, availability of African American-owned businesses is between 6.57 and 12.28 percent, availability of Hispanic-owned businesses is between 0.00 and 1.35 percent, availability of Asian/Pacific Islander-owned businesses is between 1.99 and 2.59 percent, and availability of Native American-owned businesses is between 1.26 and 2.83 percent. Availability of minority-owned businesses as a group is between 11.78 and 16.02 percent. Availability of nonminority female-owned businesses is between 9.90 and 14.15 percent.

In Concessions, M/W/DBE availability is between 35.31 and 38.10 percent. Non-M/W/DBE availability is between 61.90 and 64.69 percent. Among M/W/DBEs, availability of African American-owned businesses is between 7.89 and 8.51 percent, availability of Hispanic-owned businesses is between 2.98 and 3.21 percent, availability of Asian/Pacific Islander-owned businesses is between 13.76 and 14.85 percent, and availability of Native American-owned businesses is between 0.54 and 0.58 percent. Availability of minority-owned businesses as a group is between 25.17 and 27.16 percent. Availability of nonminority female-owned businesses is between 10.14 and 10.94 percent.

Tables 3.18 through 3.27 present detailed estimates of M/W/DBE availability in MSCAA's relevant market area for Construction, AE-CRS, Services, CSE, and Concessions. For Construction, AE-CRS, Services, and CSE, two tables are presented. The first provides availability for all MSCAA contracts, weighted by dollars awarded. The second provides availability for federally-assisted MSCAA contracts, weighted by dollars awarded. For

Concessions, two tables are also presented, one using weights that include car rentals and one using weights that exclude car rentals.⁶⁶

Table 3.18. Detailed M/W/DBE Availability Percentages—Construction (All Contracts) (Dollars Awarded)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Support Activities for Crop Production (NAICS 1151)	9.86	1.41	4.23	0.00	5.63	21.13	78.87
Nonresidential Building Construction (NAICS 2362)	11.94	0.43	1.55	1.98	8.63	24.53	75.47
Utility System Construction (NAICS 2371)	3.86	0.00	4.18	1.77	13.74	23.56	76.44
Highway, Street, and Bridge Construction (NAICS 2373)	4.08	0.00	0.00	2.93	15.44	22.45	77.55
Other Heavy and Civil Engineering Construction (NAICS 2379)	15.08	0.00	0.00	1.56	18.63	35.28	64.72
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	12.12	3.16	0.00	1.03	8.64	24.94	75.06
Building Equipment Contractors (NAICS 2382)	12.42	2.78	0.33	0.68	8.94	25.14	74.86
Building Finishing Contractors (NAICS 2383)	12.09	3.40	0.00	0.71	8.39	24.58	75.42
Other Specialty Trade Contractors (NAICS 2389)	14.32	2.76	0.00	0.75	9.12	26.95	73.05
Printing and Related Support Activities (NAICS 3231)	10.74	0.00	2.51	0.79	25.44	39.48	60.52
Other Chemical Product and Preparation Manufacturing (NAICS 3259)	6.22	0.00	0.71	0.71	26.96	34.61	65.39
Cement and Concrete Product Manufacturing (NAICS 3273)	11.34	0.00	0.90	0.90	11.66	24.79	75.21
Architectural and Structural Metals Manufacturing (NAICS 3323)	3.19	0.00	1.28	0.64	7.67	12.78	87.22
Other General Purpose Machinery Manufacturing (NAICS 3339)	2.97	0.00	1.19	0.59	7.13	11.88	88.12
Other Miscellaneous Manufacturing (NAICS 3399)	5.27	0.00	2.44	2.90	20.93	31.54	68.46
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	2.62	0.00	2.66	3.43	10.95	19.65	80.35
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	3.88	0.00	2.59	3.45	6.47	16.39	83.61
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	4.60	0.00	2.55	3.27	8.15	18.57	81.43

⁶⁶ Similar tables using paid dollar weights were also produced but are not included here for space considerations.

M/W/DBE Availability in MSCAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	2.47	0.00	2.60	3.13	11.63	19.83	80.17
General Freight Trucking (NAICS 4841)	12.65	1.30	4.00	0.08	7.09	25.12	74.88
Architectural, Engineering, and Related Services (NAICS 5413)	10.94	1.47	2.57	0.54	15.21	30.73	69.27
Employment Services (NAICS 5613)	25.05	3.83	0.00	0.20	21.69	50.77	49.23
Services to Buildings and Dwellings (NAICS 5617)	22.86	4.37	0.00	0.04	19.03	46.30	53.70
Remediation and Other Waste Management Services (NAICS 5629)	17.21	3.10	0.00	0.41	38.83	59.54	40.46
Automotive Repair and Maintenance (NAICS 8111)	17.90	0.70	2.91	1.07	17.04	39.61	60.39

Sources and Notes: See Table 3.17.

**Table 3.19. Detailed M/W/DBE Availability Percentages—Construction (Federally-Assisted Contracts)
(Dollars Awarded)**

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Support Activities for Crop Production (NAICS 1151)	9.86	1.41	4.23	0.00	5.63	21.13	78.87
Nonresidential Building Construction (NAICS 2362)	11.94	0.43	1.55	1.98	8.63	24.53	75.47
Utility System Construction (NAICS 2371)	3.73	0.00	3.92	1.77	13.43	22.85	77.15
Highway, Street, and Bridge Construction (NAICS 2373)	4.08	0.00	0.00	2.93	15.44	22.45	77.55
Other Heavy and Civil Engineering Construction (NAICS 2379)	15.08	0.00	0.00	1.56	18.63	35.28	64.72
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	12.06	3.16	0.00	1.01	8.59	24.83	75.17
Building Equipment Contractors (NAICS 2382)	12.43	2.78	0.33	0.68	8.92	25.13	74.87
Building Finishing Contractors (NAICS 2383)	12.25	3.46	0.00	0.70	8.37	24.78	75.22
Other Specialty Trade Contractors (NAICS 2389)	14.60	2.80	0.00	0.73	9.11	27.25	72.75
Printing and Related Support Activities (NAICS 3231)	10.74	0.00	2.51	0.79	25.44	39.48	60.52
Other Chemical Product and Preparation Manufacturing (NAICS 3259)	6.22	0.00	0.71	0.71	26.96	34.61	65.39
Cement and Concrete Product Manufacturing (NAICS 3273)	11.34	0.00	0.90	0.90	11.66	24.79	75.21
Architectural and Structural Metals Manufacturing (NAICS 3323)	3.19	0.00	1.28	0.64	7.67	12.78	87.22
Other General Purpose Machinery Manufacturing (NAICS 3339)	2.97	0.00	1.19	0.59	7.13	11.88	88.12
Other Miscellaneous Manufacturing (NAICS 3399)	5.27	0.00	2.44	2.90	20.93	31.54	68.46
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	2.63	0.00	2.65	3.75	9.52	18.55	81.45
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	3.88	0.00	2.59	3.45	6.47	16.39	83.61
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	4.60	0.00	2.55	3.27	8.15	18.57	81.43
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	2.47	0.00	2.60	3.13	11.63	19.83	80.17

M/W/DBE Availability in MSCAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
General Freight Trucking (NAICS 4841)	12.65	1.30	4.00	0.08	7.09	25.12	74.88
Architectural, Engineering, and Related Services (NAICS 5413)	10.90	1.48	2.63	0.54	15.26	30.82	69.18
Employment Services (NAICS 5613)	25.05	3.83	0.00	0.20	21.69	50.77	49.23
Services to Buildings and Dwellings (NAICS 5617)	22.86	4.37	0.00	0.04	19.03	46.30	53.70
Remediation and Other Waste Management Services (NAICS 5629)	17.21	3.10	0.00	0.41	38.83	59.54	40.46
Automotive Repair and Maintenance (NAICS 8111)	17.90	0.70	2.91	1.07	17.04	39.61	60.39

Sources and Notes: See Table 3.17.

Table 3.20. Detailed M/W/DBE Availability Percentages—AE-CRS (All Contracts) (Dollars Awarded)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Other Specialty Trade Contractors (NAICS 2389)	12.71	2.53	0.00	0.86	9.13	25.24	74.76
Printing and Related Support Activities (NAICS 3231)	10.13	0.00	1.27	1.27	16.46	29.11	70.89
Architectural, Engineering, and Related Services (NAICS 5413)	12.29	1.53	2.59	0.52	12.65	29.59	70.41
Management, Scientific, and Technical Consulting Services (NAICS 5416)	15.74	1.98	1.49	0.87	15.21	35.30	64.70
Other Professional, Scientific, and Technical Services (NAICS 5419)	9.74	1.84	0.73	0.66	13.22	26.20	73.80

Sources and Notes: See Table 3.17.

Table 3.21. Detailed M/W/DBE Availability Percentages—AE-CRS (Federally-Assisted Contracts) (Dollars Awarded)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Other Specialty Trade Contractors (NAICS 2389)	12.71	2.53	0.00	0.86	9.13	25.24	74.76
Architectural, Engineering, and Related Services (NAICS 5413)	12.31	1.61	3.14	0.55	12.39	30.00	70.00
Management, Scientific, and Technical Consulting Services (NAICS 5416)	15.75	1.96	1.42	0.84	14.70	34.66	65.34
Other Professional, Scientific, and Technical Services (NAICS 5419)	9.74	1.84	0.73	0.66	13.22	26.20	73.80

Sources and Notes: See Table 3.17.

Table 3.22. Detailed M/W/DBE Availability Percentages—Services (All Contracts) (Dollars Awarded)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Building Equipment Contractors (NAICS 2382)	12.14	2.78	0.19	0.70	8.76	24.57	75.43
Other Specialty Trade Contractors (NAICS 2389)	12.71	2.53	0.00	0.86	9.13	25.24	74.76
Printing and Related Support Activities (NAICS 3231)	14.05	0.00	0.78	1.45	22.84	39.13	60.87
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	33.82	0.00	1.22	0.61	15.00	50.65	49.35
Other General Purpose Machinery Manufacturing (NAICS 3339)	2.97	0.00	1.19	0.59	7.13	11.88	88.12
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	2.51	0.00	2.57	3.25	9.18	17.51	82.49
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	4.18	0.00	3.06	3.18	10.80	21.22	78.78
Paper and Paper Product Merchant Wholesalers (NAICS 4241)	4.64	0.00	2.57	2.89	18.66	28.76	71.24
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)	4.03	1.67	2.40	3.12	10.77	21.98	78.02
Support Activities for Air Transportation (NAICS 4881)	9.69	1.38	4.15	0.00	5.54	20.77	79.23
Data Processing, Hosting, and Related Services (NAICS 5182)	11.17	0.89	0.89	0.00	8.38	21.33	78.67
Nondepository Credit Intermediation (NAICS 5222)	7.21	0.99	0.99	0.00	7.10	16.29	83.71
Other Financial Investment Activities (NAICS 5239)	7.04	1.06	1.57	0.00	2.82	12.49	87.51
Insurance Carriers (NAICS 5241)	8.06	1.00	1.00	0.00	6.16	16.20	83.80
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)	7.67	1.12	1.01	0.00	4.33	14.12	85.88
Consumer Goods Rental (NAICS 5322)	6.66	0.98	0.98	1.64	6.63	16.90	83.10
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)	6.29	1.00	1.00	3.42	2.64	14.36	85.64
Legal Services (NAICS 5411)	10.00	1.79	0.65	0.68	13.81	26.95	73.05
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)	10.02	1.73	0.67	0.61	14.55	27.59	72.41
Architectural, Engineering, and Related Services (NAICS 5413)	12.28	1.60	3.23	0.56	12.60	30.27	69.73

M/W/DBE Availability in MSCAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Computer Systems Design and Related Services (NAICS 5415)	13.89	1.57	3.16	1.41	11.92	31.95	68.05
Management, Scientific, and Technical Consulting Services (NAICS 5416)	14.02	1.65	0.93	0.67	17.74	35.01	64.99
Other Professional, Scientific, and Technical Services (NAICS 5419)	11.11	1.66	3.22	0.62	15.51	32.11	67.89
Investigation and Security Services (NAICS 5616)	24.33	4.46	0.33	0.07	19.64	48.83	51.17
Services to Buildings and Dwellings (NAICS 5617)	29.00	3.69	0.27	0.22	21.20	54.38	45.62
Other Support Services (NAICS 5619)	23.20	4.20	0.02	0.17	20.63	48.21	51.79
Waste Treatment and Disposal (NAICS 5622)	20.80	4.23	0.00	0.22	22.23	47.49	52.51
Offices of Physicians (NAICS 6211)	10.56	1.34	4.35	0.13	7.74	24.12	75.88
Personal and Household Goods Repair and Maintenance (NAICS 8114)	20.02	0.00	2.99	1.05	16.23	40.29	59.71
Drycleaning and Laundry Services (NAICS 8123)	10.85	0.00	1.91	0.64	8.94	22.34	77.66
Other Personal Services (NAICS 8129)	21.76	0.00	3.04	1.20	15.45	41.45	58.55
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)	18.04	0.00	3.04	1.01	14.17	36.26	63.74

Sources and Notes: See Table 3.17.

Table 3.23. Detailed M/W/DBE Availability Percentages—Services (Federally-Assisted Contracts) (Dollars Awarded)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Data Processing, Hosting, and Related Services (NAICS 5182)	11.17	0.89	0.89	0.00	8.38	21.33	78.67
Legal Services (NAICS 5411)	10.00	1.79	0.65	0.68	13.81	26.95	73.05
Architectural, Engineering, and Related Services (NAICS 5413)	12.21	1.62	3.31	0.56	12.60	30.30	69.70
Management, Scientific, and Technical Consulting Services (NAICS 5416)	14.00	1.63	0.89	0.67	18.92	36.10	63.90
Other Professional, Scientific, and Technical Services (NAICS 5419)	11.11	1.66	3.22	0.62	15.51	32.11	67.89

Sources and Notes: See Table 3.17.

Table 3.24. Detailed M/W/DBE Availability Percentages—CSE (All Contracts) (Dollars Awarded)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Utility System Construction (NAICS 2371)	1.75	0.00	0.00	1.75	8.77	12.28	87.72
Highway, Street, and Bridge Construction (NAICS 2373)	4.08	0.00	0.00	2.93	15.44	22.45	77.55
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	11.03	3.04	0.00	0.71	10.72	25.50	74.50
Building Equipment Contractors (NAICS 2382)	12.05	2.78	0.16	0.70	8.74	24.44	75.56
Building Finishing Contractors (NAICS 2383)	12.42	3.61	0.00	0.71	8.43	25.16	74.84
Other Specialty Trade Contractors (NAICS 2389)	12.71	2.53	0.00	0.86	9.13	25.24	74.76
Other Food Manufacturing (NAICS 3119)	4.95	0.00	1.98	0.99	11.88	19.80	80.20
Printing and Related Support Activities (NAICS 3231)	14.05	0.00	0.78	1.45	22.84	39.13	60.87
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)	7.15	0.00	0.89	0.89	11.62	20.55	79.45
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)	14.57	0.00	0.64	0.64	26.16	42.01	57.99
Rubber Product Manufacturing (NAICS 3262)	10.13	0.00	1.27	1.27	16.46	29.11	70.89
Glass and Glass Product Manufacturing (NAICS 3272)	5.06	0.00	0.63	0.63	33.23	39.56	60.44
Cement and Concrete Product Manufacturing (NAICS 3273)	11.34	0.00	0.90	0.90	11.66	24.79	75.21
Architectural and Structural Metals Manufacturing (NAICS 3323)	3.85	0.43	1.15	0.57	7.65	13.65	86.35
Hardware Manufacturing (NAICS 3325)	4.95	0.00	1.98	0.99	11.88	19.80	80.20
Spring and Wire Product Manufacturing (NAICS 3326)	3.71	0.00	1.49	0.74	8.91	14.85	85.15
Other Fabricated Metal Product Manufacturing (NAICS 3329)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)	4.04	0.00	1.75	0.81	10.85	17.45	82.55
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	33.82	0.00	1.22	0.61	15.00	50.65	49.35
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)	11.83	0.00	1.29	0.64	8.04	21.80	78.20
Other General Purpose Machinery Manufacturing (NAICS 3339)	3.19	4.34	1.14	0.57	15.18	24.42	75.58

M/W/DBE Availability in MSCAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Computer and Peripheral Equipment Manufacturing (NAICS 3341)	17.23	0.00	1.44	0.72	8.64	28.03	71.97
Communications Equipment Manufacturing (NAICS 3342)	4.95	0.00	1.98	0.99	11.88	19.80	80.20
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	4.01	0.00	1.61	0.80	9.63	16.06	83.94
Electric Lighting Equipment Manufacturing (NAICS 3351)	3.91	0.00	1.13	0.56	13.30	18.90	81.10
Electrical Equipment Manufacturing (NAICS 3353)	36.63	0.00	1.32	0.66	7.92	46.53	53.47
Other Electrical Equipment and Component Manufacturing (NAICS 3359)	3.54	0.00	1.41	0.71	13.25	18.91	81.09
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)	19.13	0.00	1.34	0.67	8.90	30.04	69.96
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)	4.40	0.00	0.99	0.50	17.48	23.36	76.64
Other Miscellaneous Manufacturing (NAICS 3399)	6.70	0.00	1.92	1.69	17.36	27.67	72.33
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)	2.63	0.00	3.15	4.70	8.05	18.53	81.47
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	2.55	0.00	2.60	4.24	7.55	16.93	83.07
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)	3.44	0.78	2.56	3.19	11.93	21.91	78.09
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	3.88	0.00	2.59	3.45	6.47	16.39	83.61
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	3.64	0.65	2.59	3.32	8.18	18.38	81.62
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	2.49	0.00	2.54	3.26	11.44	19.73	80.27
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	3.31	0.00	2.79	3.26	11.22	20.58	79.42
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	3.29	0.00	2.71	3.63	7.50	17.13	82.87

M/W/DBE Availability in MSCAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Paper and Paper Product Merchant Wholesalers (NAICS 4241)	4.64	0.00	2.57	2.89	18.66	28.76	71.24
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)	9.40	0.00	2.51	2.67	13.44	28.03	71.97
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)	3.77	1.38	2.44	3.12	10.67	21.38	78.62
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)	3.23	0.00	2.51	3.30	14.70	23.74	76.26
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)	2.96	0.00	2.84	3.26	7.50	16.56	83.44
Automobile Dealers (NAICS 4411)	10.79	1.35	4.06	0.02	6.58	22.80	77.20
Other Motor Vehicle Dealers (NAICS 4412)	8.54	1.22	10.33	0.00	4.88	24.98	75.02
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)	10.27	1.60	4.24	0.04	6.59	22.74	77.26
Home Furnishings Stores (NAICS 4422)	11.08	1.30	4.06	0.14	7.80	24.38	75.62
Electronics and Appliance Stores (NAICS 4431)	12.03	1.31	4.01	0.03	7.01	24.38	75.62
Building Material and Supplies Dealers (NAICS 4441)	9.93	1.32	4.25	0.35	7.84	23.69	76.31
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)	11.31	1.21	4.10	0.48	13.40	30.49	69.51
Gasoline Stations (NAICS 4471)	9.90	1.33	4.74	0.10	7.07	23.14	76.86
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)	5.68	1.91	1.81	0.00	21.78	31.19	68.81
Office Supplies, Stationery, and Gift Stores (NAICS 4532)	7.21	0.94	1.42	0.00	28.84	38.41	61.59
Other Miscellaneous Store Retailers (NAICS 4539)	7.41	1.34	2.33	0.13	22.20	33.41	66.59
Electronic Shopping and Mail-Order Houses (NAICS 4541)	15.00	3.33	1.43	0.00	28.81	48.57	51.43
Software Publishers (NAICS 5112)	9.08	3.65	1.02	0.00	3.26	17.02	82.98
Wired Telecommunications Carriers (NAICS 5171)	6.52	2.81	1.05	0.00	2.91	13.29	86.71
Data Processing, Hosting, and Related Services (NAICS 5182)	11.17	0.89	0.89	0.00	8.38	21.33	78.67
Consumer Goods Rental (NAICS 5322)	15.05	0.93	0.93	0.70	3.86	21.47	78.53
General Rental Centers (NAICS 5323)	6.67	1.11	1.11	0.00	2.22	11.11	88.89

M/W/DBE Availability in MSCAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)	6.72	1.02	1.02	0.87	3.35	12.97	87.03
Specialized Design Services (NAICS 5414)	15.64	1.62	1.62	0.72	21.01	40.61	59.39
Computer Systems Design and Related Services (NAICS 5415)	14.85	2.14	2.31	1.23	17.03	37.55	62.45
Scientific Research and Development Services (NAICS 5417)	13.67	1.69	2.36	0.63	13.11	31.47	68.53
Advertising, Public Relations, and Related Services (NAICS 5418)	12.41	1.49	1.13	2.45	28.40	45.89	54.11
Facilities Support Services (NAICS 5612)	26.15	3.94	0.00	0.09	17.99	48.18	51.82
Investigation and Security Services (NAICS 5616)	22.36	4.02	0.00	1.82	20.75	48.95	51.05
Other Support Services (NAICS 5619)	23.13	4.21	0.02	0.16	20.58	48.11	51.89
Remediation and Other Waste Management Services (NAICS 5629)	20.93	4.65	0.00	0.00	18.60	44.19	55.81
Limited-Service Eating Places (NAICS 7222)	8.28	3.14	15.06	0.61	10.76	37.84	62.16
Automotive Repair and Maintenance (NAICS 8111)	19.13	0.07	3.03	1.08	15.78	39.09	60.91
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)	18.51	0.00	3.06	1.15	16.06	38.77	61.23
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance (NAICS 8113)	17.42	1.32	2.80	2.37	13.88	37.78	62.22

Sources and Notes: See Table 3.17.

Table 3.25. Detailed M/W/DBE Availability Percentages—CSE (Federally-Assisted Contracts) (Dollars Awarded)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Highway, Street, and Bridge Construction (NAICS 2373)	4.08	0.00	0.00	2.93	15.44	22.45	77.55
Hardware Manufacturing (NAICS 3325)	4.95	0.00	1.98	0.99	11.88	19.80	80.20
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	4.60	0.00	2.55	3.27	8.15	18.57	81.43
Automotive Repair and Maintenance (NAICS 8111)	19.59	0.00	2.94	1.07	15.71	39.31	60.69

Sources and Notes: See Table 3.17.

Table 3.26. Detailed M/W/DBE Availability Percentages—Concessions (Including Car Rental)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Confectionery and Nut Stores (NAICS 445292)	9.14	1.31	3.92	0.00	10.68	25.04	74.96
Women's Clothing Stores (NAICS 448120)	12.09	1.21	4.01	0.59	12.15	30.04	69.96
Luggage and Leather Goods Stores (NAICS 448320)	11.31	1.21	4.10	0.48	13.40	30.49	69.51
Sporting Goods Stores (NAICS 451110)	5.68	1.91	1.81	0.00	21.78	31.19	68.81
Hobby, Toy, and Game Stores (NAICS 451120)	7.21	1.17	1.75	0.00	28.70	38.83	61.17
Book Stores (NAICS 451211)	13.44	0.93	1.39	0.00	27.07	42.82	57.18
News Dealers and Newsstands (NAICS 451212)	3.21	0.71	1.07	0.00	10.00	15.00	85.00
All Other Miscellaneous Store Retailers (except Tobacco Stores) (NAICS 453998)	7.41	1.34	2.33	0.13	22.20	33.41	66.59
Taxi Service (NAICS 485310)	9.86	1.41	4.23	0.00	5.63	21.13	78.87
All Other Transit and Ground Passenger Transportation (NAICS 485999)	27.23	0.99	3.29	0.33	9.94	41.79	58.21
Cable and Other Subscription Programming (NAICS 515210)	6.86	1.07	1.07	0.00	3.98	12.97	87.03
Wired Telecommunications Carriers (NAICS 517110)	6.52	2.81	1.05	0.00	2.91	13.29	86.71
Telecommunications Resellers (NAICS 517911)	7.99	1.01	1.01	1.59	3.48	15.06	84.94
Commercial Banking (NAICS 522110)	7.23	1.05	1.05	0.00	2.09	11.41	88.59
Credit Unions (NAICS 522130)	6.51	1.09	1.09	0.00	2.17	10.86	89.14
Financial Transactions Processing, Reserve, and Clearinghouse Activities (NAICS 522320)	8.69	2.17	1.02	1.15	3.10	16.14	83.86
Other Activities Related to Credit Intermediation (NAICS 522390)	7.21	1.03	1.03	0.00	3.57	12.85	87.15
Passenger Car Rental (MAJORS ONLY) (NAICS 532111)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Video Tape and Disc Rental (NAICS 532230)	9.94	0.98	0.98	0.00	6.15	18.04	81.96
Display Advertising (NAICS 541850)	9.82	1.84	0.61	0.61	11.04	23.93	76.07
Hotels (except Casino Hotels) and Motels (NAICS 721110)	7.29	2.92	20.83	0.48	9.08	40.60	59.40
Full-Service Restaurants (NAICS 722110)	9.27	3.92	14.91	0.49	11.60	40.19	59.81
Limited-Service Restaurants (NAICS 722211)	8.28	3.14	15.06	0.61	10.76	37.84	62.16

M/W/DBE Availability in MSCAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Other Electronic and Precision Equipment Repair and Maintenance (NAICS 811219)	18.51	0.00	3.06	1.15	16.06	38.77	61.23
Barber Shops (NAICS 812111)	21.30	0.00	2.88	2.16	16.22	42.56	57.44
Parking Lots and Garages (NAICS 812930)	21.76	0.00	3.04	1.20	15.45	41.45	58.55
All Other Personal Services (NAICS 812990)	20.23	0.78	2.95	1.46	18.16	43.58	56.42

Sources and Notes: See Table 3.17.

Table 3.27. Detailed M/W/DBE Availability Percentages—Concessions (Excluding Car Rental)

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Confectionery and Nut Stores (NAICS 445292)	9.14	1.31	3.92	0.00	10.68	25.04	74.96
Women's Clothing Stores (NAICS 448120)	12.09	1.21	4.01	0.59	12.15	30.04	69.96
Luggage and Leather Goods Stores (NAICS 448320)	11.31	1.21	4.10	0.48	13.40	30.49	69.51
Sporting Goods Stores (NAICS 451110)	5.68	1.91	1.81	0.00	21.78	31.19	68.81
Hobby, Toy, and Game Stores (NAICS 451120)	7.21	1.17	1.75	0.00	28.70	38.83	61.17
Book Stores (NAICS 451211)	13.44	0.93	1.39	0.00	27.07	42.82	57.18
News Dealers and Newsstands (NAICS 451212)	3.21	0.71	1.07	0.00	10.00	15.00	85.00
All Other Miscellaneous Store Retailers (except Tobacco Stores) (NAICS 453998)	7.41	1.34	2.33	0.13	22.20	33.41	66.59
Taxi Service (NAICS 485310)	9.86	1.41	4.23	0.00	5.63	21.13	78.87
All Other Transit and Ground Passenger Transportation (NAICS 485999)	27.23	0.99	3.29	0.33	9.94	41.79	58.21
Cable and Other Subscription Programming (NAICS 515210)	6.86	1.07	1.07	0.00	3.98	12.97	87.03
Wired Telecommunications Carriers (NAICS 517110)	6.52	2.81	1.05	0.00	2.91	13.29	86.71
Telecommunications Resellers (NAICS 517911)	7.99	1.01	1.01	1.59	3.48	15.06	84.94
Commercial Banking (NAICS 522110)	7.23	1.05	1.05	0.00	2.09	11.41	88.59
Credit Unions (NAICS 522130)	6.51	1.09	1.09	0.00	2.17	10.86	89.14
Financial Transactions Processing, Reserve, and Clearinghouse Activities (NAICS 522320)	8.69	2.17	1.02	1.15	3.10	16.14	83.86
Other Activities Related to Credit Intermediation (NAICS 522390)	7.21	1.03	1.03	0.00	3.57	12.85	87.15
Video Tape and Disc Rental (NAICS 532230)	9.94	0.98	0.98	0.00	6.15	18.04	81.96
Display Advertising (NAICS 541850)	9.82	1.84	0.61	0.61	11.04	23.93	76.07
Hotels (except Casino Hotels) and Motels (NAICS 721110)	7.29	2.92	20.83	0.48	9.08	40.60	59.40
Full-Service Restaurants (NAICS 722110)	9.27	3.92	14.91	0.49	11.60	40.19	59.81
Limited-Service Restaurants (NAICS 722211)	8.28	3.14	15.06	0.61	10.76	37.84	62.16
Other Electronic and Precision Equipment Repair and Maintenance (NAICS 811219)	18.51	0.00	3.06	1.15	16.06	38.77	61.23

M/W/DBE Availability in MSCAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	M/W/DBE	Non-M/W/DBE
Barber Shops (NAICS 812111)	21.30	0.00	2.88	2.16	16.22	42.56	57.44
Parking Lots and Garages (NAICS 812930)	21.76	0.00	3.04	1.20	15.45	41.45	58.55
All Other Personal Services (NAICS 812990)	20.23	0.78	2.95	1.46	18.16	43.58	56.42

Sources and Notes: See Table 3.17.

IV. Market-Based Disparities in Business Formation and Business Owner Earnings

A. Introduction

In this chapter, we examine disparities in business formation and earnings principally in the private sector, where contracting activities are generally *not* subject to M/W/DBE or other affirmative action requirements. Statistical examination of disparities in the private sector of the relevant geographic market area is important for several reasons. First, to the extent that discriminatory practices by contractors, suppliers, insurers, lenders, customers, and others limit the ability of M/W/DBEs to compete, those practices will impact the larger private sector as well as the public sector. Second, examining the utilization of M/W/DBEs in the private sector provides an indicator of the extent to which M/W/DBEs are used in the absence of race- and gender-conscious efforts, since few firms in the private sector make such efforts. Third, the Supreme Court in *Croson* and other courts acknowledged that state and local governments have a constitutional duty not to contribute to the perpetuation of discrimination in the private sector of their relevant geographic and product markets.

After years of comparative neglect, research on the economics of entrepreneurship—especially upon self-employment—has expanded in the last 20 years.⁶⁷ As a result, there is now a good deal of agreement in the literature on the microeconomic correlates of self-employment.⁶⁸ In the U.S., it appears that self-employment rises with age, is higher among men than women, and higher among non-minorities than minorities. The least educated have the highest probability of being self-employed. However, evidence is also found in the U.S. that the most highly educated also have relatively high probabilities. On average, however, increases in educational attainment are generally found to lead to increases in the probability of being self-employed. A higher number of children in the family increases the likelihood of (male) self-employment. Workers in agriculture and construction are also especially likely to be self-employed.

There has been relatively less work on how institutional factors influence self-employment. Such work that has been conducted includes examining the role of minimum wage legislation (Blau, 1987), immigration (Fairlie and Meyer, 1998 and 2003; Olson, Zuiker and Montalto, 2000; Mora

⁶⁷ Microeconometric work includes Fuchs (1982), Borjas and Bronars (1989), Evans and Jovanovic (1989), Evans and Leighton (1989), Fairlie and Meyer (1996, 1998), Reardon (1998), Fairlie (1999), Wainwright (2000), Blanchflower and Wainwright (2005), and Blanchflower (2009) for the United States; Rees and Shah (1986), Pickles and O'Farrell (1987), Blanchflower and Oswald (1990, 1998), Meager (1992), Taylor (1996), Robson (1998a, 1998b), and Blanchflower and Shadforth (2007) for the UK; DeWit and van Winden (1990) for the Netherlands; Alba-Ramirez (1994) for Spain; Bernhardt (1994), Schuetze (1998), Arai (1997), Lentz and Laband (1990), and Kuhn and Schuetze (1998) for Canada; LaFerrere and McEntee (1995) for France; Blanchflower and Meyer (1994) and Kidd (1993) for Australia; and Foti and Vivarelli (1994) for Italy. There are also several theoretical papers including Kihlstrom and Laffont (1979), Kanbur (1990), Holmes and Schmitz (1990), Coate and Tennyson (1992), and Cagetti and DeNardi (2006), plus a few papers that draw comparisons across countries, *i.e.*, Schuetze (1998) for Canada and the U.S., Blanchflower and Meyer (1994) for Australia and the U.S., Alba-Ramirez (1994) for Spain and the United States, and Acs and Evans (1994), Blanchflower (2000), Blanchflower, Oswald, and Stutzer (2001), and Blanchflower and Oswald (2008) for many countries.

⁶⁸ Parker (2004) and Aronson (1991) provide good overviews.

and Davila, 2006; Robles and Cordero-Gúzman, 2007),⁶⁹ immigration policy (Borjas and Bronars, 1989), and retirement policies (Quinn, 1980). Studies by Long (1982), Blau (1987), and Schuetze (1998), have considered the role of taxes.⁷⁰ A number of other studies have also considered the cyclical aspects of self-employment and in particular how movements of self-employment are correlated with movements in unemployment. Meager (1992) provides a useful summary of much of this work.⁷¹

Blanchflower, Oswald and Stutzer (2001) found that there is a strikingly large latent desire to own a business. There exists frustrated entrepreneurship on a huge scale in the U.S. and other Organization for Economic Co-operation and Development (OECD) countries.⁷² In the U.S., 7 out of 10 people say they would prefer to be self-employed. This compares to an actual proportion of self-employed people in 2001 of 7.3 percent of the civilian labor force, which also shows that the proportion of the labor force that is self-employed has declined steadily since 1990 following a small increase in the rate from 1980 to 1990. This raises an important question. Why do so few individuals in the U.S. and OECD countries manage to translate their preferences into action? Lack of start-up capital is one likely explanation. This factor is commonly cited by small-business managers themselves (Blanchflower and Oswald, 1998). There is also econometric evidence that confirms this barrier. Holding other influences constant, people who

⁶⁹ Fairlie and Meyer (1998) found that immigration had no statistically significant impact at all on African American self-employment. In a subsequent paper, Fairlie and Meyer (2003) found that self-employed immigrants did displace self-employed native non-African Americans. They found that immigration has a large negative effect on the probability of self-employment among native non-African Americans, although, surprisingly, they found that immigrants increase native self-employment earnings.

⁷⁰ In an interesting study pooling individual level data for the U.S. and Canada from the Current Population Survey and the Survey of Consumer Finances, respectively, Schuetze (1998) finds that increases in income taxes have large and positive effects on the male self-employment rate. He found that a 30 percent increase in taxes generated a rise of 0.9 to 2.0 percentage points in the male self-employment rate in Canada compared with a rise of 0.8 to 1.4 percentage points in the U.S. over 1994 levels.

⁷¹ Evans and Leighton (1989) found that nonminority men who are unemployed are nearly twice as likely as wage workers to enter self-employment. Bogenhold and Staber (1991) also find evidence that unemployment and self-employment are positively correlated. Blanchflower and Oswald (1990) found a strong negative relationship between regional unemployment and self-employment for the period 1983-1989 in the U.K. using a pooled cross-section time-series data set. Blanchflower and Oswald (1998) confirmed this result, finding that the log of the county unemployment rate entered negatively in a cross-section self-employment model for young people age 23 in 1981 and for the same people aged 33 in 1991. Taylor (1996) confirmed this result using data from the British Household Panel Study of 1991, showing that the probability of being self-employed rises when expected self-employment earnings increase relative to employee earnings, *i.e.*, when unemployment is low. Acs and Evans (1994) found evidence from an analysis of a panel of countries that the unemployment rate entered negatively in a fixed effect and random effects formulation. However, Schuetze (1998) found that for the U.S. and Canada the elasticity of the male self-employment rate with respect to the unemployment rate was considerably smaller than found for the effect from taxes discussed above. The elasticity of self-employment associated with the unemployment rate is about 0.1 in both countries using 1994 figures. A decrease of 5 percentage points in the unemployment rate in the U.S. (about the same decline occurred from 1983-1989) leads to about a 1 percentage point decrease in self-employment. Blanchflower (2000) found that there is generally a negative relationship between the self-employment rate and the unemployment rate. It does seem then that there is some disagreement in the literature on whether high unemployment acts to discourage self-employment because of the lack of available opportunities or encourage it because of the lack of viable alternatives.

⁷² The OECD is an international organization of those developed countries that accept the principles of representative democracy and a free market economy. There are currently 30 full members.

inherit cash, who win the lottery, or who have large family assets, are all more likely both to set up and sustain a lasting small business. By contrast, childhood personality test-scores turn out to have almost no predictive power about which persons will be running their own businesses as adults (Blanchflower and Oswald, 1998).

One primary impediment to entrepreneurship among minorities is lack of capital. In work based on U.S. micro data at the level of the individual, Evans and Leighton (1989), and Evans and Jovanovic (1989), have argued formally that entrepreneurs face liquidity constraints. The authors use the National Longitudinal Survey of Young Men for 1966-1981, and the Current Population Surveys for 1968-1987. The key test shows that, all else remaining equal, people with greater family assets are more likely to switch to self-employment from employment. This asset variable enters econometric equations significantly and with a quadratic form. Although Evans and his collaborators draw the conclusion that capital and liquidity constraints bind, this claim is open to the objection that other interpretations of their correlation are feasible. One possibility, for example, is that inherently acquisitive individuals both start their own businesses and forego leisure to build up family assets. In this case, there would be a correlation between family assets and movement into self-employment even if capital constraints did not exist. A second possibility is that the correlation between family assets and the movement to self-employment arises because children tend to inherit family firms. Blanchflower and Oswald (1998), however, find that the probability of self-employment depends positively upon whether the individual ever received an inheritance or gift.⁷³ Moreover, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Work by Holtz-Eakin, Joulfaian and Harvey (1994a, 1994b) drew similar conclusions using different methods on U.S. data, examining flows into and out of self-employment and finding that inheritances both raise entry and slow exit. In contrast, Hurst and Lusardi (2004), citing evidence from the U.S. *Panel Study of Income Dynamics*, claim to show that wealth is not a significant determinant of entry into self-employment. In response, however, Fairlie and Krashinsky (2006) have demonstrated that when the sample is split into two segments—those who enter self-employment after job loss and those who do not—the strong correlation between assets and rate of entry business formation is evident in both segments.

The work of Black, et al. (1996) for the United Kingdom discovers an apparently powerful role for house prices (through its impact on equity withdrawal) in affecting the supply of small new firms. Cowling and Mitchell (1997) find a similar result. Again, these are both suggestive of capital constraints. Finally, Lindh and Ohlsson (1996) adopt the Blanchflower-Oswald procedure and provide complementary evidence for Sweden. Bernhardt (1994), in a study for Canada using data from the 1981 Social Change in Canada Project, also found evidence that capital constraints appear to bind. Using the 1991 French Household Survey of Financial Assets, LaFerrere and McEntee (1995) examined the determinants of self-employment using data on intergenerational transfers of wealth, education, informal human capital, and a range of demographic variables.

They also find evidence of the importance played by the family in the decision to enter self-employment. Intergenerational transfers of wealth, familial transfers of human capital, and the

⁷³ This emerges from British data, the National Child Development Study; a birth cohort of children born in March 1958 who have been followed for the whole of their lives.

structure of the family, were found to be determining factors in the decision to move from wage work into entrepreneurship. Broussard, et al. (2003) found that the self-employed have between 0.2 and 0.4 more children compared to the non-self-employed. The authors argue that having more children can increase the likelihood that an inside family member will be a good match at running the business. One might also think that the existence of family businesses, which are particularly prevalent in construction and in agriculture, is a further way to overcome the existence of capital constraints. Transfers of firms within families will help to preserve the status quo and will work against the interests of African Americans, in particular, who do not have as strong a history of business ownership as indigenous non-minorities. Analogously, Hout and Rosen (2000) and Fairlie and Robb (2007a) found that the offspring of self-employed parents are more likely than others to become self-employed and argued that the historically low rates of self-employment among African Americans and Latinos may contribute to their low contemporary rates. Fairlie and Robb (2007b), using data from the U.S. *Characteristics of Business Owners Survey*, and Dunn and Holtz-Eakin (2000), using data from the U.S. *National Longitudinal Surveys*, show that the transmission of positive effects of family on self-employment operates through two channels, intergenerational transmission of entrepreneurial preferences and wealth, and the acquisition of general and specific human capital.

A continuing puzzle in the literature has been why, nationally, the self-employment rate of African American males is one-third of that of nonminority males and has remained roughly constant since 1910. Fairlie and Meyer (2000) rule out a number of explanations for the difference. They found that trends in demographic factors, including the Great Migration and the racial convergence in education levels, “did not have large effects on the trend in the racial gap in self-employment” (p. 662). They also found that an initial lack of business experience “cannot explain the current low levels of black self-employment.” Further, they found that “the lack of traditions in business enterprise among blacks that resulted from slavery cannot explain a substantial part of the current racial gap in self-employment” (p. 664).

Fairlie (1999) and Wainwright (2000) have shown that a considerable part of the explanation of the differences between the African American and nonminority self-employment rate can be attributed to discrimination. Using the 5 percent Public Use Microdata Sample data (“PUMS”) from the 1990 Census, Wainwright (2000) demonstrated that these disparities tend to persist even when factors such as geography, industry, occupation, age, education and assets are held constant.⁷⁴

⁷⁴ In Wainwright (2000), the author conducted a series of regression analyses, similar to those reported in Chapter IV, that examined racial differences among males in business formation rates and business owner earnings while holding a large set of control factors constant. Separate regressions were conducted for each of the nine Census geographic divisions. In addition to race, the following factors were controlled for: educational attainment, age, marital status, non-mover status, number of workers in the family, number of children, immigrant status, years in the U.S., English language proficiency, work-limiting disability, veteran status, years of military services, interest and dividend income, usual weeks worked per year, and usual hours worked per week, industry, and occupation. Additionally, a set of local labor market variables was included for each Census division, including the unemployment rate, population size, population growth rate, the government employment rate, and per capita income. The results, in general, showed large and statistically significant disparities in both sets of regressions for all minority groups examined. The findings were strongest for African Americans, followed by Native Americans and Hispanics. Large disparities were documented for Asians as well in many instances.

Bates (1989) finds strong supporting evidence that racial differences in levels of financial capital have significant effects upon racial patterns in business failure rates. Fairlie (1999, 2006) demonstrates, for example, that the African American exit rate from self-employment is twice as high as that of non-minorities. An example will help to make the point. Two baths are being filled with water. In the first scenario, both have the plug in. Water flows into bath A at the same rate as it does into bath B—that is, the inflow rate is the same. When we return after ten minutes the amount of water (the stock) will be the same in the two baths as the inflow rates were the same. In the second scenario, we take out the plugs and allow for the possibility that the outflow rates from the two baths are different. Bath A (the African American firms) has a much larger drain and hence the water flows out more quickly than it does from bath B (the nonminority firms). When we return after 10 minutes, even though the inflow rates are the same there is much less water in bath A than there is in bath B. A lower exit rate for nonminority-owned firms than is found for minority-owned firms is perfectly consistent with the observed fact that minority-owned firms are younger and smaller than nonminority-owned firms. The extent to which that will be true is a function of the relative sizes of the inflow and the outflow rates.

B. Race and Gender Disparities in Earnings

In this section, we examine earnings to determine whether minority and female entrepreneurs earn less from their businesses than do their nonminority male counterparts. Other things equal, if minority and female business owners as a group cannot achieve comparable earnings from their businesses as similarly situated nonminorities because of discrimination, then failure rates for M/W/DBEs will be higher and M/W/DBE formation rates will be lower than would be observed in a race- and gender-neutral market area. Both phenomena would contribute directly to lower levels of minority and female business ownership.

Below, we first examine earnings disparities among wage and salary employees, that is, non-business owners. It is helpful to examine this segment of the labor force since a key source of new entrepreneurs in any given industry is the pool of experienced wage and salary workers in similar or related industries (Blanchflower 2000 and 2004). Employment discrimination that adversely impacts the ability of minorities or women to succeed in the labor force directly shrinks the available pool of potential M/W/DBEs. In almost every instance examined, a statistically significant adverse impact on wage and salary earnings is observed—in both the economy at large and also in the construction and construction-related professional services sector.⁷⁵

We then turn to an examination of differences in earnings among the self-employed, that is, among business owners. Here too, among the pool of minorities and women who have formed businesses despite discrimination in both employment opportunities and business opportunities, statistically significant adverse impacts are observed in the vast majority of cases in construction

⁷⁵ There is a growing body of evidence that discriminatory constraints in the capital market prevent minority-owned businesses from obtaining business loans. Furthermore, even when they are able to obtain them, there is evidence that these loans are not obtained on equal terms: minority-owned firms have to pay higher interest rates, other things being equal. This is another form of discrimination with an obvious and direct impact on the ability of racial minorities to form businesses and to expand or grow previously formed businesses. See Chapter V, *infra*.

and construction-related professional services (hereafter, “construction”), and other sectors of the economy.

In the remainder of this chapter, we discuss the methods and data we employed and present the specific findings.

1. Methods

We used the statistical technique of linear regression analysis to estimate the effect of each of a set of observable characteristics, such as education and age, on an outcome variable of interest. In this case, the outcome variable of interest is earnings and we used regression to compare earnings among individuals in similar geographic and product markets at similar points in time and with similar years of education and potential labor market experience and see if any adverse race or gender differences remain. In a discrimination free market area, one would not expect to observe significant differences in earnings by race or gender among such similarly situated observations.

Regression also allows us to narrowly tailor our statistical tests to MSCAA’s relevant geographic market, and assess whether disparities in that market are statistically significantly different from those observed elsewhere in the nation. Starting from an economy-wide data set, we first estimated the basic model of earnings differences just described and also included an indicator variable for the MSCAA Market Area (MSCAAMA), which is comprised of the Memphis, TN-MS-AR Metropolitan Statistical Area. This variable estimates the differential effect of location in the MSCAAMA relevant to the rest of the country. This model appears as Specification 1 in Tables 4.1 through 4.6. Next, we estimated Specification 2, which is the same model as Specification 1 but with the addition of indicator variables that interact race and gender with the MSCAAMA indicator. These variables estimate the differential effect of location in the MSCAAMA *and* membership in the given race or gender group. Specification 3 represents our ultimate specification, which includes all the variables from the basic model as well as any of the interaction terms from Specification 2 that were statistically significant.⁷⁶

Any negative and statistically significant differences by race or gender that remain in Specification 3 after holding all of these other factors constant—time, age, education, geography, and industry—are consistent with what would be observed in a market suffering from business-related discrimination.⁷⁷

2. Data

The analyses undertaken in this Study require individual-level data (*i.e.*, “microdata”) with relevant information on business ownership status and other key socioeconomic characteristics.

⁷⁶ If none of these terms is significant then Specification 3 reduces to Specification 1.

⁷⁷ Typically, a given test statistic is considered to be statistically significant if there is a reasonably low probability that the value of the statistic is due to random chance alone. Unless otherwise indicated, in this and subsequent chapters, we employ three levels of statistical significance, corresponding to 10 percent, 5 percent, and 1 percent probabilities that results were the result of random chance.

The data source used is the American Community Survey (ACS) Public Use Microdata Sample (PUMS) for 2007–2011. The Census Bureau’s ACS is an ongoing survey covering the same type of information collected in the decennial census. The ACS is sent to approximately 3 million addresses annually, including housing units in all counties in the 50 states and the District of Columbia. The PUMS file from the ACS contains records for a subsample of the full ACS. The data used here are the multi-year estimates combining the 2007 through 2011 ACS PUMS records. The combined file contains over six million person-level records. Released in early 2013, the ACS PUMS provides the full range of population and housing information collected in the annual ACS and in the decennial census. Business ownership status is identified in the ACS PUMS through the “class of worker” variable, which distinguishes the unincorporated and incorporated self-employed from others in the labor force. The presence of the class of worker variable allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings.

3. Findings: Race and Gender Disparities in Wage and Salary Earnings

Tables 4.1, 4.2 and 4.3 report results from our regression analyses of annual earnings among wage and salary workers. Table 4.1 focuses on the economy as a whole, Table 4.2 on the construction sector, and Table 4.3 on the goods and services sector. The numbers shown in each table indicate the percentage difference in that sector between the average annual wages of a given race/gender group and comparable nonminority males.

a. Specification 1 - the Basic Model

For example, in Table 4.1 Specification 1, the estimated percentage difference in average annual wages between African Americans (both genders) and nonminority males in 2007–2011 was -32.0 percent. That is, average annual wages among African Americans were 32.0 percent lower than for nonminority males who were otherwise similar in terms of geographic location, industry, age, and education. The number in parentheses below each percentage difference is the t-statistic, which indicates whether the estimated percentage difference is statistically significant or not. In Tables 4.1 through 4.6, a t-statistic of 1.99 or larger indicates statistical significance at a 95 percent confidence level or better.⁷⁸ In the example just used, the t-statistic of 248.11 indicates that the result is statistically significant.

Specification 1 in Table 4.1 shows adverse and statistically significant wage disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting in multiple race categories, and nonminority women, consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from -22.0 percent for Hispanics to -32.0 percent for African Americans.

Specification 1 in Table 4.2 shows similar results when the basic analysis is restricted to the construction sector. In this sector, large, adverse, and statistically significant wage disparities are once again observed for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting in multiple race categories, and nonminority women, consistent

⁷⁸ From a two-tailed test.

with the presence of discrimination in these markets. Observed disparities are large as well, ranging from -19.9 percent for Hispanics to -34.9 percent for African Americans.

Similarly, Specification 1 in Table 4.3 for the goods and services sector also shows large, adverse, and statistically significant wage disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting in multiple race categories, and nonminority women, consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from -27.6 percent for Hispanics to -37.2 percent for African Americans.

A comparison of Tables 4.1 and 4.2 shows that for Asians and persons reporting multiple races, the disparities in the construction sector are somewhat smaller than those observed in the economy as a whole. For African Americans and nonminority women, they are somewhat larger. Disparities for Hispanics and Native Americans are similar in both sectors. A comparison of Tables 4.1 and 4.3 shows that for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting in multiple race categories, and nonminority women, the disparities in the goods and services sector are all larger than those observed in the economy as a whole.

b. Specifications 2 and 3 - the Full Model Including MSCAAMA-Specific Interaction Terms

Next, we turn to Specifications 2 and 3 in Tables 4.1 through 4.3. In each of these Tables, Specification 2 is the basic regression model with a set of interaction terms added, designed to test whether minorities and women in the MSCAAMA differ significantly from those elsewhere in the U.S. economy. Specification 2 in Table 4.1, for example, shows a -32.0 percent wage difference that estimates the direct effect of being African American in 2007–2011, as well as a statistically significant 9.0 percent wage decrement that captures the indirect effect of residing in the MSCAAMA and being African American. That is, wages for African Americans in the MSCAAMA, on average, were 9.0 percent lower than for African Americans in the nation as a whole and 41.0 percent lower (-32.0 percent minus 9.0 percent) than for nonminority males in the MSCAAMA.

Specification 3 simply repeats Specification 2, dropping any MSCAAMA interactions that are not statistically significant. In Table 4.1, for example, interaction terms were included in the final specification for nonminority women. The net result of Specification 3 in Table 4.1 is evidence of large, adverse, and statistically significant wage disparities for all minority groups and for nonminority women consistent with the presence of discrimination in these markets. The same is true for the construction sector (Table 4.2) as well as for the goods and services sector (Table 4.3).

Table 4.1. Annual Wage Earnings Regressions, All Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.320 (248.11)	-0.320 (245.85)	-0.320 (245.89)
Hispanic	-0.220 (173.54)	-0.219 (173.29)	-0.219 (173.47)
Asian/Pacific Islander	-0.256 (151.5)	-0.256 (151.22)	-0.256 (151.46)
Native American	-0.302 (67.34)	-0.302 (67.23)	-0.302 (67.33)
Two or more races	-0.269 (95.04)	-0.269 (94.83)	-0.269 (95.03)
Nonminority Female	-0.306 (365.12)	-0.306 (364.37)	-0.306 (364.47)
Age	0.181 (792.16)	0.181 (792.17)	0.181 (792.17)
Age ²	-0.002 (683.70)	-0.002 (683.71)	-0.002 (683.71)
MSCAAMA	0.090 (13.03)	0.141 (12.33)	0.131 (12.64)
MSCAAMA*African American		-0.090 (6.62)	-0.082 (6.34)
MSCAAMA*Hispanic		-0.032 (1.02)	n/a
MSCAAMA*Asian/Pacific Islander		-0.058 (1.49)	n/a
MSCAAMA*Native American		-0.129 (1.04)	n/a
MSCAAMA*Two or more races		-0.047 (0.82)	n/a
MSCAAMA*Nonminority female		-0.038 (2.54)	-0.030 (2.08)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	5399867	5399867	5399867
Adj. R ²	.4268	.4268	.4268

Source: NERA calculations from the 2007-2011 ACS Public Use Microdata Sample.

Notes: (1) See above, section B.3.(a)-(b) for a description of Specifications 1 through 3; (2) Universe is all private sector wage and salary workers between the ages of 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number is the percentage difference in annual wages between a given group and nonminority men; (4) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (5) Geography is defined based on place of residence; (6) “MSCAAMA” is shorthand for “Memphis-Shelby County Airport Authority Market Area,” which includes the Memphis, TN-MS-AR Metropolitan Statistical Area; (7) “n/a” in Specification 3 means that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section B.3.b; (8) The “Yes” values next to the “Education,” “Geography,” and “Industry” rows indicate that control variables were included in the regression specification for these factors.

Table 4.2. Annual Wage Earnings Regressions, Construction and Related Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.349 (62.76)	-0.349 (62.52)	-0.349 (62.76)
Hispanic	-0.199 (51.54)	-0.199 (51.46)	-0.199 (51.54)
Asian/Pacific Islander	-0.216 (25.92)	-0.216 (25.90)	-0.216 (25.92)
Native American	-0.312 (23.71)	-0.312 (23.69)	-0.312 (23.71)
Two or more races	-0.223 (20.99)	-0.223 (20.94)	-0.223 (20.99)
Nonminority Female	-0.337 (92.29)	-0.337 (92.12)	-0.337 (92.29)
Age	0.141 (170.41)	0.141 (170.41)	0.141 (170.41)
Age ²	-0.001 (145.92)	-0.001 (145.92)	-0.001 (145.92)
MSCAAMA	0.030 (1.15)	0.031 (0.94)	0.030 (1.15)
MSCAAMA*African American		0.062 (0.92)	n/a
MSCAAMA*Hispanic		-0.046 (0.71)	n/a
MSCAAMA*Asian/Pacific Islander		-0.023 (0.06)	n/a
MSCAAMA*Native American		-0.311 (0.42)	n/a
MSCAAMA*Two or more races		-0.021 (0.11)	n/a
MSCAAMA*Nonminority female		-0.027 (0.35)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	445303	445303	445303
Adj. R ²	.2366	.2366	.2366

Source and Notes: See Table 4.1.

Table 4.3. Annual Wage Earnings Regressions, Goods and Services Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.372 (283.22)	-0.371 (280.70)	-0.371 (280.78)
Hispanic	-0.276 (206.10)	-0.276 (205.86)	-0.276 (206.03)
Asian/Pacific Islander	-0.283 (161.09)	-0.283 (160.78)	-0.283 (160.82)
Native American	-0.363 (76.05)	-0.363 (75.94)	-0.363 (76.04)
Two or more races	-0.323 (108.55)	-0.322 (108.36)	-0.323 (108.54)
Nonminority Female	-0.369 (457.00)	-0.369 (456.03)	-0.369 (457.00)
Age	0.214 (870.58)	0.214 (870.58)	0.214 (870.59)
Age ²	-0.002 (747.35)	-0.002 (747.36)	-0.002 (747.37)
MSCAAMA	0.064 (8.63)	0.110 (8.85)	0.097 (10.68)
MSCAAMA*African American		-0.090 (6.11)	-0.079 (6.22)
MSCAAMA*Hispanic		-0.002 (0.06)	n/a
MSCAAMA*Asian/Pacific Islander		-0.082 (2.01)	-0.071 (1.75)
MSCAAMA*Native American		-0.101 (0.76)	n/a
MSCAAMA*Two or more races		-0.020 (0.31)	n/a
MSCAAMA*Nonminority female		-0.026 (1.61)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	4954564	4954564	4954564
Adj. R ²	.3844	.3845	.3845

Source and Notes: See Table 4.1.

c. Conclusions

Tables 4.1 through 4.3 demonstrate that minorities and women earn substantially and significantly less from their labor than do their similarly situated nonminority male counterparts—in the MSCAA Market Area just as in the nation as a whole. Such disparities are consistent with the presence of discrimination in the labor force that, in addition to its direct effect on workers, reduces the future availability of M/W/DBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are most likely to lead to acquiring the skills, experience and contacts necessary to take advantage of entrepreneurial opportunities. They also demonstrate that discrimination results in less opportunity for minorities and women to accumulate and save business start-up capital through their work as employees. These disparities reflect more than mere “societal discrimination” because they demonstrate the nexus between discrimination in the job market and reduced entrepreneurial opportunities for minorities and women. Other things equal, these reduced entrepreneurial opportunities in turn lead to lower M/W/DBE availability levels than would be observed in a race- and gender-neutral market area.

4. Findings: Race and Gender Disparities in Business Owner Earnings

The patterns of discrimination that affect minority and female wage earners affect minority and female entrepreneurs as well. We turn next to the analysis of race and gender disparities in business owner earnings. Table 4.4 focuses on the economy as a whole, Table 4.5 on the construction sector, and Table 4.6 on the goods and services sector. The numbers shown in each table indicate the percentage difference in that sector between the average annual self-employment earnings of a given race/gender group and comparable nonminority males.

a. Specification 1 - the Basic Model⁷⁹

Specification 1 in Table 4.4 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, and nonminority women, consistent with the presence of discrimination in these markets. The measured difference for African Americans is 38.1 percent lower than for comparable nonminority males; for Hispanics, 21.7 percent lower; for Asians, 11.8 percent lower; for Native Americans, 35.8 percent lower; for persons reporting two or more races, 33.5 percent lower; and for nonminority women, 39.0 percent lower.

Turning to the construction sector, Specification 1 in Table 4.5 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, and nonminority women, consistent with the presence of discrimination in these markets. The measured difference for African Americans is 36.9 percent lower than for comparable nonminority males; for Hispanics, 17.1 percent lower; for Asians/Pacific Islanders, 17.9 percent lower; for Native Americans, 26.1 percent lower; for persons reporting two or more races, 25.1 percent lower; and for nonminority women, 43.9 percent lower.

⁷⁹ See above, section B.3.a., for a detailed description of Specification 1.

For the Goods and Services sector, Specification 1 in Table 4.6 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, and nonminority women consistent with the presence of discrimination in these markets. The measured difference for African Americans is 42.7 percent lower than for comparable nonminority males; for Hispanics, 29.8 percent lower; for Asians/Pacific Islanders, 14.4 percent lower; for Native Americans, 42.1 percent lower; for persons reporting two or more races, 39.3 percent lower; and for nonminority women, 42.9 percent lower.

b. Specifications 2 and 3 - the Full Model Including MSCAAMA-Specific Interaction Terms⁸⁰

Next, we turn to Specifications 2 and 3 in Tables 4.4 through 4.6. Specification 2 is the basic regression model enhanced by a set of interaction terms to test whether minorities and women in the MSCAAMA differ significantly from those elsewhere in the U.S. economy. Specification 3 drops any MSCAAMA interaction terms that are not statistically significant.

For the economy as a whole in 2007-2011, Table 4.4 shows that none of the MSCAAMA interaction terms is statistically significant, indicating that disparities are, on average, no better or worse in the MSCAAMA than what is observed for the nation as a whole.

For the construction sector, Table 4.5 shows that none of the MSCAAMA interaction terms is statistically significant, indicating that disparities are, on average, no better or worse in the MSCAAMA than what is observed for the nation as a whole.

For the goods and services sector, Table 4.6 shows that none of the MSCAAMA interaction terms is statistically significant, indicating that disparities are, on average, no better or worse in the MSCAAMA than what is observed for the nation as a whole.

⁸⁰ See above, section B.3.b., for a detailed description of Specifications 2 and 3.

Table 4.4. Annual Business Owner Earnings Regressions, All Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.381 (46.14)	-0.381 (45.77)	-0.381 (46.14)
Hispanic	-0.217 (29.55)	-0.217 (29.51)	-0.217 (29.55)
Asian/Pacific Islander	-0.118 (11.22)	-0.118 (11.18)	-0.118 (11.22)
Native American	-0.358 (15.03)	-0.358 (15.00)	-0.358 (15.03)
Two or more races	-0.335 (22.61)	-0.335 (22.57)	-0.335 (22.61)
Nonminority Female	-0.390 (88.92)	-0.390 (88.71)	-0.390 (88.92)
Age	0.166 (117.67)	0.166 (117.67)	0.166 (117.67)
Age ²	-0.002 (103.50)	-0.002 (103.50)	-0.002 (103.50)
MSCAAMA	0.110 (2.74)	0.166 (3.01)	0.110 (2.74)
MSCAAMA*African American		-0.063 (0.74)	n/a
MSCAAMA*Hispanic		-0.040 (0.22)	n/a
MSCAAMA*Asian/Pacific Islander		-0.147 (0.64)	n/a
MSCAAMA*Native American		-0.146 (0.24)	n/a
MSCAAMA*Two or more races		-0.040 (0.11)	n/a
MSCAAMA*Nonminority female		-0.119 (1.54)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	579330	579330	579330
Adj. R ²	.1495	.1495	.1495

Source: NERA calculations from the 2007-2011 ACS Public Use Microdata Sample.

Notes: (1) See above, section B.4.(a)-(b) for a description of specifications 1 through 3; (2) Universe is all persons in the private sector with positive business earnings between the ages of 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number is the percentage difference in annual business earnings between a given group and nonminority men; (4) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (5) Geography is defined based on place of residence; (6) "MSCAAMA" is shorthand for "Memphis-Shelby County Airport Authority Market Area," which includes the Memphis, TN-MS-AR Metropolitan Statistical Area; (7) "n/a" in Specification 3 means that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section B.4.b.

Table 4.5. Business Owner Earnings Regressions, Construction and Related Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.369 (18.14)	-0.367 (17.82)	-0.369 (18.14)
Hispanic	-0.171 (11.71)	-0.171 (11.66)	-0.171 (11.71)
Asian/Pacific Islander	-0.179 (5.50)	-0.179 (5.50)	-0.179 (5.50)
Native American	-0.261 (5.14)	-0.257 (5.05)	-0.261 (5.14)
Two or more races	-0.251 (7.15)	-0.248 (7.04)	-0.251 (7.15)
Nonminority female	-0.439 (28.65)	-0.439 (28.63)	-0.439 (28.65)
Age	0.131 (40.86)	0.131 (40.87)	0.131 (40.86)
Age ²	-0.001 (37.37)	-0.001 (37.38)	-0.001 (37.37)
MSCAAMA	0.219 (2.61)	0.289 (2.87)	0.219 (2.61)
MSCAAMA*African American		-0.166 (1.02)	n/a
MSCAAMA*Hispanic		-0.151 (0.64)	n/a
MSCAAMA*Asian/Pacific Islander		0.361 (0.22)	n/a
MSCAAMA*Native American		-0.587 (1.08)	n/a
MSCAAMA*Two or more races		-0.584 (1.38)	n/a
MSCAAMA*Nonminority Female		0.219 (0.50)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	74811	74811	74811
Adj. R ²	.0509	.0508	.0509

Source and Notes: See Table 4.4.

Table 4.6. Business Owner Earnings Regressions, Goods and Services Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.427 (48.15)	-0.427 (47.90)	-0.427 (48.15)
Hispanic	-0.298 (36.97)	-0.298 (36.92)	-0.298 (36.97)
Asian/Pacific Islander	-0.144 (12.98)	-0.144 (12.94)	-0.144 (12.98)
Native American	-0.421 (15.79)	-0.421 (15.80)	-0.421 (15.79)
Two or more races	-0.393 (24.17)	-0.393 (24.16)	-0.393 (24.17)
Nonminority female	-0.429 (101.06)	-0.429 (100.84)	-0.429 (101.06)
Age	0.185 (114.55)	0.185 (114.55)	0.185 (114.55)
Age ²	-0.002 (99.40)	-0.002 (99.39)	-0.002 (99.4)
MSCAAMA	0.072 (1.56)	0.095 (1.45)	0.072 (1.56)
MSCAAMA*African American		0.036 (0.34)	n/a
MSCAAMA*Hispanic		-0.127 (0.53)	n/a
MSCAAMA*Asian/Pacific Islander		-0.180 (0.74)	n/a
MSCAAMA*Native American		0.669 (0.53)	n/a
MSCAAMA*Two or more races		0.187 (0.37)	n/a
MSCAAMA*Nonminority Female		-0.074 (0.83)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	482127	482127	482127
Adj. R ²	.1090	.1090	.1090

Source and Notes: See Table 4.4.

c. Conclusions

As was the case for wage and salary earners, minority and female entrepreneurs earn substantially and significantly less from their efforts than similarly situated nonminority male entrepreneurs. The situation, in general, differs little in the MSCAA Market Area from what is observed for the nation as a whole. These disparities are consistent with the presence of discrimination in commercial markets that adversely affects M/W/DBEs. Other things equal, if minorities and women are prevented by discrimination from earning remuneration from their entrepreneurial efforts comparable to that of similarly situated nonminority males, then capital reinvestment and growth rates may slow, business failure rates may increase and, as demonstrated in the next section, business formation rates may decrease. Combined, these phenomena result in lower M/W/DBE availability levels than would be observed in a race- and gender-neutral market area, since discrimination depresses business owner earnings for women and minority entrepreneurs. Business owner earnings, however, are often directly related to whether an owner has the capital to reinvest (firm size), how long a firm survives (firm age), and how much money a firm takes in (individual firm revenues). These observations illustrate why employment size, years in business, and individual firm revenues are especially inappropriate factors to consider when attempting to determine if discrimination has diminished opportunities for M/W/DBEs.

C. Race and Gender Disparities in Business Formation

As discussed in the two previous sections, discrimination that affects the wages and entrepreneurial earnings of minorities and women will ultimately affect the number of businesses formed by these groups as well. In this section of this chapter, we turn to the analysis of race and gender disparities in business formation.⁸¹ We compare self-employment rates by race and gender to determine whether minorities or women are as likely to enter the ranks of entrepreneurs as are similarly situated nonminority males. We find that in most cases they are not as likely to do so, and that minority and female business formation rates in most cases would likely be substantially and significantly higher if markets operated in a race- and gender-neutral manner.

Discrimination in the labor market, symptoms of which are evidenced in Section B.3 above, might cause wage and salary workers to turn to self-employment in hopes of encountering less discrimination from customers and suppliers than from employers and co-workers. Other things equal, and assuming minority and female workers did not believe that discrimination pervaded commercial markets as well, this would lead minority and female business formation rates to be higher than would otherwise be expected.

On the other hand, discrimination in the labor market prevents minorities and women from acquiring the very skills, experience, and positions that are often observed among those who leave the ranks of the wage and salary earners to start their own businesses. Many construction contracting concerns have been formed by individuals who were once employed as foremen for other contractors, fewer by those who were employed instead as laborers. Similarly,

⁸¹ We use the phrases “business formation rates” and “self-employment rates” interchangeably in this Study.

discrimination in commercial capital and credit markets, as well as asset and wealth distribution, prevents minorities and women from acquiring the financial credit and capital that are so often prerequisites to starting or expanding a business. Other things being equal, these phenomena would lead minority and female business formation rates to be lower than otherwise would be expected.

Further, discrimination by commercial customers and suppliers against M/W/DBEs, symptoms of which are evidenced in Section B.4 above and elsewhere, operates to increase input prices and lower output prices for M/W/DBEs. This discrimination leads to higher rates of failure for some minority- and women-owned firms, lower rates of profitability and growth for others, and prevents some minorities and women from ever starting businesses at all.⁸² All of these phenomena, other things equal, would contribute directly to relatively lower observed rates of minority and female self-employment.

1. Methods and Data

To see if minorities or nonminority women are as likely to be business owners as are comparable nonminority males, we use a statistical technique known as Probit regression. Probit regression is used to determine the relationship between a categorical variable—one that can be characterized in terms of a “yes” or a “no” response as opposed to a continuous number—and a set of characteristics that are related to the outcome of the categorical variable. Probit regression produces estimates of the extent to which each characteristic is positively or negatively related to the likelihood that the categorical variable will be a yes or no. For example, Probit regression is used by statisticians to estimate the likelihood that an individual participates in the labor force, retires this year, or contracts a particular disease—these are all variables that can be categorized by a response of “yes” (for example, she is in the labor force) or “no” (for example, she is not in the labor force)—and the extent to which certain factors are positively or negatively related to the likelihood (for example, the more education she has, the more likely that she is in the labor force). Probit regression is one of several techniques that can be used to examine qualitative outcomes. Generally, other techniques such as Logit regression yield similar results.⁸³ In the present case, Probit regression is used to examine the relationship between the choice to own a business (yes or no) and the other demographic and socioeconomic characteristics in our basic model. The underlying data for this section is once again the 2007-2011 ACS PUMS.

2. Findings: Race and Gender Disparities in Business Formation

As a point of reference for what follows, Tables 4.7 and 4.8 provide a summary of business ownership rates in 2007-2011 by race and gender. A striking feature of both tables is how much higher, in general, business ownership rates are for nonminority males than for other groups. Table 4.7, for example, shows a 9.02 percentage point difference between the overall self-employment rate of African Americans and nonminority males in the MSCAAMA (14.14 – 5.12 = 9.02). As shown in the rightmost column, this 9.02 percentage point gap translates into an

⁸² See also the materials cited at fn. 67 *supra*.

⁸³ For a detailed discussion, see G.S. Maddala (1983). Probit analysis is performed here using the “dprobit” command in the statistical program STATA.

African American business formation rate in the MSCAAMA that is 63.8 percent lower than the nonminority male business formation rate (*i.e.*, $5.12 - 14.14 \div 14.14 \approx -63.8\%$). For Hispanics, the business formation rate is 47.1 percent lower. For Asians/Pacific Islanders, it is 15.3 percent lower. For Native Americans, it is 4.0 percent lower. For persons reporting multiple races, it is 62.8 percent lower. For minorities as a group, it is 59.8 percent lower. For nonminority women, it is 44.8 percent lower; and for M/W/DBEs overall, it is 55.0 percent lower.

Table 4.8 provides similar information for the construction sector and the goods and services sector. Large deficits are observed in construction for all groups. With the sole exception of Asians/Pacific Islanders, large deficits are observed in the goods and services sector as well.

There is no doubt that a portion of the group differences documented in Tables 4.7 and 4.8 are associated with differences in the distribution of individual productivity characteristics and preferences between minorities, women, and nonminority males. It is well known, for example, that earnings tend to increase with age (*i.e.*, labor market experience). It is also true that the propensity toward self-employment increases with labor market experience.⁸⁴ Since most minority populations in the United States have a lower median age than the nonminority population, it is important to test whether the disparities in business ownership evidenced in Tables 4.7 and 4.8 can be explained by differences in the age distribution or in other factors such as education, geographic location, or the industry preferences of minorities and nonminority women compared to nonminority males.

To do this, the remainder of this section presents a series of regression analyses that test whether large, adverse, and statistically significant race and gender disparities for minorities and women remain when these other factors are held constant. Table 4.9 focuses on the economy as a whole and Tables 4.10 and 4.11 focus on the construction sector and the goods and services sector, respectively. The numbers shown in each of these tables indicate the percentage point difference between the probability of self-employment for a given race/gender group compared to similarly situated nonminority males.

⁸⁴ Wainwright (2000), p. 86.

Table 4.7. Self-Employment Rates in 2007-2011 for Selected Race and Gender Groups: United States and the MSCAA Market Area, All Industries

Race/Gender	U.S. (%)	MSCAA Market Area (%)	Percent Difference from Nonminority Male in Column (2)
	(1)	(2)	(3)
African American	5.85	5.12	-63.8
Hispanic	8.79	7.48	-47.1
Asian/Pacific Islander	11.02	11.97	-15.3
Native American	9.08	13.58	-4.0
Two or more races	9.50	5.26	-62.8
Minority	8.24	5.68	-59.8
Nonminority female	8.96	7.81	-44.8
M/W/DBE	8.58	6.37	-55.0
Nonminority male	14.69	14.14	

Source: NERA calculations from the 2007-2011 ACS Public Use Microdata Sample.

Table 4.8. Self-Employment Rates in 2007-2011 for Selected Race and Gender Groups: United States and the MSCAA Market Area, Construction Sector and Goods and Services Sector

Race/Gender	U.S. (%)	MSCAA Market Area (%)	Percent Difference from Nonminority Male in Column (2)
	(1)	(2)	(3)
<i>Construction Sector</i>			
African American	18.38	27.10	-16.9
Hispanic	15.91	11.75	-64.0
Asian/Pacific Islander	19.21	29.91	-8.3
Native American	18.36	36.54	12.1
Two or more races	21.69	14.81	-54.6
Minority	16.83	19.93	-38.9
Nonminority female	16.11	12.69	-61.1
M/W/DBE	16.68	18.73	-42.5
Nonminority male	27.46	32.60	
<i>Goods and Services Sector</i>			
African American	5.23	4.27	-61.9
Hispanic	7.69	5.93	-47.1
Asian/Pacific Islander	10.68	11.81	5.3
Native American	7.88	9.59	-14.5
Two or more races	8.45	4.31	-61.6
Minority	7.40	4.75	-57.7
Nonminority female	8.76	7.69	-31.5
M/W/DBE	8.07	5.72	-49.0
Nonminority male	12.36	11.22	

Source: NERA calculations from the 2007-2011 ACS Public Use Microdata Sample.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

a. Specification 1 - the Basic Model⁸⁵

Specification 1 in Table 4.9 shows large, adverse, and statistically significant business formation disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, and nonminority women consistent with the presence of discrimination in these markets. Specification 1 in Tables 4.10 and 4.11 shows large, negative, and statistically significant business formation disparities for each of these groups in the construction sectors as well as in the goods and services sector.

⁸⁵ See above, section C.2.a., for a detailed description of Specification 1.

b. Specifications 2 and 3 - the Full Model Including MSCAAMA-Specific Interaction Terms⁸⁶

Several of the MSCAAMA interaction terms included in Specification 2 were significant. The final results are shown in Specification 3 for Tables 4.9 through 4.11.

To summarize for the economy-wide results (Table 4.9):

- For African Americans, business formation rates are 5.0 percentage points lower than what would be expected in a race- and gender-neutral market area.⁸⁷
- For Hispanics, business formation rates are 3.4 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Asians/Pacific Islanders, business formation rates are 1.6 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Native Americans, business formation rates are 2.9 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For persons reporting multiple races, business formation rates are 1.6 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For nonminority women, business formation rates are 2.7 percentage points lower than what would be expected in a race- and gender-neutral market area.

To summarize for the Construction sector results (Table 4.10):

- For African Americans, business formation rates are 8.8 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Hispanics, business formation rates are 7.4 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Asians/Pacific Islanders, business formation rates are 5.2 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Native Americans, business formation rates are 9.1 percentage points lower than what would be expected in a race- and gender-neutral market area.

⁸⁶ See above, section C.2.b., for a detailed description of Specifications 2 and 3.

⁸⁷ Recall that the net business formation rate is equal to the value direct coefficient (on the African American indicator variable in this case) plus the value of the statistically significant coefficient on the MSCAAMA*African American interaction term.

- For persons reporting multiple races, business formation rates are 2.8 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For nonminority women, business formation rates are 20.0 percentage points lower than what would be expected in a race- and gender-neutral market area.

To summarize for the Goods and Services sector results (Table 4.11):

- For African Americans, business formation rates are 5.3 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Hispanics, business formation rates are 3.3 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Asians/Pacific Islanders, business formation rates are 1.2 percentage points higher than what would be expected in a race- and gender-neutral market area.
- For Native Americans, business formation rates are 3.1 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For persons reporting multiple races, business formation rates are 1.9 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For nonminority women, business formation rates are 2.8 percentage points lower than what would be expected in a race- and gender-neutral market area.

Table 4.9. Business Formation Regressions, All Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.041 (114.35)	-0.041 (113.32)	-0.041 (113.34)
Hispanic	-0.034 (104.75)	-0.034 (104.65)	-0.034 (104.73)
Asian/Pacific Islander	-0.016 (34.96)	-0.016 (34.98)	-0.016 (34.95)
Native American	-0.029 (24.91)	-0.029 (24.92)	-0.029 (24.91)
Two or more races	-0.016 (20.38)	-0.016 (20.27)	-0.016 (20.37)
Nonminority Female	-0.027 (108.68)	-0.027 (108.42)	-0.027 (108.68)
Age	0.010 (163.38)	0.010 (163.38)	0.010 (163.39)
Age ²	-0.000 (110.77)	-0.000 (110.77)	-0.000 (110.77)
MSCAAMA	-0.006 (3.53)	-0.002 (0.97)	-0.004 (2.12)
MSCAAMA*African American		-0.010 (2.68)	-0.009 (2.42)
MSCAAMA*Hispanic		0.000 (0.02)	n/a
MSCAAMA*Asian/Pacific Islander		0.019 (1.76)	n/a
MSCAAMA*Native American		0.033 (0.87)	n/a
MSCAAMA*Two or more races		-0.024 (1.51)	n/a
MSCAAMA*Nonminority Female		-0.006 (1.67)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	5813772	5813772	5813772
Pseudo R ²	.2146	.2146	.2146

Source: NERA calculations from the 2007-2011 ACS Public Use Microdata Sample.

Notes: (1) See above, section C.2.(a)-(b) for a description of specifications 1 through 3; (2) Universe is all private sector labor force participants between the ages of 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number represents the percentage point probability difference in business ownership rates between a given group and nonminority men, evaluated at the mean business ownership rate for the estimation sample; (4) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (5) Geography is defined based on place of residence; (6) “MSCAAMA” is shorthand for “Memphis-Shelby County Airport Authority Market Area,” which includes the Memphis, TN-MS-AR Metropolitan Statistical Area; (7) “n/a” in Specification 3 indicates that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section C.2.b.

Table 4.10. Business Formation Regressions, Construction and Related Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.088 (32.63)	-0.089 (32.62)	-0.088 (32.66)
Hispanic	-0.074 (40.33)	-0.074 (40.23)	-0.074 (40.32)
Asian/Pacific Islander	-0.052 (12.57)	-0.052 (12.57)	-0.052 (12.56)
Native American	-0.091 (14.37)	-0.091 (14.40)	-0.091 (14.36)
Two or more races	-0.028 (5.41)	-0.027 (5.32)	-0.028 (5.41)
Nonminority Female	-0.097 (50.55)	-0.096 (50.29)	-0.096 (50.29)
Age	0.022 (60.24)	0.022 (60.23)	0.022 (60.23)
Age ²	-0.000 (39.80)	-0.000 (39.79)	-0.000 (39.79)
MSCAAMA	0.036 (3.29)	0.043 (3.23)	0.045 (4.01)
MSCAAMA*African American		0.042 (1.58)	n/a
MSCAAMA*Hispanic		-0.041 (1.36)	n/a
MSCAAMA*Asian/Pacific Islander		0.139 (0.76)	n/a
MSCAAMA*Native American		0.291 (1.38)	n/a
MSCAAMA*Two or more races		-0.104 (1.37)	n/a
MSCAAMA*Nonminority female		-0.102 (3.12)	-0.104 (3.23)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	540977	540977	540977
Pseudo R ²	.0760	.0760	.0760

Source and Notes: See Table 4.9.

Table 4.11. Business Formation Regressions, Goods and Services Industries, 2007-2011

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.053 (124.63)	-0.053 (123.72)	-0.053 (124.61)
Hispanic	-0.033 (80.27)	-0.033 (80.25)	-0.033 (80.28)
Asian/Pacific Islander	-0.023 (44.41)	-0.023 (44.48)	-0.023 (44.49)
Native American	-0.031 (20.87)	-0.031 (20.84)	-0.031 (20.87)
Two or more races	-0.019 (20.04)	-0.019 (19.96)	-0.019 (20.04)
Nonminority Female	-0.028 (102.78)	-0.028 (102.62)	-0.028 (102.78)
Age	0.010 (137.24)	0.010 (137.23)	0.010 (137.23)
Age ²	-0.000 (91.23)	-0.000 (91.23)	-0.000 (91.23)
MSCAAMA	-0.003 (1.44)	-0.004 (1.13)	-0.004 (1.81)
MSCAAMA*African American		-0.003 (0.69)	n/a
MSCAAMA*Hispanic		0.010 (0.81)	n/a
MSCAAMA*Asian/Pacific Islander		0.034 (2.61)	0.035 (2.70)
MSCAAMA*Native American		-0.008 (0.18)	n/a
MSCAAMA*Two or more races		-0.024 (1.19)	n/a
MSCAAMA*Nonminority female		0.002 (0.35)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	5416849	5416849	5416849
Pseudo R ²	.0649	.0649	.0649

Source and Notes: See Table 4.9.

c. Conclusions

This section has demonstrated that, for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, minorities as a group, nonminority women, and minorities and women as a group, observed business formation rates in the construction sector of the MSCAA Market Area are substantially and statistically significantly lower than those that would be expected to be observed if commercial markets operated in a race- and gender-neutral manner. With the sole exception of Asians/Pacific Islanders, the same is true in the goods and services sector and in the economy as a whole. Minorities and women generally are substantially and significantly less likely to own their own businesses than would be expected based upon their observable characteristics including age, education, geographic location, industry, and trends over time. Moreover, as demonstrated in previous sections, these groups also suffer substantial and significant earnings disadvantages relative to comparable nonminority males whether they work as employees or as entrepreneurs. These findings are consistent with results that would be observed in a discriminatory market area.

D. Expected Business Formation Rates—Implications for Current M/W/DBE Availability⁸⁸

In Table 4.12, the Probit regression results for the MSCAA market area from Tables 4.9, 4.10 and 4.11 for the overall economy, the construction sector, and the goods and services sector, respectively, are combined with weighted average self-employment rates by race and gender from the 2007-2011 ACS PUMS (Tables 4.7 and 4.8) to determine the disparity between baseline availability and expected availability in a race- and gender-neutral market area. These figures appear in column (3) of each panel in Table 4.12.

The business formation rate in the MSCAAMA for African Americans in the construction sector is 27.10 percent (see middle panel of Table 4.12, top row). According to the regression specification underlying Table 4.10, however, that rate would be 35.90 percent, or 32.5 percent higher, in a race- and gender-neutral market area. Put differently, the disparity ratio of the actual business formation rate to the expected business formation rate for African Americans is 75.49. Disparity indices are adverse and statistically significant in construction for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, minorities as a group, nonminority women, and minorities and women combined.

In construction, the largest disparities observed are for nonminority women (38.82), followed in descending order by Hispanics (61.36), minorities and women combined (68.53), minorities as a group (72.39), African Americans (75.49), Native Americans (80.06), persons reporting multiple races (84.10), and Asians/Pacific Islanders (85.19).

Given the large disparities observed in the construction sector for most presumptive groups, goal-setters might consider adjusting baseline estimates of M/W/DBE availability upward to partly account for the continuing effects of discrimination. The business formation rate disparities documented for the construction sector in Table 4.12 can be combined with the

⁸⁸ This exercise also addresses the requirements of 49 C.F.R. 26.45 (“Step 2”) for the USDOT DBE Program.

estimates of current M/W/DBE availability documented in Table 3.17 and elsewhere to provide estimates of expected availability. These estimates appear below in Table 6.15. Expected M/W/DBE availability exceeds actual current M/W/DBE availability in five of the seven cases observed.

Table 4.12. Actual and Potential Business Formation Rates in the MSCAA Market Area

Race/Gender	Business Formation Rate (%)	Expected Business Formation Rate (%)	Disparity Ratio
<i>All Industries</i>	(1)	(2)	(3)
African American	5.12	10.12	50.59
Hispanic	7.48	10.88	68.75
Asian/Pacific Islander	11.97	13.57	88.21
Native American	13.58	16.48	82.40
Two or more races	5.26	6.86	76.68
Minority	5.68	10.78	52.69
Nonminority female	7.81	10.51	74.31
M/W/DBE	6.37	11.07	57.54
<i>Construction Sector</i>	(1)	(2)	(3)
African American	27.10	35.90	75.49
Hispanic	11.75	19.15	61.36
Asian/Pacific Islander	29.91	35.11	85.19
Native American	36.54	45.64	80.06
Two or more races	14.81	17.61	84.10
Minority	19.93	27.53	72.39
Nonminority female	12.69	32.69	38.82
M/W/DBE	18.73	27.33	68.53
<i>Goods and Services Sector</i>	(1)	(2)	(3)
African American	4.27	9.57	44.62
Hispanic	5.93	9.23	64.25
Asian/Pacific Islander	11.81	10.61	111.31
Native American	9.59	12.69	75.57
Two or more races	4.31	6.21	69.40
Minority	4.75	9.25	51.35
Nonminority female	7.69	10.49	73.31
M/W/DBE	5.72	9.52	60.08

Source: 2007-2011 ACS Public Use Microdata Sample. See Tables 4.7 through 4.11.

Notes: (A) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (B) Figures in column (1) are average self-employment rates weighted using ACS population-based person weights, as also shown in Tables 4.7 and 4.8. (C) Figures in column (2), top, middle, and bottom panels, are derived by combining the figure in column (1) with the corresponding result from the regression reported in Table 4.9, 4.10 or 4.11, respectively. Minority and M/W/DBE figures were derived from similar regression analyses, not reported separately. (D) Column (3) is the figure in column (1) divided by the figure in column (2), with the result multiplied by 100. (E) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

E. Evidence from the Survey of Business Owners

As a final check on the statistical findings in this chapter, we present evidence from a Census Bureau data collection effort dedicated to M/W/DBEs. The Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO), formerly known as the *Survey of Minority- and Women-Owned Business Enterprises* (SMWOBE), collects and disseminates data on the number, sales, employment, and payrolls of businesses owned by women and members of racial and ethnic minority groups. This survey has been conducted every five years since 1972 as part of the *Economic Census* program. Data from the 2007 SBO, the most recent, were released in 2011.

The SBO estimates are created by matching data collected from income tax returns by the Internal Revenue Service with Social Security Administration data on race and ethnicity, and supplementing this information using statistical sampling methods. The unique field for conducting this matching is the Social Security Number (SSN) or the Employer Identification Number (EIN), as reported on the tax return.⁸⁹

The SBO covers women and five groups of minorities: (1) African Americans, (2) Hispanics, (3) Asians, (4) Native Hawaiians and Pacific Islanders, and (5) American Indians and Alaskan Natives. The 2007 SBO also includes comparative information for nonminority male-owned firms.⁹⁰

The SBO provides aggregate estimates of the number of minority-owned and women-owned firms and their annual sales and receipts. The SBO distinguishes employer firms (*i.e.*, firms with one or more paid employees) from nonemployer firms, and for the former also includes estimates of aggregate annual employment and payroll.

Compared to the ACS PUMS, the SBO is more limited in the scope of industrial and geographic detail it provides. Nonetheless, it contains a wealth of information on the character of minority and female business enterprise in the U.S as a whole as well as in the State of Tennessee.⁹¹ In the remainder of this section, we present SBO statistics for the United States as a whole and in Tennessee and calculate disparity indices from them. We find that results in the SBO regarding disparities are consistent with our findings above using the ACS PUMS.

Tables 4.13 and 4.14 contain data for all industries combined. Table 4.13 is for the U.S. as a whole, Table 4.14 is for the State of Tennessee. Panel A in these two tables summarizes the SBO results for each race and/or gender grouping. For example, Panel A of Table 4.13 shows a total of 26.29 million firms in the U.S. in 2007 (column 1) with overall sales and receipts of \$10.949

⁸⁹ Prior to 2002, "C" corporations were not included in the SMWOBE universe due to technical difficulties. This has been rectified in the 2002 SBO. For more information, consult the discussion of SBO survey methodology at <http://www.census.gov/econ/sbo/>.

⁹⁰ In the ACS PUMS data, discussed above, the unit of analysis is the business owner, or self-employed person. In the SBO data the unit of analysis is the business rather than the business owner. Furthermore, unlike most other business statistics, including the other components of the *Economic Census*, the unit of analysis in the SBO is the firm, rather than the establishment.

⁹¹ It is, in general, not possible with the SBO dataset to examine geographic divisions below the state level.

trillion (column 2). Of these 26.29 million firms, 5.19 million had one or more employees (column 3) and these 5.19 million firms had overall sales and receipts of \$10.015 trillion (column 4). Column (5) shows a total of 56.63 million employees on the payroll of these 5.19 million firms and a total annual payroll expense of \$1.941 trillion (column 6).

The remaining rows in Panel A provide comparable statistics for nonminority male-owned, women-owned, and minority-owned firms. For example, Table 4.13 shows that there were 1.9 million African American-owned firms counted in the SBO, and that these 1.9 million firms registered \$135.7 billion in sales and receipts. It also shows that 106,566 of these African American-owned firms had one or more employees, and that they employed a total of 909,552 workers with an annual payroll total of \$23.33 billion.

Panel A of Table 4.14 provides comparable information for Tennessee. The SBO counted 531,219 firms in Tennessee, of which 268,300 were nonminority male-owned; 117,496 were female-owned; 45,726 were African American-owned; 8,700 were Hispanic-owned; 11,178 were Asian-owned; 2,708 were Native American-owned; and 415 were Native Hawaiian- or Pacific Islander-owned.

Panel B in each Table converts the figures in Panel A to percentage distributions within each column. For example, Column (1) in Panel B of Table 4.14 shows that nonminority male-owned firms were 50.51 percent of all firms in Tennessee, female-owned firms were 22.12 percent, and African American-owned firms were 8.61 percent. Additionally, 1.64 percent of firms were Hispanic-owned, 2.10 percent were Asian-owned, 0.51 percent were Native American-owned, and 0.08 percent were Native Hawaiian- or Pacific Islander-owned.

Column (2) in Panel B provides the same percentage distribution for overall sales and receipts. Table 4.14, for example, shows that although nonminority male-owned firms were 50.51 percent of all firms, they accounted for 76.15 percent of all sales and receipts. African American-owned firms, in contrast, were 8.61 percent of all firms in Tennessee, but they accounted for only 1.47 percent of all sales and receipts. Hispanic-owned firms were 1.64 percent of all firms, but they accounted for only 0.87 percent of all sales and receipts. Asian-owned firms were 2.10 percent of all firms, but they accounted for only 1.75 percent of all sales and receipts. Native American-owned firms were 0.51 percent of all firms, but they accounted for only 0.32 percent of all sales and receipts. Native Hawaiian- or Pacific Islander-owned firms were 0.08 percent of all firms, but they accounted for only 0.01 percent of all sales and receipts. Similarly, women accounted for 22.12 percent of all firms in Tennessee, but earned only 9.91 percent of sales and receipts.

Similar results are obtained when the survey results are restricted to firms with one or more paid employees. Column (3) in Table 4.14, for example, shows that although nonminority male-owned firms were 59.61 percent of all employer firms, they accounted for 77.89 percent of all employer firm sales and receipts. African American-owned firms, in contrast, were 2.36 percent of all employer firms, but they accounted for only 1.09 percent of all employer firm sales and receipts. Hispanic-owned firms were 1.28 percent of all employer firms, but they accounted for only 0.77 percent of all employer firm sales and receipts. Asian-owned firms were 4.10 percent of all employer firms, but they accounted for only 1.73 percent of all employer firm sales and receipts. Native American-owned firms were 0.34 percent of all employer firms and accounted

for 0.31 percent of all sales and receipts. There were no Native Hawaiian- or Pacific Islander-owned employer firms in Tennessee in 2007. Finally, women accounted for 14.31 percent of all employer firms in Tennessee, but earned only 9.55 percent of all employer firm sales and receipts.

Large disparities between the fraction of firms that are minority- or women-owned and their fraction of sales and receipts in Tennessee are observed for African Americans, Hispanics, Asians, Native Americans, Native Hawaiians and Pacific Islanders, and women, both for employer firms and nonemployer firms. The disparity indices are presented in Panel C of each table. Disparity indices of approximately 80 percent or less indicate disparate impact consistent with business discrimination (0 percent being complete disparity and 100 percent being full parity). In Tennessee (Table 4.14), the sales and receipts disparity indices (in columns 2 and 4) fall at or beneath the 80 percent threshold in 9 out of 11 cases. All of these disparity indices are statistically significant within a 95 percent confidence interval.

Table 4.13. Disparity Ratios from the 2007 Survey of Business Owners, United States, All Industries

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
All Firms	26,294,860	10,949,461,874	5,189,968	10,015,142,962	56,626,554	1,940,572,944
Nonminority Male	10,943,636	7,725,275,376	2,753,871	7,255,760,511	37,138,139	1,386,782,737
Female	7,792,115	1,196,608,004	909,661	1,014,366,348	7,520,121	214,673,400
African American	1,921,864	135,739,834	106,566	97,144,898	909,552	23,334,792
Hispanic	2,260,269	350,661,243	248,852	279,920,707	1,908,161	54,295,508
Asian	1,549,559	506,047,751	397,426	453,574,194	2,807,771	79,230,459
Native Hawaiian/Pac. Islander	37,687	6,319,357	4,151	5,250,301	37,801	1,217,138
Am. Indian & Alaska Native	236,691	34,353,842	23,662	27,494,075	185,037	5,930,247
Panel B. Column Percentages						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	41.62%	70.55%	53.06%	72.45%	65.58%	71.46%
Female	29.63%	10.93%	17.53%	10.13%	13.28%	11.06%
African American	7.31%	1.24%	2.05%	0.97%	1.61%	1.20%
Hispanic	8.60%	3.20%	4.79%	2.79%	3.37%	2.80%
Asian	5.89%	4.62%	7.66%	4.53%	4.96%	4.08%
Native Hawaiian/Pac. Islander	0.14%	0.06%	0.08%	0.05%	0.07%	0.06%
Am. Indian & Alaska Native	0.90%	0.31%	0.46%	0.27%	0.33%	0.31%
Panel C. Disparity Ratios						
	(2) vs. (1)			(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Nonminority Male	169.52			136.54	123.60	134.68
Female	36.88			57.79	75.77	63.12
African American	16.96			47.24	78.23	58.56
Hispanic	37.26			58.29	70.28	58.35
Asian	78.43			59.14	64.75	53.32
Native Hawaiian/Pac. Islander	40.27			65.54	83.46	78.42
Am. Indian & Alaska Native	34.86			60.21	71.67	67.03

Source: NERA calculations using 2007 SBO. Notes: (A) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (B) Excludes publicly-owned, foreign-owned, and not-for-profit firms. (C) "n/a" indicates that data were not disclosed due to confidentiality or other publication restrictions.

Table 4.14. Disparity Ratios from the 2007 Survey of Business Owners, State of Tennessee, All Industries

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
All Firms	531,219	203,885,325	85,940	184,019,741	1,090,125	34,724,309
Nonminority Male	268,300	155,254,926	51,228	143,333,502	793,046	27,296,196
Female	117,496	20,213,429	12,301	17,577,788	117,303	2,966,773
African American	45,726	2,995,787	2,029	2,012,677	16,409	410,149
Hispanic	8,700	1,775,137	1,097	1,409,699	12,074	279,981
Asian	11,178	3,575,270	3,527	3,186,361	26,402	545,295
Native Hawaiian/Pac. Islander	415	12,845	n/a	n/a	n/a	n/a
Am. Indian & Alaska Native	2,708	653,502	290	564,657	1,963	191,377
Panel B. Column Percentages						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	50.51%	76.15%	59.61%	77.89%	72.75%	78.61%
Female	22.12%	9.91%	14.31%	9.55%	10.76%	8.54%
African American	8.61%	1.47%	2.36%	1.09%	1.51%	1.18%
Hispanic	1.64%	0.87%	1.28%	0.77%	1.11%	0.81%
Asian	2.10%	1.75%	4.10%	1.73%	2.42%	1.57%
Native Hawaiian/Pac. Islander	0.08%	0.01%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.51%	0.32%	0.34%	0.31%	0.18%	0.55%
Panel C. Disparity Ratios						
		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Nonminority Male		150.77		130.67	122.04	131.87
Female		44.82		66.74	75.18	59.69
African American		17.07		46.33	63.76	50.03
Hispanic		53.16		60.01	86.77	63.17
Asian		83.34		42.19	59.01	38.26
Native Hawaiian/Pac. Islander		8.06		n/a	n/a	n/a
Am. Indian & Alaska Native		62.88		90.93	53.36	163.33

Source and Notes: See Table 4.13.

Table 4.15 shows comparable SBO data for the Construction and AE-CRS sector in the U.S. as a whole. Here, adverse disparities are evident for African Americans, Hispanics, Asians, Native Americans, Native Hawaiians and Pacific Islanders, and women.⁹² For example, although African Americans account for 4.10 percent of all firms in the Construction and AE-CRS sector, they earn only 1.15 percent of all sales and receipts in that sector. Hispanics account for 7.44 percent of firms but only 3.52 percent of sales and receipts. For Asians, the figures are 4.02 percent and 2.71 percent, respectively. For Native Americans, the figures are 0.87 percent and 0.49 percent, respectively. For Native Hawaiians and Pacific Islanders, the figures are 0.12 percent and 0.10 percent, respectively. Finally, women account for 19.31 percent of all Construction and AE-CRS firms but earned only 9.08 percent of all sales and receipts.

Among firms with paid employees, adverse disparities are observed for African Americans, Hispanics, Asians, Native Americans, and women. Overall, disparities in this category are slightly less acute than among firms as a whole. However, they remain far larger than the comparable figure for nonminority male-owned firms. This is evident in that the fraction of employer firms compared to the fraction of all firms is far higher among nonminority males than among other race and gender groups. In Table 4.15, for example, nonminority males represent 54.37 percent of all firms but 62.74 percent of employer firms. For all other groups, the direction of this ratio is reversed. That is, each group's fraction among employer firms is substantially smaller than its fraction among firms as a whole, whereas for nonminority males it is larger.

Table 4.16 shows comparable results for the Construction and AE-CRS sector in Tennessee. Among all firms in Construction and AE-CRS, large disparities are observed for African Americans, Hispanics, Native Americans, Native Hawaiians and Pacific Islanders, and women. Among firms with paid employees, large disparities are observed for African Americans, Native Americans, and women.⁹³ As in Table 4.15, nonminority males have a much higher ratio of employer firms to firms as a whole than do minorities or women.

⁹² The sole exception being Native Hawaiian and Pacific Islander-owned firms with paid employees.

⁹³ Results are not available for Hispanics, Asians, or Native Hawaiians and Pacific Islanders because data were not disclosed due to Census confidentiality or other publication restrictions.

Table 4.15. Disparity Ratios from the 2007 Survey of Business Owners, United States, Construction and AE-CRS

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
All Firms	7,069,005	2,247,219,546	1,473,633	1,968,365,597	10,803,954	515,161,851
Nonminority Male	3,843,180	1,649,355,770	924,548	1,483,625,570	7,664,496	381,436,430
Female	1,365,249	203,964,647	196,614	165,319,338	1,124,710	49,343,438
African American	289,579	25,787,994	22,521	18,937,276	135,685	5,647,555
Hispanic	526,190	79,164,324	63,055	58,649,224	390,113	15,224,090
Asian	284,427	61,003,128	48,732	51,923,279	303,058	17,195,039
Native Hawaiian/Pac. Islander	8,610	2,161,094	1,311	1,853,781	9,923	509,611
Am. Indian & Alaska Native	61,579	11,032,792	8,047	8,831,344	51,974	2,228,594
Panel B. Column Percentages						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	54.37%	73.40%	62.74%	75.37%	70.94%	74.04%
Female	19.31%	9.08%	13.34%	8.40%	10.41%	9.58%
African American	4.10%	1.15%	1.53%	0.96%	1.26%	1.10%
Hispanic	7.44%	3.52%	4.28%	2.98%	3.61%	2.96%
Asian	4.02%	2.71%	3.31%	2.64%	2.81%	3.34%
Native Hawaiian/Pac. Islander	0.12%	0.10%	0.09%	0.09%	0.09%	0.10%
Am. Indian & Alaska Native	0.87%	0.49%	0.55%	0.45%	0.48%	0.43%
Panel C. Disparity Ratios						
		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Nonminority Male		135.00		120.14	113.07	118.02
Female		47.00		62.95	78.02	71.79
African American		28.01		62.95	82.18	71.73
Hispanic		47.33		69.63	84.39	69.06
Asian		67.47		79.77	84.82	100.93
Native Hawaiian/Pac. Islander		78.96		105.86	103.24	111.19
Am. Indian & Alaska Native		56.36		82.16	88.10	79.22

Source and Notes: See Table 4.13.

Table 4.16. Disparity Ratios from the 2007 Survey of Business Owners, State of Tennessee, Construction and AE-CRS

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
All Firms	150,200	39,261,762	21,187	32,019,297	180,107	7,692,078
Nonminority Male	95,046	30,597,276	14,590	25,883,388	138,646	6,194,232
Female	22,868	3,176,065	2,558	2,575,960	17,036	662,380
African American	6,442	474,200	363	253,502	2,100	73,766
Hispanic	3,063	423,912	-	-	-	-
Asian	1,301	391,408	-	-	-	-
Native Hawaiian/Pac. Islander	82	2,552	-	-	-	-
Am. Indian & Alaska Native	1,278	140,504	98	108,290	577	26,938
Panel B. Column Percentages						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	63.28%	77.93%	68.86%	80.84%	76.98%	80.53%
Female	15.23%	8.09%	12.07%	8.05%	9.46%	8.61%
African American	4.29%	1.21%	1.71%	0.79%	1.17%	0.96%
Hispanic	2.04%	1.08%	0.00%	0.00%	0.00%	0.00%
Asian	0.87%	1.00%	0.00%	0.00%	0.00%	0.00%
Native Hawaiian/Pac. Islander	0.05%	0.01%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.85%	0.36%	0.46%	0.34%	0.32%	0.35%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Nonminority Male		123.15		117.39	111.79	116.94
Female		53.13		66.63	78.34	71.32
African American		28.16		46.21	68.05	55.97
Hispanic		52.95		n/a	n/a	n/a
Asian		115.09		n/a	n/a	n/a
Native Hawaiian/Pac. Islander		11.91		n/a	n/a	n/a
Am. Indian & Alaska Native		42.06		73.12	69.26	75.71

Source and Notes: See Table 4.13.

Table 4.17 shows comparable SBO data for the Goods and Services sector in the U.S. as a whole. Here, adverse disparities are evident for African Americans, Hispanics, Asians, Native Americans, Native Hawaiians and Pacific Islanders, and women. African Americans, for example, account for 8.49 percent of all firms in the Goods and Services sector, they earned only 1.26 percent of all sales and receipts in that sector. Hispanics account for 9.02 percent of firms but only 3.12 percent of sales and receipts. For Asians, the figures are 6.58 percent and 5.11 percent, respectively. For Native Americans, the figures are 0.91 percent and 0.27 percent, respectively. For Native Hawaiians and Pacific Islanders, the figures are 0.15 percent and 0.05 percent, respectively. Finally, women account for 33.43 percent of all Goods and Services firms but earned only 11.41 percent of all sales and receipts. Comparable, though slightly smaller, disparities are observed as well among firms with paid employees in the Goods and Services sector.

Finally, Table 4.18 shows comparable results for the Goods and Services sector in Tennessee. Among all firms in Goods and Services, adverse disparities are observed for African Americans, Hispanics, Asians, Native Americans, Native Hawaiians and Pacific Islanders, and women. Among firms with paid employees, adverse disparities are observed for African Americans, Hispanics, Asians, Native Americans, Native Hawaiians and Pacific Islanders, and women. As in Table 4.17, nonminority males have a much higher ratio of employer firms to firms as a whole than do minorities or women. In the Tennessee Goods and Services sector, the sales and receipts disparity indices fall at or beneath the 80 percent threshold in 12 out of 12 cases. All of these disparity indices are statistically significant within a 95 percent confidence interval.

Table 4.17. Disparity Ratios from the 2007 Survey of Business Owners, United States, Goods and Services

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
All Firms	19,225,855	8,702,242,328	3,716,335	8,046,777,365	45,822,600	1,425,411,093
Nonminority Male	7,100,456	6,075,919,606	1,829,323	5,772,134,941	29,473,643	1,005,346,307
Female	6,426,866	992,643,357	713,047	849,047,010	6,395,411	165,329,962
African American	1,632,285	109,951,840	84,045	78,207,622	773,867	17,687,237
Hispanic	1,734,079	271,496,919	185,797	221,271,483	1,518,048	39,071,418
Asian	1,265,132	445,044,623	348,694	401,650,915	2,504,713	62,035,420
Native Hawaiian/Pac. Islander	29,077	4,158,263	2,840	3,396,520	27,878	707,527
Am. Indian & Alaska Native	175,112	23,321,050	15,615	18,662,731	133,063	3,701,653
Panel B. Column Percentages						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	36.93%	69.82%	49.22%	71.73%	64.32%	70.53%
Female	33.43%	11.41%	19.19%	10.55%	13.96%	11.60%
African American	8.49%	1.26%	2.26%	0.97%	1.69%	1.24%
Hispanic	9.02%	3.12%	5.00%	2.75%	3.31%	2.74%
Asian	6.58%	5.11%	9.38%	4.99%	5.47%	4.35%
Native Hawaiian/Pac. Islander	0.15%	0.05%	0.08%	0.04%	0.06%	0.05%
Am. Indian & Alaska Native	0.91%	0.27%	0.42%	0.23%	0.29%	0.26%
Panel C. Disparity Ratios						
		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Nonminority Male		189.05		145.73	130.67	143.28
Female		34.12		54.99	72.74	60.45
African American		14.88		42.98	74.68	54.87
Hispanic		34.59		55.00	66.26	54.83
Asian		77.72		53.20	58.26	46.38
Native Hawaiian/Pac. Islander		31.59		55.23	79.61	64.95
Am. Indian & Alaska Native		29.42		55.20	69.11	61.81

Source and Notes: See Table 4.13.

Table 4.18. Disparity Ratios from the 2007 Survey of Business Owners, State of Tennessee, Goods and Services

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
All Firms	381,019	164,623,563	64,753	152,000,444	910,018	27,032,231
Nonminority Male	173,254	124,657,650	36,638	117,450,114	654,400	21,101,964
Female	94,628	17,037,364	9,743	15,001,828	100,267	2,304,393
African American	39,284	2,521,587	1,666	1,759,175	14,309	336,383
Hispanic	5,637	1,351,225	1,097	1,409,699	12,074	279,981
Asian	9,877	3,183,862	3,527	3,186,361	26,402	545,295
Native Hawaiian/Pac. Islander	333	10,293	-	-	-	-
Am. Indian & Alaska Native	1,430	512,998	192	456,367	1,386	164,439
Panel B. Column Percentages						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	45.47%	75.72%	56.58%	77.27%	71.91%	78.06%
Female	24.84%	10.35%	15.05%	9.87%	11.02%	8.52%
African American	10.31%	1.53%	2.57%	1.16%	1.57%	1.24%
Hispanic	1.48%	0.82%	1.69%	0.93%	1.33%	1.04%
Asian	2.59%	1.93%	5.45%	2.10%	2.90%	2.02%
Native Hawaiian/Pac. Islander	0.09%	0.01%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.38%	0.31%	0.30%	0.30%	0.15%	0.61%
Panel C. Disparity Ratios						
		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Nonminority Male		166.53		136.56	127.09	137.97
Female		41.67		65.59	73.23	56.66
African American		14.86		44.98	61.11	48.37
Hispanic		55.48		54.74	78.32	61.14
Asian		74.61		38.49	53.26	37.03
Native Hawaiian/Pac. Islander		7.15		n/a	n/a	n/a
Am. Indian & Alaska Native		83.03		101.26	51.37	205.15

Source and Notes: See Table 4.13.

V. Statistical Disparities in Capital Markets

A. Introduction

Discrimination occurs whenever the terms of a transaction are affected by personal characteristics of the participants that are not relevant to the transaction. Among such characteristics, the most commonly considered are race, ethnicity and gender. In labor markets, this might translate into equally productive workers in similar jobs being paid different salaries because of their race, ethnicity or gender. In credit markets, it might translate into loan approvals differing across racial or gender groups with otherwise similar financial backgrounds.

In this chapter, we examine whether there is evidence consistent with the presence of discrimination in the small business credit market against minority-owned or women-owned small businesses. Discrimination in the credit market against such businesses can have an important effect on the likelihood that they will succeed. Moreover, discrimination in the credit market might even prevent businesses from opening in the first place, might negatively impact the size a firm could obtain, and/or shorten its longevity in the market.⁹⁴

In our analysis, we use data from the Federal Reserve Board to examine the existence or otherwise of discrimination in the small business credit market for 1993, 1998 and 2003. These surveys are based on a large representative sample of firms with fewer than 500 employees and are administered by the Federal Reserve Board and the U.S. Small Business Administration. The 1993 and 1998 surveys deliberately oversampled minority-owned firms but the 2003 survey did not.⁹⁵

These data provide qualitative and quantitative evidence consistent with the presence of discrimination against minorities in the credit market for small businesses. For example, we find that African American-owned firms are much more likely to report being seriously concerned with credit market problems and report being less likely to apply for credit because they fear the loan would be denied. Moreover, after controlling for a large number of characteristics of the firms, we find that African American-owned firms, Hispanic-owned firms, and to a lesser extent other minority-owned firms, are substantially and statistically significantly more likely to be denied credit than are nonminority-owned firms. We find some evidence that women are discriminated against in this market as well. The principal results are as follows:

- Minority-owned firms were more likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied (see Tables 5.15, 5.22, 5.29).

⁹⁴ Again, as noted in Chapter IV, these factors also illustrate why, in a disparity study intended to answer the question of whether discrimination is present in business enterprise, adjusting availability for “capacity” factors such as firm age, firm size or firm revenues, is not a legitimate practice when there is evidence that suggests that these factors themselves are tainted by discrimination. To do so would be to inappropriately introduce one or more endogenous variables into the analysis.

⁹⁵ The 2003 survey took other steps, however, to increase the likelihood that minority-owned and women-owned firms were captured in the sampling frame. For more details, see National Opinion Research Center (2005), p. 11.

- When minority-owned firms applied for a loan, their loan requests were substantially more likely to be denied than non-minorities, even after accounting for differences like firm size and credit history (see Tables 5.8, 5.9, 5.18, 5.19, 5.25, 5.26).
- When minority-owned firms *did* receive a loan, they were obligated to pay higher interest rates on the loans than comparable nonminority-owned firms (see Tables 5.13, 5.14, 5.21, 5.27).
- A larger proportion of minority-owned firms than nonminority-owned firms report that credit market conditions are a serious concern (see Tables 5.3, 5.4, 5.5, 5.6, 5.7, 5.17, 5.24).
- A larger share of minority-owned firms than nonminority-owned firms believes that the availability of credit is the most important issue likely to confront them in the upcoming year (see Tables 5.5, 5.6).
- There is no evidence that discrimination in the market for credit is significantly different in the East and West South Central census divisions or in the construction and construction-related professional services industries than it is in the nation or the economy as a whole (various tables).
- There is no evidence that the level of discrimination in the market for credit has diminished between 1993 and 2003 (various tables).

The structure of this chapter is as follows. First, we outline the main theories of discrimination and discuss how they might be tested. Second, we examine the evidence on the existence of capital/liquidity constraints facing individuals in the mortgage market, households in the non-mortgage loan market, and for small businesses in the commercial credit market. Third, we describe the data files used in the remainder of the chapter and then examine in more detail problems faced by minority-owned firms in obtaining credit. Fourth, we provide a series of answers to criticisms. Finally, we present our conclusions.

We begin with the 1993 dataset and continue chronologically through the 2003 dataset and then to evidence from NERA's own comparable surveys conducted in various geographies between 1999 and 2007. This chronological progression allows the reader to see the consistency of the main findings over time. This approach serves as well to demonstrate the value of over-sampling minority and female small business owners, as was the case in the 1993 and 1998 surveys, but not the 2003 survey. Unfortunately, the much anticipated 2008 survey results never materialized because the Federal Reserve cancelled this important survey effort.⁹⁶

⁹⁶ For more on this, see fn. 135 below.

B. Theoretical Framework and Review of the Literature

Most recent economic studies of discrimination draw on the analyses contained in Gary Becker's (1957) *The Economics of Discrimination*. Becker's main contribution was to translate the notion of discrimination into financial terms. Discrimination, in this view, results from the desire of owners, workers, or customers to avoid contact with certain groups. This being the case, transactions with the undesired groups would require more favorable terms than those that occur with a desired group. Assume that the primary objective of a financial institution is to maximize their expected profits. The expected return on a loan will depend on the interest rate charged and the likelihood that a borrower defaults. The financial institution would approve any loan for which the expected return on the loan exceeded the cost of the funds to the institution. Discrimination would then result in either (a) higher interest rates being charged to undesired groups having otherwise similar characteristics to the desired group, or (b) requiring better characteristics (*i.e.*, a lower expected default rate) from the undesired group at any given interest rate. In other words, applicants from the disadvantaged group might either be appraised more rigorously or be given less favorable terms on the loan.

A similar connection between the likelihood of loan approval and the race, ethnicity or gender of the applicant might also be found if lenders employ statistical discrimination—meaning that lenders use personal characteristics such as race, ethnicity or gender to infer the likelihood of default on the loan. If experience has suggested that certain groups of individuals are on average more or less likely to default, then the lender may use this information to economize on the costs of gathering more directly relevant information. Hence, discrimination would not reflect the preferences of the owner but would rather reflect an attempt to minimize costs. Empirically, the racial, ethnic or gender characteristics of the applicant could proxy for unobserved characteristics of their creditworthiness.

There has been an active debate about whether banks discriminate against minority applicants for mortgages. In particular, banks were often accused of “redlining”—that is, not granting loans for properties located in certain areas. To analyze that issue, the Home Mortgage Disclosure Act was passed to require lenders to disclose information on the geographic location of their home mortgage loans. These data, however, were not sufficient to assess whether or not there was discrimination in the market for mortgage loans.

In 1992, researchers at the Federal Reserve Bank of Boston collected additional information from mortgage lenders (Munnell, et al., 1996). In particular, they tried to collect any information that might be deemed economically relevant to whether a loan would be approved. In the raw data, non-minorities had 10 percent of their loans rejected whereas rejection rates were 28 percent for both African Americans and Hispanics. Even after the creditworthiness of the borrowers (including the amount of the debt, debt-to-income ratio, credit history, loan characteristics, *etc.*) were controlled for, African Americans were still found to be 7 percentage points less likely to be granted the loan. A variety of criticisms have been launched at this study (see, for example, Horne, 1994; Day and Liebowitz, 1998; Harrison, 1998). Responses to these criticisms are found in Browne and Tootell (1995).

In addition to the type of statistical analysis done in the Munnell, et al. (1996) study, two other approaches have been used to measure discrimination in mortgage markets. First, Federal Reserve regulators can examine a lending institution's files to try to identify any cases where a loan rejection looks suspicious. Second, audit studies have been used with paired "identical" applicants. Such studies have also found evidence of discrimination (*c.f.* Cloud and Galster, 1993) although the audit approach is not without its critics (Heckman, 1998).

Another relevant subset of the literature is concerned with the severity of liquidity constraints affecting consumers in non-mortgage credit markets. A consumer is said to be liquidity-constrained when lenders refuse to make the household a loan or offer the household less than they wished to borrow (Ferri and Simon, 1997). Many studies have suggested that roughly twenty percent of U.S. families are liquidity-constrained (*c.f.* Hall and Mishkin, 1982; and Jappelli, 1990). As might be expected, liquidity-constrained households are typically younger, with less wealth and accumulated savings (Hayashi, 1985; and Jappelli, 1990). The research shows minority households to be substantially more likely to be liquidity-constrained even when a variety of financial characteristics of households are controlled for (Jappelli, 1990; and Ferri and Simon, 1997).

We now turn to the more directly relevant evidence on liquidity constraints facing small businesses. Just like individuals and households, businesses can also face liquidity constraints.⁹⁷ Liquidity constraints can be a problem in starting a business as well as in running it. Discrimination in the credit market against minority-owned small businesses can have a devastating effect on the success of such businesses, and even prevent them from opening in the first place. Evidence of the latter effect is provided in the economics literature on self-employment.⁹⁸

In his 2003 report for *Builders Association of Greater Chicago v. the City of Chicago*,⁹⁹ Bates argued that "from its origins, the black-business community has been constrained by limited access to credit, limited opportunities for education and training, and nonminority stereotypes about suitable roles for minorities in society" (Bates, 1989; Bates, 1993; Bates, 1973). Indeed, as Bates points out, Gunner Myrdal observed,

⁹⁷ Evans and Leighton (1989) and Evans and Jovanovic (1989) have argued formally that entrepreneurs face difficulties borrowing money. As in the discussion above, such individuals are labeled liquidity constrained by economists. Using data from the National Longitudinal Survey of Youth from 1966-1981 and the Current Population Surveys from 1968-1987, these authors found that, all else equal, people with greater family assets are more likely to switch to self-employment from employment. Blanchflower and Oswald (1998) studied the probability that an individual reports him or herself as self-employed. Consistent with the existence of capital constraints on potential entrepreneurs, their econometric estimates imply that the probability of being self-employed depends positively upon whether the individual ever received an inheritance or gift. Additionally, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Holtz-Eakin, et al. (1994a, 1994b) examine flows in and out of self-employment and find that inheritances both raise entry and slow exit. Black, de Meza and Jeffreys (1996) find that housing equity plays an important role in shaping the supply of entrepreneurs. Lindh and Ohlsson (1996) suggest that the probability of being self-employed increases when people receive windfall gains in the form of lottery winnings and inheritances.

⁹⁸ See Chapter IV.

⁹⁹ 298 F.Supp.2d 725 (N.D. Ill. 2003).

The Negro businessman ... encounters greater difficulties than whites in securing credit. This is partly due to the marginal position of Negro business. It is also partly due to prejudicial opinions among whites concerning business ability and personal reliability of Negroes. In either case a vicious circle is in operation keeping Negro business down.”¹⁰⁰

Bates goes on to argue that commercial banks lend most easily to nonminority males who possess significant amounts of equity capital to invest in their businesses (Bates, 1991a). Apart from banks, an important source of debt capital for small business is likely to be family and friends, but the low wealth of African American households reduces the availability of debt capital that family and friends could invest in small business operations (Bates, 1993; Bates, 1991b).

Additional evidence indicates that capital constraints for African American-owned businesses are particularly large. For instance, Bates (1989) finds that racial differences in levels of financial capital do have a significant effect upon racial patterns in business failure rates. Fairlie and Meyer (1996) find that racial groups with higher levels of unearned income have higher levels of self-employment. In an important paper, Fairlie (1999) uses data from the 1968-1989 Panel Study of Income Dynamics to examine why African American men are one-third as likely to be self-employed as nonminority men. The author finds that the large discrepancy is due to an African American transition rate into self-employment that is approximately one half the nonminority rate and an African American transition rate out of self-employment that is twice the nonminority rate. He finds that capital constraints—measured by interest income and lump-sum cash payments—significantly reduce the flow into self-employment from wage/salary work, with this effect being nearly seven times larger for self-employed African Americans than for nonminority self-employed persons. Fairlie then attempts to decompose the racial gap in the transition rate into self-employment into a part due to differences in the distributions of individual characteristics and a part due to differences in the processes generating the transitions. He finds that differences in the distributions of characteristics between African Americans and non-minorities explain only a part of the racial gap in the transition rate into self-employment. In addition, racial differences in specific variables, such as levels of assets and the likelihood of having a self-employed father provide important contributions to the gap. He concludes, however, that “the remaining part of the gap is large and is due to racial differences in the coefficients. Unfortunately, we know much less about the causes of these differences. They may be partly caused by lending or consumer discrimination against blacks” (1999, p. 14).

There is also research into racial differences in access to credit among small businesses. Cavalluzzo and Cavalluzzo (1998) use data from the 1988-1989 National Survey of Small Business Finances (NSSBF), conducted by the Board of Governors of the Federal Reserve System, to analyze differences in application rates, denial rates, and other outcomes by race, ethnicity and gender in a manner similar to the econometric models reported in this Study. This paper documents that a large discrepancy exists in credit access between non-minorities and minority-owned firms that cannot be explained by a handful of firm characteristics. Unfortunately, the earlier NSSBF data did not over-sample minority-owned firms and included limited information on a firm’s credit history and that of its owner, reducing the ability to

¹⁰⁰ G. Myrdal (1944, p. 308).

provide a powerful test of the causal impact of race, ethnicity or gender on loan decisions. In an unpublished paper, Cole (1998) uses the 1993 NSSBF and estimates models of loan denials similar in nature to those discussed in this Study.

The present analysis takes advantage of the 1993 NSSBF data, the 1998 Survey of Small Business Finances (SSBF) data, and the 2003 SSBF data. All three datasets have better information on creditworthiness than did the earlier NSSBF data, and the 1993 and 1998 surveys have a larger sample of minority-owned firms than did the earlier NSSBF data. These datasets are also used to conduct an extensive set of specification checks designed to weigh the possibility that our results are subject to alternative interpretations.

C. Empirical Framework and Description of the Data

1. Introduction

Disputes about discrimination typically originate in differences in the average outcomes for two groups. To determine whether a difference in the loan denial rate for African American-owned firms compared to nonminority-owned firms is consistent with discrimination, it is necessary to compare African American- and nonminority-owned firms that have similar risks of default; that is, the fraction of the African American firms' loans that would be approved if they had the same creditworthiness as the nonminority-owned firms. A standard approach to this problem is to statistically control for firms' characteristics relevant to the loan decision. If African American-owned firms with the same likelihood of default as nonminority-owned firms are less likely to be approved, then it is appropriate to attribute such a difference to discrimination.

Following Munnell, et al. (1996) we estimated the following loan denial equation:

$$(1) \quad \text{Prob}(D_i = 1) = \Phi(\beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i),$$

where D_i represents an indicator variable for loan denial for firm i (that is, 1 if the loan is denied and 0 if accepted), CW represents measures of creditworthiness, X represents other firm characteristics, R represents the race, ethnicity or gender of the firm's ownership, and Φ is the cumulative normal probability distribution.¹⁰¹ This econometric model can be thought of as a reduced form version of a structural model that incorporates firms' demand for and financial institutions' supply of loan funds as a function of the interest rate and other factors. Within the framework of this model, a positive estimate of β_3 is consistent with the presence of discrimination.¹⁰²

2. 1993 NSSBF Data

The 1993 NSSBF data contain substantial information regarding credit availability on a nationally representative target sample of for-profit, non-farm, non-financial business enterprises

¹⁰¹ Additional discussion of Probit regression appears in Chapter IV, Section C.1.

¹⁰² The Equal Credit Opportunity Act prohibits discrimination in access to credit by race and would apply to both Becker-type and statistical discrimination.

with fewer than 500 employees. The survey was conducted during 1994 and 1995 for the Board of Governors of the Federal Reserve System and the U.S. Small Business Administration; the data relate to the years 1992 and 1993. The data file used here contains 4,637 firms.¹⁰³ In this NSSBF file, minority-owned firms were over-sampled, but sampling weights are provided to generate nationally representative estimates. Of the firms surveyed, 9.5 percent were owned by African Americans, 6.4 percent were owned by Hispanics, and 7.4 percent were owned by individuals of other races (*i.e.*, Asians/Pacific Islanders, Native Americans).¹⁰⁴

Table 5.1 presents population-weighted sample means from these data for all firms in the sample that applied for credit. The estimates indicate that African American-owned firms are almost 2.5 times more likely to have a loan application rejected as are non-Hispanic White-owned firms (hereafter “nonminority”) (65.9 percent versus 26.9 percent).¹⁰⁵ Other minority groups are denied at rates higher than nonminorities as well, but the magnitude of the African American/nonminority differential is especially striking.

Minority-owned firms, however, do have characteristics that are different from those of nonminority-owned firms, and such differences may contribute to the gap in loan denial rates. For instance, minority-owned firms were younger, smaller (whether measured in terms of sales or employment), more likely to be located in urban areas, and more likely to have an owner with fewer years of experience than their nonminority counterparts. Minority firms were also less creditworthy, on average, than their nonminority counterparts, as measured by whether (a) the owner had legal judgments against him or her over the previous three years, (b) the firm had been delinquent for more than 60 days on business obligations over the preceding three years, or (c) the owner had been delinquent for more than 60 days on personal obligations over the prior three years. Additionally, compared to nonminority-owned firms, African American-owned firms were also more likely, on average, to have owners who had declared bankruptcy over the preceding seven years.

Minority-owned firms also sought smaller amounts of credit than nonminority-owned firms. This was particularly true for African American-owned firms, who requested loans that were, on average, about 60 percent smaller than those requested by nonminority-owned firms, and Hispanic-owned firms, who requested loans about 42 percent smaller than those requested by nonminority-owned firms.

The NSSBF database does not identify the specific city or state where the firm is located; instead, data are reported for four census regions, nine census divisions, and urban or rural location. Table 5.2 presents evidence for the East and West South Central (EWSC) divisions,

¹⁰³ The median size of firms in the sample was 5.5 and mean size was 31.6 full-time equivalent employees; 440 firms out of 4,637 had 100 or more full-time equivalent employees.

¹⁰⁴ There were also two firms in the “Other race” category in 1993 that reported multiple or mixed race.

¹⁰⁵ Cavalluzzo and Cavalluzzo (1998) examined these outcomes using the 1987 NSSBF and similarly found that denial rates (weighted) are considerably higher for minorities. Nonminority-owned firms had a denial rate for loans of 22 percent compared with 56 percent for African Americans, 36 percent for Hispanics, and 24 percent for other races, which are broadly similar to the differences reported here. These estimates for minority groups are estimated with less precision, however, because of the smaller number of minority-owned firms in the 1987 sample.

which include the State of Tennessee and seven surrounding states.¹⁰⁶ The EWSC sample includes the owners of 783 firms, of which 512 owners (65.4%) said that they had applied for a loan over the preceding three-year period.

The overall denial rate of 24.6 percent in the EWSC is slightly lower than the national rate of 28.8 percent reported in Table 5.1. The difference in the denial rates between African American-owned firms and nonminority-owned firms, on the other hand, is slightly higher in the EWSC (45.4 percent) than in the nation as a whole (39.0). On balance, however, the weighted sample means are not significantly different in the EWSC than in the nation as a whole—either overall or by race, ethnicity or gender.

¹⁰⁶ In addition to Tennessee, the EWSC includes Mississippi, Alabama, Kentucky, Arkansas, Louisiana, Texas, and Oklahoma.

Table 5.1. Selected Population-Weighted Sample Means of Loan Applicants from 1993 NSSBF Data

	All	Non-minority	African American	Hispanic	Other Races
% of Firms Denied in the Last Three Years	28.8	26.9	65.9	35.9	39.9
<i>Credit History of Firm/Owners</i>					
% Owners with Judgments Against Them	4.8	4.1	16.9	5.2	15.2
% Firms Delinquent in Business Obligations	24.2	23.1	49.0	25.1	31.6
% Owners Delinquent on Personal Obligations	14.0	12.6	43.4	14.8	24.5
% Owners Declared Bankruptcy in Past 7yrs	2.4	2.4	5.3	2.0	0.8
<i>Other Firm Characteristics</i>					
% Female-Owned	17.9	18.1	18.2	9.7	23.1
Sales (in 1,000s of 1992 \$)	1795.0	1870.6	588.6	1361.3	1309.1
Profits (in 1,000s of 1992 \$)	86.7	84.5	59.9	189.5	54.0
Assets (in 1,000s of 1992 \$)	889.4	922.5	230.3	745.6	747.3
Liabilities (in 1,000s of 1992 \$)	547.4	572.8	146.2	308.6	486.0
Owner's Years of Experience	18.3	18.7	15.3	15.9	14.9
Owner's Share of Business	77.1	76.5	86.4	83.9	77.1
% ≤ 8 th Grade Education	0.8	0.7	0.0	3.4	1.0
% 9 th -11 th Grade Education	2.2	2.2	3.7	1.8	1.2
% High School Graduate	19.6	19.7	12.8	27.7	14.9
% Some College	28.0	28.3	36.0	20.6	19.8
% College Graduate	29.2	29.2	28.0	24.1	36.5
% Postgraduate Education	20.2	19.9	19.5	22.3	26.6
% Line of credit	48.7	49.1	35.8	52.8	43.7
Total Full-time Employment in 1990	11.4	11.8	6.8	9.3	8.8
Total Full-time Employment in 1992	13.6	13.9	8.3	10.8	12.3
Firm age, in years	13.4	13.6	11.5	13.3	9.3
% New Firm Since 1990	9.4	9.4	13.0	6.4	9.5
% Firms Located in MSA	76.5	75.1	91.2	90.7	85.7
% Sole Proprietorship	32.8	32.3	48.6	38.2	24.2
% Partnership	7.8	7.8	7.7	6.7	7.9
% S Corporation	26.1	27.1	11.7	13.7	27.1
% C Corporation	33.4	32.8	32.1	41.4	40.8
% Existing Relationship with Lender	24.6	24.7	12.8	29.6	25.7
% Firms with Local Sales Market	54.1	54.7	42.9	55.0	47.4
<i>Characteristics of Loan Application</i>					
Amount Requested (in 1,000s of 1992 \$)	300.4	310.8	126.5	179.1	310.5
% Loans to be Used for Working Capital	8.4	8.8	4.9	4.6	5.5
% Loans to be Used for Equipment/Machinery	2.3	2.4	1.7	0.2	0.6
% Loans to be Used for Land/Buildings	0.4	0.4	0.9	0.0	0.0
% Loan to be Backed by Real Estate	28.3	28.6	24.7	26.2	24.7
Sample Size (unweighted)	2,007	1,648	170	96	93

Source: NERA calculations from 1993 NSSBF.

Notes: (1) Sample weights are used to provide statistics that are nationally representative of all small businesses.
 (2) Sample restricted to firms that applied for a loan over the preceding three years.

Table 5.2. Selected Sample Means of Loan Applicants—EWSC

	All	Non-minority	African American	Hispanic	Other Races
% of Firms Denied in the Last Three Years	24.6	21.0	66.4	18.2	53.9
<i>Credit History of Firm/Owners</i>					
% Owners with Judgments Against Them	4.5	3.0	20.1	4.8	16.1
% Firms Delinquent in Business Obligations	21.6	18.8	56.2	11.0	49.1
% Owners Delinquent on Personal Obligations	11.3	8.6	44.7	6.8	31.5
% Owners Declared Bankruptcy in Past 7yrs	3.5	3.6	3.1	4.6	0.0
<i>Other Firm Characteristics</i>					
% Female-Owned	18.8	18.8	12.2	14.4	29.9
Sales (in 1,000s of 1992 \$)	1487.1	1595.9	365.7	1093.4	1179.0
Profits (in 1,000s of 1992 \$)	101.9	112.6	61.0	63.6	9.1
Assets (in 1,000s of 1992 \$)	723.7	774.1	144.5	326.8	893.4
Liabilities (in 1,000s of 1992 \$)	405.1	430.0	62.1	118.7	649.0
Owner's Years of Experience	18.9	19.9	13.5	15.6	12.5
Owner's Share of Business	79.5	78.6	88.4	90.2	72.5
% ≤ 8 th Grade Education	1.2	0.5	0.0	12.3	0.0
% 9 th -11 th Grade Education	2.5	2.8	0.0	0.0	2.5
% High School Graduate	17.2	16.8	4.7	23.2	27.0
% Some College	24.8	24.8	47.2	22.6	6.6
% College Graduate	32.2	32.8	37.5	25.0	27.7
% Postgraduate Education	22.2	22.3	10.6	17.0	36.3
% Line of credit	48.1	47.9	26.2	65.2	49.0
Total Full-time Employment in 1990	10.6	11.4	4.7	5.7	10.2
Total Full-time Employment in 1992	13.7	14.7	6.0	7.8	12.4
Firm age, in years	12.8	13.1	12.7	13.8	7.4
% New Firm Since 1990	9.8	10.3	15.7	2.0	5.5
% Firms Located in MSA	66.1	62.6	80.6	87.3	85.7
% Sole Proprietorship	36.9	35.3	63.3	52.7	21.2
% Partnership	5.5	5.1	13.3	6.8	2.8
% S Corporation	28.5	29.9	9.3	11.8	43.2
% C Corporation	29.1	29.7	14.0	28.7	32.7
% Existing Relationship with Lender	31.8	32.8	9.3	44.1	20.4
% Firms with Local Sales Market	54.9	56.7	52.7	49.3	34.1
<i>Characteristics of Loan Application</i>					
Amount Requested (in 1,000s of 1992 \$)	224.3	233.1	79.2	71.2	394.6
% Loans to be Used for Working Capital	9.5	10.0	5.2	2.5	12.9
% Loans to be Used for Equipment/Machinery	2.4	2.7	0.0	0.0	2.5
% Loans to be Used for Land/Buildings	0.2	0.0	3.5	0.0	0.0
% Loan to be Backed by Real Estate	25.4	25.9	18.7	21.1	27.3
Total Sample Size (unweighted)	783	550	87	86	60

Source: See Table 5.1.

Notes: (1) Sample weights are used to provide statistics that are nationally representative of all small businesses. (2) Some variable means are computed from slightly smaller samples because of missing values. (3) "Other Races" are not reported separately due to small sample size.

D. Qualitative Evidence

Before moving on to the results of our multivariate analysis, we first report on what business owners themselves say are their main problems. While this evidence is not conclusive in determining whether discrimination exists, it highlights firms' perceptions regarding discrimination in obtaining credit. That African American-owned firms and other minorities report greater difficulty in obtaining commercial credit than do nonminority-owned firms, but report other types of problems no more frequently, suggests either that discrimination takes place or that perceptions of discrimination exist that are unwarranted. It therefore complements the econometric analysis provided subsequently, which can distinguish between these two hypotheses.

Table 5.3 summarizes, for the U.S. as a whole, responses to specific questions about problems that firms confronted over the 12-month period before the date of response. In the top panel, respondents were asked to what extent credit market conditions had been a problem. African Americans and Hispanics were much more likely to say that it had been a “serious” problem (31.3 percent and 22.9 percent, respectively) than nonminorities (12.7 percent). The bottom panel of the table reports the results for eight other designated problem areas: (1) training costs; (2) worker's compensation costs; (3) health insurance costs; (4) IRS regulation or penalties; (5) environmental regulations; (6) The American with Disabilities Act; (7) the Occupational Safety and Health Act; and (8) The Family and Medical Leave Act. Differences between African American-owned firms and Hispanic-owned firms, on the one hand, and nonminority-owned firms, on the other, are much less pronounced in these eight areas than they are in relation to credit market conditions.¹⁰⁷ The finding that minority-owned firms are largely indistinguishable from nonminority-owned firms in reporting a variety of problems, except for the case of credit, indicates that these firms perceive credit availability to be a particular problem for them.

Results are similar in Table 5.4 for the EWSC division—with African American-owned firms and Hispanic-owned firms being far more likely than nonminority-owned firms to say that credit market conditions had been a serious problem in the preceding 12 months.

¹⁰⁷ We also estimated a series of ordered Logit equations (not reported) to control for differences across firms in their creditworthiness, location, industry, size, and the like. It is apparent from these regressions that African American-owned firms were more likely to report that credit market conditions were especially serious.

Table 5.3. Problems Firms Experienced During Preceding 12 Months—USA

	All	Non-minority	African American	Hispanic	Other Races
<i>Credit Market Conditions</i>					
Percent reporting not a problem	66.2	67.3	43.1	58.9	65.8
Percent reporting somewhat of a problem	20.1	19.9	25.6	18.2	21.3
Percent reporting serious problem	13.7	12.7	31.3	22.9	12.9
<i>Other Potential Problems (% reporting problem is serious)</i>					
Training costs	6.5	6.6	7.2	6.3	4.3
Worker's compensation costs	21.7	21.0	19.3	30.6	28.7
Health insurance costs	32.5	31.6	38.1	44.3	35.0
IRS regulation or penalties	12.3	11.8	17.1	17.9	13.2
Environmental regulations	8.5	8.5	5.6	7.4	11.0
Americans with Disabilities Act	2.7	2.6	3.6	2.7	3.9
Occupational Safety and Health Act	4.5	4.5	3.9	3.6	6.2
Family and Medical Leave Act	2.7	2.5	4.5	3.1	4.8
Number of observations (unweighted)	2,007	1,648	170	96	93

Source: See Table 5.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Table 5.4. Problems Firms Experienced During Preceding 12 Months—EWSC

	All	Non-minority	African American	Hispanic	Other Races
<i>Credit Market Conditions</i>					
Percent reporting not a problem	66.4	68.2	43.8	53.9	73.7
Percent reporting somewhat of a problem	19.4	19.7	19.8	22.3	10.5
Percent reporting serious problem	14.2	12.0	36.4	23.8	15.7
<i>Other Potential Problems (% reporting problem is serious)</i>					
Training costs	8.2	8.8	6.9	2.3	9.1
Worker's compensation costs	24.0	24.1	16.6	21.5	30.6
Health insurance costs	32.3	30.3	31.5	42.5	47.8
IRS regulation or penalties	15.6	15.3	19.8	15.5	16.8
Environmental regulations	9.4	9.3	2.7	7.1	17.8
Americans with Disabilities Act	4.1	3.7	4.7	1.5	11.4
Occupational Safety and Health Act	6.5	6.3	3.7	4.3	13.9
Family and Medical Leave Act	3.7	3.5	1.9	4.0	6.4
Number of observations (unweighted)	783	550	87	86	60

Source: See Table 5.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Tables 5.5 and 5.6 report the views of NSSBF respondents for the U.S. as a whole and the EWSC division, respectively, on the most important issues businesses expected to face over the next 12 months. Nationally, credit availability and cash flow again appear to be more important issues for African American-owned firms than for nonminority-owned firms. Nonminority-owned firms were especially worried about health care costs. Hispanic and other minority-owned firms were especially worried about general business conditions.

In the EWSC, credit availability is a far more important issue for African American-owned firms than for nonminority-owned firms. Almost six times as many African American-owned firms than nonminority-owned firms reported credit availability as the most important issue affecting them.

Table 5.5. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months—USA

	All	Non-minority	African American	Hispanic	Other Races
Credit availability	5.9	5.5	20.5	5.3	4.3
Health care, health insurance	21.1	22.1	12.3	13.7	14.8
Taxes, tax policy	5.7	5.7	2.6	8.7	3.3
General U.S. business conditions	11.8	11.5	8.9	14.4	17.4
High interest rates	5.4	5.7	1.8	3.5	3.4
Costs of conducting business	3.3	3.3	3.8	3.8	3.6
Labor force problems	3.5	3.3	3.9	5.5	3.6
Profits, cash flow, expansion, sales	10.3	9.9	20.3	9.8	11.9
Number of observations (unweighted)	4,388	3,383	424	262	319

Source: See Table 5.1.

Table 5.6. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months—EWSC

	All	Non-minority	African American	Hispanic	Other Races
Credit availability	5.0	3.8	22.5	9.3	3.1
Health care, health insurance	22.0	22.5	14.6	22.1	19.9
Taxes, tax policy	6.5	6.8	2.5	2.4	10.3
General U.S. business conditions	9.2	9.8	6.4	5.9	6.0
High interest rates	5.6	6.2	2.6	0.9	5.3
Costs of conducting business	2.0	2.0	1.2	3.9	0.0
Labor force problems	5.9	5.3	5.1	7.4	13.1
Profits, cash flow, expansion, sales	8.2	7.5	19.1	9.7	8.0
Number of observations (unweighted)	783	550	87	86	60

Source: See Table 5.1.

Acute credit availability problems for minorities have been reported in surveys other than the NSSBF. In the Census Bureau's 1992 Characteristics of Business Owners (CBO) Survey, for example, when owners were asked to identify the impact of various issues on their firm's profitability, 27.0 percent of African American-owned firms reporting an answer indicated that lack of financial capital had a strong negative impact—compared to only 17.3 percent among nonminority male-owned firms. Hispanic-owned firms and other minority-owned firms also reported higher percentages than nonminority male-owned firms—21.3 percent and 19.7 percent,

respectively. Further, owners who had recently discontinued their business because it was unsuccessful were asked in the CBO survey to identify the reasons why. African American-owned firms, and to a lesser degree Hispanic-owned firms, other minority-owned firms, and women-owned firms, were much more likely than nonminority male-owned firms to report that the reason was due to lack of access to business or personal loans or credit. For unsuccessful firms that were discontinued, 7.3 percent of firms owned by nonminority males reported it was due to lack of access to business loans or credit compared to 15.5 percent for firms owned by African Americans, 8.8 percent for Hispanics, 6.1 percent for Other minorities, and 9.3 percent for women. Another 2.7 percent of nonminority males said it was due to lack of personal loans or credit compared to 8.4 percent for firms owned by African Americans, 5.8 percent for Hispanics, 6.4 percent for Other minorities, and 3.3 percent for women.¹⁰⁸

A later study published by the U.S. Chamber of Commerce (2005) is also consistent with these findings from the 1993 NSSBF and the 1992 CBO.¹⁰⁹ The Chamber of Commerce survey was conducted in March and April 2005 and detailed the financing problems experienced by small business owners, 95 percent of whom had less than 100 employees. Over 1,000 business owners were interviewed. This survey showed that minority-owned businesses rely heavily on credit cards to fund their businesses; often do not apply for credit, even though they need it, for fear of being denied; and were especially likely to need working capital. In particular, as shown in Table 5.7, minority-owned firms report that availability of credit is their top problem. The biggest difference in responses between minorities and nonminority men and women was availability of credit: 19 percent of nonminority males report credit as their top problem compared with 54 percent for minority males. There was a 15 percentage point difference between minority women and nonminority women. In no other category is there more than a 10 percentage point difference for men or women.

¹⁰⁸ Bureau of the Census (1997), Table 5a, p. 46, Table 1, p. 21.

¹⁰⁹ Although the CBO is part of the Economic Census, it was not published in 1997. In 2002, the name was changed to the Survey of Business Owners (SBO). Unfortunately, questions relating to the importance of access to financial loans and credit to business success were not included in SBO.

Table 5.7. Types of Problems Facing Your Business, by Race and Gender

	Non-minority Male	Non-minority Female	Minority Male	Minority Female	African American	Hispanic	Asian/Pacific Islander
Availability of credit	19	23	54	38	46	52	34
Rising health care costs	60	49	50	41	31	42	66
Excessive tax burden	49	46	48	42	46	34	51
Lack of qualified workers	37	28	33	17	22	20	34
Rising energy costs	37	35	36	35	29	34	44
Rising costs of materials	44	47	36	47	53	42	32
Legal reform	21	15	15	12	11	10	17
Number of firms	415	356	80	81	55	50	41

Source: U.S. Chamber of Commerce (2005), Appendix tables, page 55, downloadable at http://www.uschamber.com/publications/reports/access_to_capital.htm (viewed 3 July 2012).

Notes: (1) Percentages may total to more than 100% because respondents had the option to select multiple choices. (2) "Minority" also includes 14 firms owned by Native Americans.

In summary, African American-owned and Hispanic-owned firms in particular reported that they had problems with the availability of credit in the past and expected that such difficulties would continue into the future. Whether or not these perceptions reflect actual discrimination can be tested in the econometric analyses to follow.

E. Differences in Loan Denial Rates by Race, Ethnicity or Gender

Evidence presented to this point indicates that minority-owned firms are more likely to be denied loans and report that their lack of access to credit significantly impairs their business. Can these differences be explained by such things as differences in size, creditworthiness, location, or other factors as some have suggested in the literature on discrimination in mortgage lending (Horne, 1994; Bauer and Cromwell, 1994; and Yezer, Phillips, and Trost, 1994)? To address this question, we turn to an econometric examination of whether the loan requests made by minority-owned firms are more likely to be denied, holding constant important differences among firms.

In Table 5.8 and Table 5.9, we report the results from a series of loan denial Probit regressions of the form specified in Equation (1) using data from the 1993 NSSBF for the U.S. and the EWSC division.¹¹⁰ As indicated earlier, the 1993-2003 datasets have the particular advantage that they include information that can be used to proxy an applicant's creditworthiness. We report

¹¹⁰ Firms owned 50-50 by minorities and non-minorities are excluded from this and all subsequent analyses, as are nonminority firms owned 50-50 by women and men.

estimates from these models that can be interpreted as changes or differences in loan denial probabilities depending on the type of variables considered. For indicator variables such as race, ethnicity and gender, estimates show differences in loan denial probabilities between the indicated group and the base group.¹¹¹ In Column (1) of Table 5.8 (in which the regression model contains only race and gender indicators), the estimated coefficient of 0.443 on the African American indicator indicates that the denial rate for African American-owned businesses is 44.3 percentage points higher than that for nonminority male-owned firms.¹¹²

The remainder of Table 5.8 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race, ethnicity or gender.¹¹³ In Column (2) a number of controls are included that distinguish the creditworthiness of the firm and the owner. Many are statistically significant on a two-tailed test at conventional levels of significance with the expected signs. For instance, having been bankrupt or had legal judgments against the firm or owner raises the probability of denial; stronger sales lower this probability. Even after controlling for these differences in creditworthiness, however, African American-owned firms remain 29 percentage points more likely than nonminority-owned firms to have their loan request denied.

The models reported in Columns (3) through (5) of Table 5.8 control for an array of additional characteristics of firms. Column (3) adds 39 additional characteristics of the firm and the loan application, including such factors as level of employment, change in employment, the size of the loan request, and the use of the loan. Column (4) includes variables to control for differences across regions of the country and major industry groups. Column (5) adds variables indicating the month and year in which the loan was requested and the type of financial institution to which the firm applied.¹¹⁴ In total, these three columns add 176 variables to the more parsimonious

¹¹¹ For “continuous” variables, such as profits and sales, estimates can be thought of as changes in loan denial probability when the continuous variable changes by one unit. For example, in Column (2) of Table 5.8, the estimated coefficient of -0.003 on owner’s years of experience indicates that one additional year of owner’s experience is related to -0.3 percentage point reduction in loan denial rate.

¹¹² This estimate largely replicates the raw difference in denial rates between African American-owned and nonminority-owned businesses reported in Table 5.1. The raw differential observed there ($0.659 - 0.269 = 0.39$) differs slightly from the 0.443 differential reported here because this specification also controls for whether the business is owned by a White Female and because the regressions are unweighted whereas the descriptive statistics are weighted using the sample weights. When a full set of explanatory control variables are included, the unweighted estimates are insignificantly different from the weighted estimates, hence in Table 5.8 and subsequent tables we report only unweighted estimates.

¹¹³ In preliminary analyses, these models were also estimated separately, focusing specifically on the differences in coefficient estimates between nonminorities and African Americans. The F-Test conducted to determine whether parameter estimates were the same for African Americans and nonminorities rejected this null hypothesis. Next, the estimates obtained by estimating the model separately by race were used to conduct an Oaxaca (1973) decomposition. The results from this analysis were similar to those obtained by restricting the coefficients to be the same between African Americans and nonminorities and using the coefficient on the African Americans indicator variable to measure the gap between groups. In this chapter, all the results are reported in this simpler format for ease of exposition and interpretation.

¹¹⁴ Approximately four out of five (80.5%) of the firms who required a loan applied to a commercial bank. Overall, seventeen different types of financial institutions were tabulated, although only the following accounted for more than 1% of the (weighted) total: Finance Companies (4.9%); Savings Banks (2.5%); Savings & Loans (2.3%); Leasing Companies (2.1%); and Credit Unions (2.0%).

specification reported in Column (2).¹¹⁵ Nevertheless, the estimated disadvantage experienced by African American-owned firms in obtaining credit remains large and statistically significant. The estimate from each of the three additional columns indicates that African American-owned firms are 24 percentage points more likely than nonminority male-owned firms to have their loan application denied even after controlling for the multitude of factors we have taken into consideration.

The results also indicate that Asians/Pacific Islanders had significantly higher denial rates than nonminority males—12 percentage points. There is little evidence in the 1993 national data, however, that denial rates for firms owned by Native Americans or Hispanics were significantly different from the denial rates of firms owned by nonminorities; or that denial rates for firms owned by nonminority women were significantly different from those for firms owned by nonminority men.¹¹⁶

In Table 5.9, we see results for the EWSC division similar to those reported in Table 5.8 for the nation as a whole. The table shows that the results of our loan denial model in the EWSC are not substantially different from the nationwide results reported in Table 5.8. The indicator variable for the EWSC division is negative and significant, indicating that denial rates, on average, are lower in the EWSC than in the nation as a whole, but its significance decreases as more control variables are included in the model. With the exception of Asian/Pacific Islander-owned firms, the interaction terms between race, ethnicity or gender and the EWSC division indicator are not statistically significant, though the coefficients are generally positive (indicating higher denial probabilities). The interaction term between Asians/Pacific Islanders and the EWSC division is significant and indicates increased denial probabilities for this group in the EWSC.¹¹⁷

¹¹⁵ One piece of information to which we did not have access in the 1993 NSSBF or the 1998 SSBF because of confidentiality concerns was each firm's credit rating. A working paper by Cavalluzzo, Cavalluzzo, and Wolken (1999) was able to incorporate Dun & Bradstreet credit ratings for each firm because the authors' connection to the Federal Reserve Board enabled them to access the confidential firm identifiers. They added these credit rating variables in a model comparable to that reported here and found the results insensitive to the inclusion. The 2003 SSBF includes Dun & Bradstreet credit ratings for each firm. Below, we discuss the impact of incorporating them into a model similar to that presented in Table 5.8 (see Tables 5.27 and 5.28).

¹¹⁶ It would be a mistake to interpret a lack of statistical significance (as opposed to substantive significance) in any of the tables in Chapter V, or elsewhere in this Study, as a lack of adverse disparity. While tests for statistical significance are very useful for assessing whether chance can explain disparities that we observe, they do have important limitations. First, the fact that a disparity is not statistically significant does not mean that it *is* due to chance. It merely means that we cannot rule out chance. Second, there are circumstances under which tests for statistical significance are not helpful for distinguishing disparities due to chance from disparities due to other reasons (e.g., discrimination). In the particular statistical application presented in this chapter, the chance that a test for statistical significance will incorrectly attribute to chance disparities that are due to discrimination becomes greater when relatively small sample sizes are present for an affected group.

¹¹⁷ The number of Native Americans and Hispanics in the EWSC sample was too small to yield statistical results.

Table 5.8. Determinants of Loan Denial Rates—USA

	(1)	(2)	(3)	(4)	(5)
African American	0.443 (11.21)	0.288 (6.84)	0.237 (5.57)	0.235 (5.22)	0.241 (5.13)
Asian/Pacific Islander	0.225 (4.21)	0.171 (3.18)	0.140 (2.56)	0.121 (2.15)	0.119 (2.07)
Native American	-0.016 (0.11)	-0.141 (1.06)	-0.097 (0.71)	-0.052 (0.35)	-0.083 (0.56)
Hispanic	0.129 (2.62)	0.070 (1.42)	0.067 (1.36)	0.035 (0.70)	0.031 (0.63)
Nonminority female	0.088 (2.65)	0.048 (1.45)	0.047 (1.45)	0.036 (1.06)	0.033 (0.94)
Judgments		0.143 (2.84)	0.129 (2.56)	0.124 (2.40)	0.121 (2.29)
Firm delinquent		0.176 (6.50)	0.178 (6.43)	0.195 (6.77)	0.208 (7.00)
Personally delinquent		0.161 (4.45)	0.128 (3.56)	0.124 (3.38)	0.119 (3.17)
Bankrupt past 7 years		0.208 (3.11)	0.179 (2.68)	0.162 (2.37)	0.167 (2.33)
\$1992 profits (*10 ⁸)		-0.000 (0.89)	-0.000 (1.64)	-0.000 (1.78)	-0.000 (1.83)
\$1992 sales (*10 ⁸)		-0.000 (3.08)	-0.000 (3.38)	-0.000 (3.28)	-0.000 (3.38)
\$1992 assets (*10 ⁸)		0.000 (0.51)	0.000 (0.60)	0.000 (0.40)	0.000 (0.37)
\$1992 liabilities (*10 ⁸)		0.000 (0.61)	0.000 (1.11)	0.000 (1.04)	0.000 (1.17)
Owner years of experience		-0.003 (2.59)	-0.001 (1.30)	-0.002 (1.55)	-0.002 (1.72)
Owner share of business		0.001 (1.91)	0.000 (0.71)	0.000 (0.26)	0.000 (0.30)
Owner Education (5 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (13 variables)	No	No	Yes	Yes	Yes
Geographic Division (8 indicator variables)	No	No	No	Yes	Yes
Industry (60 indicator variables)	No	No	No	Yes	Yes
Month/Year of Application (51 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (16 indicator vars.)	No	No	No	No	Yes
N	2,007	2,007	2,006	1,985	1,973
Pseudo R ²	.0608	.1412	.2276	.2539	.2725
Chi ²	143.6	333.4	537.3	595.4	635.8
Log likelihood	-1108.8	-1013.8	-911.6	-874.8	-848.7

Source: See Table 5.1.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) “Other firm characteristics” include variables indicating whether the firm had a line of credit, 1990 employment, firm age, metropolitan area, a new firm since 1990, legal form of organization (sole proprietorship, partnership, S-corporation, or C-corporation), 1990-1992 employment change, existing long run relation with lender, geographic scope of market (local, regional, national or international), the value of the firm’s inventory, the level of wages and salaries paid to workers, the firm’s cash holdings, and the value of land held by the firm. (3) “Characteristics of the loan” include the size of the loan applied for, a variable indicating whether the loan was backed by real estate, and twelve variables indicating the intended use of the loan.

Table 5.9. Determinants of Loan Denial Rates—EWSC Division

	(1)	(2)	(3)	(4)	(5)
African American	0.424 (9.54)	0.273 (5.89)	0.222 (4.76)	0.218 (4.44)	0.219 (4.29)
Asian/Pacific Islander	0.162 (2.75)	0.111 (1.88)	0.080 (1.37)	0.057 (0.96)	0.056 (0.92)
Native American	-0.028 (0.14)	-0.103 (0.52)	-0.029 (0.13)	-0.006 (0.02)	-0.063 (0.25)
Hispanic	0.146 (2.49)	0.086 (1.48)	0.055 (0.97)	0.025 (0.44)	0.021 (0.37)
Nonminority female	0.083 (2.3)	0.047 (1.32)	0.044 (1.25)	0.032 (0.89)	0.022 (0.58)
African American*EWSC	0.112 (1.19)	0.087 (0.90)	0.080 (0.85)	0.062 (0.65)	0.081 (0.81)
Asian/Pacific Islander*EWSC	0.328 (2.32)	0.304 (2.18)	0.324 (2.17)	0.335 (2.18)	0.331 (2.10)
Native American*EWSC	0.082 (0.26)	-0.061 (0.20)	-0.090 (0.33)	-0.040 (0.14)	0.010 (0.03)
Hispanic*EWSC	-0.013 (0.13)	-0.019 (0.19)	0.066 (0.60)	0.098 (0.85)	0.106 (0.90)
Nonminority female*EWSC	0.032 (0.37)	0.013 (0.15)	0.028 (0.32)	0.039 (0.42)	0.088 (0.89)
EWSC division	-0.073 (2.22)	-0.058 (1.70)	-0.048 (1.41)	-0.071 (1.39)	-0.081 (1.55)
Creditworthiness Controls (4 variables)	No	Yes	Yes	Yes	Yes
Owner Education (5 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (13 variables)	No	No	Yes	Yes	Yes
Geographic Division (7 indicator variables)	No	No	No	Yes	Yes
Industry (60 indicator variables)	No	No	No	Yes	Yes
Month/Year of Application (51 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (16 indicator vars.)	No	No	No	No	Yes
N	2,007	2,007	2,006	1,985	1,973
Pseudo R ²	0.0649	0.1443	0.2301	0.2534	0.2722
Chi ²	153.13	340.71	543.19	594.25	635.22
Log likelihood	-1104.0	-1010.2	-908.6	-875.3	-849.0

Source: See Table 5.1.

Note: Creditworthiness controls are those used in Table 5.8 above.

Although the results provided so far strongly indicate that financial institutions treat African American-owned and nonminority male-owned small businesses differently in lending, other considerations may limit our ability to interpret this finding as discrimination. Of perhaps greatest concern is the possibility that we may not have adequately controlled for differences in the creditworthiness of firms. If African American-owned firms are less creditworthy and we have failed to sufficiently capture those differences, then we would be inadvertently attributing the racial difference in loan denial rates to discrimination. On the other hand, if financial institutions discriminate against African American-owned firms, then the greater likelihood of denial for African Americans in earlier years is likely to hurt the performance of these firms and appear to make them look less creditworthy. Therefore, controlling for creditworthiness will likely understate the presence of discrimination.

As a check on the foregoing results, therefore, our first approach was to identify the types of information that financial institutions collect in order to evaluate a loan application and compare that with the information available to us in the NSSBF. First, a selection of small business loan applications was collected from various banks. An Internet search of web sites that provide general business advice to small firms was also conducted. Such sites typically include descriptions of the loan application process and list the kinds of information typically requested of applicants.¹¹⁸

Bank loan applications typically request detailed information about both the firm and its owner(s). Regarding the firm, banks typically request information on: (a) type of business, (b) years in business, (c) number of full-time employees, (d) annual sales, (e) organization type (corporation or proprietorship), (f) owner share(s), (g) assets and liabilities, (h) whether the business is a party to any lawsuit, and (i) whether any back taxes are owed. Regarding the owner's personal finances, banks typically ask for: (a) assets and liabilities, (b) sources and levels of income, and (c) whether the owner has any contingent liabilities. Some applications ask explicitly if the firm qualifies as a minority-owned enterprise for the purposes of certain government loan guarantee programs. The race of the applicant, however, would be readily identifiable even in the absence of such a question since most of these loans would be originated through face-to-face contact with a representative of the financial institution.

These criteria seem to match quite closely the information available in the 1993 NSSBF. The particular strength of the NSSBF is the detail available on the firm, which covers much of the information typically requested on loan application forms. The only shortcoming that we have identified in the 1993 NSSBF data is that less detail is available on the finances of the owner of the firm, as opposed to the firm itself.¹¹⁹ Although our creditworthiness measures enable us to identify those owners who have had serious financial problems (like being delinquent on personal obligations), we have no direct information regarding the owner's assets, liabilities, and income (as opposed to those of the firm). These factors would be necessary to identify whether the business owner has sufficient personal resources to draw upon should the business encounter

¹¹⁸ An example of a typical application form is presented as Appendix B in Blanchflower, Levine, and Zimmerman (2003).

¹¹⁹ This is remedied in the 1998 SSBF and the 2003 SSBF, discussed below, both of which contain information on the owner's home equity, and personal net worth excluding home equity and business equity.

difficulties and to determine the personal collateral available should the firm default on its obligation. We do have measures of the owner's human capital in the form of education and experience, which likely capture at least some of the differential in available personal wealth across firm owners. Nevertheless, our potentially incomplete characterization of the business owner's personal financial condition in the 1993 NSSBF dataset may introduce a bias into our analysis if African American business owners have fewer resources than nonminority business owners. As we will see below, however, and as noted in the previous footnote, this deficiency is rectified in the 1998 and 2003 SSBF datasets, with little change in the main findings.

To assess the potential impact of this problem on our results, we separately examined groups of firms who differ in the degree to which personal finances should influence the loan decision and compare the estimated disadvantage experienced by African American-owned firms in different groups. First, we examine proprietorships and partnerships separately from corporations since owners of incorporated businesses are at least somewhat shielded from incurring the costs of a failed business. Second, we divide firms according to size.¹²⁰ Both larger small businesses and those that have been in existence for some time are more likely to rely on the business's funds, rather than the owner's, to repay its obligations. Third, we consider firms that have applied for loans to obtain working capital separately from those firms that seek funds for other purposes (mainly to purchase vehicles, machinery and equipment, and buildings or land). Loans made for one of these other purposes are at least partially collateralized because the financial institution could sell them, albeit at a potentially somewhat reduced rate, should the small business default.¹²¹

Results from these analyses provide no indication that omitting the owner's personal wealth substantially biases the results presented above in Tables 5.8 and 5.9. Estimates presented in row numbers 1 through 8 of Table 5.10 indicate that African American-owned small businesses are significantly more likely to have their loan applications rejected regardless of the category of firm considered. In particular, when samples are restricted to corporations, larger firms, and firms seeking credit for uses other than working capital, African American-owned firms are 18, 25, and 16 percentage points more likely, respectively, to have their loan application rejected even though personal resources should be less important in these categories. Moreover, in each group where there are two types of firms (large and small, *etc.*), the estimates for the two types of firms are not significantly different from each other.

¹²⁰ As reported earlier, the mean and median size of firms is 5.5 and 31.6 full-time equivalent workers, respectively. Fourteen percent of firms have one or fewer employees and 27 percent have two or fewer employees. In the EWSC, the mean and median size of firms is 6.0 and 34.3 full-time equivalent workers, respectively. Twelve percent of firms have one or fewer employees and 26 percent have two or fewer employees.

¹²¹ As indicated earlier, greater personal wealth may improve a small business's chances of obtaining credit because it provides collateral should the loan go bad and because wealthy owners can use their own resources to weather bad times, improving the likelihood of repayment. Our separate analysis of corporations and proprietorships and of large and small firms does not account for this second reason because corporations and large businesses may still need to draw on the owner's personal wealth to help it survive short-term shocks. Businesses that have been in existence for several years, however, are less likely to experience these shocks, making them less likely to require infusions from the owner's personal wealth. A loan used to purchase equipment that can be sold if the firm defaults similarly insulates the bank from the need to seek repayment directly from the owner.

Another issue is whether the racial differences in loan denial rates among firms with similar characteristics can be attributable to differences in the geographic location of African American- and nonminority-owned firms. If, for example, African American-owned firms are more likely to be located in the central city, and a central city location is negatively correlated with profitability and the ability to repay debt, then financial institutions may be acting optimally in rejecting the loan applications of African American-owned firms at a higher rate. As indicated earlier, this type of behavior is labeled “statistical discrimination.” In the subsequent text and tables, we present a limited analysis to address whether or not this type of behavior takes place.¹²²

To identify whether lenders’ behavior is consistent with this hypothesis, we distinguish those firms that self-classified their sales market as being local rather than regional, national, or international. A central city location should have a greater impact on future profit expectations for those firms that operate on a local level. If minority-owned firms are more likely to locate in the central city, racial differences in loan approval rates should be greater in the firms that sell in the local market area. The results of this test, reported in row numbers 9 and 10 of Table 5.10, reject the hypothesis that differences in loan denial rates are attributable to different propensities to locate in the center of a city. Estimates indicate that African American-owned firms that sell to the local market are 11 percentage points more likely to have their loan applications denied compared to a 20 percent excess denial rate for firms selling primarily to regional, national, or international markets.

In order to determine whether the findings for the EWSC division were different from those for the nation, in the second column of Table 5.10 we also report the coefficient and t-statistics on an interaction term between the EWSC division and African American ownership. In only one of 14 cases was the estimated coefficient on this interaction significant. There is, therefore, little evidence that the figures for the EWSC are significantly different from those in the nation as a whole.

¹²² A strong test to distinguish between statistical discrimination and “Becker-Type” discrimination (referring to the standard economic model of discrimination first expounded by University of Chicago economist Gary Becker) would require a tremendous amount of detail about the specific location of the firm, characteristics of its surrounding area, characteristics of neighboring firms, and the like, which were unavailable to us. As indicated earlier, both forms of discrimination are illegal and this chapter applies a definition that incorporates both.

Table 5.10. Alternative Models of Loan Denials

Specification	African American	African American* EWSC	Asian/Pacific Islander	Hispanic	Non-minority Female	Sample Size
All	0.222 (4.76)	0.080 (0.85)	0.080 (1.37)	0.055 (0.97)	0.044 (1.25)	2,006
<i>Organization Type</i>						
1) Proprietorships and Partnerships	0.278 (3.03)	0.039 (0.24)	0.177 (1.51)	-0.021 (0.21)	-0.020 (0.29)	536
2) Corporations	0.181 (3.36)	0.175 (1.17)	0.050 (0.73)	0.092 (1.25)	0.069 (1.66)	1,457
<i>Age of Firm</i>						
3) 12 Years or Under	0.243 (3.80)	0.150 (1.02)	0.117 (1.41)	-0.001 (0.01)	0.029 (0.56)	1,074
4) Over 12 Years	0.180 (2.56)	0.068 (0.54)	-0.006 (0.08)	0.114 (1.39)	0.087 (1.69)	926
<i>1993 Firm Size</i>						
5) Fewer than 10 Employees	0.193 (2.97)	0.251 (1.71)	0.078 (0.92)	-0.019 (0.24)	-0.018 (0.34)	868
6) 10 or More Employees	0.245 (3.39)	-0.082 (0.65)	0.077 (0.85)	0.145 (1.61)	0.111 (2.18)	1,132
<i>Intended Use of Loan</i>						
7) Working Capital	0.241 (4.21)	0.176 (1.22)	0.035 (0.47)	0.039 (0.51)	0.041 (0.85)	1,086
8) Other Use	0.158 (1.93)	0.037 (0.27)	0.167 (1.74)	0.081 (0.94)	0.045 (0.87)	917
<i>Scope of Sales Market</i>						
9) Local	0.108 (1.50)	0.348 (2.06)	0.097 (1.26)	0.007 (0.10)	0.041 (0.78)	875
10) Regional, National, or International	0.199 (4.94)	-0.013 (0.24)	0.031 (0.65)	0.071 (1.34)	0.031 (1.19)	1,129
<i>Creditworthiness</i>						
11) No Past Problems	0.244 (4.07)	-0.006 (0.06)	0.113 (1.91)	0.038 (0.68)	0.069 (2.02)	1,386
12) One Past Problem	0.286 (2.56)	-0.072 (0.36)	-0.095 (0.55)	0.184 (1.11)	0.041 (0.40)	376
13) More Than One Problem	0.283 (2.71)	0.203 (0.77)	0.258 (1.74)	-0.011 (0.05)	-0.125 (0.82)	231

Source: See Table 5.1.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) Each line of this table represents a separate regression with the same control variables as Column 3 of Table 5.8. (3) The dependent variable in all specifications represents an indicator for whether or not a loan application was denied. (4) Control for EWSC also included.

We also estimate models that address a potential weakness in the specific functional form with which we control for differences in credit history across firms. As shown in Tables 5.1 and 5.2, African American-owned firms are considerably more likely to have had troubles in the past in the form of judgments against them, late payments by the firm or its owner, or past bankruptcies. The model specifications reported in Tables 5.8 and 5.9 implicitly assume that these past problems are additive in their effect on loan denials and one might suspect the marginal impact would rise as past problems rise. Therefore, in the final three rows of Table 5.10, we separated firms by the number of past problems experienced. In Rows 11 through 13, we restricted the sample to those firms that have never had any past credit problems, those firms that reported one problem only, and those firms that reported more than one of these problems, respectively. The results indicate that even African American-owned firms with clean credit histories are at a significant disadvantage in getting their loans approved, holding constant their other characteristics. In fact, the estimated differential in loan approval rates between African American- and nonminority-owned firms is statistically indistinguishable within each of these groups. Asian/Pacific Islander-owned firms and nonminority female-owned firms with clean credit histories, are also at a significant disadvantage relative to nonminority-male owned firms.

Finally, we considered whether African American-owned firms are treated differently from nonminority-owned firms when requesting credit from other sources. The source of credit we examined is credit cards. Such an analysis provides a unique advantage because credit card applications are more likely to be filled out and mailed in, so it is more likely that the race of the applicant is unknown to the financial institution, at least in the case of African American-owned firms and Native American-owned firms, where surname is unlikely to provide any signal about minority status. On the other hand, for Asian/Pacific Islander and Hispanic applicants, it is possible that surname does provide such a signal, albeit a somewhat noisy one. The 1993 NSSBF asked respondents whether they used either a business or personal credit card for business purposes. Although our analysis of use of credit cards does not condition on application, a finding that African American- and nonminority-owned small businesses are equally likely to use credit cards may still provide evidence supporting discrimination in small-business lending. In fact, if financial institutions discriminate against African Americans in providing small business loans, we may even expect to see African Americans use credit cards more often than nonminorities since they have fewer alternatives. Even though many institutions may offer both types of credit, they may only be aware of the race of the applicant in a small business loan.¹²³

In Tables 5.11 and 5.12, we examine the probability that a firm uses either a business credit card (Row 1) or a personal credit card (Row 2) to finance business expenses holding constant other

¹²³ It appears that race may also rarely be known to those institutions that issue credit ratings. As we mentioned above, Cavalluzzo, Cavalluzzo, and Wolken (1999) show that Dun & Bradstreet Credit Ratings are not helpful in explaining racial disparities in loan denials. Although we are not privy to Dun & Bradstreet's methodology for establishing its credit ratings, we do know from long experience that the good indicators of ownership by race are lacking in Dun & Bradstreet's master business identifier file. Indeed, this is the reason why NERA's availability estimation methodology requires us to create a master directory of disadvantaged, minority, and women-owned businesses for merging with Dun & Bradstreet's data.

differences across firms.¹²⁴ There is no evidence, either for the U.S. as a whole or for the EWSC, that African American-owned firms are less likely to access either business or personal credit cards for business expenses. On the other hand, there is evidence in the EWSC and in the nation as a whole that Asian- and Pacific Islander-owned firms are less likely to access business credit cards.

Table 5.11. Models of Credit Card Use–USA

Specification	African American	Asian/ Pacific Islander	Native American	Hispanic	Non-minority Female	Sample Size
1) Business Credit Card	0.035 (1.35)	-0.096 (3.23)	0.085 (1.00)	0.024 (0.79)	0.018 (0.83)	4,633
2) Personal Credit Card	0.019 (0.74)	-0.019 (0.63)	0.019 (0.23)	-0.042 (1.40)	0.028 (1.28)	4,633

Source: See Table 5.1.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) Each line of this table represents a separate regression with the same control variables as Column 3 of Table 5.8 but excluding the loan characteristics. (3) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (4) In all specifications, the sample size is all firms. (5) Other races are excluded due to sample size limitations.

Table 5.12. Models of Credit Card Use–EWSC

Specification	African American	Asian/ Pacific Islander	Native American	Hispanic	Non-minority Female	Sample Size
1) Business Credit Card	0.030 (1.05)	-0.080 (2.50)	0.116 (1.05)	0.026 (0.72)	0.020 (0.84)	4,633
2) Personal Credit Card	0.029 (1.03)	-0.017 (0.54)	-0.098 (0.94)	-0.001 (0.03)	0.050 (2.08)	4,633

Source: See Table 5.1.

Notes: See Table 5.11. Control for EWSC included.

F. Differences in Interest Rates Charged on Approved Loans

Although most of our analysis has addressed whether minority- and nonminority-owned firms are treated equally in terms of their probability of loan denial, another way that differential treatment may emerge is through the interest rate charged for approved loans. Discrimination may be apparent if banks approve loans to equally creditworthy minority- and nonminority-owned firms, but charge the minority-owned firms a higher interest rate. Therefore, we estimated

¹²⁴ On average, 29 percent of all firms use business credit cards and 41 percent use personal credit cards for business use; these levels vary only modestly by race and ethnicity. In the EWSC division, the figures are 29 percent and 36 percent, respectively.

model specifications analogous to those reported previously for loan denials, but now the dependent variable represents the interest rate charged for firms whose loans were approved and the set of explanatory variables includes characteristics of the loan. More formally, the model we estimated takes the form:

$$(2) \quad I_i = \beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i + \beta_4 LC_i + \varepsilon_i,$$

where I represents the interest rate charged on the loan, LC represents characteristics of the loan (see the notes to Table 5.8 for a full list of the variables included in this set), ε_i is a term capturing random factors, and all other notations are the same as in equation (1).

An important consideration is whether the interest rate may be treated as exogenous, as our reduced form model assumes. In the context of small business loans, in which it is possible that the loan terms may be negotiated in the determination process, this assumption may not be valid. As such, a model that simultaneously estimates the interest rate and the loan decision might be appropriate, except that the interest rate that would be charged to firms whose loans were denied is not available in our data. Alternatively, one could estimate an interest rate model alone for those firms whose loan was approved, adjusting for the potential bias brought about by sample selection. To properly identify such a model, however, a variable is required that is linked to the loan denial decision, but unrelated to the level of interest charged on approved loans; no such variable exists in the data.

Nevertheless, one would expect these considerations to impose a downward bias on the estimated differential in interest rates charged on loans to African American-owned firms. Those firms whose loans were rejected would have been charged higher interest rates than those approved. Since African American-owned businesses were considerably more likely to be rejected holding constant differences in creditworthiness, one would expect any differential in interest rate to be even greater if those firms were included in the sample. We overlook this implication in the results reported below, but its impact should be kept in mind.

The results obtained from estimating equation (2) are reported in Row 1 of Table 5.13, which includes the complete set of control variables comparable to those in Column 5 of Table 5.8. Estimates indicated that African American-owned firms pay rates of interest that are roughly one percent (100 basis points) higher than similarly situated nonminority-owned firms. Row 2 shows that even African American-owned firms with good credit histories are charged higher interest rates relative to nonminority-owned firms.¹²⁵ There is evidence of this phenomenon affecting Hispanic-owned firms as well.

The remainder of the table presents similar specification checks to those reported in Table 5.10. Recall that most of these models identify firms for which the firm's own history is likely to be a more important contributor to its creditworthiness. The specifications by sales market are designed to distinguish the impact of central city location. Unfortunately, sample sizes are smaller in these specifications and reduce the power of the analysis. Nevertheless, we still find

¹²⁵ Estimates from firms that have had past credit problems are not presented since the higher likelihood of their being denied credit restricts the size of the sample and limits the ability to provide a powerful test of the interest rates charged if they are approved.

that regardless of organization type and firm age, African American-owned firms face statistically significantly higher interest rates. Overall, the evidence presented indicates that African Americans, and to a lesser extent Hispanics and Asians/Pacific Islanders, do face disadvantages in the market for small business credit that does not appear to be attributable to differences in geography or creditworthiness.

Table 5.13. Models of Interest Rate Charged—USA

Specification	African American	Asian/ Pacific Islander	Native American	Hispanic	Non-minority Female	Sample Size
1) All loans (controls as in Column 5, Table 5.8)	1.034 (3.72)	0.413 (1.37)	-0.427 (0.63)	0.517 (1.97)	0.025 (0.14)	1,454
<i>Creditworthiness</i>						
2) No credit problems	1.187 (3.27)	0.485 (1.33)	0.910 (1.07)	0.435 (1.48)	0.129 (0.66)	1,137
<i>Organization Type</i>						
3) Proprietorships and Partnerships	1.735 (2.57)	0.826 (1.03)	2.589 (0.90)	1.008 (1.74)	-0.239 (0.53)	364
4) Corporations	0.660 (2.04)	0.359 (1.07)	-0.585 (0.86)	0.491 (1.53)	0.127 (0.66)	1,090
<i>1993 Firm Size</i>						
5) Fewer than 10 Employees	1.200 (2.58)	-0.247 (0.41)	-0.010 (0.01)	0.783 (1.75)	-0.311 (1.02)	574
6) 10 or More Employees	0.450 (1.15)	0.446 (1.21)	-0.197 (0.25)	0.515 (1.37)	0.164 (0.77)	880
<i>Scope of Sales Market</i>						
7) Local	0.751 (1.55)	-0.073 (0.13)	1.773 (1.12)	0.805 (2.05)	0.324 (1.08)	633
8) Regional, National, or International	1.544 (4.26)	1.185 (2.93)	-1.368 (1.85)	0.392 (0.96)	-0.163 (0.73)	821

Source: See Table 5.1.

Notes: (1) Reported estimates are Ordinary Least Squares (OLS) coefficients, t-statistics in parentheses. (2) Each line of this table represents a separate regression with all of the control variables as Column 5 of Table 5.8 (except where specified) as well as: an indicator variable for whether the loan request was for a fixed interest rate loan, the length of the loan, the size of the loan, whether the loan was guaranteed, whether the loan was secured by collateral, and 7 variables identifying the type of collateral used if the loan was secured. (3) The sample consists of firms that had applied for a loan and had their application approved. (4) “No credit problems” means that neither the firm nor the owner had been delinquent on payments over 60 days, no judgments against the owner for the preceding 3 years, and the owner had not been bankrupt in the preceding 7 years.

Table 5.14 shows results for the EWSC. Findings are similar to those observed for the nation as a whole.

Table 5.14. Models of Interest Rate Charged—EWSC

Specification	African American	African American * EWSC	Asian/Pacific Islander	Native American	Hispanic	Non-minority Female	Sample Size
1) All loans (controls as in Column 5, Table 5.8)	0.972 (3.13)	0.235 (0.36)	0.362 (1.13)	0.690 (0.72)	0.548 (1.72)	-0.109 (0.59)	1,454
<i>Creditworthiness</i>							
2) No credit problems	0.970 (2.37)	0.997 (1.19)	0.522 (1.38)	1.145 (1.05)	0.467 (1.29)	-0.015 (0.07)	1,137
<i>Organization Type</i>							
3) Proprietorships and Partnerships	1.814 (2.06)	-0.124 (0.09)	0.602 (0.72)	2.940 (1.02)	0.740 (1.00)	-0.569 (1.17)	364
4) Corporations	0.689 (2.02)	-0.357 (0.35)	0.449 (1.24)	0.756 (0.73)	0.731 (1.94)	0.007 (0.04)	1,090
<i>1993 Firm Size</i>							
5) Fewer than 10 Employees	1.078 (2.04)	0.165 (0.16)	-0.355 (0.57)	3.228 (1.76)	0.866 (1.57)	-0.478 (1.43)	574
6) 10 or More Employees	0.362 (0.87)	0.670 (0.63)	0.591 (1.43)	-0.600 (0.54)	0.828 (1.90)	0.046 (0.20)	880
<i>Scope of Sales Market</i>							
7) Local	0.229 (0.42)	2.231 (2.04)	-0.207 (0.35)	4.155 (1.85)	0.585 (1.21)	0.271 (0.81)	633
8) Regional, National, or International	1.672 (4.20)	-0.770 (0.88)	1.158 (2.68)	-0.626 (0.60)	0.682 (1.38)	-0.311 (1.31)	821

Source: See Table 5.1.

Notes: See Table 5.13.

G. Loan Approval Rates and Access to Credit

The results presented so far may be biased toward finding too small a disparity between nonminority- and African American-owned firms because those minority-owned firms that actually apply for credit may represent a selected sample of the most creditworthy. More marginal minority-owned firms whose loans may have been accepted had they been owned by nonminorities may not even be among the pool of loan applicants. First, these firms may have gone out of business or may not have had the opportunity to commence operations because of their inability to obtain capital. Second, some existing firms may have chosen not to apply for credit because they were afraid their application would be rejected due to prejudice.

Although we have no direct evidence regarding the first proposition, data from the 1993 NSSBF provide some evidence for the second: African American- and Hispanic-owned firms are much more likely to report that they did not apply for a loan, even though they needed credit, because

they thought they would be rejected. Table 5.15 reports estimates from Probit models in which the dependent variable is an indicator variable representing failure to apply for a loan fearing denial for all firms. The first row presents racial differences without controlling for any other characteristics of firms, and the results indicate that African American- and Hispanic-owned firms are 40 and 23 percentage points more likely than nonminority-owned firms to withhold an application fearing denial.

Of course, some of this difference may be attributable to differences in creditworthiness across firms since firms that are bad credit risks should be afraid that their loan would be denied. To adjust for this, the second row of Table 5.15 reports comparable models that control for differences in creditworthiness and other characteristics of firms. The results from this specification show that the greater fear of rejection among African American- and Hispanic-owned firms can partially be explained by these differences. Nevertheless, a gap of 26, 5, and 16 percentage points still exists for African American-owned, Asian/Pacific Islander-owned, and Hispanic-owned firms relative to nonminority-owned firms with similar characteristics. In fact, when asked directly why they were afraid to apply for loans, African American-owned firms and Hispanic-owned firms were far more likely to report prejudice as the reason (19 percent and 8 percent, respectively, compared to 3 percent for nonminority-owned firms).¹²⁶ Results obtained in section (b) of Table 5.15 for the EWSC division are very similar to those found for the nation as a whole. As section (c) of Table 5.15 shows, African American-owned firms in construction also appear to be fearful of applying because of the possibility of their application being turned down.¹²⁷

If these minority-owned firms had applied for credit and were rejected because of discrimination, estimates of racial disparities based only upon loan applicants (as in Tables 5.8 and 5.9) would be understated. The perception of prejudice among these firms, however, does not necessarily imply that selection bias is present. Those firms that failed to apply because they feared rejection may have had similar loan denial rates as other minority-owned firms with comparable levels of creditworthiness that did apply. If those firms chose to apply for a loan, differences by race in the combined denial rate of the actual and potential applicants would be the same as what we have estimated for the observed sample of applicants.

More formally, suppose that loan denial rates for equally creditworthy nonminority- and minority-owned firms that applied for credit are θ^W and θ^M , respectively; the measure of discrimination employed in the previous analysis is $\theta^M - \theta^W$. Now suppose that firms that are equally creditworthy, but chose not to apply for a loan because they feared rejection, would have been denied at the rates θ^W and ψ^M for nonminority- and minority-owned firms, respectively. Among the nonminority-owned firms, the denial rate is identical regardless of whether the firm chose to apply or not, conditional upon creditworthiness. Among minority-owned firms, however, those who were afraid to apply may have been denied at a higher rate (perhaps because of their greater propensity to locate in the central city or other factors that are related to their race, but unrelated to creditworthiness) compared with other minority-owned firms. Then the

¹²⁶ Other reasons given, including “too little collateral,” “poor credit history,” and “poor balance sheet,” are comparable across groups. Firms could report more than one reason.

¹²⁷ It was not possible to report separate construction results in earlier tables because of small sample sizes.

correct representation of the disadvantage faced by minority-owned firms is $[\eta\theta^m + (1-\eta)\psi^m] - \theta^w$, where η represents the share of minority-owned firms desiring credit that submitted an application. Our earlier findings are biased if θ^m is not equal to ψ^m .

Table 5.15. Racial Differences in Failing to Apply for Loans Fearing Denial

Specification	African American	Asian/Pacific Islander	Native American	Hispanic	Non-minority Female
a) USA					
No Other Control Variables (n=4,637)	0.405 (16.65)	0.099 (3.61)	0.134 (1.72)	0.235 (8.28)	0.031 (1.54)
Full Set of Control Variables (same as Table 5.8, Column 3 except for loan characteristics) (n=4,633)	0.257 (10.02)	0.054 (1.98)	0.019 (0.27)	0.164 (5.69)	-0.008 (0.38)
b) EWSC					
No Other Control Variables, except for WNC dummy and race*WNC interactions (n=4,637)	0.388 (14.41)	0.087 (2.92)	0.200 (1.97)	0.247 (7.41)	0.046 (2.08)
Full Set of Control Variables (same as Table 5.8, Column 3 except for loan characteristics) (n=4,633)	0.249 (8.94)	0.045 (1.52)	0.054 (0.58)	0.169 (5.05)	0.007 (0.31)
c) Construction					
No Other Control Variables (n=781)	0.350 (6.74)	0.109 (1.27)	-0.087 (0.54)	0.150 (2.22)	-0.007 (0.12)
Full Set of Control Variables (same as Table 5.8, Column 3 except for loan characteristics) (n=781)	0.181 (3.67)	0.064 (0.78)	-0.132 (1.00)	0.039 (0.65)	-0.063 (1.32)

Source: See Table 5.1.

Notes: (1) Reported estimates are Probit derivatives, t-statistics in parentheses. (2) Sample consists of all firms.

(3) Dependent variable equals one if the firm said they did not apply for a loan fearing denial, zero otherwise.

One approach that is frequently employed to address such a problem is to estimate a “Heckman-correction” that would formally model the application process in conjunction with the loan outcome for those who applied. The difficulty with this methodology in the present context is that it is only correctly implemented when some variable is present that is correlated with a firm’s decision to apply for a loan, but is independent of the financial institution’s decision to approve or deny the request. Unfortunately, the NSSBF data do not appear to contain any variables that would satisfy these conditions, so we are unable to implement this methodology.¹²⁸

¹²⁸ The only variable that potentially could meet these conditions in the NSSBF data is the distance between a firm and the nearest financial institution. If greater distance reduced a firm’s information regarding the availability of funds, it might be related to the decision to apply for a loan. On the other hand, the creditworthiness of the firm should be independent of its location and should be unlikely to enter into the approval process. Unfortunately, we did not find a direct relationship between distance to the nearest financial institution and the probability of applying for a loan. This may be due to the fact that few firms are located more than a very short distance from the nearest financial institution.

As an alternative that answers a different, but related, question, we consider the ability of firms to get credit among those who desired it, regardless of whether or not they applied. This amounts to analyzing access to credit rather than loan approval and includes in the denominator those firms that needed credit but did not apply because they feared rejection. If differences by race in this rate among all firms who needed credit are greater than differences by race in the rate of denial among loan applicants, then this would indicate that African American- and other minority-owned firms have even less access to credit than an analysis of loan applicants would indicate.

To test this proposition, we estimate a regression model comparable to the one reported in Table 5.10 for the sample of firms that applied for a loan, except that this analysis considers all firms seeking credit and treats those who did not apply for fear of rejection as denials. The sample excludes firms that did not need additional credit in the preceding three years. The results, reported in Table 5.16, are consistent with the previous analysis; we find that selection is not much of an issue for African American-owned firms nationally, Asian/Pacific Islander-owned firms nationally, or in the EWSC division. Regardless of whether we consider denial rates among applicants or denial rates among firms that desired additional credit, African American-owned firms are 20-30 percentage points less likely to obtain credit once control variables are included and even higher than that when they are not. For Hispanic-owned firms, however, some selection bias is evident. Among the pool of loan applicants, Hispanic-owned firms are not statistically significantly more likely to be denied than other firms with the same characteristics (see, *e.g.*, Table 5.8, Column 5). Among the pool of firms seeking additional credit, however, Hispanic-owned firms are 17 percentage points more likely to be denied access to credit, and 16 percentage points more likely in the EWSC, and these differences are statistically significant.

Table 5.16. Models of Failure to Obtain Credit Among Firms that Desired Additional Credit

Specification	African American	Asian/Pacific Islander	Native American	Hispanic	Non-minority Female
a) USA					
No Other Control Variables (n=2,647)	0.455 (14.85)	0.299 (6.83)	0.188 (1.57)	0.297 (7.77)	0.126 (4.01)
Full Set of Control Variables (same as Table 5.8, Column 3 except for loan characteristics) (n=2,644)	0.276 (6.93)	0.180 (3.42)	-0.009 (0.06)	0.165 (3.51)	0.049 (1.38)
b) EWSC					
No Other Control Variables (n=2,647)	0.446 (12.94)	0.278 (5.80)	0.275 (1.87)	0.315 (7.01)	0.138 (4.06)
Full Set of Control Variables (same as Table 5.8, Column 3 except for loan characteristics) (n=2,644)	0.282 (6.43)	0.150 (2.64)	0.140 (0.71)	0.160 (2.95)	0.053 (1.38)

Source: See Table 5.1.

Notes: (1) Reported estimates are Probit derivatives, t-statistics in parentheses. (2) The sample consists of all firms that applied for loans along with those who needed credit, but did not apply for fear of refusal. (3) Failure to obtain credit includes those firms that were denied and those that did not apply for fear of refusal. (4) Dependent variable is set to one if the firm failed to obtain credit and to zero if the firm applied for credit and had their loan application approved.

H. Analysis of Credit Market Discrimination in the U.S. in 1998

We turn next to an examination of the extent to which discrimination in the credit market has changed since 1993 using data from the 1998 SSBF conducted by the Board of Governors of the Federal Reserve System.¹²⁹ This section updates the estimates obtained above using the 1993 NSSBF. Two complications are that the overall sample size is smaller and a number of the questions have been changed. However, the result is still clear—African American-owned firms face discrimination in the credit market. In addition, there is evidence of discrimination in the credit market against other minority-owned firms as well. We present four sections of evidence, all of which are consistent with our findings from the 1993 survey.

¹²⁹ The target population of the survey was for-profit businesses with fewer than 500 employees that were either a single establishment or the headquarters of a multiple establishment company, and were not agricultural firms, financial institutions, or government entities. These firms also had to be in business during December 1998. Data were collected for fiscal year-end 1998. Like its 1993 counterpart, the purpose of this survey was to gather information about small business financial behavior and the use of financial services and financial service providers by these firms. The objectives of the survey were to collect information that can inform researchers and policy makers on the availability of credit to small businesses; the location of the sources of financial services; the types of financial services used, including checking accounts, savings accounts, various types of credit, credit cards, trade credit, and equity injections; as well as the firm's recent credit acquisition experiences. The survey also investigated the level of debt held by these firms and their accessibility to credit. Additionally, the survey collected information on firm and owner demographics, as well as the firm's recent income statement and balance sheet.

1. Qualitative Evidence

Consistent with the 1993 survey, African American-owned firms in the 1998 survey report that the biggest problem their firm currently faces is “financing and interest rates.” (Table 5.17). In the 1993 survey, respondents were asked to report problems in the preceding 12 months (Tables 5.3 and 5.4) and over the next 12 months (Tables 5.5 and 5.6). Interestingly, even though credit availability was by far the most important category for African Americans (21 percent in Table 5.5), interest rates were relatively unimportant (2 percent). The 1998 SSBF, however, did not report separate categories.

Table 5.17. What is the Most Important Problem Facing Your Business Today?

	Non-minority Male	African American	Other	Hispanic	Non-minority Female	Total
Financing and interest rates	5.8%	18.2%	10.6%	8.1%	6.2%	6.8%
Taxes	7.7%	1.9%	5.3%	3.1%	6.6%	6.9%
Inflation	0.4%	0.6%	0.0%	1.0%	0.4%	0.4%
Poor sales	7.0%	5.9%	11.6%	7.0%	8.3%	7.5%
Cost/availability of labor	3.9%	3.3%	2.4%	3.5%	4.5%	3.9%
Government regulations/red tape	7.1%	3.0%	4.8%	8.1%	6.5%	6.8%
Competition (from larger firms)	11.1%	10.7%	10.6%	18.4%	10.2%	11.3%
Quality of labor	14.4%	11.0%	9.4%	8.7%	9.1%	12.6%
Cost and availability of insurance	2.6%	1.0%	0.8%	0.0%	2.3%	2.2%
Other	11.4%	10.0%	8.3%	16.0%	12.7%	11.7%
Cash flow	4.6%	10.9%	6.3%	3.5%	3.3%	4.6%
Capital other than working capital	1.1%	1.7%	4.1%	0.8%	1.3%	1.3%
Acquiring and retaining new customers	3.1%	3.9%	5.0%	1.8%	3.3%	3.2%
Growth of firm/industry	0.9%	1.0%	1.2%	0.1%	0.4%	0.8%
Overcapacity of firm/industry	0.1%	0.0%	0.0%	0.3%	0.0%	0.1%
Marketing/advertising	2.1%	3.9%	2.5%	2.8%	3.6%	2.5%
Technology	1.4%	1.2%	1.6%	2.6%	1.3%	1.5%
Costs, other than labor	2.7%	1.8%	2.5%	3.6%	3.8%	2.9%
Seasonal/cyclical issues	1.3%	1.2%	0.7%	0.4%	0.7%	1.1%
Bill collection	2.8%	2.2%	2.4%	2.6%	2.8%	2.8%
Too much work/not enough time	3.6%	2.2%	4.3%	1.4%	5.7%	3.9%
No problems	4.6%	4.3%	5.6%	5.8%	6.4%	5.1%
Not ascertainable	0.4%	0.0%	0.0%	0.0%	0.7%	0.4%

Source: NERA calculations from the 1998 SSBF (n=3,561).

Note: Results are weighted.

2. Differences in Loan Denial Rates by Race/Ethnicity

In 1998 as in 1993, in comparison with firms owned by nonminority males, minority- and female-owned firms were less creditworthy, more likely to have their loan applications turned down, more likely not to apply for a loan for fear of being denied, and consistently smaller and younger. Moreover, their owners had lower amounts of both home and non-home equity. Minority-owned firms in general, and African American-owned firms in particular, were much less likely to be classified as having a “low risk” credit rating by Dun & Bradstreet.¹³⁰

In the 1993 survey, respondents were asked “During the last three years has the firm applied for credit or asked for the renewal of terms on an existing loan?” In 1998, a narrower question limited to new loans was asked—“Did the firm apply for new loans in the last three years?” In 1993, 43 percent answered the question in the affirmative compared with 27 percent in 1998. Despite the fact that in 1993 the question was broader, the pattern of denials by race and gender is similar across the years. As can be seen below, minority-owned firms were especially likely to have their loan applications denied.

Percentage of Loan Applications Denied		
	1993	1998
Nonminority males	26.2%	24.4%
African Americans	65.9%	62.3%
Asians/Pacific Islander, Native Americans, <i>etc.</i>	39.9%	47.0%
Hispanics	35.9%	49.9%
Nonminority females	30.1%	23.5%
Overall	28.8%	28.6%

Similarly, the proportion of firms reporting that they did not apply for fear of being denied is similar by race, ethnicity, and gender across the two survey years. More than half of African American owners did not apply for a loan for fear of being denied compared with only one out of five nonminority males.

Percentage Not Applying for Fear of Denial		
	1993	1998
Nonminority males	22.5%	20.2%
African Americans	60.7%	53.9%
Asians/Pacific Islander, Native Americans, <i>etc.</i>	27.5%	23.1%
Hispanics	41.5%	34.3%
Nonminority females	22.7%	24.2%
Overall	24.7%	23.3%

In the 1998 SSBF survey, respondents who were denied loans were asked if they believed there were reasons other than the official ones provided by their financial institution as to why their loan applications were turned down. Among numerous options provided were the following:

- a) Prejudice on a racial/ethnic basis.

¹³⁰ Information on home and non-home equity or on the Dun & Bradstreet credit rating was not available in the 1993 survey.

- b) Prejudice against women.
- c) Prejudice against the business location.
- d) Prejudice against the business type.
- e) Prejudice or discrimination (not-specified or other).

Among firm owners who had applied for credit within the last three years and were denied, 34.1 percent believed there were reasons for their denial beyond the official explanation provided by the financial institution. Among nonminorities, 7.7 percent suspected some sort of prejudice. By contrast, the figure among minorities was 25.8 percent. Among owners who needed credit but did not apply for fear of denial, a similar pattern was observed. Only 1.7 percent of nonminorities stated prejudice was the reason, whereas among minorities the figure was 6.8 percent.

In Tables 5.8 and 5.9, the determinants of loan denial rates were estimated using data from the 1993 NSSBF. It was found that African American-owned firms were almost twice as likely to have their loans denied than nonminority male-owned firms, even after controlling for a host of variables included primarily to control for the possibility that minority-owned firms are smaller and less creditworthy than those owned by nonminority men.

A similar exercise is performed below in Tables 5.18 and 5.19 using data from the 1998 SSBF. Column 1 in Table 5.18 shows that African American-owned firms in 1998 had a 42.2 percentage point higher probability of denial than nonminority male-owned firms before taking account of creditworthiness of the firm or any other characteristics. For 1993, the comparable figure was 44.3 percentage points. The addition of a large number of controls reduces the percentage point differential for African Americans to 21.8 in column 5 as the full set of controls is added. For 1993, the comparable figure was 24.1 percentage points.

The main difference between 1993 and 1998 is that now we find evidence that the probability of denial is significantly higher for Hispanic-owned firms as well. In Table 5.18, Column 5, Hispanic-owned firms have a 17.1 percentage point higher probability of being denied than nonminority male-owned firms. In Table 5.8, by contrast, denial probabilities for Hispanic-owned firms were *not* significantly different from those of nonminority male-owned firms. If anything, discrimination in the small business credit market appears to have expanded during the late 1990s.

Table 5.18. Determinants of Loan Denial Rates—USA

	(1)	(2)	(3)	(4)	(5)
African American	0.422 (7.94)	0.254 (5.36)	0.217 (5.05)	0.192 (4.52)	0.218 (4.74)
Asian/Pacific Islander	0.148 (2.54)	0.129 (2.52)	0.049 (1.25)	0.023 (0.65)	0.028 (0.77)
Hispanic	0.353 (6.44)	0.269 (5.37)	0.211 (4.69)	0.183 (4.21)	0.171 (4.00)
Nonminority female	0.087 (2.22)	0.049 (1.55)	0.024 (0.96)	0.016 (0.66)	0.011 (0.44)
Judgments		0.272 (4.28)	0.249 (4.32)	0.272 (4.47)	0.262 (4.20)
Firm delinquent		0.081 (2.88)	0.115 (4.20)	0.103 (3.88)	0.111 (4.01)
Personally delinquent		0.092 (2.85)	0.039 (1.59)	0.042 (1.69)	0.045 (1.76)
Bankrupt past 7 years		0.504 (4.48)	0.406 (3.83)	0.392 (3.67)	0.395 (3.64)
\$1998 sales (*10 ⁸)		-0.000 (2.47)	-0.000 (0.26)	0.000 (0.02)	0.000 (0.03)
\$1998 firm equity (*10 ⁸)		0.000 (1.40)	0.000 (0.46)	0.000 (0.20)	0.000 (0.06)
Owner home equity (*10 ⁸)		0.000 (0.52)	0.000 (1.47)	0.000 (0.96)	0.000 (0.90)
Owner net worth (*10 ⁸)		-0.000 (1.25)	-0.000 (1.28)	-0.000 (1.19)	-0.000 (1.24)
Owner years of experience		-0.002 (1.42)	-0.001 (0.49)	-0.000 (0.34)	-0.000 (0.21)
Owner share of business		0.000 (0.75)	-0.000 (0.12)	0.000 (0.03)	-0.000 (0.33)
Dun & Bradstreet credit ratings (4 variables)	No	Yes	Yes	Yes	Yes
Owner Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Geographic Division (8 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	924	924	924	924	905
Pseudo R ²	.1061	.2842	.3714	.3910	.4015
Chi ²	90.0	241.1	315.1	331.8	337.8
Log likelihood	-379.3	-303.7	-266.7	-258.3	-251.7

Source: See Table 5.17.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) “Other firm characteristics” include variables indicating whether the firm had a line of credit, 1998 full time equivalent employment, firm age, metropolitan area, legal form of organization (sole proprietorship, partnership, LLP, S-corporation, C-corporation, or LLC), existing long run relation with lender, geographic scope of market (regional, national, foreign or international), the value of the firm’s inventory, the firm’s cash holdings, and the value of land held by the firm. (3) “Characteristics of the loan” includes the size of the loan applied for.

Table 5.19. Determinants of Loan Denial Rates—EWSC

	(1)	(2)	(3)	(4)	(5)
African American	0.415 (6.80)	0.223 (4.23)	0.205 (4.21)	0.183 (3.78)	0.205 (3.97)
Asian/Pacific Islander	0.156 (2.50)	0.146 (2.61)	0.062 (1.43)	0.041 (1.00)	0.043 (1.04)
Hispanic	0.320 (5.12)	0.254 (4.56)	0.206 (4.12)	0.184 (3.76)	0.169 (3.54)
Nonminority Female	0.093 (2.18)	0.050 (1.43)	0.025 (0.90)	0.017 (0.61)	0.012 (0.43)
African American*EWSC	0.037 (0.39)	0.068 (0.79)	0.023 (0.36)	0.029 (0.44)	0.040 (0.57)
Asian/Pacific Islander*EWSC	-0.050 (0.38)	-0.059 (0.70)	-0.045 (0.69)	-0.041 (0.65)	-0.038 (0.58)
Hispanic*EWSC	0.110 (0.99)	0.033 (0.39)	0.012 (0.18)	0.037 (0.50)	0.032 (0.44)
Nonminority female*EWSC	-0.023 (0.25)	-0.007 (0.10)	-0.005 (0.08)	0.003 (0.06)	-0.002 (0.04)
EWSC division	-0.041 (0.89)	0.002 (0.06)	-0.002 (0.08)	-0.018 (0.42)	-0.013 (0.29)
Creditworthiness Controls (8 variables)	No	Yes	Yes	Yes	Yes
Owner's Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Geographic Division (7 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	924	924	924	924	905
Pseudo R ²	0.1090	0.2862	0.3724	0.4000	0.4002
Chi ²	92.45	242.88	315.95	329.24	336.64
Log likelihood	-378.0	-302.8	-266.3	-259.6	-252.3

Source: See Table 5.17.

Notes: (1) t-statistics in parentheses. (2) Other creditworthiness controls are the four other variables included in Column 2 of Table 5.18.

Table 5.19 focusing on the EWSC division yields similar results—showing significantly larger denial probabilities for African American- and Hispanic-owned firms (20.5 percent and 16.9 percent, respectively) than for nonminority male-owned firms. The EWSC indicator was not significant in Table 5.19. None of the interaction terms between EWSC and race, ethnicity or gender were significant either, indicating that the loan denial results for the EWSC are not significantly different than for the nation as a whole.

Although tempered by the smaller sample size available, the quality of the experiment is somewhat better using the 1998 data than it was using the 1993 data due to the availability of an

improved set of controls for the creditworthiness of the firm and its owner. In 1998, three new variables are included regarding the financial viability of the firm:

- a) The value of the equity, if any, in the owner's home.
- b) The owner's net worth excluding home equity and equity in the firm.
- c) The firm's Dun & Bradstreet credit rating in five categories (low, moderate, average, significant and high) indicating the likelihood of loan default.¹³¹

Despite the fact that these new variables do help to predict loan denials,¹³² the estimated race differences including these variables are unchanged from those reported above.¹³³ This suggests that the large estimated differences in the denial probabilities that were estimated in 1993 were not biased significantly upwards by the fact that these variables were unavailable.

3. Effect of 1998 Survey Design Changes on Differences in Loan Denial Rates

The question we used to examine the 1998 data was somewhat narrower than the question used in the 1993 survey because it was changed by the survey designers. The 1998 question asked about new loans over the preceding three years, whereas the 1993 question covered all loans, including renewals. Responses in 1998 were as follows:

Applied for New Loans Last Three Years	Number	Percent
Did not apply	2,599	73.0%
Always approved	713	20.0%
Always denied	166	4.7%
Sometimes approved/sometimes denied	83	2.3%
Total	3,561	100.0%

The dependent variable used in Tables 5.18 and 5.19 was set to one if the loan application was always denied and was set to zero if the application was always approved or sometimes approved/sometimes denied. An alternative dependent variable—*denylast*—is set to one if the application is always denied, set to zero if always approved. Those responding “sometimes approved/sometimes denied” are excluded from the analysis. Column (1) of Table 5.20 replicates Column 1 of Table 5.18 using *denylast* as the dependent variable with the smaller sub-sample. African Americans, Hispanics, Asians/Pacific Islanders, and nonminority females are all confirmed to face higher denial rates than nonminority males using this specification. For

¹³¹ The D&B Commercial Credit Score Report predicts the likelihood of a company paying in a delinquent manner (90+ days past terms) during the next 12 months based on the information in D&B's file. The score is intended to help firms decide quickly whether to accept or reject accounts, adjust terms or credit limits, or conduct a more extensive review based on the report D&B provides. Firms can also determine the company's relative ranking among other businesses in the D&B database.

¹³² The coefficients and t-statistics on the credit score variables when they were included alone in a U.S. loan denial model was as follows: moderate risk = .228 (2.45); average risk = .295 (3.25); significant risk = .319 (3.28); high risk = .391 (3.53); $n = 924$; pseudo $r^2 = .0253$. Excluded category “low risk.” Results were essentially the same when a control for EWSC was also included.

¹³³ This confirms the findings of Cavalluzzo, Cavalluzzo and Wolken (1999) who performed a similar exercise with the 1993 data.

African Americans and Hispanics, the difference is 46 and 36 percentage points, respectively. For Asians/Pacific Islanders, the difference is 19 percentage points, and for nonminority females, 8 percentage points.

Table 5.20. More Loan Denial Probabilities

	(1)	(2)	(3)	(4)
	<i>Denylast</i>	<i>Denylast</i>	<i>Denylast</i>	<i>Denylast</i>
African American	0.457 (8.00)	0.250 (4.84)	0.466 (6.95)	0.251 (4.10)
Asian/Pacific Islander	0.185 (2.81)	0.033 (0.76)	0.187 (2.67)	0.038 (0.82)
Hispanic	0.360 (6.28)	0.186 (3.91)	0.330 (4.99)	0.170 (3.23)
Nonminority female	0.083 (2.00)	0.006 (0.22)	0.085 (1.88)	0.004 (0.12)
African American*EWSC			0.007 (0.07)	0.003 (0.05)
Asian/Pacific Islander*EWSC			-0.031 (0.19)	-0.028 (0.31)
Hispanic*EWSC			0.112 (0.96)	0.042 (0.50)
Nonminority female*EWSC			-0.005 (0.05)	0.012 (0.18)
EWSC			-0.055 (1.14)	-0.012 (0.23)
Creditworthiness Controls	No	Yes	No	Yes
Owner's Education	No	Yes	No	Yes
Other Firm Characteristics	No	Yes	No	Yes
Characteristics of the Loan	No	Yes	No	Yes
Geographic Division	No	Yes	No	Yes
Industry	No	Yes	No	Yes
N	846	846	846	846
Pseudo R ²	0.1112	0.4227	0.1147	0.4232
Chi ²	90.94	345.57	93.79	345.98
Log likelihood	-363.3	-236.0	-361.9	-235.8

Source: See Table 5.18.

Results consistent with discrimination are confirmed for African American-owned firms and Hispanic-owned firms in Column (2) of Table 5.20 when a host of demographic and financial characteristics and geographic and industry indicators are included. When interaction terms for the EWSC division are added to the model as in Columns (3) and (4), results for African Americans and Hispanics remain statistically significant. Moreover, the results for Asian/Pacific Islander-owned firms and nonminority female-owned firms become significant in Column (3), though not in Column (4). The EWSC indicator is not significant in any of the specifications, nor are the interaction terms between EWSC and race, ethnicity, or gender.

4. Differences in Interest Rates, Credit Card Use, and Failure to Apply for Fear of Denial

Tables 5.21 through 5.23 provide confirmation from the 1998 survey of a number of other results from the 1993 survey reported above.

Table 5.21, which is similar to Tables 5.13 and 5.14, finds that conditional on obtaining a loan, African American-owned firms are charged a higher price for their credit—on average 1.06 percentage points nationally. However, African Americans in the EWSC appear to pay less for their loans than African Americans nationally.

Table 5.22, which is similar to Table 5.15, shows that African American-owned firms are much more likely not to apply for a loan for fear that they will be denied. Based on all of the foregoing evidence, this is perhaps a sensible decision—if and when they do apply they are almost twice as likely as nonminority male-owned firms to have their application rejected. This is evident in the EWSC as well and also in the construction and construction-related industries. There is some evidence of this phenomenon for Hispanics nationally as well.

Finally, Table 5.23, which is comparable to Tables 5.11 and 5.12, suggests that when the financial institution does not know the race or ethnicity of the applicant—as is often the case in an application for a credit card—there are no differences by race or ethnicity in the usage for business purposes of either business or personal credit cards. Except for personal credit card use by African American-owned firms, there was also little evidence of any race effects in the use of credit cards in the EWSC division (rows 3 and 4).

Our confidence in the strength of our findings from the 1993 NSSBF survey is elevated by these findings from the 1998 SSBF survey, which strongly confirm the earlier results. Unfortunately, African Americans continue to be discriminated against in the market for small business credit. By 1998, this discrimination appears to be on the increase for African Americans and to be expanding to impact other minority groups, such as Hispanics, as well. This is an important market failure, and one which government agencies such as MSCAA cannot ignore if they are to avoid passive participation in a discriminatory market area.

Table 5.21. Models of Interest Rate Charged

Specification	African American	African American* EWSC	Asian/Pacific Islander	Hispanic	Non-minority Female
1a) All Loans (as in Column 5 of Table 5.18) n=765	1.057 (2.63)	—	0.585 (1.55)	-0.003 (0.01)	-0.518 (1.99)
1b) All Loans (as in Column 5 of Table 5.19) n=765	1.573 (3.16)	-1.975 (2.28)	0.335 (0.76)	0.167 (0.35)	-0.493 (1.66)

Source: See Table 5.18.

Notes: (1) Each line of this table represents a separate regression with all of the control variables. (2) The sample consists of firms that had applied for a loan and had their application approved.

Table 5.22. Racial Differences in Failing to Apply for Loans Fearing Denial

Specification	African American	Asian/Pacific Islander	Hispanic	Non-minority Female
a) U.S.				
No Other Control Variables (n=3,448)	0.353 (11.90)	0.046 (1.48)	0.173 (5.77)	0.051 (2.55)
Full Set of Control Variables (n=3,448)	0.209 (7.07)	-0.010 (0.36)	0.057 (2.06)	0.012 (0.65)
b) EWSC division				
No Other Control Variables (n=565)	0.317 (4.92)	-0.057 (0.65)	0.078 (1.28)	-0.004 (0.09)
Full Set of Control Variables (n=560)	0.204 (3.33)	-0.043 (0.64)	-0.026 (0.59)	-0.019 (0.51)
c) Construction				
No Other Control Variables (n=613)	0.371 (5.06)	0.117 (1.43)	0.020 (0.26)	0.122 (2.08)
Full Set of Control Variables (n=609)	0.292 (3.88)	0.105 (1.37)	-0.055 (0.96)	0.053 (1.00)

Source: See Table 5.18.

Notes: (1) Reported estimates are Probit derivatives with t-statistics in parentheses. (2) Full set of control variables as in Column 5 of Table 5.18, except for loan amount, year of application, and type of lender.

Table 5.23. Models of Credit Card Use

Specification	African American	Asian/ Pacific Islander	Hispanic	Nonminority Female	Sample Size
1) Business Credit Card	-0.001 (0.01)	-0.038 (1.00)	-0.014 (0.37)	-0.018 (0.72)	3,561
2) Personal Credit Card	-0.018 (0.54)	0.016 (0.44)	-0.050 (1.43)	0.012 (0.51)	3,561
3) Business Credit Card EWSC	0.015 (0.18)	-0.191 (1.71)	0.001 (0.01)	0.070 (1.10)	583
4) Personal Credit Card EWSC	-0.146 (2.05)	0.064 (0.60)	-0.051 (0.67)	0.001 (0.01)	583
3) Business Credit Card Construction & related	0.066 (0.73)	-0.070 (0.66)	0.104 (1.05)	-0.013 (0.18)	624
4) Personal Credit Card Construction & related	0.008 (0.100)	0.048 (0.48)	-0.086 (0.95)	-0.068 (0.92)	624

Source: See Table 5.18.

Notes: (1) Each line of this table represents a separate regression with the same control variables as Column 5 of Table 5.18, except for loan amount, year of application, and type of lender. (2) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (3) In all specifications, the sample size includes all firms. (4) Reported estimates are Probit derivatives with t-statistics in parentheses.

I. Analysis of Credit Market Discrimination in the U.S. in 2003

The most recent wave of the Survey of Small Business Finances was made available by the Board of Governors of the Federal Reserve System in 2007.¹³⁴ This is the fourth and final survey of U.S. small businesses conducted by the Board of Governors since 1987.¹³⁵ The survey gathered data from 4,072 firms selected to be representative of small businesses operating in the U.S. at the end of 2003. The survey covered a nationally representative sample of U.S. for profit, non-financial, non-subsidiary, nonagricultural, and nongovernmental businesses with fewer than 500 employees that were in operation at year-end 2003 and at the time of interview. Most interviews took place between June 2004 and January 2005. The sample was drawn from the Dun & Bradstreet Market Identifier file. The number of employees varied from zero to 486 with a weighted median of 3.0 and weighted mean of 8.6.

¹³⁴ See www.federalreserve.gov/pubs/oss/oss3/ssbf03/ssbf03home.html.

¹³⁵ The Federal Reserve Board cancelled the SSBF subsequent to the completion of the 2003 wave, ostensibly for financial reasons. See Robb (2010).

Unfortunately, the 2003 SSBF did not over-sample minority-owned firms, as in the first three survey waves. According to survey staff, this was due to concerns that doing so would delay the survey timeline and reduce the overall response rate.¹³⁶

In 1998, almost 8 percent of survey respondents were African American, compared to slightly more than 3 percent in 2003. Hispanics were almost 7 percent in 1998 but less than 4 percent in 2003. Other minorities were 6.5 percent in 1998 but only 5.4 percent in 2003.¹³⁷ Although the population weights were adjusted to accommodate these changes, even these weighted percentages are significantly smaller for minorities in 2003 than in 1998.¹³⁸

Mach and Wolken (2006) reported using these data that 13.1 percent of firms were owned by nonminority or Hispanic individuals; the share is statistically lower than in 1998 (14.6 percent). The shares for African Americans and Asians/Pacific Islanders each held roughly constant at 4 percent; the share of American Indians and Alaska natives held at roughly 1 percent. However, the share of Hispanics fell a statistically significant amount from 5.6 percent to 4.2 percent. The percentage of firms owned by females also declined from 72.0 percent to 64.8 percent. Despite these drawbacks, our analysis of the 2003 SSBF yields results that are strongly consistent with those obtained from the 1993 and 1998 survey waves. The remainder of this section presents our findings from this analysis.¹³⁹

1. Qualitative Evidence

Table 5.24 reports the results of asking business owners for the most important problem currently facing their firm. Consistent with the 1993 and 1998 surveys, firms owned by minority and women-owned firms were more likely to say that their most important problem was “financing and interest rates.” Once again, the African American-nonminority difference was most pronounced—only slightly more than 5 percent of nonminority male business owners reported this as their major problem compared to almost 21 percent of African American business owners.

¹³⁶ See fn. 95, above.

¹³⁷ The impact on women was not as pronounced. Females were 23.3 percent in 1998 and 20.9 percent in 2003. For nonminority females, the figures are 17.8 percent in 1998 and 18.2 percent in 2003.

¹³⁸ Mach and Wolken (2006, Table 2) report that weighted figures for Blacks were 4.1 percent in 1998 and 3.7 percent in 2003. Hispanics were 5.6 and 4.2 percent, respectively; Asians and Pacific Islanders were 4.4 and 4.2 percent, respectively; Native Americans were 0.8 and 1.3 percent, respectively; and women were 24.3 and 22.4 percent, respectively.

¹³⁹ The data file provided by the Board of Governors includes five separate observations per firm. That is to say, there are $4240 \times 5 = 21,200$ observations. These so-called multiple imputations are done via a randomized regression model, and are included because where there are missing observations several alternative estimates are provided. Where values are not missing the values for each of the five imputations are identical. We make use of the data from the first imputation: the results presented here are essentially identical whichever imputation is used. Overall, only 1.8 percent of observations in the data file were missing.

Table 5.24. What is the Most Important Problem Facing Your Business Today?

	Non-minority Male	African American	Other	Hispanic	Non-minority Female	Total
Financing and interest rates	5.4%	20.7%	9.1%	5.7%	5.8%	6.3%
Taxes	6.3%	2.4%	4.9%	7.7%	4.3%	5.7%
Inflation	2.7%	1.0%	2.3%	0.5%	1.4%	2.3%
Poor sales or profitability	17.8%	38.5%	28.9%	30.0%	22.5%	20.6%
Cost/availability of labor	1.5%	0.0%	0.6%	1.5%	1.5%	1.4%
Government regulations/red tape	4.7%	1.0%	5.4%	9.6%	2.5%	4.5%
Competition from larger firms	4.0%	2.7%	2.7%	3.6%	3.6%	3.8%
Quality of labor	7.9%	6.9%	5.0%	3.8%	6.5%	7.2%
Cost and availability of insurances	10.3%	1.8%	3.1%	5.2%	6.4%	8.6%
Other	2.6%	1.9%	4.0%	2.8%	1.6%	2.5%
None	5.3%	3.4%	9.4%	4.1%	8.6%	6.0%
Cash flow	6.2%	5.1%	4.6%	7.1%	6.8%	6.3%
Growth	0.9%	2.7%	0.4%	1.1%	0.8%	1.0%
Foreign competition	1.3%	0.0%	1.0%	0.1%	0.7%	1.0%
Competition - other	1.6%	0.8%	1.8%	0.1%	1.1%	1.4%
Availability of materials/resources	0.8%	0.8%	0.6%	1.6%	1.2%	0.9%
Labor problems other than cost or quality	1.2%	2.2%	0.2%	0.0%	1.3%	1.1%
Internal management/administrative problems	4.2%	2.5%	4.3%	1.0%	6.1%	4.4%
Environmental constraints	1.4%	0.7%	1.6%	2.3%	2.0%	1.6%
Advertising and public awareness	2.2%	1.8%	2.4%	1.8%	3.3%	2.4%
Market/economic/industry factors	4.9%	1.9%	4.0%	2.3%	6.2%	4.8%
Health care cost and availability	1.5%	0.0%	0.7%	0.8%	1.4%	1.4%
Energy costs	1.5%	0.0%	0.7%	3.7%	1.2%	1.4%
Costs other than health care and energy	2.2%	1.0%	0.1%	3.6%	1.0%	1.9%
Owner's personal problems	0.3%	0.0%	0.0%	0.0%	0.8%	0.4%
Technology	0.4%	0.0%	0.7%	0.0%	0.5%	0.4%
Dealing with insurance companies	0.3%	0.4%	0.0%	0.0%	0.4%	0.3%
War and September 11th	0.2%	0.0%	1.3%	0.0%	0.5%	0.3%

Source: NERA calculations from the 2003 SSBF (n=4,072).

Note: Results are weighted.

2. Differences in Loan Denial Rates by Race/Ethnicity

Tables 5.25 and 5.26 present estimates of loan denial probabilities for the nation as a whole and for the EWSC using a regression model comparable to that used with the 1993 and 1998 survey waves.¹⁴⁰

Column (1) in Table 5.25 (comparable to Table 5.8 for 1993 and 5.18 for 1998) shows that African American-owned firms in 2003 had a 45.9 percentage point higher probability of denial than nonminority male-owned firms before taking into account the creditworthiness of the firm or any other characteristics. The addition of a large number of controls reduces the percentage point differential for African Americans to 9.4 in Column (5) as the full set of controls is added. The coefficients in Column (5) for nonminority females and other minority groups are not significant, however.

Table 5.26 (comparable to Table 5.9 for 1993 and 5.19 for 1998) focuses on the EWSC division and yields similar results—showing significantly larger denial probabilities for African American-owned firms than for nonminority male-owned firms, persisting even after the addition of all of the control variables. The EWSC Asian/Pacific Islander interaction term is also significant, indicating that this group was more than 39 percent more likely to be denied in the EWSC in 2003. Additionally, the EWSC gender interaction term is significant, indicating that nonminority women were over 5 percent more likely to be denied in the EWSC in 2003.

¹⁴⁰ In 2003, the credit application question was changed from 1998 to once again include requests for renewals as well as new loans, making it comparable to the 1993 version.

Table 5.25. Determinants of Loan Denial Rates—USA

	(1)	(2)	(3)	(4)	(5)
African American	0.459 (8.38)	0.136 (5.47)	0.105 (4.80)	0.091 (5.04)	0.094 (4.95)
Asian/Pacific Islander	0.055 (1.51)	0.020 (1.59)	0.009 (1.01)	0.002 (0.49)	0.001 (0.18)
Hispanic	0.067 (1.74)	0.008 (0.83)	0.004 (0.58)	0.001 (0.30)	0.001 (0.25)
Native American and Other	0.184 (2.22)	0.061 (1.95)	0.032 (1.47)	0.021 (1.43)	0.021 (1.49)
Nonminority female	0.043 (2.17)	0.003 (0.70)	0.002 (0.49)	0.001 (0.57)	0.002 (0.76)
Judgments against owner		0.007 (0.66)	0.003 (0.35)	0.003 (0.54)	0.006 (0.90)
Judgments against firm		0.005 (1.16)	0.005 (1.42)	0.001 (0.54)	0.001 (0.64)
Firm delinquent		0.032 (3.78)	0.021 (3.23)	0.019 (3.89)	0.021 (4.08)
Personally delinquent		-0.007 (0.69)	-0.006 (1.02)	-0.003 (0.82)	-0.002 (0.58)
Owner Bankrupt past 7 years		0.046 (1.36)	0.041 (1.35)	0.052 (1.81)	0.044 (1.66)
Firm Bankrupt past 7 years		0.000 (0.03)	0.003 (0.37)	0.001 (0.17)	-0.001 (0.38)
\$1998 sales (*10 ⁸)		-0.000 (1.68)	0.000 (0.04)	0.000 (0.29)	0.000 (0.51)
\$1998 firm equity (*10 ⁸)		-0.000 (2.23)	-0.000 (1.03)	-0.000 (1.62)	-0.000 (1.63)
Owner home equity (*10 ⁸)		0.000 (0.28)	0.000 (0.02)	-0.000 (0.45)	-0.000 (0.26)
Owner net worth (*10 ⁸)		-0.000 (2.97)	-0.000 (2.92)	-0.000 (3.06)	-0.000 (3.26)
Owner years of experience		0.000 (0.31)	0.000 (1.00)	0.000 (0.82)	0.000 (0.62)
Owner share of business		0.000 (0.08)	0.000 (0.61)	0.000 (0.38)	0.000 (0.47)
Dun & Bradstreet credit ratings (4 variables)	No	Yes	Yes	Yes	Yes
Owner Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Geographic Division (8 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	1,664	1,655	1,655	1,655	1,605
Pseudo R ²	.0850	.2267	.2901	.3336	.3681
Chi ²	74.1	192.9	246.8	283.8	310.3
Log likelihood	-399.1	-328.9	-301.9	-283.4	-266.4

Source: See Table 5.26. Notes: (1) “Other firm characteristics” include variables indicating whether the firm had a line of credit, 2003 total employment, firm age, metropolitan area, legal form of organization (sole proprietorship, partnership, LLP, S-corporation, C-corporation, or LLC), existing long run relation with lender, geographic scope of market (local, regional, national, foreign or international), the value of the firm’s inventory, the firm’s cash holdings, the value of land held by the firm, and total salaries and wages paid. (2) “Characteristics of the loan” includes the size of the loan applied for.

Table 5.26. Determinants of Loan Denial Rates—EWSC

	(1)	(2)	(3)	(4)	(5)
African American	0.388 (6.78)	0.098 (4.60)	0.072 (3.96)	0.064 (4.12)	0.064 (4.03)
Asian/Pacific Islander	0.018 (0.51)	0.004 (0.45)	-0.000 (0.08)	-0.002 (0.81)	-0.002 (1.14)
Hispanic	0.067 (1.76)	0.006 (0.81)	0.003 (0.56)	0.001 (0.34)	0.001 (0.18)
Native and Other	0.162 (1.70)	0.074 (1.92)	0.032 (1.3)	0.010 (0.80)	0.012 (0.99)
Nonminority female	0.028 (1.43)	0.001 (0.19)	-0.000 (0.16)	-0.000 (0.07)	0.000 (0.16)
African American*EWSC	0.275 (2.17)	0.065 (1.47)	0.056 (1.46)	0.038 (1.42)	0.036 (1.41)
Asian/Pacific Islander*EWSC	0.392 (2.43)	0.333 (2.79)	0.332 (2.78)	0.362 (3.10)	0.395 (3.17)
Hispanic-Other*EWSC	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	0.000 (0.0)
Native-Other*EWSC	0.137 (0.85)	0.011 (0.35)	0.027 (0.69)	0.045 (1.01)	0.026 (0.84)
Nonminority female*EWSC	0.178 (1.98)	0.056 (1.70)	0.071 (1.99)	0.057 (2.03)	0.052 (1.94)
EWSC division	-0.062 (2.91)	-0.013 (3.23)	-0.009 (3.19)	-0.006 (2.73)	-0.005 (2.87)
Creditworthiness (4 variables)	No	Yes	Yes	Yes	Yes
Dun & Bradstreet credit ratings (4 variables)	No	Yes	Yes	Yes	Yes
Balance Sheet (4 indicator variables)	No	Yes	Yes	Yes	Yes
Owner Experience (1 indicator variable)	No	Yes	Yes	Yes	Yes
Owner's Share of Business (1 indicator variable)	No	Yes	Yes	Yes	Yes
Owner's Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Geographic Division (7 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	1,656	1,647	1,647	1,647	1,597
Pseudo R ²	0.1029	0.2521	0.3155	0.3484	0.3826
Chi ²	89.65	214.16	267.98	295.99	322.10
Log likelihood	-390.8	-317.6	-290.7	-276.7	-259.9

Source: See Table 5.24.

Notes: (1) t-statistics in parentheses. (2) Creditworthiness controls include presence of legal judgments against the firm during the previous 3 years, more than 60 days delinquent on any personal obligations of the firm's owner during the previous 3 years, more than 60 days delinquent on any business obligations of the firm during the previous 3 years, and declaration of owner of firm bankruptcy during the previous 7 years. (3) Balance sheet variables include firm sales in 1998, firm equity in 1998, owner's home equity in 1998, and owner's personal net worth (exclusive of firm equity and home equity) in 1998. (4) For other variables, see notes for Table 5.25.

3. Differences in Interest Rates, Credit Card Use, and Failure to Apply for Fear of Denial

Table 5.27 models the interest rate charged for those minority-owned and nonminority female-owned firms that were able to successfully obtain a loan (comparable to Tables 5.13 and 5.14 for 1993 and Table 5.21 for 1998). As was found in earlier surveys, African American business owners are hurt here as well since they have to pay, on average, 1.05 percentage points more for their loans than nonminority male business owners with identical characteristics. Hispanic business owners, as well, pay 0.99 percentage points more than their nonminority male counterparts.

Table 5.27 shows that the loan price differential is present for African American and Hispanic business owners in the EWSC as well. For African American-owned firms, the differential is 3.6 percentage points. For Hispanics, the differential is 3.5 percentage points.

Table 5.28 reports the results of estimating a model where the dependent variable is whether a business or personal credit card is used to pay business expenses (comparable to Tables 5.11 and 5.12 for 1993 and Table 5.23 for 1998). As noted above, the application procedure for business and personal credit cards is usually automated and not conducted face-to-face. If there were missing variables such as creditworthiness or some such characteristic unobserved to the econometrician, then the race and ethnicity indicator variables should enter significantly in these equations. Unlike earlier years, there is some evidence that African Americans are less likely to use personal credit cards for business expenses. However, this result is not observed for business credit cards, nor is it observed in the EWSC.

Table 5.27. Models of Interest Rate Charged

Specification	African American	African American * EWSC	Asian/Pacific Islander	Hispanic	Hispanic * EWSC	Native and Other	Non-minority Female
1a) All Loans (as in Column 5 of Table 5.25) n=1,537	1.046 (2.02)	n/a	0.430 (1.20)	0.991 (2.72)	n/a	0.260 (0.35)	-0.148 (0.75)
1b) All Loans (as in Column 5 of Table 5.26) n=1,537	0.810 (1.39)	2.797 (1.84)	0.541 (1.32)	0.837 (1.83)	2.619 (2.67)	1.251 (0.87)	-0.277 (1.23)

Source: See Table 5.24.

Notes: (1) Each line of this table represents a separate regression with all of the control variables as indicated. (2) Additionally, controls were included for whether the loan required a co-signer or guarantor, whether collateral was required and, if so, the type of collateral required. (3) The sample consists of firms that had applied for a loan and had their application approved.

Table 5.28. Models of Credit Card Use

Specification	African American	Asian/ Pacific Islander	Hispanic	Native American and Other	Non- minority Female	Sample Size
1) Business Credit Card	-0.060 (1.13)	0.040 (0.91)	0.004 (0.08)	-0.001 (0.01)	0.002 (0.07)	3,676
2) Personal Credit Card	-0.132 (2.68)	0.036 (0.84)	-0.080 (1.77)	-0.040 (0.48)	0.036 (1.56)	3,676
3) Business Credit Card, EWSC	-0.017 (0.13)	-0.133 (0.92)	0.019 (0.18)		-0.196 (1.18)	563
4) Personal Credit Card, EWSC	-0.023 (0.18)	0.065 (0.50)	-0.189 (1.82)	0.074 (0.48)	0.006 (0.09)	563

Source: See Table 5.24.

Notes: (1) Each line of this table represents a separate regression with the same control variables as Column 5 of Table 5.27, except for loan amount, year of application, and type of lender. (2) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (3) In all specifications, the sample size is all firms. (4) Reported estimates are Probit derivatives with t-statistics in parentheses.

Finally, consistent with earlier results, Table 5.29 (comparable to Tables 5.15 for 1993 and 5.22 for 1998) shows that African American owners are much more likely not to apply for a loan fearing they will be denied. Even after controlling for a host of demographic, financial, geographic, and industry factors, African American business owners are still almost 17 percentage points more likely to fail to apply for loans for fear of denial—even though they need the credit. In the EWSC the phenomenon is evident as well—African American business owners are almost 19 percentage points more likely to fail to apply for fear of denial. In construction and related industries, the trend is even more pronounced at 30 percentage points. Nationally, and in the EWSC, there is evidence of this phenomenon for nonminority female business owners as well.

Table 5.29. Racial Differences in Failing to Apply for Loans Fearing Denial

Specification	African American	Asian/Pacific Islander	Hispanic	Native American and Other	Non-minority Female
a) USA					
No Other Control Variables (n=3,704)	0.385 (9.48)	0.059 (1.95)	0.138 (4.01)	0.138 (2.14)	0.072 (4.47)
Full Set of Control Variables (n=3,676)	0.166 (4.73)	0.038 (1.40)	0.050 (1.82)	0.052 (1.01)	0.035 (2.46)
b) EWSC division					
No Other Control Variables (n=3,694)	0.378 (8.26)	0.060 (1.85)	0.144 (3.74)	0.187 (2.30)	0.064 (3.66)
Full Set of Control Variables (n=3,666)	0.189 (4.69)	0.048 (1.62)	0.052 (1.70)	0.135 (1.88)	0.031 (1.99)
c) Construction					
No Other Control Variables (n=705)	0.492 (4.34)	-0.022 (0.29)	0.090 (1.22)	0.258 (2.17)	0.026 (0.64)
Full Set of Control Variables (n=695)	0.303 (3.16)	0.002 (0.04)	-0.009 (0.34)	0.137 (1.65)	-0.002 (0.11)

Source: See Table 5.24.

Notes: (1) Reported estimates are Probit derivatives with t-statistics in parentheses. (2) Full set of control variables as in Column 5 of Table 5.27, except for loan amount, year of application, and type of lender. (3) In Panel (b), interaction terms between race, gender, and EWSC were all insignificant.

J. Further Analysis of Credit Market Discrimination: NERA Surveys 1999-2007

NERA has conducted local credit market surveys at nine other times and places since 1999. These include the Chicago metropolitan area in 1999, the State of Maryland in 2000, the Jacksonville, Florida metropolitan area in 2002, the Baltimore-Washington, DC metropolitan area in 2003, the St. Louis metropolitan area in 2004, the Denver metropolitan area in 2005, the State of Maryland (again) in 2005, the State of Massachusetts in 2005, and the Memphis, TN-MS-AR metropolitan area in 2007. The Chicago, Jacksonville, Baltimore, St. Louis, and Denver surveys focused on construction and construction-related industries, while the two Maryland surveys, the Massachusetts surveys, and the Memphis surveys, included other goods and services as well.

Our Chicago, Maryland I, and Jacksonville survey questionnaires followed the format of the 1993 NSSBF, while our Baltimore, St. Louis, Denver, Maryland II, Massachusetts, and Memphis surveys followed the format of the 1998 SSBF questionnaire.

As a final check on our findings in this chapter, we combined the results of these nine NERA surveys together in a consistent format and re-estimated the basic loan denial model on this larger file. These results appear below in Table 5.30, and are remarkably similar to results seen in Tables 5.8-5.9, 5.18-5.19, and 5.25-5.26. Denial probabilities for African American-owned firms compared to nonminority male-owned firms are 29 percentage points higher—even when creditworthiness controls, other firm and owner characteristics, and interaction terms are included.

Moreover, the NERA surveys found statistically significant loan denial disparities for Hispanic-owned firms and nonminority female-owned firms as well. Denial rates were 18-24 percentage points higher for Hispanic-owned firms and 5-9 percentage points higher for nonminority female-owned firms than for their nonminority male-owned counterparts. Significant loan denial disparities were also observed for Native American-owned firms in some cases (9-19 percentage points higher).

Finally, as shown in Table 5.31, we modeled the rate of interest charged, conditional upon receiving loan approval, using our nine-jurisdiction dataset. Results are very similar to that observed in Tables 5.13-5.14, 5.21 and 5.27. African Americans pay almost 170 basis points more, on average, for their business credit than do nonminority males, declining to 150 basis points when creditworthiness and other firm and owner controls are accounted for.

On the basis of the foregoing, we conclude that the evidence of credit discrimination from NERA's nine local credit market surveys conducted throughout the nation between 1999-2007 is entirely consistent with the results obtained using data from the 1993 NSSBF, the 1998 SSBF, and the 2003 SSBF.

Table 5.30. Determinants of Loan Denial Rates—Nine Jurisdictions

	(1)	(2)
	<i>Most Recent Application</i>	<i>Last Three Years</i>
African American	0.289 (8.2)	0.293 (7.60)
Hispanic	0.178 (3.86)	0.244 (4.59)
Native American	0.087 (1.69)	0.188 (3.29)
Asian/Pacific Islander	0.042 (0.72)	0.003 (0.05)
Other race	0.313 (3.07)	0.364 (3.15)
Nonminority female	0.046 (1.83)	0.086 (2.96)
Judgments	0.051 (1.23)	0.119 (2.24)
Firm delinquent	0.022 (2.7)	0.057 (5.90)
Personally delinquent	0.076 (7.38)	0.077 (6.03)
Bankrupt past 3 years	0.228 (3.99)	0.328 (4.74)
N	1,855	1,855
Pseudo R ²	.1905	.1721
Chi ²	336.0	363.3
Log likelihood	-714.1	-873.7

Source: NERA Credit Market Surveys, 1999-2007.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) Indicator variables are also included for the various jurisdictions.

Table 5.31. Determinants of Interest Rates—Nine Jurisdictions

	(1)	(2)
African American	1.683 (3.44)	1.491 (2.98)
Asian/Pacific Islander	1.221 (2.16)	0.789 (1.34)
Hispanic	0.820 (1.48)	0.895 (1.56)
Native American	1.241 (1.52)	1.008 (1.24)
Other race	-1.115 (0.63)	-1.072 (0.61)
Nonminority female	0.046 (0.16)	0.018 (0.06)
Judgments		0.537 (0.85)
Firm delinquent		-0.041 (0.36)
Personally delinquent		0.644 (3.65)
Bankrupt past 3 years		1.184 (1.13)
Creditworthiness, Firm, and Owner Characteristics	No	Yes
Loan Characteristics	Yes	Yes
N	1,490	1,463
Adjusted R ²	.0831	.1046
F	11.4	11.05

Source: See Table 5.30.

Notes: (1) Reported estimates are OLS regression models, t-statistics are in parentheses. (2) Five indicators for primary owner's education level, four indicators for legal form of organization, loan amount applied for, loan amount granted, and month and year of loan application were included. (3) Seven additional indicators for jurisdiction were also included.

K. Conclusions

The results presented in this chapter indicate that African American-owned firms face serious obstacles in obtaining credit that are unrelated to their creditworthiness, industry, or geographic location. In a number of cases this is true as well for Hispanic-owned firms, Asian/Pacific Islander-owned firms, Native American-owned firms, and nonminority female-owned firms.

As in any regression-based study, our analysis hinges upon the proposition that all of the factors that are related to loan denial rates have been included in our statistical model. If, for example, African American business owners possess some unobservable characteristic that makes them less creditworthy, then our statistical finding would overstate the difference in loan denial rates. To check on this possibility, the models we have estimated include an extensive array of factors that could conceivably affect loan decisions. Additionally, we have also estimated several alternative specifications that could potentially identify the impact of such a bias. Moreover, we have conducted our own surveys on numerous occasions and in numerous places across the U.S. Throughout, we have consistently found that African Americans are disadvantaged in the small business credit market and that our specification tests support the interpretation of discrimination.

Another potential criticism is that this study has examined loan denial rates rather than loan default rates; some have claimed that the latter provides a more appropriate strategy for identifying discrimination. For example, if banks only approve loans for relatively good African American firms then African American firms should exhibit relatively low default rates. Such an approach has several significant shortcomings that are detailed in Browne and Tootell (1995) and Ladd (1998). For instance, one problem is that it relies on the distribution of default probabilities being similar for African American and nonminority applicants meeting the acceptance standard used for nonminority firms. A further problem is that it assumes that the loan originators know with a high degree of precision what determines defaults; however, little hard information exists on what causes default. Additionally, it would be hard to disentangle the factors associated with differences in default rates between nonminority- and African American-owned firms given the fact that the African American-owned firms that obtain credit are typically charged higher interest rates, as we have demonstrated. Finally, such an analysis would require longitudinal data, tracking firms for several years following loan origination. Such data do not exist. While we have highlighted the potential limitations of such an analysis, we believe that it would be fruitful for this sort of longitudinal data collection to take place and for future research to investigate this question more fully.

In addition, many of the criticisms levied against the home mortgage loan discrimination study of Munnell, et al. (1996) could perhaps be used here as well. Yet these criticisms appear to have been effectively countered by, for example, Browne and Tootell (1995) and Tootell (1996). What is important to keep in mind in reference to this work compared with Munnell, et al. (1996), is the magnitude of the estimated racial disparity. The absolute size of the raw racial differences found in the mortgage study are considerably smaller than those observed in this study regarding business credit.¹⁴¹

The magnitude of the racial difference in small business loan approval rates is substantial, even after controlling for observed differences in creditworthiness, and considerably larger than that found in the analysis of discrimination in mortgage markets. Why do the results for small business loans differ so markedly from those obtained from mortgage loans? First, many

¹⁴¹ In the Boston Fed study, 10 percent of White mortgage applications were rejected compared with 28 percent for African Americans. Loan denial rates (weighted) for business credit in this study ranged from 8.3 to 26.2 percent for White males and between 50.0 and 65.9 percent for African American-owned firms (depending on which NSSBF or SSBF survey is used).

mortgages are sold in the secondary market and a substantial fraction of mortgage lenders have little intention of keeping the loans they make. This added “distance” in the transaction might reduce the likelihood of discrimination. As Day and Liebowitz (1998, p. 6) point out, “economic self-interest, therefore, should reduce racial discrimination in this market more completely than in many others.” A highly sophisticated secondary market for loans to small firms does not exist. Second, the presence of special programs and regulatory incentives to encourage banks and others to increase their mortgage lending to minorities gives these groups some advantages in obtaining a mortgage.

Clearly, a portion of the difference in denial rates between nonminority males and other groups in both types of studies appears to be due to differences in the characteristics of the applicants. Even after controlling for these differences, however, the gap in denial rates in the small business credit market is considerably larger than that found in the mortgage market.¹⁴²

Our analysis finds significant evidence that African American-owned businesses face impediments to obtaining credit that go beyond observable differences in their creditworthiness. These firms are more likely to report that credit availability was a problem in the past and expect it to be a problem in the future. In fact, these concerns prevented more African American-owned firms from applying for loans because they feared being turned down due to prejudice or discrimination. We also found that loan denial rates are significantly higher for African American-owned firms than for nonminority male-owned firms even after taking into account differences in an extensive array of measures of creditworthiness and other characteristics. This result appears to be largely insensitive to geographic location or to changes in econometric specification. Comparable findings are observed for other minority business owners and for nonminority women as well, although not with as much consistency as the findings for African Americans.

Overall, the evidence is consistent that African American-owned firms and other M/W/DBE firms face large and statistically significant disadvantages in the market for small business credit. The larger size and significance of the effects found in our analyses (compared to mortgage market analyses) significantly reduces the possibility that the observed differences can be explained away by some quirk of the econometric estimation procedure and, instead, strongly suggests that the observed differences are due to discrimination.

As noted above, the Federal Reserve discontinued the SSBF as of 2003 and the most recent NERA survey on the topic was conducted in 2007. Economist Alicia Robb, in her article “Beyond the Late, Lamented Survey of Small Business Finance,”¹⁴³ notes:

“A few years ago, the [SSBF], the main source of data on small business financing, was cancelled by the Federal Reserve Board. The SSBF had provided detailed information on the use of credit and other financial services by small businesses every five years

¹⁴² The gap in denial rates between African Americans and nonminorities with similar characteristics is between 34-46 percentage points in the small business credit market compared with 7 percentage points in the mortgage market.

¹⁴³ Robb, A. (2010).

beginning in 1987. There are no data available after 2003. The Federal Reserve stated the survey was cancelled for financial reasons and the survey had been conducted four times in varying economic conditions. Yet, less than a year after the cancellation, the worst financial crisis hit the United States since the Great Depression. Unfortunately, the nation now has no demand-side data to investigate the impact of this financial crisis on small business financing or firm performance. It is ironic that a survey that could shed light on the impact of a financial crisis on the state of small business financing was cancelled due to budgetary concerns when the government has spent hundreds of billions of dollars on other matters arising from the crisis. The survey cost about \$6 million dollars over a five-year survey period, more of a rounding error to the Fed than a significant investment. What a pity that we have no data for 2008—a year of great interest for policy purposes.”

Given this, what, if anything, can we say about evidence of M/W/DBE disparities in access to capital and credit since the 2003-2007 Period? Although adverse impact of the loss of the SSBF cannot be overstated, Dr. Robb herself has endeavored to partially fill the void using data from a unique data set known as the Kaufman Firm Survey (KFS), which follows a sample of small businesses from 2004 through 2010, as well as other sources.

Key findings from Dr. Robb’s 2012 article entitled “Access to Capital among Young Firms, Minority-owned Firms, Women-owned Firms, and High-tech Firms,”¹⁴⁴ include the following:

- Differences in asset levels are the largest single factor explaining racial disparities in business creation rates. Half of all Hispanic families in 2004 had less than \$13,375 in wealth and half of all African American families in 2004 had less than \$8,650 in wealth. These figures were 12 percent and 8 percent, respectively, of nonminority wealth levels.
- Research indicates that the level of startup capital is a strong predictor of business success.
- There is evidence that during times of financial distress, bank lending is curtailed, especially to firms that are inherently more risky, such as minority-owned and women-owned firms
- During 2007-2010, young firms owned by African Americans, Hispanics, and other minorities (except Asians) were statistically significantly less likely than similarly situated nonminority firms to apply for credit when they needed it for fear of denial. Dr. Robb notes: “This is perhaps the clearest recent evidence of continued borrowing constraints for Black and Hispanic business owners in the United States. Women were also more likely than men to have this fear during the economic crisis.”
- During 2007-2010, when they did apply for credit, African American, Hispanic, and other young minority firms were statistically significantly more likely to have their loans denied than nonminority owned firms with comparable levels of creditworthiness.

¹⁴⁴ Robb, A. (2012)

- Moreover, the magnitude of minority denials “increased dramatically” during the 2007-2010 period and through the financial crisis.
- Women-owned firms were also more likely to be denied than nonminority male firms with comparable creditworthiness levels in three of the four years studied, though the difference was only statistically significant in 2008.

Dr. Robb concludes:¹⁴⁵

“The multivariate findings indicate that ... minority owners who did not apply for new loans were significantly more likely than their White counterparts to avoid applying for loans when needed because they were afraid that their loan applications would be declined by lenders. This is even after controlling for credit quality and a host of owner and firm characteristics. Women were also more likely than similar men not to apply for credit when it was needed for fear of having their loan application denied during the years of the economic crisis. The analysis showed that women and minority business owners’ fears of being declined for a loan were not necessarily unwarranted. In particular, in terms of loan application outcomes, even after controlling for such factors as industry, credit score, legal form, and human capital, minority owners of young firms were significantly less likely to have their loan applications approved than were similar White business owners. Similarly, in 2008, women owners of new businesses were significantly less likely than men with similar credit profiles and legal forms of organization to be approved for loans. More generally, the results suggest that in the initial year of startup, Black- and Hispanic-owned businesses faced greater credit constraints than did their White and Asian counterparts. Similarly, women-owned businesses faced greater credit constraints than did similar startups owned by men during the years of the financial crisis.”

Dr. Robb’s findings are consistent with those reported above from the SSBF and from NERA’s own surveys. There is no evidence to suggest that credit discrimination has lessened in the years since 2007. Indeed the available evidence suggests that credit discrimination has continued and, if anything, worsened during the recent financial crisis.

¹⁴⁵ *Ibid.*

VI. DBE Utilization and Disparity in MSCAA Contracting Activity

A. Introduction

The *Croson* decision and its progeny have held that statistical evidence of race-based or gender-based disparities in business enterprise activity is a requirement for any state or local entity that desires to establish or maintain race-conscious or gender-conscious requirements for M/W/DBE participation in contracting and procurement. Chapters IV and V documented the extent of disparity facing minority- and women-owned firms in the private sector of MSCAA's market area, where contracting and procurement activity is typically *not* subject to such requirements. In this Chapter, we combined the evidence from Chapter III, which estimates M/W/DBE availability in MSCAA's Market Area, with the Master Contract/Subcontract Database described in Chapter II in order to examine whether there is statistical evidence of disparities in public sector construction and consulting contracting activities supported by MSCAA.

The statistical evidence reported in Chapter II has already established from which specific industries MSCAA procures construction and consulting services as well as from which geographic areas it draws the majority of its prime contractors and subcontractors. In addition, the statistical evidence reported in Chapter III has established what percentage of all firms in MSCAA's geographic and product markets are M/W/DBEs.

This chapter will document:

- To what extent have M/W/DBEs been utilized in the contracting and subcontracting activities of MSCAA during the study period.
- Whether M/W/DBEs have been utilized to the extent that they are available in the relevant market area.

Below, we report the M/W/DBE utilization results using two measures—dollars awarded and dollars paid. We report this information for construction, consulting, and for both categories combined. We also report results separately for federally-assisted contracts and for locally-funded contracts. All results are reported by race and gender as well as for all M/W/DBEs combined, and cover the entire MSCAA market area.

B. DBE Utilization

For this Study, we examined 177 prime contracts, 762 associated subcontracts, and 17,003 purchase orders active during 2006-2011. These contracts and purchases had a total award value of \$498.6 million and a total payment value of \$445.3 million.¹⁴⁶ Of these, 22 prime contracts and 133 associated subcontracts were awarded on federally-assisted projects, with a total award value of \$45.8 million and a total paid value of \$41.8 million. Another 155 prime contracts, 230 associated subcontracts and 16,964 purchases orders were issued on locally-funded projects, with

¹⁴⁶ Payments on contracts that were not substantially complete at the time of the Study data collection were excluded from the paid dollar totals.

a total award value of \$172.5 million and a total paid value of \$148.7 million (See also Tables 2.3–2.5).

NAICS codes, M/W/DBE status, and detailed race and gender status for the prime contractors and subcontractors included in the Master Contract/Subcontract Database were established through extensive computer-assisted cross-referencing of firms in our database with firms in (a) the Mid-South Minority Business Council Uniform Certification Agency database, (b) the Tennessee DOT Uniform Certification Program database, (c) the master directory of M/W/DBEs assembled for this study, (d) Dun & Bradstreet, (e) company profiles drawn from Hoover's, American Business Information, Standard & Poor's, and other sources, and (f) the results of our race/gender misclassification/non-classification surveys.

From Tables 6.1 and 6.2 we see that, as a group during the study period, M/W/DBEs were awarded 26.46 percent and paid 22.53 percent of all contract and subcontract dollars in Construction; awarded 21.00 percent and paid 26.00 percent of all contract and subcontract dollars in AE-CRS; awarded 35.48 percent and paid 29.41 percent of all contract and subcontract dollars in Services; and awarded 7.13 percent and paid 7.60 percent of all contract and subcontract dollars in CSE. Altogether, M/W/DBEs were awarded 25.39 percent and paid 22.64 percent of all contract and subcontract dollars during the study period. Among M/W/DBEs, firms owned by African Americans were awarded the largest fraction of contracting and subcontracting dollars, followed in descending order by firms owned by nonminority females, Native Americans, Asians/Pacific Islanders, and Hispanics. The rank ordering for paid dollars is the same except that the position of Native Americans and Asians/Pacific Islanders is reversed.

Table 6.1. M/W/DBE Utilization at MSCAA (All Contracts) (Dollars Awarded)

M/W/DBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	CSE (%)	Overall (%)
African American	8.49	9.13	32.66	2.27	11.48
Hispanic	0.04	0.00	0.57	0.17	0.12
Asian/Pacific Islander	0.32	6.44	0.21	0.23	1.15
Native American	6.71	0.00	0.00	0.00	4.28
Minority Total	15.55	15.56	33.44	2.67	17.03
Nonminority female	10.91	5.44	2.05	4.46	8.37
M/W/DBE Total	26.46	21.00	35.48	7.13	25.39
Non-M/W/DBE Total	73.54	79.00	64.52	92.87	74.61
Total (%)	100.00	100.00	100.00	100.00	100.00
Total(\$)	318,247,312	69,289,989	70,360,754	40,721,165	498,619,219

Source: NERA Master Contract/Subcontract Database, 2006-2011.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Table 6.2. M/W/DBE Utilization at MSCAA (All Contracts) (Dollars Paid)

M/W/DBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	CSE (%)	Overall (%)
African American	9.42	11.33	26.36	2.43	11.47
Hispanic	0.04	0.00	0.56	0.18	0.12
Asian/Pacific Islander	0.39	8.33	0.23	0.25	1.28
Native American	1.71	0.00	0.00	0.00	1.12
Minority Total	11.57	19.66	27.16	2.86	13.99
Nonminority female	10.96	6.34	2.26	4.74	8.65
M/W/DBE Total	22.53	26.00	29.41	7.60	22.64
Non-M/W/DBE Total	77.47	74.00	70.59	92.40	77.36
Total (%)	100.00	100.00	100.00	100.00	100.00
Total(\$)	291,838,297	51,671,732	63,773,523	38,048,057	445,331,609

Source and Notes: See Table 6.1.

Restricting the data to federally-assisted contracts and associated subcontracts, Tables 6.3 and 6.4 show that M/W/DBEs were awarded 29.18 percent and paid 24.48 percent of all contract and subcontract dollars in Construction; awarded 26.15 percent and paid 26.44 percent of all contract and subcontract dollars in AE-CRS; awarded 33.02 percent and paid 32.10 percent of all contract and subcontract dollars in Services; and awarded 4.29 percent and paid 8.17 percent of all contract and subcontract dollars in CSE. Altogether, M/W/DBEs were awarded 28.40 percent

and paid 24.68 percent of all federally-assisted contract and subcontract dollars during the study period. Among M/W/DBEs, firms owned by African Americans were awarded and paid the largest fraction of contracting and subcontracting dollars, followed in descending order by firms owned by nonminority females, Native Americans, Asians/Pacific Islanders, and Hispanics.

Table 6.3. M/W/DBE Utilization at MSCAA (Federally-Assisted Contracts) (Dollars Awarded)

M/W/DBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	CSE (%)	Overall (%)
African American	9.84	10.88	8.61	0.00	9.82
Hispanic	0.04	0.00	17.35	0.00	0.16
Asian/Pacific Islander	0.37	7.68	5.78	0.00	1.43
Native American	7.70	0.00	0.00	0.00	6.44
Minority Total	17.95	18.56	31.73	0.00	17.86
Nonminority female	11.23	7.59	1.29	4.29	10.54
M/W/DBE Total	29.18	26.15	33.02	4.29	28.40
Non-M/W/DBE Total	70.82	73.85	66.98	95.71	71.60
Total (%)	100.00	100.00	100.00	100.00	100.00
Total(\$)	273,004,203	45,810,443	2,308,524	5,003,760	326,126,931

Source and Notes: See Table 6.1.

Table 6.4. M/W/DBE Utilization at MSCAA (Federally-Assisted Contracts) (Dollars Paid)

M/W/DBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	CSE (%)	Overall (%)
African American	10.94	11.11	8.82	0.00	10.85
Hispanic	0.05	0.00	16.02	0.00	0.16
Asian/Pacific Islander	0.46	8.10	5.94	0.00	1.57
Native American	1.91	0.00	0.00	0.00	1.61
Minority Total	13.35	19.21	30.78	0.00	14.20
Nonminority female	11.12	7.22	1.32	8.17	10.48
M/W/DBE Total	24.48	26.44	32.10	8.17	24.68
Non-M/W/DBE Total	75.52	73.56	67.90	91.83	75.32
Total (%)	100.00	100.00	100.00	100.00	100.00
Total(\$)	250,081,554	41,813,606	2,245,251	2,496,826	296,637,236

Source and Notes: See Table 6.1.

Turning to locally-funded contracts and associated subcontracts, Tables 6.5 and 6.6 show that M/W/DBEs were awarded 10.04 percent and paid 10.83 percent of all contract and subcontract

dollars in Construction; awarded 10.95 percent and paid 24.13 percent of all contract and subcontract dollars in AE-CRS; awarded 35.57 percent and paid 29.32 percent of all contract and subcontract dollars in Services; and awarded 7.53 percent and paid 7.56 percent of all contract and subcontract dollars in CSE. Altogether, M/W/DBEs were awarded 19.72 percent and paid 18.58 percent of all locally-funded contract and subcontract dollars during the study period. Among M/W/DBEs, firms owned by African Americans earned the largest fraction of contracting and subcontracting dollars, followed in descending order by firms owned by nonminority females, Asians/Pacific Islanders, Native Americans, and Hispanics.

Table 6.5. M/W/DBE Utilization at MSCAA (Locally-Funded Contracts) (Dollars Awarded)

M/W/DBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	CSE (%)	Overall (%)
African American	0.34	5.70	33.47	2.59	14.61
Hispanic	0.00	0.00	0.00	0.19	0.04
Asian/Pacific Islander	0.01	4.03	0.02	0.26	0.61
Native American	0.73	0.00	0.00	0.00	0.19
Minority Total	1.08	9.73	33.50	3.05	15.45
Nonminority female	8.97	1.23	2.07	4.48	4.26
M/W/DBE Total	10.04	10.95	35.57	7.53	19.72
Non-M/W/DBE Total	89.96	89.05	64.43	92.47	80.28
Total (%)	100.00	100.00	100.00	100.00	100.00
Total(\$)	45,243,109	23,479,545	68,052,230	35,717,404	172,492,288

Source and Notes: See Table 6.1.

Table 6.6. M/W/DBE Utilization at MSCAA (Locally-Funded Contracts) (Dollars Paid)

M/W/DBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	CSE (%)	Overall (%)
African American	0.35	12.28	27.00	2.60	12.71
Hispanic	0.00	0.00	0.00	0.19	0.05
Asian/Pacific Islander	0.01	9.27	0.02	0.27	0.69
Native American	0.50	0.00	0.00	0.00	0.14
Minority Total	0.86	21.54	27.03	3.06	13.58
Nonminority female	9.97	2.59	2.29	4.50	5.00
M/W/DBE Total	10.83	24.13	29.32	7.56	18.58
Non-M/W/DBE Total	89.17	75.87	70.68	92.44	81.42
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	41,756,744	9,858,126	61,528,272	35,551,231	148,694,373

Source and Notes: See Table 6.1.

Turning to Concessions, Table 6.7 shows that M/W/DBEs received 9.67 percent of concessions revenues during the study period when revenues from car rentals are included and 22.57 percent when they are excluded. ACDBEs owned by African Americans earned the largest fraction of concessions revenues, followed by nonminority females.

Table 6.7. M/W/DBE Utilization in MSCAA Concessions

M/W/DBE Type	Category	
	Including Car Rental (%)	Excluding Car Rental (%)
African American	8.12	18.94
Hispanic	0.00	0.00
Asian/Pacific Islander	0.00	0.00
Native American	0.00	0.00
Minority Total	8.12	18.94
Nonminority female	1.56	3.63
M/W/DBE Total	9.67	22.57
Non-M/W/DBE Total	90.30	77.37
Total (%)	100.00	100.00
Total (\$)	706,636,425	302,809,539

Source: NERA Master Concessions Database.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

C. Disparity Analysis

1. Results by Major Procurement Category

To determine whether M/W/DBEs have been underutilized at MSCAA, we should ideally examine public expenditures that were *not* subject to subcontracting goals. As a result of the DBE Program and the Business Diversity Development Program, however, MSCAA has a longstanding policy of setting such goals in many of its contracting activities.¹⁴⁷

Given this, MSCAA's own data may not show evidence of underutilization, even if such underutilization exists in the private sector of its relevant market area. This is especially true where M/W/DBE programs are well established. Instead, the Airport's own data is most informative for examining the effectiveness of its M/W/DBE policies during the study time period. On the other hand, if actual MSCAA M/W/DBE utilization still turns out to be significantly less than M/W/DBE availability in certain contracting categories, then MSCAA's data will provide evidence of adverse disparities as well.

In this section, we compare our estimates of M/W/DBE utilization in MSCAA's contracting and subcontracting activities to our estimates of M/W/DBE availability in MSCAA's geographic and product market area. Tables 6.8 and 6.9 present the results of this comparison using dollars awarded and dollars paid, respectively, as the metric of utilization. These two tables include all funding sources, both federal and local. Tables 6.10 and 6.11 show comparable results for federally-assisted contracts, and Tables 6.12 and 6.13 show comparable results for locally-funded contracts.

In each table, the figures in the utilization column include both prime contract and subcontract dollars and were derived as described above in this chapter. The figures in the availability column were derived as described in Chapter III. The disparity ratio, which appears in the final column of Tables 6.8 through 6.13, is derived by dividing utilization by availability and then multiplying the result by 100. A disparity ratio below 100 indicates that M/W/DBEs did not participate in MSCAA contracting and subcontracting at a level that is consistent with their estimated availability in the relevant market area. A disparity ratio of 80 or lower is considered to be large, or substantively significant. A disparity ratio is said to be statistically significant if it is unlikely to be caused by chance alone. In the tables below, statistical significance is indicated by one or more asterisks to the right of the disparity ratio.

In Construction, disparities were observed for firms owned by African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, minorities as a group, nonminority females, and M/W/DBEs as a group. Disparities for Hispanics were large and statistically significant in all cases. Disparities on locally-funded contracts tended to be larger than those on federally-assisted contracts.

In AE-CRS, disparities were observed for firms owned by African Americans, Hispanics, Native Americans, minorities as a group, nonminority females, and M/W/DBEs as a group. Disparities

¹⁴⁷ Goals are generally not set, however, on purchase orders.

for Hispanics and Native Americans were large and statistically significant in all cases. Disparities for nonminority females were large and statistically significant in most cases.

In Services, disparities were observed for firms owned by African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, nonminority females, and M/W/DBEs as a group. Disparities for Native Americans and nonminority females were large and statistically significant in all cases. Disparities for Hispanics were large and statistically significant in most cases. Disparities for Asians/Pacific Islanders were large and statistically significant in some cases. Disparities on locally-funded contracts tended to be larger than those on federally-assisted contracts.

CSE is the one major procurement area where it is generally not possible to set subcontracting goals, since subcontracting opportunities rarely exist on such contracts and purchases. As a result, large and statistically significant disparities were observed for firms owned by African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, nonminority females, minorities as a group, and DBEs as a group in almost all cases.

DBE Utilization and Disparity in MSCAA Contracting Activity

Table 6.8. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (All Funds) (Dollars Awarded)

Contracting Category & M/W/DBE Type	Utilization	Availability	Disparity Ratio
OVERALL			
African American	11.48	13.63	84.25
Hispanic	0.12	2.02	5.83 ****
Asian/Pacific Islander	1.15	1.02	
Native American	4.28	1.00	
Minority	17.03	17.66	96.38
Nonminority female	8.37	12.23	68.44
M/W/DBE total	25.39	29.89	84.95
CONSTRUCTION			
African American	8.49	10.85	78.20
Hispanic	0.04	1.78	2.07 ****
Asian/Pacific Islander	0.32	0.62	51.61
Native American	6.71	1.38	
Minority	15.55	14.64	
Nonminority female	10.91	10.49	
M/W/DBE total	26.46	25.12	
AE-CRS			
African American	9.13	12.68	71.99
Hispanic	0.00	1.61	0.00 ****
Asian/Pacific Islander	6.44	2.91	
Native American	0.00	0.56	0.00 ****
Minority	15.56	17.75	87.67
Nonminority female	5.44	12.17	44.65 ***
M/W/DBE total	21.00	29.93	70.17 ***
SERVICES			
African American	32.66	21.69	
Hispanic	0.57	3.00	19.00 ****
Asian/Pacific Islander	0.21	0.57	36.60
Native American	0.00	0.28	0.00 ****
Minority	33.44	25.54	
Nonminority female	2.05	16.93	12.08 ****
M/W/DBE total	35.48	42.47	83.55
CSE			
African American	2.27	9.22	24.66 ****
Hispanic	0.17	1.29	12.99 **
Asian/Pacific Islander	0.23	2.58	8.97 ****
Native American	0.00	1.35	0.00 ****
Minority	2.67	14.44	18.51 ****
Nonminority female	4.46	10.02	44.49 ***
M/W/DBE total	7.13	24.46	29.15 ****

Source: Calculations from NERA Master Contract/Subcontract Database and NERA Baseline Business Universe.

Notes: (1) “*” indicates an adverse disparity that is statistically significant at the 15% level or better (85% confidence). “***” indicates the disparity is significant at a 10% level or better (90% confidence). “****” indicates significance at a 5% level or better (95% confidence) “*****” indicates significance at a 1% level or better (99% confidence). (2) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

Table 6.9. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (All Funds) (Dollars Paid)

Contracting Category & M/W/DBE Type	Utilization	Availability	Disparity Ratio
OVERALL			
African American	11.47	13.84	82.91
Hispanic	0.12	2.11	5.81 ****
Asian/Pacific Islander	1.28	0.99	
Native American	1.12	0.95	
Minority	13.99	17.88	78.26
Nonminority female	8.65	12.52	69.07
M/W/DBE total	22.64	30.40	74.48 **
CONSTRUCTION			
African American	9.42	10.66	88.34
Hispanic	0.04	1.85	2.18 ****
Asian/Pacific Islander	0.39	0.57	69.02
Native American	1.71	1.35	
Minority	11.57	14.43	80.18
Nonminority female	10.96	10.61	
M/W/DBE total	22.53	25.04	89.97
AE-CRS			
African American	11.33	12.67	89.41
Hispanic	0.00	1.62	0.00 ****
Asian/Pacific Islander	8.33	3.01	
Native American	0.00	0.56	0.00 ****
Minority	19.66	17.86	
Nonminority female	6.34	12.14	52.20 **
M/W/DBE total	26.00	30.01	86.63
SERVICES			
African American	26.36	21.78	
Hispanic	0.56	3.00	18.83 ****
Asian/Pacific Islander	0.23	0.55	42.35
Native American	0.00	0.28	0.00 ****
Minority	27.16	25.60	
Nonminority female	2.26	17.03	13.25 ****
M/W/DBE total	29.41	42.64	68.99 ****
CSE			
African American	2.43	9.44	25.77 ****
Hispanic	0.18	1.35	13.26 **
Asian/Pacific Islander	0.25	2.59	9.57 ****
Native American	0.00	1.26	0.00 ****
Minority	2.86	14.64	19.53 ****
Nonminority female	4.74	10.07	47.08 **
M/W/DBE total	7.60	24.71	30.76 ****

Source and Notes: See Table 6.8.

Table 6.10. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Federally-Assisted Contracts) (Dollars Awarded)

Contracting Category & M/W/DBE Type	Utilization	Availability	Disparity Ratio
OVERALL			
African American	9.82	11.31	86.89
Hispanic	0.16	1.76	9.04 ***
Asian/Pacific Islander	1.43	1.13	
Native American	6.44	1.21	
Minority	17.86	15.40	
Nonminority female	10.54	10.57	99.71
M/W/DBE total	28.40	25.97	
CONSTRUCTION			
African American	9.84	11.01	89.36
Hispanic	0.04	1.80	2.40 ****
Asian/Pacific Islander	0.37	0.68	54.66
Native American	7.70	1.35	
Minority	17.95	14.84	
Nonminority female	11.23	10.23	
M/W/DBE total	29.18	25.06	
AE-CRS			
African American	10.88	12.73	85.45
Hispanic	0.00	1.63	0.00 ****
Asian/Pacific Islander	7.68	3.00	
Native American	0.00	0.56	0.00 ****
Minority	18.56	17.92	
Nonminority female	7.59	12.09	62.78
M/W/DBE total	26.15	30.02	87.11
SERVICES			
African American	8.61	11.81	72.88
Hispanic	17.35	1.70	
Asian/Pacific Islander	5.78	1.81	
Native American	0.00	0.63	0.00 ****
Minority	31.73	15.96	
Nonminority female	1.29	13.90	9.26 ****
M/W/DBE total	33.02	29.85	
CSE			
African American	0.00	6.57	0.00 ****
Hispanic	0.00	0.00	
Asian/Pacific Islander	0.00	2.38	0.00 ****
Native American	0.00	2.83	0.00 ****
Minority	0.00	11.78	0.00 ****
Nonminority female	4.29	9.90	43.33 **
M/W/DBE total	4.29	21.68	19.79 ****

Source and Notes: See Table 6.8.

Table 6.11. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Federally-Assisted Contracts) (Dollars Paid)

Contracting Category & M/W/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
OVERALL			
African American	10.85	11.13	97.50
Hispanic	0.16	1.81	8.91 ***
Asian/Pacific Islander	1.57	1.11	
Native American	1.61	1.17	
Minority	14.20	15.21	93.33
Nonminority female	10.48	10.72	97.68
M/W/DBE total	24.68	25.94	95.13
CONSTRUCTION			
African American	10.94	10.75	
Hispanic	0.05	1.85	2.54 ****
Asian/Pacific Islander	0.46	0.63	72.88
Native American	1.91	1.32	
Minority	13.35	14.56	91.73
Nonminority female	11.12	10.39	
M/W/DBE total	24.48	24.95	98.12
AE-CRS			
African American	11.11	12.73	87.27
Hispanic	0.00	1.62	0.00 ****
Asian/Pacific Islander	8.10	3.01	
Native American	0.00	0.56	0.00 ****
Minority	19.21	17.92	
Nonminority female	7.22	12.12	59.61
M/W/DBE total	26.44	30.04	87.99
SERVICES			
African American	8.82	11.50	76.68
Hispanic	16.02	1.68	
Asian/Pacific Islander	5.94	1.85	
Native American	0.00	0.62	0.00 ****
Minority	30.78	15.65	
Nonminority female	1.32	13.77	9.60 ****
M/W/DBE total	32.10	29.42	
CSE			
African American	0.00	12.28	0.00 ****
Hispanic	0.00	0.00	
Asian/Pacific Islander	0.00	1.99	0.00 ****
Native American	0.00	1.75	0.00 ****
Minority	0.00	16.02	0.00 ****
Nonminority female	8.17	14.15	57.75 *
M/W/DBE total	8.17	30.17	27.08 ****

Source and Notes: See Table 6.8.

Table 6.12. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Locally-Funded Contracts) (Dollars Awarded)

Contracting Category & M/W/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
OVERALL			
African American	11.48	17.50	65.58
Hispanic	0.12	2.48	4.75 ****
Asian/Pacific Islander	1.15	0.84	
Native American	4.28	0.65	
Minority	17.03	21.47	79.29
Nonminority female	8.37	15.00	55.81
M/W/DBE total	25.39	36.47	69.64
CONSTRUCTION			
African American	0.34	9.78	3.43 ****
Hispanic	0.00	1.68	0.00 ****
Asian/Pacific Islander	0.01	0.23	5.03 **
Native American	0.73	1.58	46.01
Minority	1.08	13.27	8.10 ****
Nonminority female	8.97	12.21	73.47
M/W/DBE total	10.04	25.48	39.41 ****
AE-CRS			
African American	5.70	12.39	46.04 *
Hispanic	0.00	1.54	0.00 ****
Asian/Pacific Islander	4.03	2.57	
Native American	0.00	0.52	0.00 ****
Minority	9.73	17.02	57.14
Nonminority female	1.23	12.44	9.86 ****
M/W/DBE total	10.95	29.46	37.18 ****
SERVICES			
African American	33.47	21.85	
Hispanic	0.00	3.02	0.03 ****
Asian/Pacific Islander	0.02	0.55	3.72 ****
Native American	0.00	0.27	0.00 ****
Minority	33.50	25.70	
Nonminority female	2.07	16.98	12.20 ****
M/W/DBE total	35.57	42.68	83.34
CSE			
African American	2.59	9.40	27.58 ****
Hispanic	0.19	1.38	13.85 **
Asian/Pacific Islander	0.26	2.60	10.17 ****
Native American	0.00	1.25	0.00 ****
Minority	3.05	14.62	20.84 ****
Nonminority female	4.48	10.02	44.69
M/W/DBE total	7.53	24.64	30.54 ****

Source and Notes: See Table 6.8.

Table 6.13. Utilization, Availability, and Disparity Results for MSCAA Contracting, Overall and by Contracting Category (Locally-Funded Contracts) (Dollars Paid)

Contracting Category & M/W/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
OVERALL			
African American	12.71	17.66	71.94
Hispanic	0.05	2.53	1.83 ****
Asian/Pacific Islander	0.69	0.83	83.45
Native American	0.14	0.64	21.99
Minority	13.58	21.65	62.73
Nonminority female	5.00	15.01	33.28 ****
M/W/DBE total	18.58	36.66	50.67 ****
CONSTRUCTION			
African American	0.35	10.15	3.42 ****
Hispanic	0.00	1.80	0.00 ****
Asian/Pacific Islander	0.01	0.24	5.28 **
Native American	0.50	1.49	33.60
Minority	0.86	13.67	6.28 ****
Nonminority female	9.97	11.89	83.83
M/W/DBE total	10.83	25.56	42.36 ****
AE-CRS			
African American	12.28	12.40	99.02
Hispanic	0.00	1.61	0.00 ****
Asian/Pacific Islander	9.27	3.02	
Native American	0.00	0.55	0.00 ****
Minority	21.54	17.57	
Nonminority female	2.59	12.24	21.13 ****
M/W/DBE total	24.13	29.81	80.94
SERVICES			
African American	27.00	21.94	
Hispanic	0.00	3.02	0.03 ****
Asian/Pacific Islander	0.02	0.53	4.33 ****
Native American	0.00	0.28	0.00 ****
Minority	27.03	25.76	
Nonminority female	2.29	17.08	13.41 ****
M/W/DBE total	29.32	42.84	68.42 **
CSE			
African American	2.60	9.39	27.73 ****
Hispanic	0.19	1.38	13.94 ***
Asian/Pacific Islander	0.27	2.60	10.20 ****
Native American	0.00	1.25	0.00 ****
Minority	3.06	14.61	20.94 ****
Nonminority female	4.50	10.00	45.02
M/W/DBE total	7.56	24.61	30.72 ****

Source and Notes: See Table 6.8.

In Concessions, as shown in Table 6.14, large and statistically significant disparities were observed for firms owned by Hispanics, Asians/Pacific Islanders, minorities as a group, nonminority females, and M/W/DBEs as a group. Large disparities were observed for Native Americans as well, though they were not statistically significant.

Table 6.14. Utilization, Availability, and Disparity Results for MSCAA Concessions

Contracting Category & M/W/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
INCLUDING CAR RENTAL			
African American	8.12	7.89	
Hispanic	0.00	2.98	0.0 ****
Asian/Pacific Islander	0.00	13.76	0.0 ****
Native American	0.00	0.54	0.0 ****
Minority	8.12	25.17	32.3 ****
Nonminority female	1.56	10.14	15.4 ****
M/W/DBE total	9.67	35.30	27.4 ****
EXCLUDING CAR RENTAL			
African American	18.94	8.51	
Hispanic	0.00	3.21	0.0 ****
Asian/Pacific Islander	0.00	14.85	0.0 ****
Native American	0.00	0.58	0.0 ****
Minority	18.94	27.16	69.8 ***
Nonminority female	3.63	10.94	33.2 ****
M/W/DBE total	22.57	38.10	59.3 ****

Source: Calculations from NERA Master Concessions Database and NERA Baseline Business Universe.

Notes: (1) “*” indicates an adverse disparity that is statistically significant at the 15% level or better (85% confidence). “**” indicates the disparity is significant at a 10% level or better (90% confidence). “***” indicates significance at a 5% level or better (95% confidence) “****” indicates significance at a 1% level or better (99% confidence). (2) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

2. Detailed Industry Level Results

Utilization, availability, and disparity results comparable to those presented above in Tables 6.8 through 6.14 have also been produced according to detailed Industry Groups. In the interest of space, these tables are presented below in Appendix D. Appendix D also includes tables showing Concessions utilization, availability, and disparity results by detailed Industry Groups.

D. Current Availability versus Expected Availability

Finally, Tables 6.15 and 6.16, for all contracting and federally-assisted contracting, respectively, provide a comparison between current levels of M/W/DBE availability for the MSCAA and levels that we would expect to observe in a race- and gender-neutral market area. The latter, referred to as “expected availability,” is derived by dividing the current availability figures, as documented in Table 3.17, by the disparity ratios documented in column (3) of Table 4.12. If no disparity is present in the relevant market area, the disparity ratio will be equal to 100 and expected availability will be equivalent to current availability. In cases where adverse disparities are present in the relevant market area, the disparity ratio will be less than 100 and, consequently, expected availability will exceed current availability.

With the exception of firms owned by Asians/Pacific Islanders in Services and in CSE, expected M/W/DBE availability in MSCAA’s market area exceeds current M/W/DBE availability by substantial margins in all cases.

Table 6.15. Current Availability and Expected Availability for MSCAA Contracting (All Funds)

Contracting Category & M/W/DBE Type	Award Dollar Weights		Paid Dollar Weights	
	Current Availability (%)	Expected Availability (%)	Current Availability (%)	Expected Availability (%)
OVERALL				
African American	13.63	26.94	13.84	27.36
Hispanic	2.02	2.94	2.11	3.07
Asian/Pacific Islander	1.02	1.16	0.99	1.12
Native American	1.00	1.21	0.95	1.15
Minority	17.66	33.52	17.88	33.93
Nonminority female	12.23	16.46	12.52	16.85
M/W/DBE total	29.89	51.95	30.40	52.83
CONSTRUCTION				
African American	10.85	14.37	10.66	14.12
Hispanic	1.78	2.90	1.85	3.01
Asian/Pacific Islander	0.62	0.73	0.57	0.67
Native American	1.38	1.72	1.35	1.69
Minority	14.64	20.22	14.43	19.93
Nonminority female	10.49	27.02	10.61	27.33
M/W/DBE total	25.12	36.66	25.04	36.54
AE-CRS				
African American	12.68	16.80	12.67	16.78
Hispanic	1.61	2.62	1.62	2.64
Asian/Pacific Islander	2.91	3.42	3.01	3.53
Native American	0.56	0.70	0.56	0.70
Minority	17.75	24.52	17.86	24.67
Nonminority female	12.17	31.35	12.14	31.27
M/W/DBE total	29.93	43.67	30.01	43.79
SERVICES				
African American	21.69	48.61	21.78	48.81
Hispanic	3.00	4.67	3.00	4.67
Asian/Pacific Islander	0.57	0.51	0.55	0.49
Native American	0.28	0.37	0.28	0.37
Minority	25.54	49.74	25.60	49.85
Nonminority female	16.93	23.09	17.03	23.23
M/W/DBE total	42.47	70.69	42.64	70.97
CSE				
African American	9.44	21.16	9.44	21.16
Hispanic	1.35	2.10	1.35	2.10
Asian/Pacific Islander	2.59	2.33	2.59	2.33
Native American	1.26	1.67	1.26	1.67
Minority	14.64	28.51	14.64	28.51
Nonminority female	10.07	13.74	10.07	13.74
M/W/DBE total	24.71	41.13	24.71	41.13

Source: See Tables 3.17 and 4.12.

Table 6.16. Current Availability and Expected Availability for MSCAA Contracting (Federally-Assisted Contracts)

Contracting Category & M/W/DBE Type	Award Dollar Weights		Paid Dollar Weights	
	Current Availability (%)	Expected Availability (%)	Current Availability (%)	Expected Availability (%)
OVERALL				
African American	11.31	22.36	11.13	22.00
Hispanic	1.76	2.56	1.81	2.63
Asian/Pacific Islander	1.13	1.28	1.11	1.26
Native American	1.21	1.47	1.17	1.42
Minority	15.40	29.23	15.21	28.87
Nonminority female	10.57	14.22	10.72	14.43
M/W/DBE total	25.97	45.13	25.94	45.08
CONSTRUCTION				
African American	11.01	14.58	10.75	14.24
Hispanic	1.80	2.93	1.85	3.01
Asian/Pacific Islander	0.68	0.80	0.63	0.74
Native American	1.35	1.69	1.32	1.65
Minority	14.84	20.50	14.56	20.11
Nonminority female	10.23	26.35	10.39	26.76
M/W/DBE total	25.06	36.57	24.95	36.41
AE-CRS				
African American	12.73	16.86	12.73	16.86
Hispanic	1.63	2.66	1.62	2.64
Asian/Pacific Islander	3.00	3.52	3.01	3.53
Native American	0.56	0.70	0.56	0.70
Minority	17.92	24.75	17.92	24.75
Nonminority female	12.09	31.14	12.12	31.22
M/W/DBE total	30.02	43.81	30.04	43.83
SERVICES				
African American	11.81	26.47	11.50	25.77
Hispanic	1.70	2.65	1.68	2.61
Asian/Pacific Islander	1.81	1.63	1.85	1.66
Native American	0.63	0.83	0.62	0.82
Minority	15.96	31.08	15.65	30.48
Nonminority female	13.90	18.96	13.77	18.78
M/W/DBE total	29.85	49.68	29.42	48.97
CSE				
African American	6.57	14.72	12.28	27.52
Hispanic	0.00	0.00	0.00	0.00
Asian/Pacific Islander	2.38	2.14	1.99	1.79
Native American	2.83	3.74	1.75	2.32
Minority	11.78	22.94	16.02	31.20
Nonminority female	9.90	13.50	14.15	19.30
M/W/DBE total	21.68	36.09	30.17	50.22

Source: See Tables 3.17 and 4.12.

VII. Anecdotal Evidence of Disparities in MSCAA's Market Area

A. Introduction

We have presented a variety of economic and statistical findings above that are consistent with, and indicative of, the presence of business discrimination against minorities and women in the geographic and product markets that are relevant to MSCAA's Construction, AE-CRS, Services, CSE, and Concessions activities. Chapters IV and V, in particular, have documented large and statistically significant adverse disparities in MSCAA's relevant markets impacting minority and female entrepreneurs. In many instances, commercial loan denial rates are higher, the cost of credit is higher, business formation rates are lower, and business owner earnings are lower—even when comparisons are restricted to similarly situated businesses and business owners.

As a further check on these findings, we investigated anecdotal evidence of disparities in MSCAA's market area. First, we conducted a large scale survey of business establishments in the market area—both M/W/DBE and non-M/W/DBE—and asked owners directly about their experiences, if any, with contemporary business-related acts of discrimination. We find that M/W/DBEs in MSCAA's markets report suffering business-related discrimination in substantial numbers and often with statistically significantly greater frequency than non-M/W/DBEs (see Tables 7.3 and 7.4). These differences tend to remain statistically significant when firm size and owner characteristics are held constant (see Tables 7.5 and 7.6). Additionally, we find that M/W/DBE firms that have been hired in the past by non-M/W/DBE prime contractors to work on public sector contracts with M/W/DBE goals often are not hired—or even solicited—by these prime contractors to work on projects without M/W/DBE goals (see Tables 7.8 and 7.9). The relative lack of M/W/DBE hiring and, even more tellingly, the relative lack of solicitation of M/W/DBEs in the absence of affirmative efforts by MSCAA and other public entities in the MSCAA market area, shows that business discrimination continues to fetter M/W/DBE business opportunities in MSCAA's relevant markets. We conclude that the statistical evidence presented in this Study is consistent with these anecdotal accounts of contemporary business discrimination.

The remainder of this chapter is organized as follows. We first discuss the mail survey results in Section B. In Section B.1, we discuss the survey questionnaire, sample frame, and response rate. Section B.2 presents evidence on willingness of firms to do business with the public sector. Section B.3 presents the key findings from the M/W/DBE and non-M/W/DBE respondents concerning disparate treatment. Section B.4 presents the key findings concerning the impact of the regular business environment on M/W/DBEs' ability to conduct their businesses. Section B.5 presents key findings to our questions concerning whether prime contractors solicit or hire M/W/DBEs for work on public or private contracts without M/W/DBE goals. Section B.6 then examines whether M/W/DBEs and non-M/W/DBEs that responded to the mail surveys are representative of all M/W/DBEs and non-M/W/DBEs in the relevant markets. To do so, we surveyed a random sample of M/W/DBEs and non-M/W/DBEs that did not respond to our mail survey, and then compared their responses to key questions with those of our survey respondents.

Finally, Section C describes the results of the business experience group interviews. Responses are grouped under the headings of the most common cited barriers and issues facing businesses in MSCAA's contracting market area.

B. Business Experience Surveys

1. Survey Questionnaire, Sample, and Responses

The survey questionnaire asked whether and with what frequency firms had experienced discrimination in a wide variety of likely business dealings in the previous five years. The survey also inquired about the influence of specific aspects of the everyday business environment, such as bonding and insurance requirements, on each firm's ability to do business in MSCAA's relevant markets. We also asked about the relative frequency with which firms that have been used as subcontractors, subconsultants, or suppliers by prime contractors on contracts *with* M/W/DBE goals have been hired to work, or even solicited to bid, on similar contracts *without* M/W/DBE goals. Finally, we posed questions about the characteristics of the firm, including firm age, owner's education, employment size, and revenue size, to facilitate comparisons of similarly situated firms.

The mail survey sample was stratified by industry and drawn directly from the Master M/W/DBE Directory and the Baseline Business Universe compiled for this Study. Firms were sampled randomly within strata. M/W/DBE firms were oversampled to facilitate statistical comparisons with non-M/W/DBEs.¹⁴⁸ Of 8,867 businesses that received the questionnaire,¹⁴⁹ 576 (6.5 percent) provided usable responses.¹⁵⁰ The distribution of total responses according to the race and gender of the business owner, by major contracting category, appears in Table 7.1.

¹⁴⁸ See Chapter II for a discussion of how the product and geographic markets were defined. See Chapter III for a discussion of how the Master DBE Directory and the Baseline Business Universe were assembled.

¹⁴⁹ These figures exclude surveys that were returned undelivered or were otherwise undeliverable.

¹⁵⁰ The total number of valid responses to any particular survey question, however, was sometimes lower than this due to item non-response.

Table 7.1. Race, Gender and Contracting Category of Mail Survey Respondents

Group	Construction	AE-CRS	Services	CSE	Total
African American	22	5	72	18	117
Hispanic	4	0	4	0	8
Asian/Pacific Islander	6	3	7	3	19
Native American	4	0	5	0	9
Minorities with unknown Race/Ethnicity	0	0	0	0	0
Nonminority Women	37	13	68	19	137
M/W/DBE Total	73	21	156	40	290
Nonminority Men	80	25	113	68	286
Total	153	46	269	108	576

Source: NERA MSCAA mail surveys.

2. Willingness of Firms to Contract with the Public Sector

The probative value of anecdotal evidence of discrimination increases when it comes from active businesses in the relevant geographic and procurement markets. The value of such evidence increases further when it comes from firms that have actually worked or attempted to work for the public sector within those markets. Such is the present case.

As shown below in Table 7.2, there is an observable link between the firms responding to our mail survey and the public sector of the Memphis area economy. All respondents operate establishments in the relevant geographic and product markets. Moreover, significant numbers of survey respondents have worked or attempted to do work for MSCAA or other public entities in the market area in the last five years. This is observed for virtually all types of M/W/DBEs and non-M/W/DBEs in all procurement categories. Overall, 56 percent of non-M/W/DBEs and 67 percent of M/W/DBEs have worked or attempted to work for MSCAA or some other public entity in the market area in the previous five years. In Construction, the figures are significantly higher than this, at 68 percent and 79 percent, respectively. This is also true for AE-CRS, at 72 percent and 86 percent, respectively.

Anecdotal Evidence of Disparities in MSCAA's Market Area

Table 7.2. Survey Respondents Indicating They Had Worked or Attempted to Work for Public Sector Agencies in the Last Five Years

Worked or Attempted to Work, Last 5 Years	African American	Hispanic	Asian/Pacific Islander	Native American	Minority Total	Non-minority Female	M/W/DBE Total	Non-minority Male
ALL INDUSTRIES								
With MSCAA	38.5%	62.5%	26.3%	44.4%	38.6%	30.9%	34.9%	32.6%
	(117)	(8)	(19)	(9)	(153)	(136)	(289)	(285)
With Other Public Entity in Market Area	65.8%	75.0%	50.0%	77.8%	65.1%	66.4%	65.7%	54.4%
	(117)	(8)	(18)	(9)	(152)	(134)	(286)	(283)
With any Public Entity in Market Area	66.7%	75.0%	50.0%	77.8%	65.8%	68.9%	67.2%	56.1%
	(117)	(8)	(18)	(9)	(152)	(135)	(287)	(285)
CONSTRUCTION								
With MSCAA	40.9%	50.0%	33.3%	50.0%	41.7%	48.6%	45.2%	36.3%
	(22)	(4)	(6)	(4)	(36)	(37)	(73)	(80)
With Other Public Entity in Market Area	72.7%	50.0%	80.0%	75.0%	71.4%	86.5%	79.2%	64.6%
	(22)	(4)	(5)	(4)	(35)	(37)	(72)	(79)
With any Public Entity in Market Area	72.7%	50.0%	80.0%	75.0%	71.4%	86.5%	79.2%	67.5%
	(22)	(4)	(5)	(4)	(35)	(37)	(72)	(80)
AE-CRS								
With MSCAA	100.0%	-	66.7%	-	87.5%	23.1%	47.6%	40.0%
	(5)	(0)	(3)	(0)	(8)	(13)	(21)	(25)
With Other Public Entity in Market Area	100.0%	-	100.0%	-	100.0%	76.9%	85.7%	72.0%
	(5)	(0)	(3)	(0)	(8)	(13)	(21)	(25)
With any Public Entity in Market Area	100.0%	-	100.0%	-	100.0%	76.9%	85.7%	72.0%
	(5)	(0)	(3)	(0)	(8)	(13)	(21)	(25)
SERVICES								
With MSCAA	33.3%	75.0%	14.3%	40.0%	34.1%	25.0%	30.1%	20.4%
	(72)	(4)	(7)	(5)	(88)	(68)	(156)	(113)
With Other Public Entity in Market Area	62.5%	100.0%	28.6%	80.0%	62.5%	50.0%	57.1%	38.4%
	(72)	(4)	(7)	(5)	(88)	(66)	(154)	(112)
With any Public Entity in Market Area	62.5%	100.0%	28.6%	80.0%	62.5%	55.2%	59.4%	39.8%
	(72)	(4)	(7)	(5)	(88)	(67)	(155)	(113)
CSE								
With MSCAA	38.9%	-	0.0%	-	33.3%	22.2%	28.2%	46.3%
	(18)	(0)	(3)	(0)	(21)	(18)	(39)	(67)
With Other Public Entity in Market Area	61.1%	-	0.0%	-	52.4%	77.8%	64.1%	62.7%
	(18)	(0)	(3)	(0)	(21)	(18)	(39)	(67)
With any Public Entity in Market Area	66.7%	-	0.0%	-	57.1%	77.8%	66.7%	64.2%
	(18)	(0)	(3)	(0)	(21)	(18)	(39)	(67)

Source: NERA MSCAA mail surveys. Note: Total number of valid responses in parentheses.

3. Experiences of Disparate Treatment in Business Dealings

The survey included questions about instances of disparate treatment based on race and/or gender experienced in various business dealings during the past five years. As shown in the last row of Table 7.3, almost 44 percent of M/W/DBE firms said they had experienced at least one instance of disparate treatment in one or more areas of business dealings identified on the survey. Reports of disparate treatment were substantially and statistically significantly higher for minorities than for nonminorities, casting doubt on claims of widespread “reverse discrimination.” On average, reports were highest among African Americans, with an overall rate of 59 percent.¹⁵¹ For nonminority women, the disparate treatment incidence rate was 36 percent. By comparison, the reported rate for nonminority males was 31 percent.

The balance of Table 7.3 shows results for each of 14 distinct types of disparate treatment that we asked about in the survey. In 13 of 14 categories the ratio of the reported amount of disparate treatment between M/W/DBEs and non-M/W/DBEs is large. In 10 of 13 categories this difference is statistically significant as well. In all but one category the incidence of disparate treatment was greater for M/W/DBEs than for non-M/W/DBEs. In most categories it was two, three, four, five, and even seven times greater than this. In applying for commercial loans, for example, M/W/DBEs reported disparate treatment seven times more frequently than nonminority males.¹⁵² In applying for commercial insurance it was almost five times more frequent. In applying for surety bonds it was almost four times more frequent. In obtaining price quotes from suppliers or subcontractors it was three times more frequent. In working or attempting to work on private sector prime contracts and subcontracts it was twice as frequent. In functioning without hindrance or harassment on the work site it was almost three times more frequent. In receiving timely payment for work performed, joining or dealing with construction trade associations, having to do inappropriate or extra work not required of comparable non-M/W/DBE firms, and having to meet quality standards not required of comparable non-M/W/DBE firms, it was more than twice as frequent.

Table 7.3 also provides evidence of the positive impact of public sector M/W/DBE programs. Although still substantial in an absolute sense, two of the smallest relative differences between M/W/DBEs and non-M/W/DBEs appear in the categories of working or attempting to work on public sector prime contracts and subcontracts, where the incidence of disparate impact was cited just 19 percent and 27 percent more frequently, respectively.

¹⁵¹ Relatively few responses were received from Hispanics, Asians/Pacific Islanders, or Native Americans. Given their low level of measured availability in this market area (see Table 3.17, showing approximately 1 percent for Asians/Pacific Islanders and Native Americans and 2 percent for Hispanics) this result is not surprising.

¹⁵² For more evidence on this topic, see Chapter V.

Anecdotal Evidence of Disparities in MSCAA's Market Area

Table 7.3. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Gender While Participating in Business Dealings

Business Dealings	African American	Hispanic	Asian/Pacific	Native American	Minority Total	Non-minority Female	M/W/DBE Total	Non-minority Male
Applying for commercial loans	45.3% (75)	0.0% (7)	14.3% (14)	14.3% (7)	35.9% (103)	5.6% (72)	23.4% (175)	3.3% (150)
Applying for surety bonds	14.0% (57)	0.0% (6)	0.0% (6)	0.0% (6)	10.7% (75)	5.3% (57)	8.3% (132)	2.2% (136)
Applying for commercial or professional insurance	15.5% (84)	0.0% (7)	6.3% (16)	0.0% (7)	12.3% (114)	3.3% (92)	8.3% (206)	1.7% (173)
Hiring workers from union hiring halls	2.5% (40)	0.0% (4)	20.0% (5)	0.0% (4)	3.8% (53)	0.0% (36)	2.2% (89)	2.3% (88)
Obtaining price quotes from suppliers or subcontractors	24.0% (75)	0.0% (8)	15.4% (13)	16.7% (6)	20.6% (102)	14.3% (84)	17.7% (186)	5.8% (156)
Working or attempting to obtain work on public sector prime contracts	48.0% (75)	0.0% (6)	30.0% (10)	14.3% (7)	40.8% (98)	17.6% (74)	30.8% (172)	26.0% (150)
Working or attempting to obtain work on public sector subcontracts	48.7% (78)	0.0% (6)	25.0% (12)	14.3% (7)	40.8% (103)	18.1% (72)	31.4% (175)	24.7% (150)
Working or attempting to obtain work on private sector prime contracts	50.7% (71)	20.0% (5)	30.0% (10)	14.3% (7)	44.1% (93)	9.3% (86)	27.4% (179)	13.8% (167)
Working or attempting to obtain work on private sector subcontracts	48.6% (72)	16.7% (6)	18.2% (11)	14.3% (7)	40.6% (96)	11.3% (80)	27.3% (176)	13.7% (161)
Receiving timely payment for work performed	45.7% (81)	14.3% (7)	16.7% (12)	14.3% (7)	38.3% (107)	19.6% (97)	29.4% (204)	12.8% (180)
Functioning without hindrance or harassment on the work site	28.6% (70)	12.5% (8)	16.7% (12)	0.0% (7)	23.7% (97)	14.3% (84)	19.3% (181)	7.3% (165)
Joining or dealing with construction trade associations	12.7% (55)	0.0% (6)	0.0% (7)	0.0% (7)	9.3% (75)	4.7% (64)	7.2% (139)	3.5% (141)
Having to do inappropriate or extra work not required of comparable non-M/W/DBEs	30.6% (72)	14.3% (7)	9.1% (11)	0.0% (7)	24.7% (97)	13.8% (80)	19.8% (177)	9.6% (156)
Double standards not required of comparable non-M/W/DBEs	39.5% (76)	14.3% (7)	14.3% (14)	14.3% (7)	32.7% (104)	6.2% (81)	21.1% (185)	8.9% (158)
In any one of the business dealings listed above	59.0% (100)	12.5% (8)	36.8% (19)	12.5% (8)	50.4% (135)	36.0% (111)	43.9% (246)	31.1% (212)

Source: See Table 7.2. Notes: Total number of valid responses in parentheses. Figures in **boldface** type are statistically significantly different from non-M/W/DBEs using a conventional two-tailed Fisher's Exact Test and within a 95% or better confidence interval. Figures in **boldface italicized** type are significant within a 90% confidence interval.

Table 7.4 represents the same disparate treatment information as in Table 7.3, but with the frequency percentages replaced by relative rankings. That is, the 14 kinds of disparate treatment are ranked by each group according to the frequency with which disparate treatment was reported, with “1” representing the most frequent and “14” representing the least frequent.¹⁵³ The most frequently reported problem overall for M/W/DBEs—as opposed to the one with the most relative difference from non-M/W/DBEs—was working or attempting to work on public sector subcontracts.¹⁵⁴ The next five most frequently reported, in descending order of frequency, were working or attempting to work on public sector prime contracts, receiving timely payment for work performed, working or attempting to work on private sector prime contracts, working or attempting to work on private sector subcontracts, and applying for commercial loans.

Some courts and other observers have asserted that findings such as those in Tables 7.3 and 7.4 tell us nothing about discrimination against M/W/DBEs since, even though they are current and come directly from the businesses reporting disparate treatment, even though they are restricted to the relevant geographic and product markets, even though they are disaggregated by contracting category and by race and gender, they still do not compare firms of similar size, qualifications, or experience. We have argued elsewhere against such flawed logic (and economics) since size, qualifications, and experience are *precisely* the factors that are adversely impacted by discrimination (Wainwright and Holt, 2010, 65-67; Wainwright, 2000, 86-87). Nevertheless, if disparities are still observed even when such “capacity” factors are held constant, the case becomes even more compelling. The results reported below in Table 7.5 show that even when levels of size, qualifications, and experience are held constant across firms, measures of disparate treatment of M/W/DBEs are still large, adverse, and statistically significant.

¹⁵³ In the case of ties, not all 14 ranks will be present.

¹⁵⁴ In this survey question, “public sector” refers to public sector entities in general and not MSCAA specifically.

Table 7.4. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Gender While Participating in Business Dealings (Rankings)

Business Dealings	African American	Hispanic	Asian/ Pacific Islander	Native American	Minority Total	Non-minority Female	M/W/DBE Total
Applying for commercial loans	6	5	7	2	6	9	5
Applying for surety bonds	12	5	10	3	12	9	10
Applying for commercial or professional insurance	11	5	9	3	11	11	11
Hiring workers from union hiring halls	14	5	3	3	14	12	13
Obtaining price quotes from suppliers or subs	10	5	6	1	10	4	9
Working or attempting to obtain work on public sector prime contracts	4	5	1	2	2	3	2
Working or attempting to obtain work on public sector subcontracts	2	5	2	2	3	2	1
Working or attempting to obtain work on private sector prime contracts	1	1	1	2	1	7	4
Working or attempting to obtain work on private sector subcontracts	3	2	4	2	4	6	4
Receiving timely payment for work performed	5	3	5	2	5	1	3
Functioning without hindrance or harassment on the work site	9	4	5	3	9	4	8
Joining or dealing with trade associations	13	5	10	3	13	10	12
Having to do extra work not required of others	8	3	8	3	8	5	7
Having to meet quality or performance standards not required of others	7	3	7	2	7	8	6

Source: See Table 7.2.

In Table 7.5, we report the results from a series of Probit regressions using the mail survey data on disparate treatment.¹⁵⁵ As indicated earlier, the survey questionnaire collected data related to each firm's size, qualifications, and experience. The reported estimates from these models can be interpreted as changes or differences in the probability of disparate treatment conditional on the control variables. The estimates in the table show large differences in disparate treatment probabilities between M/W/DBEs and non-M/W/DBEs. In column (1) of Table 7.5 (in which the regression model contains only M/W/DBE status and contracting category indicators), the estimated coefficient of 0.138 on the M/W/DBE indicator indicates that the likelihood of experiencing disparate treatment for M/W/DBE firms is 13.8 percentage points higher than that for non-M/W/DBE firms.¹⁵⁶ This difference is statistically significant. Column (2) of Table 7.5 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race or gender, including the owner's education, the age of the firm, and the size of the firm measured by employment and by sales. Even after controlling for these differences, however, M/W/DBE firms remain 12.4 percentage points more likely than non-M/W/DBE firms to experience disparate treatment. This difference is also statistically significant. Firm size and other "capacity"-type characteristics account only a small portion of the disparate treatment reported by M/W/DBEs in the MSCAA market area.

The exercise is repeated in columns (3) and (4). The only difference from the earlier regressions is that the M/W/DBE indicator is now separated into two components—one for minority-owned firms and one for nonminority-female owned firms. The results in column (3) indicate that minority-owned firms in MSCAA's market area are 21.9 percentage points more likely to experience disparate treatment than non-M/W/DBE firms. When controls are added in column (4), this difference falls to 18.3 percentage points, indicating that disparate treatment is occurring even when accounting for other "capacity"-type factors. The differences for nonminority female-owned firms are not statistically significant.

The exercise is repeated a final time in columns (5) and (6) with separate indicators for each type of M/W/DBE. The results for nonminority females are nearly identical to those in columns (3) and (4). For African American-owned firms, the differential is 32.1 percentage points in column (5), falling to 30.7 percentage points once controls are added. The differences for firms owned by Hispanics, Asians/Pacific Islanders, and Native Americans are not statistically significant.

¹⁵⁵ See Chapter IV for a description of Probit regression.

¹⁵⁶ This estimate largely replicates the raw difference in disparate treatment rates between M/W/DBE and non-M/W/DBE firms reported in the last row of Table 7.3. The raw differential observed there ($43.9\% - 31.1\% = 12.8\%$) differs slightly from the 13.8% differential reported here since the regression specification also controls for industry category.

Table 7.5. Prevalence of Disparate Treatment Facing M/W/DBEs

	(1)	(2)	(3)	(4)	(5)	(6)
M/W/DBE	0.138 (2.96)	0.124 (2.33)				
Minority			0.219 (3.93)	0.183 (2.88)		
Nonminority Female			0.044 (0.75)	0.059 (0.88)	0.045 (0.75)	0.062 (0.92)
African American					0.321 (5.17)	0.307 (4.25)
Hispanic					-0.220 (-1.18)	-0.238 (-1.26)
Asian/Pacific Islander					0.040 (0.33)	(0.003) (-0.02)
Native American					-0.220 (-1.18)	-0.228 (-1.26)
Owner's Education (3 indicator variables)	No	Yes	No	Yes	No	Yes
Firm Age (4 indicators)	No	Yes	No	Yes	No	Yes
Employment size bracket (6 indicators)	No	Yes	No	Yes	No	Yes
Sales/revenue size bracket (4 indicators)	No	Yes	No	Yes	No	Yes
Industry category (3 indicators)	Yes	Yes	Yes	Yes	Yes	Yes
N	458.00	401.00	458.00	401.00	458.00	401.00
Pseudo R ²	0.04	0.08	0.05	0.08	0.08	0.12
Chi ²	25.70	42.35	33.11	45.30	51.29	62.43
Log likelihood	(291.27)	(246.36)	(287.57)	(244.89)	(278.48)	(236.32)

Source: See Table 7.2.

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. A t-statistic of 1.96 (1.64) or larger indicates that the result is significant within a 95 (90) percent confidence interval.

Table 7.6. Prevalence of Disparate Treatment Facing M/W/DBEs, by Type of Business Dealing

Business Dealings	African American	Hispanic	Asian/ Pacific Islander	Native American	Minority Total	Non-minority Female	M/W/DBE Total
Applying for commercial loans	57.5% (6.02)	0.0% (0.00)	21.9% (1.66)	36.6% (1.64)	40.6% (5.44)	9.0% (1.28)	21.5% (4.43)
Applying for surety bonds	0.1% (2.75)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (2.64)	0.0% (2.19)	0.0% (2.67)
Applying for commercial or professional insurance	1.4% (1.83)	0.0% (0.00)	1.8% (0.91)	0.0% (0.00)	1.0% (1.65)	0.3% (0.56)	0.5% (1.37)
Hiring workers from union hiring halls	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)
Obtaining price quotes from suppliers or subcontractors	21.9% (3.30)	0.0% (0.00)	21.3% (1.70)	12.4% (0.71)	15.9% (2.99)	11.5% (2.02)	11.1% (2.94)
Working or attempting to obtain work on public sector prime contracts	28.3% (3.43)	0.0% (0.00)	1.4% (0.10)	-14.2% (-0.79)	16.9% (2.38)	-9.5% (-1.28)	5.6% (0.94)
Working or attempting to obtain work on public sector subcontracts	27.7% (3.40)	0.0% (0.00)	-5.9% (-0.43)	-17.3% (-1.00)	15.0% (2.16)	-12.8% (-1.68)	4.1% (0.69)
Working or attempting to obtain work on private sector prime contract	34.3% (4.70)	2.3% (0.13)	6.2% (0.46)	-5.0% (-0.33)	24.4% (3.94)	-6.2% (-0.98)	11.1% (2.23)
Working or attempting to obtain work on private sector subcontracts	35.2% (4.74)	-0.6% (-0.04)	-4.3% (-0.37)	-7.1% (-0.50)	22.9% (3.69)	-0.7% (-0.11)	12.8% (2.56)
Receiving timely payment for work performed	31.5% (4.31)	3.2% (0.17)	-5.0% (-0.40)	-4.8% (-0.30)	21.5% (3.45)	8.4% (1.31)	13.8% (2.90)
Functioning without hindrance or harassment on the work site	15.6% (2.69)	2.7% (0.22)	7.0% (0.65)	0.0% (0.00)	10.9% (2.25)	4.6% (0.88)	7.4% (1.94)
Joining or dealing with construction trade associations	0.0% (1.24)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.69)	0.0% (0.87)	0.0% (0.92)
Having to do inappropriate or extra work not required of comparable non-M/W/DBEs	18.4% (3.04)	5.5% (0.38)	-6.2% (-0.68)	0.0% (0.00)	11.5% (2.26)	5.5% (0.97)	8.1% (2.01)
Having to meet quality, inspection, or performance standards not required of comparable non-M/W/DBEs	29.7% (4.52)	3.8% (0.26)	-0.6% (-0.07)	-1.9% (-0.16)	19.3% (3.63)	-3.7% (-0.65)	10.2% (2.38)
In any one of the business dealings listed above	30.7% (4.25)	-23.8% (-1.26)	-0.3% (-0.02)	-24.8% (-1.26)	18.3% (2.88)	5.9% (0.88)	12.4% (2.33)

Source: See Table 7.2.

Notes: Reported estimates are derivatives from Probit models with specification such as in Table 7.5, column (2). The t-statistics are in parentheses. A t-statistic of 1.96 (1.64) or larger indicates that the result is significant within a 95 (90) percent confidence interval. Results with t-statistics of 1.96 or higher are **boldfaced**. Results with t-statistics of 1.64 or higher are **boldfaced italicized**.

The regression models reported in Table 7.5 used as their dependent variable an indicator of whether or not a survey respondent reported having been treated less favorably in *any* of the 14 different types of business dealings described in the first column of Table 7.3. We re-estimated the regression model reported in Column (2) of Table 7.5 separately using as the dependent variable, in turn, each of the 14 types of business dealings and report those results in Table 7.6. As Table 7.6 shows, African American-owned firms, in particular, experience a wide variety of disparate treatment compared to non-M/W/DBEs. In 11 of 14 categories, the differences for African American-owned firms are both large and statistically significant. For minorities as a group, it is true in 10 of 14 cases as well. For M/W/DBEs as a group, it is true in 8 of 14 cases.

4. Impact of Current Business Environment on Ability to Win Contracts

The survey asked questions about some common features of the business environment to determine which factors were perceived by M/W/DBEs as serious impediments to obtaining contracts.

As Table 7.7 makes clear, substantial percentages of both M/W/DBEs and non-M/W/DBEs report that certain factors, such as “Late Notice of Bid/Proposal Deadlines,” “Obtaining working capital,” “Bonding requirements,” and “Large project sizes,” make it harder or impossible for their firms to obtain contracts. Among non-M/W/DBEs, for example, almost 39 percent reported that late notice of bid/proposal deadlines made it harder or impossible for them to win contracts, 31 percent reported that large project sizes had this effect, 19 percent reported that obtaining working capital had this effect, and 18 percent reported that the price of supplies or materials had this effect. The figures for M/W/DBEs in these four categories, however, at 44, 36, 38, and 22 percent, respectively, are substantially higher than those for non-M/W/DBEs. Indeed, as Table 7.7 shows, M/W/DBEs reported significantly more difficulty than non-M/W/DBEs in all nine factors about which they were polled.

Table 7.7. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts—Sample Differences

Business Environment	African American	Hispanic	Asian/ Pacific Islander	Native American	Minority Total	Non-minority Female	M/W/DBE Total	Non-M/W/DBEs
Bonding Requirements	37.7% (61)	25.0% (4)	36.4% (11)	20.0% (5)	35.8% (81)	22.8% (57)	30.4% (138)	15.6% (128)
Insurance Requirements	19.0% (79)	14.3% (7)	21.4% (14)	0.0% (6)	17.9% (106)	12.8% (86)	15.6% (192)	11.3% (159)
Previous Experience Requirements	24.7% (77)	0.0% (6)	25.0% (12)	0.0% (6)	21.8% (101)	15.6% (96)	18.8% (197)	6.9% (173)
Cost of Bidding or Proposing	27.0% (74)	0.0% (6)	8.3% (12)	0.0% (4)	21.9% (96)	18.8% (85)	20.4% (181)	11.2% (169)
Large Project Sizes	47.9% (73)	0.0% (6)	36.4% (11)	33.3% (6)	42.7% (96)	28.9% (83)	36.3% (179)	31.4% (159)
Price of Supplies or Materials	25.4% (71)	16.7% (6)	18.2% (11)	14.3% (7)	23.2% (95)	19.8% (81)	21.6% (176)	18.4% (163)
Obtaining Working Capital	55.1% (69)	33.3% (6)	30.0% (10)	16.7% (6)	48.4% (91)	25.6% (78)	37.9% (169)	19.2% (151)
Late Notice of Bid/Proposal Deadlines	52.9% (68)	0.0% (5)	37.5% (8)	50.0% (4)	48.2% (85)	39.2% (79)	43.9% (164)	38.7% (142)
Prior Dealings with Owner	23.5% (68)	0.0% (7)	16.7% (12)	0.0% (5)	19.6% (92)	5.3% (94)	12.4% (186)	5.7% (158)

Source: See Table 7.2.

Notes: Total number of valid responses in parentheses. Figures in **boldface** type are adverse and statistically significantly different from non-M/W/DBEs using a conventional two-tailed Fisher's Exact Test and within a 95% or better confidence interval. Figures in **boldface italicized** type are adverse and significant within a 90% confidence interval.

To control for firm and owner characteristics, we used a regression technique known as ordered Probit.¹⁵⁷ Ordered Probit regression is used when the dependent variable is discrete and ordinal (and hence can be ranked). We use ordered Probit to model the ordinal ranking—helps me (1), no effect (2), makes it harder (3), and makes it impossible (4)—of the aspect of procurement under consideration. The firm characteristics used as control variables consist of the age of the firm, the number of employees, the size of revenues, the education level of the primary owner of the firm, and the major industry group. To report results from ordered Probit analysis, we use a “+” to indicate that M/W/DBEs had more difficulty than non-M/W/DBEs with similar firm characteristics, and a “–” to indicate that M/W/DBEs had less difficulty than non-M/W/DBEs with similar firm characteristics.

Table 7.8 reports the sign and statistical significance from the ordered Probit analysis. We find that when observable firm characteristics are controlled for, six of the nine factors we inquired about prove to be greater difficulties for M/W/DBEs than for non-M/W/DBEs (as indicated by the “+” sign), even when “capacity”-type factors such as employment size, revenue size, years in business, and owner education are held constant. The disparity observed regarding obtaining working capital, in particular, was statistically significant with respect to non-M/W/DBEs.

Table 7.8. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts, Regression Results

Business Environment	M/W/DBEs
Bonding Requirements	+
Insurance Requirements	–
Previous Experience Requirements	+
Cost of Bidding or Proposing	+
Large Project Sizes	–
Price of Supplies or Materials	–
Obtaining Working Capital	+*
Late Notice of Bid/Proposal Deadlines	+
Prior Dealings with Owner	+

Source: See Table 7.2.

Notes: A plus (+) indicates that a group is more likely than non-M/W/DBEs to report difficulty with business environment factors. A minus (–) indicates that a group is less likely than non-M/W/DBEs to experience difficulty. An asterisk (*) indicates that the disparity is statistically significant within a 95% or better confidence interval. A dagger (†) indicates that the disparity is statistically significant within a 90% or better confidence interval.

¹⁵⁷ For a textbook discussion of ordered Probit, see, for example, Greene (1997).

5. Solicitation and Use of M/W/DBEs on Public and Private Projects Without Affirmative Action Goals

Our second to last survey question asked, “How often do prime contractors who use your firm as a subcontractor on public-sector projects with requirements for minority, women and/or disadvantaged businesses also *hire* your firm on projects (public or private) *without* such goals or requirements?” As Table 7.9 shows, 72 percent of African American-owned firms, 80 percent of Hispanic-owned firms, 70 percent of Asian/Pacific Islander-owned firms, 83 percent of Native American-owned firms, and 64 percent of nonminority female-owned firms responded that this seldom or never occurs. For minorities as a group the figure was 73 percent and for M/W/DBEs as a group the figure was 70 percent. Similar results were observed by major contracting category as well.¹⁵⁸

At least one court has held that the failure of prime contractors to even *solicit* qualified minority- and women-owned firms is a “market failure” that serves to establish a government’s compelling interest in remedying that failure.¹⁵⁹ Among the evidence relied upon for this holding was a NERA survey similar to the current one in which approximately 50 percent of the respondents reported that they were seldom or never solicited for non-goals work.¹⁶⁰

Table 7.9. Percent of M/W/DBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with Goals Seldom or Never Hire Them on Projects without Such Goals

M/W/DBE Group	All Industries	Construction	Consulting	Services	CSE
African American	72.2% (72)	42.9% (14)	75.0% (4)	80.0% (45)	77.8% (9)
Hispanic	80.0% (5)	100.0% (1)	- (0)	75.0% (4)	- (0)
Asian/Pacific Islander	70.0% (10)	50.0% (2)	50.0% (2)	80.0% (5)	100.0% (1)
Native American	83.3% (6)	75.0% (4)	- (0)	100.0% (2)	- (0)
Minority Total	73.1% (93)	52.4% (21)	66.7% (6)	80.4% (56)	80.0% (10)
Nonminority Female	63.6% (55)	52.6% (19)	66.7% (9)	76.2% (21)	50.0% (6)
M/W/DBE Total	69.6% (148)	52.5% (40)	66.7% (15)	79.2% (77)	68.8% (16)

Source and Note: See Table 7.2.

¹⁵⁸ We note, however, that the percentage of African Americans in Construction reporting this phenomenon, while still very large, is, unlike that observed in all other categories, less than 50 percent.

¹⁵⁹ *Builders Association of Greater Chicago v. Authority of Chicago*, 298 F.Supp.2d 725, 737 (N.D. Ill. 2003).

¹⁶⁰ *Id.*

Our final survey question therefore asked “How often do prime contractors who use your firm as a subcontractor on public-sector projects with requirements for minority, women and/or disadvantaged businesses *solicit* your firm on projects (public or private) *without* such goals or requirements?” Responses to this question are tabulated in Table 7.10, which shows the same pattern as in Table 7.9. In Table 7.10, 75 percent of African American-owned firms, 75 percent of Hispanic-owned firms, 60 percent of Asian/Pacific Islander-owned firms, 83 percent of Native American-owned firms, and 67 percent of nonminority female-owned firms responded that this seldom or never occurs. For minorities as a group the figure was 74 percent and for M/W/DBEs as a group the figure was 71 percent. Similar results were also observed in each major contracting category.¹⁶¹

Table 7.10. Percent of M/W/DBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with Goals Seldom or Never *Solicit* Them on Projects without Such Goals

M/W/DBE Group	All Industries	Construction	Consulting	Services	CSE
African American	74.6% (63)	41.7% (12)	75.0% (4)	82.5% (40)	85.7% (7)
Hispanic	75.0% (4)	100.0% (1)	- (0)	66.7% (3)	- (0)
Asian/Pacific Islander	60.0% (10)	50.0% (2)	0.0% (2)	80.0% (5)	100.0% (1)
Native American	83.3% (6)	75.0% (4)	- (0)	100.0% (2)	- (0)
Minority Total	73.5% (83)	52.6% (19)	50.0% (6)	82.0% (50)	87.5% (8)
Nonminority Female	66.7% (54)	61.1% (18)	66.7% (9)	76.2% (21)	50.0% (6)
M/W/DBE Total	70.8% (137)	56.8% (37)	60.0% (15)	80.3% (71)	71.4% (14)

Source and Note: See Table 7.2.

¹⁶¹ As in Table 7.9, the percentage for African Americans in Construction reporting this phenomenon is less than 50 percent.

6. Impact of Survey Non-Response

Since the mail survey was voluntary, it is important to account for the fact that a majority of those who received it did not respond. As a check on the usefulness of the information obtained from our mail survey respondents, we conducted telephone surveys of 1,250 randomly selected M/W/DBEs and non-M/W/DBEs that did not respond to our mail survey. The purpose of this “non-response” survey is to test whether their answers to key survey questions were different from the answers of respondents in ways that would call into question the relevance of the information obtained from our mail survey respondents.

We obtained responses from 402 firms, for a raw response rate of 32.2 percent. After removing duplicate records, records where the firm was no longer in business, and records where the telephone number was disconnected, the effective response rate increased to 49.9 percent.

For the non-respondent survey, we selected three questions from the mail survey to pose to non-respondents. The first question asked whether large project sizes helped or harmed the firm's ability to obtain public or private sector contracts. The second question asked whether and how frequently the firm had experienced discrimination in attempting to apply for commercial loans. The final question asked whether and how frequently the firm had experienced discrimination in working or attempting to work on private sector prime contracts.

Not surprisingly, one difference that we observed between respondents and non-respondents was a greater general interest in the questions being asked. Among survey respondents, only 25.9 percent indicated that the question about large project sizes was “not applicable.” Among non-respondents, the figure was 51.6 percent. Approximately 50.8 percent of survey respondents indicated that discrimination in applying for commercial loans never occurred, compared to 79.3 percent among non-respondents. Approximately 49.9 percent of survey respondents indicated that discrimination in working or attempting to work on private sector prime contracts never occurred, compared to 78.9 percent among non-respondents. This phenomenon was apparent regardless of whether the firm was minority-owned, women-owned, or nonminority male-owned.

Among those firms to which the question was applicable, 46.7 percent of minority-owned firms that did not respond to the mail survey indicated that large project sizes made it harder or impossible for them to obtain contract awards. Among those that did respond to the survey, the figure was 42.7 percent. Among female-owned firms that did not respond to the mail survey, 25.3 percent indicated that large project sizes made it harder or impossible for them to obtain contract awards. Among those that did respond to the survey, the figure was 3.0 percent. Neither of these differences is statistically significant.¹⁶² This result implies that the estimate of adverse disparity for M/W/DBE firms with regard to large project sizes that was reported from the mail survey (see Tables 7.7 and 7.8) is representative of that in the universe as a whole, since the ratio of M/W/DBE firms to non-M/W/DBE firms reporting difficulty in this regard is not statistically different between respondents and non-respondents.

¹⁶² The percentages reported in this section may differ slightly from comparable figures reported elsewhere in Chapter VII, since minorities of unknown race or ethnicity were excluded from the tallies in the mail survey.

Among those firms to which the question was applicable, 21.7 percent of minority-owned firms that did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in applying for commercial loans. Among those that did respond to the survey, the figure was 36.0 percent. For nonminority female-owned firms, 6.7 percent of those that did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in applying for commercial loans. Among those that did respond to the survey, the figure was 17.9 percent. Both of these differences are statistically significant. Among nonminority male-owned firms that did not respond to the mail survey, 0.96 percent indicated that they had experienced one or more instances of discrimination during the previous five years in applying for commercial loans. Among those that did respond to the survey, the figure was 3.3 percent. This difference is not statistically significant. Regardless, among non-respondents as well as respondents, M/W/DBE firms reported a far greater degree of disparate impact in applying for commercial loans than non-M/W/DBEs. Although the absolute level of incidence was lower among non-respondents than respondents, the relative disparity between M/W/DBEs and non-M/W/DBEs was actually larger among non-respondents than respondents, indicating that the corresponding disparities reported above in this chapter may be somewhat smaller than in the relevant population of businesses as a whole.

Among those firms to which the question was applicable, 24.8 percent of minority-owned firms that did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in working or attempting to work on private sector prime contracts. Among those that did respond to the survey, the figure was 44.1 percent. This difference is statistically significant. For nonminority female-owned firms, 12.8 percent of those that did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in working or attempting to work on private sector prime contracts. Among those that did respond to the survey, the figure was 18.0 percent. This difference is not statistically significant. Among nonminority male-owned firms that did not respond to the mail survey, 4.9 percent indicated that they had experienced one or more instances of discrimination during the previous five years in working or attempting to work on private sector prime contracts. Among those that did respond to the survey, the figure was 13.8 percent. This difference is statistically significant. As with the previous question, among non-respondents as well as respondents, M/W/DBE firms reported a far greater degree of disparate impact in working or attempting to work on private sector prime contracts than did non-M/W/DBEs. Once again, although the absolute level of incidence was smaller among non-respondents, the relative disparity between M/W/DBEs and non-M/W/DBEs was actually larger, indicating that the corresponding disparities reported above in this chapter may be somewhat smaller than in the relevant population of businesses as a whole.

The results of our non-respondent survey, in general, indicate that both M/W/DBEs and non-M/W/DBEs are more likely to have responded to the mail survey if they had experienced the difficulties identified in the mail survey. In some cases, this means the actual disparities facing M/W/DBEs may be somewhat larger than what we have estimated in our mail survey, in other cases they may be somewhat smaller. For all three questions examined, the basic qualitative finding of more problems and greater disparities being observed among M/W/DBEs than among non-M/W/DBEs is unchanged.

C. Business Owner Interviews

To explore additional anecdotal evidence of possible discrimination against minorities and women (collectively, M/W/DBEs) in MSCAA's market area, we conducted 16 group interviews. We met with 125 business owners from a broad cross section of the industries from which the Airport purchases services and goods, including Airport concessions. Firms ranged in size from large national businesses to new start-ups. Owners' backgrounds included individuals with decades of experience in their fields and entrepreneurs beginning their careers. We sought to explore their experiences in seeking and performing public and private sector contracts, and with MSCAA's DBE, ACDBE, and BDD Programs.

This effort gathered individual perspectives to augment the statistical information from the business experience and credit access surveys. In general, interviewees' individual experiences mirrored the responses to the business experience surveys. We also elicited recommendations for improvements to the Airport's Programs, reported below in Chapter VIII.

The following are summaries of the issues discussed. Quotations are indented, and are usually representative of the views expressed by several participants. Some have been shortened for readability.

1. Discriminatory Attitudes and Negative Perceptions of Competence

Many owners still experience discriminatory attitudes and behaviors. Minorities and women repeatedly discussed their struggles with negative perceptions and attitudes of their capabilities within their industries and in the Memphis market area. The stereotypes about minorities' and women's lack of competence infect all aspects of their attempts to obtain contracts and subcontracts, and to be treated equally in performing contract work. This was true across a wide swath of industries.

[At a meeting about an Airport contract,] I was around the corner and the general was talking to [an Airport staffer] about those change orders. And he said, oh well, I know you had a hard time with him. I know you had to use him.... That's his perception of minority contractors.... There are some really, really good small minority companies in this town and it's just a shame somebody would say that, especially at the Airport.

It's rare that you will run into [discrimination] that will be that overt. You do occasionally but people are smarter than to be that overt out here in the marketplace when they're dealing with you on these projects. They're going to do things like say, "What's your bonding level? If you can't bond this then you can't, you can't get the project." Well, if you haven't had any projects then how are you going to get bonding? Now you might say, well that could be with, any contractor. So, you know, you really can never really get to a point where you can just trace it back and just find the smoking gun.... Nobody's going to come out and say, well, I'm not giving you this loan because you're African-American or I'm not giving you this loan because you're a woman.... [I think that sexism is] a little more blatant than even the racism.... Guys will sometimes, they'll even say stuff that they don't even consider to be sexist and it's just blatantly sexist....

But racism, there's a lot more sensitivity to it so people tend to recognize when they're about to do it.

In a perfect world you would think that you would be measured on the quality of your work and your capabilities and whatnot. But in the real world, that's not the case.

There is a perception that when you're DBE you have no capacities. I'm required to use you so I just need you to shut up and give me my invoice for the most part. Which doesn't allow you to develop case studies. Which doesn't allow your creativity to be at the forefront to create marketing opportunities for you in that regard.

The DBE program has definitely helped us get in the door with contractors that we might not have had the opportunity to prove ourselves with if the program wasn't there. But once we've gotten in there and we're able to show what we can do, usually you can kind of change those perceptions and you work hard to change those perceptions and then subsequent work is easier. And I guess that's just all about building relationships and making sure that the primes understand that you're not a joke. You're actually going to perform what you say you're going to perform and do it correctly.

The perception [problem] really becomes [manifest] when you talk about race or gender being accepted as prime [consultant].

I'm a woman and I see a woman on a jobsite and we're so rare that I assume she's doing paperwork and that's very wrong of me. Oh, I have people walk past me and go to like my superintendent and start talking to him. I just sit there and smile. And he'll go, she's the boss.

There's more women in this room than any meeting I go to that is not government based.... And now I would say I see a fair amount of black contractors at these meetings.... There's no women there.

Between Tennessee, Mississippi, and Arkansas we still got a long way to go.

2. Jobsite Harassment

Women reported they still experience sexist comments and harassment in the construction industry.

When we first started our business, I did have a hard time I think with some of the prime contractors taking me seriously because I was a woman. I did experience some sexual harassment type situations from contractors and state employees; we do a lot of TDOT work, when we first started. But I agree with some of the other comments that were made that, our philosophy has just been, to try to do what we can to get in there and prove yourself and let the work speak for itself.

We're very cautious to say anything to anybody because you don't want to do—I consider myself easy to get along with—but I certainly don't want to lose my work out there [by filing complaints].

When we first started, I was out in the field and I was on the road and I was pulling lane closures, installing signs, all that kind of stuff. We only had like three of us in the company so everyone had to be out there working. And we had one particular project, it was a TDOT project with a very well-known prime contractor. And there was a state employee, one of the inspectors on the job, that was a very nice person. But then started getting a little bit too, I don't know, just unprofessional. Making. I was wearing shorts at the time when I was out there because it was hot. It was comments made about my apparel and my physique and, and they were directed towards me as well as other people. And it got a very, very uncomfortable feeling. I ended up having to go to the prime contractor and say, look, will you please talk about this. Everything's supposed to go through the primes anyways on projects. So, I went to the prime contractor and said, here's what's going on. I don't really want to get this person in trouble because you're a new company. You don't want to shoot yourself in the foot and then be labeled a troublemaker and not get work anywhere. But at the same time it had started to get very unprofessional and to the point where I felt uncomfortable being around this person and dealing with this person on a professional level.... They ended up going to that person's supervisor and talking about it. And it was handled very well, I thought. That person ended up apologizing. It never happened again. We ended up never having any more issues with that person or the project and it kind of blew over and wasn't a big deal. But, as a new business owner and a very small company at the time, it was very nerve wracking to think, oh my gosh, do I just suck it up and deal with this? Or do I say something because it's not right. I am a person. I'm doing a good job. I shouldn't be judged just based on what I look like or that I'm a woman out here on the project. Because it's obviously a very, very male dominated world, especially in road construction. There's very few women out there, only in the business as much less working out there on the road. So that really hit home to me as far as initially how do you handle that and how do you get past it and not have it affect your business because that's your livelihood too.

I've had trouble with [sexual harassment] all my life. But it's also just part of construction. I don't accept it nor do I like it, nor do I allow it but I also, when I know these contractors exist and I have to go the site I never go without someone with me if that person's like that. But I've noticed I don't see it as much as I used to. But where it's an all man site. They all have wives and girlfriends but you let a woman come up on a construction site, they're like something crazy. It's like they've never seen a woman before. And I don't know why that is. I just don't understand it but, that's the way it is.... It's still happening but it's not near as bad. They used to call and say, honey, let me talk to the estimator. And you'd say, honey, she's speaking and then everybody's uncomfortable. But I don't get that near as much.... As the younger men come up in construction in management positions, I'm seeing it less than I did with the older men. The men that are my age.... It's just what we do and you learn how to deal with it. It's part of learning how to run a business and handling a thousand customers.

Women and minorities shouldn't have to deal with that kind of situation. I mean I agree that it's there and it's not probably ever going to go away. But I also think that it helps justify why the program's in place to help try to make sure that everyone at least has their quote looked at and is given a fair chance to do work on the project and prove themselves as a competent business person.

I agree with her a hundred percent and if one of them ever thinks they're going to turn you in, turn them in for harassing you, trust me, it stops. Because they're afraid they'll lose their job. Because most of those companies are big enough that they can't have that kind of danger hanging around.

I think [harassment is] a hundred percent positive reason to keep the program. Because I think it would get much worse if the program was [gone].

Several men agreed that women still face sexist attitudes in the construction industry.

A good example is ... a woman walks into a plant and she's looking for a contract and a guy [says], "Well honey, you know, this is not something that I'd want to da da da da da."... If you walk in as an African-American, the person's not going to call you the N word right there.... I think some people don't feel that that's that much of a problem in their own world because ... I love my mother, I love my wife, I love my daughter, so how could I be sexist?

3. Exclusion from Industry and Information Networks

Minorities and women from across the spectrum of industries recounted their exclusion from the industry and information networks necessary for success. Both discrimination and the tight knit nature of the construction and design industries in Memphis operate to the disadvantage of M/W/DBEs.

You're going to hire who you feel most comfortable with.

Several M/W/DBEs offered a version of this advice on business networking success.

In this relationship is key to everything.... You got to get involved.... It's not easy. It could be sometimes it's just like trying to knock your head on the wall. But if you keep knocking the head on the wall eventually the wall will break.

Don't be afraid to partner and joint venture.... Make your company larger temporarily and go in and get that opportunity.

4. Discrimination in Obtaining Surety Bonds

Many M/W/DBEs reported difficulty obtaining surety bonds. The underwriting standards were so strict that they could not qualify. They saw it as similar to lending discrimination, since the

criteria are very similar. Not only does this impede M/W/DBEs' ability to obtain prime contracts, but some general contractors require the subcontractors to also bond their portion of the job.

Our problems have been that it's been hard for us to get bonding, financing, if we go at these government type jobs. The bid bond, performance bond. And that's where we have, you know, our big problem [getting government prime contracts].... It may be some discrimination [in the bonding industry] but due to the fact that everything has to be almost one hundred percent perfect in order for us to get bonding and some of these companies, I've noticed that they've filed bankruptcy and they get back somehow, I guess loan them money and they get back up on their feet and they let them go right on.... The City of Memphis, they lowered the requirements and everything so that we could do their work.

5. Payment on Equal Terms

A few M/W/DBEs felt that they were paid by general contractors more slowly than nonminority male subcontractors or suppliers.

I've also had a really hard time with some of the primes that I've worked for at the Airport, one in particular, with actually getting them to pay me for the equipment that I brought out. I had issues with them, you know, writing my contract the correct way. It ended up being like a huge mess. I don't know if that issue was because I was a minority owned company or because I'm a small company and they're a big giant company and so they're just making more profit off of kind of screwing the rest of us.

6. Barriers to Obtaining Work on Public Sector Projects

There was close to universal agreement among minority and women business owners that the programs are essential to creating opportunities for work on Airport projects.

Without the program, my company wouldn't have been as successful as it is because it's opened a lot of doors that I feel were closed to me, especially at the infancy of my business.

[The program] is a big, big reason that a lot of small and mostly really women-owned companies are able to get into the workplace like that is because there's something in place just to keep these guys in line. There's no doubt that works.

I think the programs are necessary. I really hate that they are necessary. I wish that it wasn't but it is and I think that they do give us opportunity to be able to, first, get in front of potential generals and primes in my case because I'm mostly a subcontractor. And then when they see what we could do, a lot of times we do get a chance to do repeat business with a lot of the prime contractors that we have worked with. But it is important to have some kind of mechanism in place to get you to the table... If I was a new business getting started I think that it would [hurt me if the programs were eliminated]. And I do believe that it would have some impact on my business even now just because

of the fact that a lot of times relationships are important in business and a lot of times when a company have a relationship and they're not forced to consider others, sometime others will get lost out. So, I think that it would have some impact on my business. I wouldn't think that it would close me down but it would probably have some impact.

95 percent of my work is because of the program.

We'd be downsized a whole lot more [if the programs were eliminated].

90 percent of our work is the result of diversity goals.

Without the DBE [program] I think there's going to be issues for smaller firms to get into the engineering business because before, especially on the private side, people do business with the people they know.

All the programs have helped me go from a one person company to what I do now. Without that I don't know what would have happened. But most, all my success has come from disparity studies and minority programs of some sort. And ... that's led me all the way, doing the job at the Airport, to doing the big job for the Memphis City Schools, as a minority contractor. Until I've done a 3½ million dollar job for the federal government. Which ten years ago, ten, twelve years ago I would have never dreamed of doing that. But it's these programs that's led me to where I'm at now.... It's just been a blessing. And without it I would probably still be a one person shop.

The program has allowed me to have more success, be more confident and it's just really helped me be a successful person and give me the confidence to go forth.

Use it as a tool to get your foot in the door with certain projects. But the goal is to get in there, do a great job, and then they'll know what type of work you do and then they'll keep calling you back no matter what.

ACDBEs were unanimous that but for the ACDBE Program, they would have no chance to operate at the Airport.

Without the current ACD[BE] program we wouldn't be there for sure. So, it does work to that effect. But, expanding is difficult.

Obtaining prime contracts was especially difficult. Most M/W/DBEs expressed frustration with obtaining public sector prime contracts. This sentiment crossed industries, size of firms, and length of time in business. While all small firms find it more difficult to receive prime contract awards than do large firms, minorities and women felt that their race, ethnicity and gender created additional barriers. Very few had received prime contracts with MSCAA.

It'd be nice if you can be in the lead on the smaller project so that there's some give and take.

One solution supported by M/W/DBEs and non-M/W/DBEs is the small business set-aside approach.

[The small business set-aside for a] smaller scope project so they could perform as GCs would be fine.... That's certainly an option that could be used and used as a tool to help to grow some of them.

For vendors of commodities, there was some agreement that agencies usually purchase strictly on price.

I don't think it's race based. I think it's that when you look at governments they're, a lot of times when they're buying goods and services, they're trying to get the cheapest that they can get for the lowest price.

For professional services contracts, the often undefined scope of work for the M/W/DBEs can lead to little actual utilization.

It gets harder and harder [to get the promised work] as the jobs go on if they're not specifically [committed to a scope of work].

Some M/W/DBEs try to reduce the burden on prime bidders.

What we try to do is, as the sub, is if the contractor that we're trying to team with, we try to get them as much of that information upfront obviously that we can. We try to let them know two or three days ahead of time that we're interested in bidding the job with them. Or if they contact us, then we go ahead and send them our certification and our paperwork. I know that probably doesn't help them much as far as on bid day but we try to get them as much of the information that we can ahead of time. Try to take some of that burden off them. But, I've been to some of those bid meetings and I've seen what they're talking about. Not necessarily from our end but from their end. And also, if I can say on their certificate showing that they're certified, I think it's kind of hard sometimes for the sub to try to produce that copy and I always wonder why we have to produce it with the bid if the Airport actually has a list of those subs.

Doing mostly public work the doors are open but you've got to try to figure out how to package yourself as a good team partner. Not the whole but something that gives enhancement to the sum of all those parts.

7. Barriers to Obtaining Work on "Non- Goals" or Private Sector Projects

Many M/W/DBEs, especially those owned by African Americans, had not expanded much beyond government mandated goals projects. Minority construction firms in particular reported that general contractors who use them successfully and repeatedly on projects with mandated affirmative action provisions rarely or never solicit or hire them for non-goals work.

The only reason they're hiring you in the first place is because they have to have minority participation. Otherwise they wouldn't even hire you.

A lot of the generals use you because they need the minority participation and they try every way to not let you make money....

A lot of [general contractors] will not use you as a minority- or woman-owned business unless they have a requirement. And then they try to nickel and dime you to death. That's not just the Airport, that's the way they are.

If the program was to go away, no, I would not be in business. I do not receive any solicitations [unless there are goals].... And some of the contractors I've worked for years. They have non goal projects. They don't ask me. But we have a good relationship when it comes to just DBE, it's all good.

If there's not a goal they won't even call you. Now the only reason I get a call from any of the generals is because they're trying to meet a goal. I mean if that program goes away we go away.

I did all the work before I became a [certified] minority.... But, it is a plus for me. I have picked up new contractors that never used me before because they wanted my minority status.

[Without goals, many general contractors are] going to do it themselves.

Without a requirement, without a MBE, DBE requirement majority firms absolutely have no motivation whatsoever to call a minority firm.... If they did not have a requirement would they call one of their boys to do what I do? Absolutely.

If you did not have those initiatives they probably wouldn't call. As you said, if they can do it themselves or farm it out to somebody that they already have a relationship with. No they would not seek you out.

I don't believe I would have that contract had I not been, had not had a 30 percent minority requirement and I had not been local and I did not play politics.

However, some M/W/DBEs, mostly those owned by nonminority females or Asians, reported that firms that use them to meet goals, once they have worked together, also solicit them on projects without goals.

They call us on both [goals and non-goals engineering projects]. We have a good client base with other architects and they use us and other engineering firms also.... On some of the projects that we've gotten, like out at the Airport, is because they needed minority participation. So, yes, [the program] has helped us.

We get solicitations for both goal work and non-goal [jobs].

I do work for the primes at the Airport as well as off the Airport. I think they used us probably the first time because of the Airport requirements on the quotas and then they were satisfied with the work and they continue to use you whether you're a minority or not, where they have to use you or not. They still, if you do a good job I think they continue to use you. But it certainly doesn't hurt that they are required to have, you know, X amount of minority and woman owned businesses. I think it's a great plus for all of us.

The program gets a lot of the small minority businesses in there then once we prove ourselves then everybody uses you. You know, your name gets out. That's been my experiences. I had a little job there I did with American Airlines with a general and got it, done a good job and now they use me on every job whether it's, you know, minority participation or not. So that, it opens doors, definitely.

I work with a particular engineer quite a bit. And he utilizes me regardless if it's DBE or not.... I have carved a niche out. But they know that I'm going to do good work regardless if I'm black, white, brown, blue or whatever it might be. So I think, and what I try to do for myself personally was not box myself in a corner with DBE certification.... Just must do a good job. Get with a good team. And you will consistently be able to do work.... I've only been certified DBE the last two years but I've been in business 18 years.

If [the program] went away it would not affect my business at all

D. Conclusion

Consistent with other evidence reported in this Study, anecdotal interview information strongly suggests that M/W/DBEs continue to suffer discriminatory barriers to full and fair access to MSCAA's construction, design, goods and services, and concession contracts, as well as private sector opportunities. This evidence includes discriminatory attitudes and negative perceptions and expectations of minorities' and women's competence; jobsite harassment; exclusion from industry and information networks; discrimination in access to surety bonds; being paid on equal terms; barriers to obtaining public sector contracts; and barriers to obtaining work on contracts without goals or private sector projects. While not definitive proof that the Airport has a compelling interest in implementing race- and gender-conscious remedies on its locally funded contracts for these impediments, the results of the surveys and the personal interviews are the types of evidence that, especially when considered alongside the numerous pieces of statistical evidence assembled, the courts have found to be highly probative of whether MSCAA would be a passive participant in a discriminatory market area without affirmative interventions.

VIII. MSCAA's Contracting Affirmative Action Programs: Overview and Feedback Interviews

In this chapter, we review MSCAA's Disadvantaged Business Enterprise (DBE) Program,¹⁶³ Airport Concessionaire Disadvantaged Business Enterprise (ACDBE) Program,¹⁶⁴ and Business Diversity Development (BDD) Program, followed by a summary of business owner experiences with these policies and procedures.

A. MSCAA's Race- and Gender-Neutral Procurement Policies and Procedures

The Authority's contracting and procurement activities are administered pursuant to MSCAA's General Policies for Purchasing, adopted in January 2013. The system is designed around a centralized purchasing system. In general, the dollar amount of the contract or purchase determines the method or manner of procurement. The use of petty cash or purchase orders with one telephone quote usually is permitted for purchase of \$1,000 or less. Purchases from \$1,000 to \$2,000 or less require one written quote. Purchases from \$2,000 to \$25,000 or less require telephone solicitations and at least two written quotes and may be set for bid depending upon the type of purchase and circumstances. Unless an emergency situation or other limited exception exists, notice to bidders and responses to published solicitations are necessary (formal procurements) for contracts over \$25,000, and contracts over \$100,000, other than for capital projects, must be approved by the Board of Commissioners.

There are three methods generally used to obtain formal procurements:

- Request for Bid: used generally for goods only and evaluation is based solely on price once the required specifications have been met. This is most appropriate for standard goods.
- Request for Proposals ("RFP"): used for goods and/or services, and is evaluated on price first and then qualifications. The RFP is most appropriate for particularly non-standard goods and services.
- Request for Qualifications: used generally for services, with evaluation based on qualifications and then price is negotiated. A Qualifications Selection Committee reviews and ranks the submissions and the Authority works to obtain a signed contract with the highest-ranking proposal.

For purchases greater than \$25,000, Purchasing mails a "Notice to Bidders" to all known sources. Newspaper advertisements are also placed in daily publications. The Authority holds mandatory pre-bid conferences for most solicitations where it provides additional information to all bidders. It also provides for a written question and answer period in which the questions

¹⁶³ 49 C.F.R. Part 26.

¹⁶⁴ 49 C.F.R. Part 23.

submitted and the answers provided are posted on the Authority's website. The Authority reserves the right to reject any and all bids, waive informalities and to contract in the best interests of the Authority.

Sole source procurements must be justified in writing and approved by Executive Management. They are generally permitted only if the goods or services are limited to one source and not otherwise obtainable, or must be obtained from a specific manufacturer and valid competition does not exist. Single source purchases are permitted for goods or services for which there may be similar products or products that perform the same functions, available from commercial sources, but for which only one brand and model or product/service has been deemed suitable for the particular use required.

B. M/W/DBE Program Administration

The Contract Compliance Department ("CCD") is responsible for planning, directing, organizing and coordinating administration of the Airport Authority's contracting affirmative action Programs. In addition to its responsibilities, CCD establishes DBE goals; monitors contract compliance regulation issues; provides information about contracting opportunities and the provisions of goods and services at the Airport; coordinates outreach efforts to increase community participation in MSCAA contracts; maintains contact with the business community, contractors, government agencies and advocacy groups; resolves issues related to the performance of Authority contracts by M/W/DBEs; coordinates MSCAA's participation in the Mid-South Minority Business Council Continuum Showcase; and ensures that M/W/DBEs are provided full and fair opportunities to participate in the Authority's contracts, in compliance with existing regulations. In addition, as of May 1, 2013, CCD is also responsible for the certification of all business enterprises that seek to participate in the Authority's DBE, ACDBE and BDD programs

The Manager of Contract Compliance is responsible for the Airport's contracting affirmative action programs, with the support and under the direction of the Vice President of Properties and Business Development. The Department also includes a DBE Certification Administrator, a Contract Compliance Coordinator, a DBE Accountant and a DBE Certification Specialist.

CCD runs a 24-hour hotline, which provides information on new contracting opportunities at the Authority, pre-bid dates, times and locations, and other important information. MSCAA engages in several types of outreach activities. For example, bids are forwarded to business association and advocacy groups, such as the Builder's Exchange Plans Room; the F.W. Dodge Plans Room; the Memphis Area Minority Contractor's Association; the Memphis Business Development Center; the Mid-South Minority Business Council Continuum; and the National Minority Contractors Association. The Airport also hosts regular meetings for its contractors to update them on Program changes and provide training, as well as networking events and informal gatherings to break down barriers and help to forge relationships.

One area in which CCD has been especially innovative has involved their development of a program to provide training in joint sealing, a specialized construction skill required by the airport as well as by other large local entities such as the City of Memphis. This two-day

classroom and practical training session included not only training in the skill of joint sealing for owners and employees of small businesses, but it also provided information about the types of equipment needed to perform joint sealing. In addition, the training touched on various financial issues including, insurance, bonding and financing. The training program was race-neutral and limited to business owners with personal net worth below \$1.32 million.

As a member of the Mid-South Minority Business Council Continuum, MSCAA supports services designed to increase opportunities for certified firms. Examples include the Working Capital Loan Fund; the APEX Alliance, which focuses on the institutionalization of diversity inclusion with the major corporations in Memphis; and regular business mixers and other networking events.

MSCAA has also been a strong supporter of the Airport Minority Advisory Council (AMAC), which brings all sectors of the aviation industry together to promote the participation of minority- and women-owned and other disadvantaged businesses.

C. DBE Program Elements

MSCAA implements its DBE Program for contacts funded in whole or in part with federal funds, pursuant to 49 CFR Part 26. As provided in the regulations, the purpose of the DBE Program is to:

- Ensure nondiscrimination in the award and administration of DOT-assisted contracts in the DOT's highway, transit and airport financial assistance programs;
- Create a level playing field on which DBE's can compete fairly for DOT-assisted contracts;
- Ensure that the DBE program is narrowly tailored in accordance with applicable law;
- Ensure that only firms that fully meet Part 26's eligibility standards are permitted to participate as DBEs;
- Help remove barriers to the participation of DBEs in DOT-assisted contracts;
- Assist the development of firms that can compete successfully in the market area outside the DBE program; and
- Provide appropriate flexibility to recipients of federal financial assistance in establishing and providing opportunities for DBEs.¹⁶⁵

¹⁶⁵ 49 CFR § 26.1.

1. Eligibility

DBE program eligibility is established by Part 26,¹⁶⁶ and includes the requirements that the owner of the applicant firm be socially and economically disadvantaged, and that the firm be a “small business” as defined by the Small Business Administration regulations,¹⁶⁷ with an absolute cap that is indexed for inflation. The Airport is a member of the Unified Certification Program administered by the Tennessee Department of Transportation. The TNUCP has been approved by USDOT.

2. DBE Goal Setting

As mandated by 49 CFR § 26.45, the Airport sets an annual goal for DBE participation in its federal-aid contracts. For Federal Fiscal Years (FFYs) 2011-2013, MSCAA's goal is 23.17%, based on its 2008 Disparity Study. The Authority projected that it will meet 20.17% of the goal through race-conscious measures, and 3.0% through race-neutral means.¹⁶⁸

The Airport sets project goals to meet the overall goal.¹⁶⁹ Project goals are set only on contracts with subcontracting opportunities, and a goal is not set on every contract. MSCAA uses a goal setting formula, prescribed in the Project Advisory Form, that takes into account the procurement codes and scope of work of the project; the costs of those scopes of work; and the availability of DBEs to perform those scopes. The Contract Compliance Department reviews the Form and the scope of work and then determines the appropriate project goal; if there is no opportunity for DBE participation, then no DBE goal is assigned to the contract.¹⁷⁰

When there is a project goal, the bidder or proposer must submit with the bid or proposal a DBE Assurance Statement/Letter of Intent for the proposal or bid to be considered responsive. The Assurance Statement/Letter of Intent requires that the respondent list the DBEs it will use, describe the work or service the DBEs will provide, and commit to the dollar value and percentage of the overall contract of the DBE's work or service; or the respondent must describe its good faith efforts to meet the goal. If a joint venture is proposed to meet the goal, the respondent must describe the terms of the relationship and attach the contract.

The Goals Accomplishment Statement must also be submitted in order for the proposal or bid to be considered responsive. The Goals Accomplishment Statement shows whether or not the respondent is committed to utilizing the allocated DBE goal or not. If the respondent is unable to meet the DBE goal, it must submit a narrative and documentation demonstrating its good faith efforts, consistent with Appendix A to Part 26. Waivers are evaluated by CCD and the legal

¹⁶⁶ 49 CFR § 26.63-67.

¹⁶⁷ 13 CFR Part 121.

¹⁶⁸ 49 C.F.R. § 26.45(g)(2).

¹⁶⁹ 49 C.F.R. § 26.51(d).

¹⁷⁰ The detailed availability estimates of this Study serve as the basis for MSCAA's tri-annual DBE goal and as the starting point for contract goal setting.

department, pursuant to the standards of Appendix A to Part 26. Very few waivers have been sought, and most of those requests have been granted.

MSCAA requires that the prime firm submit information at the time of bid on the firm age and gross receipts of all firms that provided bids or quotes, regardless of whether those bids or quotes were used in preparing the final bid or proposal. The signed forms must be submitted within 24 hours of the proposal submittal deadline.

3. Contract Monitoring

During contract performance, the vendor must submit a Business Diversity Monthly Compliance Report to CCD for all subcontractors, both DBEs and non-DBEs, to detail compliance with contractual commitments to DBEs. This report requires the name, address, and telephone number; certification status; current month's payment with check number; total for the year; cumulative total to date, and the gender and ethnicity of the subcontractor's owner. Copies of checks, electronic payments or release of lien (the release of lien must show the beginning balance, the current payment and the ending balance) must be attached to the report.

CCD conducts random site visits to monitor the actual participation of DBEs, including documenting participation through interviews with contractors on the job and the collection of photographic documentation of contractors and their employees working on MSCAA projects. The collection of this data has been helpful both in documenting the compliance process and in resolving later disputes about when and where various firms, managers and employees were working. Staff meets weekly concerning the progress of larger construction projects.

Substitutions of DBEs listed in the DBE Assurance Statement/Letter of Intent are permitted, where appropriate. Any substitutions must receive prior written approval from CCD and the user department.

4. Small Business Participation Program

The Small Business Participation Program (SBPP) is designed to meet the requirements of 49 C.F.R. § 26.39 that recipients "structure contracting requirements to facilitate competition by small business concerns, taking all reasonable steps to eliminate obstacles to their participation." The SBPP is also part of MSCAA's efforts to fulfill the mandate of 49 C.F.R. § Part 26.51 that it meet the "maximum feasible portion" of its overall DBE goal through the use of race-neutral measures. SBPP eligibility is based on the standard of business size and personal net worth, without regard to the race or gender of the business owner. The application for verification is received by the CCD DBE Certification Specialist, reviewed and submitted to the DBE Certification Administrator for processing and forwarded to the CCD Manager for approval and signature. This pilot effort has so far been used on construction and service contracts.

D. Airport Concessionaire Disadvantaged Business Enterprise Program

The Airport Concessionaire Disadvantaged Business Enterprise (ACDBE) Program governs MSCAA's contracts for concession opportunities.¹⁷¹ The Program is implemented only at the Memphis Shelby County Airport. MSCAA also owns two General Aviation Airports, but no concession opportunities have been identified for those facilities.

As required by Part 23, MSCAA sets an overall goal for three years for concessions other than car rentals.¹⁷² The Authority has determined that the market area is the Memphis, TN-MS-AR MSA for some types of concessions (*e.g.*, beauty salons, taxis, food and beverage, *etc.*), and is national for other services (*e.g.*, advertising, hotels, banking services, *etc.*). The non-car rental concession goal is currently 27.49 percent, with 2.50 percent projected to be achieved through race-neutral means and 24.99 percent through race-conscious means. The car rental goal is currently 2.9 percent, with 0.0 percent projected to be achieved through race-neutral means and 2.9 percent through race-conscious means.

Firms must be certified pursuant to the ACDBE Program regulations, administered by the CCD as part of the Tennessee Uniform Certification Program.

MSCAA utilizes a contract compliance software program, B2GNow, to collect and report data information on the program. This provides a comprehensive set of reports on the revenue and airport income of prime firms and subcontractors. The reports are separated by concession class (news/gifts, food/beverage, advertising, transportation services, *etc.*). The system also produces the Federal Aviation Administration ("FAA") annual Uniform Report of ACDBE Participation.

E. Business Diversity Development Program

The BDD Program is designed to increase the participation by M/W/DBEs in the purchase of goods and services for non-federally funded projects. This Program adopts race- and gender-conscious goals, similar to those for the DBE Program.

The BDD Program was developed in response to the 1994 Memphis-Shelby County Intergovernmental Consortium Disparity Study. It was MSCAA's response to the Study's finding, and seeks to eliminate any discrimination that exists against M/W/DBEs in the purchase of goods and services for non-federally funded projects. The BDD Program has been reviewed and modified at various times since 1994. Most recently, the continued need for the program was set out in a resolution passed by the Board of Commissioners in early 2009. This resolution, passed after the Board of Commissioners had received and reviewed the 2008 Disparity Study, summarized various findings of the study, including the fact that the study found a factual and legal basis to continue the program. Through the DBE, ACDBE and BDD Programs, the Authority seeks to ensure that its own policies and practices are non-discriminatory and endeavors to influence private sector actors to change any of their own practices that cause

¹⁷¹ 49 CFR Part 23.

¹⁷² 49 C.F.R. § 23.41.

discrimination so that the Authority does not become a passive participant in marketplace discrimination.

Since 2004, MSCAA has applied the DBE eligibility criteria, including the personal net worth and size limits, to firms participating in its locally funded projects. Participants must therefore be certified as DBEs under Part 26, rather than as MBEs or WBEs pursuant to a local process and standards. Further, all policies, documents and procedures applicable to the DBE Program are used to administer the BDDP on locally-funded projects. This includes the procedures governing good faith efforts to meet goals on locally-funded contracts, contained in Appendix A to Part 26, and the reconsideration process set forth in 49 CFR § 26.67.

The BDD Program's objectives are to:

- Provide an environment which promotes equal access and maximum business opportunities to M/W/DBEs seeking to provide goods and services to the Airport.
- Provide technical and developmental assistance to M/W/DBEs to promote their stability and growth.
- Serve the entire community through efforts of inclusion and create and implement initiatives to promote the enhancement of the economic, business and educational concerns of the Memphis-Shelby County community.

Goals for overall Authority spending on locally funded contracts are set annually, with regular reports to the President and Board of Commissioners. As with the DBE Program, goals are set for appropriate contracts.

F. MSCAA Local Preference Program

In July of 2013, MSCAA adopted a local preference program intended to assist businesses located in Shelby County in competing for Authority contracts. The program provides for a 5 percent price decrease (up to a maximum price differential of \$100,000) of bid amounts to local businesses on contracts over \$25,000. The decrease is only for bid comparison purposes and does not permit the Authority to actually decrease the amount of any bid. The program is applied so long as it is reasonable in light of the dollar value and terms and conditions of the contract. The Local Preference program does not apply to contracts let with federal funds.

G. Business Owner Interviews

To gather anecdotal evidence of the effectiveness of current Airport policies and procedures in leveling the playing field for opening up opportunities for M/W/DBEs on federal-aid and locally-funded contracts, we interviewed 125 firm owners or representatives. The following are summaries of the issues discussed. Quotations are indented and are representative of the views expressed by multiple participants. Highly repetitive or idiosyncratic comments were not included. Some quotations have been shortened for readability.

1. Race- and Gender-Neutral Program Elements

We explored the effects of race- and gender-neutral policies such as contract size, experience requirements, insurance requirements, *etc.*, on all firms and whether they have a disproportionate impact on M/W/DBEs and other small businesses. As discussed in Appendix B, MSCAA must evaluate and use race-neutral measures to the maximum feasible extent.

a. Access to Information about Upcoming Opportunities

Most attendees praised MSCAA for the ease of access to information about upcoming opportunities.

With the Airport, [information about upcoming opportunities] is on their website.

No problem with the Airport.

[MSCAA is] good about sending things out when it's time.

The communications that the Airport puts out there has always been open, it's always been clear. It's always been that opportunity of asking the questions at all the meetings and all the FYI prior to the impromptus that they put in. It's just a matter of hustling.

[The Airport is] pretty open about everything.... They really make it clear and understanding to most M/W/DBEs and how to go about bidding it and everything, so I haven't had any problems.

If you're on [MSCAA's] e-mail list, the ones I get I've always had plenty of time [to prepare a bid] but I think the secret is getting on that list so you get the notifications in time.

Some M/WBEs in professional services found it difficult to find out which firms were submitting design proposals.

It's hard to know who else is going to bid the work. And one of the ways I think this is helpful is if you have the mandatory pre-bid conference.... As a sub, you have to know that list. And they will publish a list of who attended that meeting. It's mandatory for a prime to be there but it's not mandatory for the subs to be there. So you could wait, take a bye on the meeting, and still get the list of primes.

b. Contract Size, Specifications and Procurement Methods

"Unbundling" contracts was suggested by M/W/DBEs and non-M/W/DBEs to increase opportunities for M/W/DBEs and other small firms to perform as prime contractors and as subcontractors on the Airport's large projects.

Break projects into smaller packages.

If [MSCAA] want[s] to get the minorities and the WBEs and MBEs involved more, from my standpoint as far as doing an entire contract, they can look at the size of the contract. Because I'm not at the point of having a ten, fifteen million dollar contract.... If they want to get more minorities involved then they could find a smaller contract that they could offer for minority participation.

Sometimes it's just the size of the job [that keeps DBEs from being awarded jobs as prime contractors].

I would like to see the Airport maybe come up with some type of smaller contracts, so that we can go in and bid it as a prime or maybe even possibly us teaming up, maybe two contractors come together to do one. Say like up to a million dollars.

I think that if [the Airport would] downsize some of the projects that would help put that effort out there that you can [joint venture together as DBEs].

One of the barriers is that when projects are solicited, they're so large. Minority and women owned firms, which are typically smaller firms, cannot position themselves as the prime.

It'd be nice if there was some parity there so that the project could be broken down so that the smaller firms could be the prime.... We can't show you experience if you never give us a job to show you our experience or our qualifications. But if we could be the prime, being that person that the Airport Authority is now comfortable with, that they've seen their work, that they know that they are responsible and very professional and they can do it.

The experience requirements were also reported to be a frequent impediment.

For those of us who have not had that experience with the Airport Authority but we've done similar work all over, it's unfair to say, well, it has to be Airport Authority work.

Insurance requirements were another issue for smaller firms.

One of the problems that I've run into is getting some of the DBE firms to meet insurance requirements.

However, one large firm stated that the Airport will often be flexible, if asked.

If you've got a little bitty project and they've got a three million dollar [insurance] requirement you just need to talk to them. Generally they'll say, okay, you're right. The weight of the project scope versus our requirement of insurance don't match and we're willing to accept what you've got.

There was also support from M/W/DBEs and prime contractors for increased support to small contractors to bond Airport jobs. Lack of bonding was an impediment to both M/W/DBEs

performing as prime contractors as well as non-M/W/DBE general contractors use of M/W/DBEs.

I'm cosigning all of [the M/W/DBE's] bonds which is a serious disincentive to suing them].

A lot of the contractors we're working with, for example, MBE or DBE, that we're not that familiar with, we would probably in our own house prequalify someone that we don't know, that could very well have the ability to work here, simply because we don't know who they are.

They might want to look into some type of a ... owner bond program that when they hire a contract we would all kind of go into it.... Because we have to bond these projects, whatever they are. And we may or may not require the subs to bond them.... There could be some people that are being excluded that simply just can't on a financial [basis get] the bonding.

Many general contractors as well as subcontractors stated that the Airport's current policy of not paying upfront for stored materials hurts everyone, but especially smaller firms for whom cash flow is a constant challenge.

That [policy] really limits our ability because for smaller contractors or minority contractors, cash flow is a prime commodity and constraining that with the stored materials process that really strangles us and limits our ability to work. That is a strong consideration with respect to doing business at the Airport.... How are we going to get past this hurdle of high dollar stored materials?

[Name] is no small company, so if they're suffering with that as a result of a blanket requirement across the board, you can imagine what it's doing to the other smaller companies that are on the list of companies that the Airport wants to use.

It's very, it's very problematic [even for very large firms]. Cash flow is not critical for just the subcontractors. But when we have 25, 30 of them that want to bill for stored materials and can't because of some arcane rule that the Airport Authority has out there, it's pretty ridiculous.... They want the project delivered on time but at the same time they don't want to pay for it as it's built. You can't just go get that fixture package ... and install it overnight so that you can get your check thirty days later. There's a lot of cash outlay for every trade out there that they're not being reimbursed for.... It's not that it's a worse problem for the MBE [than for other small contractors]. It's a much worse problem for the general contractor because we have to finance now. We have to have the [M/W/DBE] quota required. Therefore, we have to use them. And that forces us in the position where we have to finance the job for them.

From a smaller contractor's perspective, they might want to look at their contract provisions [like those governing stored materials].... They can be very harsh for a very small contract.

You've got a hundred thousand dollars' worth of material that's site specific to this project.... You look at the two evils. How much money is it going to cost me to borrow and go onto the line of credit versus what is the anticipated cost increases going to be?

More flexible procurement methods such as design-build or construction manager at risk were suggested as ways to increase M/W/DBE participation.

If we were part of a [construction manager] at risk, where we could be brought in earlier and we could have that opportunity to establish some of those budgets upfront and knowing that we could be more of a mentor-protégé type program in its application instead of a subcontractor type program, that might be an opportunity to bring somebody in.... That would afford us an opportunity to make sure we got the right people on board and to make sure they had the right resources. A lot of times people, minority, disadvantaged business, don't have the staff that they need when they walk into the job. And if you start out behind then you're going to stay behind and consequently that's where a lot of the frustration is.

If [MSCAA] selected the contractor prior and then had the contractor go through the good faith process, go through the effort, and then you were willing as the owner to accept [higher costs for M/W/DBEs] ... that burden of risk now has been put off me; now the owner is paying for it.... And you would also have a much greater chance at breaking up the scope of the work in packages.

c. Small Business Set-asides

There was significant support from both M/W/DBEs and non-M/W/DBEs for the new small business set-aside. Several non-construction firms urged MSCAA to extend the program to other industries, especially those without many subcontracting opportunities, like consulting.

[The Airport] can size the project to fit the size of the firm. They can give us a chance by letting us do the smaller projects.... [The Small Business set-aside] would work for us, too.

[The Small Business set-aside] would help us out.... If you start small with a small portion of it, then that's great. Once you have a proven track record, you've shown that you're going to handle and deliver. Just as the expectation is you've been held accountable. Then be afforded the opportunity to do that. And grow within the organization and become a part of the family that becomes the Airport Authority.

It would give us [as a small non-M/W/DBE] an opportunity to bid.

Some owners expressed doubts that it will be useful because of the increase in Airport staff necessary to manage additional contracts.

They've already got an office with fifty people in it. They've got a large staff that's running these projects. Then they'd have to hire another company to help manage. So, if they start trying to break these things up they're going to have to triple their size.

2. Race- and Gender-Conscious Program Elements

a. M/W/DBEs' Perceptions of the Programs' Overall Effectiveness

As detailed in Chapter VII, in general, M/W/DBEs reported that being certified created opportunities that otherwise would not have presented themselves. The Authority's affirmative action programs were seen as vital to the continuing viability of their companies.

MSCAA was described as being committed to inclusion and the success of certified firms. Most M/W/DBEs felt that the Airport is serious about its commitment to reducing barriers to their participation, especially as subcontractors.

So as far as the goals, we've had nothing but success. I have nothing but good things to say about the program as far as how it's worked for us.... We've been able to team with the prime contractors and so far we've had absolutely nothing but good success and no problems to speak of.

A M/W/DBE who has worked as a prime contractor stressed the support he received from Airport staff members.

[Our experience] was very good in that they would from time to time come by and see how we were progressing and if we needed anything from them. So, that was a big help, being a small company and everything, to know that they were willing to work with us, which they did.... I couldn't ask for a better experience.

Several majority business owners agreed. They praised the Airport, especially as compared to other local governments.

The Airport's been great to work with as far as from our end of the project.... We've had very good, very good experience with the Airport as far as working with them, with the project managers and. We've had absolutely no problem. We've been very, very fortunate to have some good project management and all of our projects have went smooth. We've finished on time and so far we've been very, very successful. No problem to speak of.

The people I've worked with [at the Airport], it's been a pleasant experience. The [M/W/DBE] subcontractors I've worked with ... [are] great. Others as well that are minority businesses have been really good to work for because it takes a quality contractor to adhere to all the rules and regulations.

The Airport's minority vendor group, I can call them and say, come on, this isn't working. I'm having trouble. Here's my choice. And they're very helpful.

[Contract Compliance helped to get] the other [firm] certified.

Absolutely no complaints. Delightful people to work with.

They're super nice.... We enjoy a relationship with them. Apparently they enjoy having us. They've had some bad experiences with a national provider so we stand out.

However, architects reported it is hard for them to obtain work through the goal setting process.

It's much more convenient to meet whatever goals may be with an engineering discipline as opposed to adding another architect.... How do you carve out a piece of the work? And also the difficulty is even with a defined scope and fee that you're satisfied with, there's always that kind of scope creep that as the smaller firm I think you get pushed into a lot more work than the value of the contract [without the ability to renegotiate the fee].... [The problem is] both architects not wanting to hire architects. But on large projects ... the perception really becomes when you talk about race or gender being accepted as prime.

b. Certification Standards and Processes

In general, few criticisms were voiced about the certification process. Several firms– including non-M/W/DBEs– expressed concerns about “front” firms owned by nonminority females; that is, enterprises that were not legitimately woman-owned, managed and controlled.¹⁷³

[The subconsultant was a woman-owned M/W/DBE but] the actual people in the trenches doing the work are all white males.

A few participants stated that there are some M/W/DBEs who seem to have outgrown the program but remain certified. This affects non-M/W/DBE subcontractors who are not selected because prime contractors use this M/W/DBE to meet goals.

When we know it's not fair on the table we don't even waste our time looking at the job.... [The Airport should] cut them out of the list when they do meet those goals or limits.

c. Meeting M/W/DBE Goals at Contract Award

The goal setting process and meeting contract goals elicited more comments than any other topic, especially from majority owned firms.

Firms that bid Airport projects mostly reported that they have been able to meet the goals.

¹⁷³ After these interviews were conducted, but before publication of this study, MSCAA began conducting their own certifications for all businesses involved in their business diversity and small business programs. In the past, certifications have been performed by an outside entity. In taking the certification process in-house, MSCAA seeks to improve program compliance, increase certification outreach and improve service to all parts of the contracting and concessions communities.

We have had very much success utilizing [MSCAA's] DBE program.

The program itself has worked fine and we've been able to meet the goals.

We've been with the same [MBE] partner since we started the contract. We're in our seventh year and it's a great relationship.... [We] work very closely together on a daily basis on all aspects of the operation.

There's not a lot [of M/W/DBEs that can perform on MSCAA jobs] but the ones that can are very qualified.

However, some bidders related that it can be hard to find qualified M/W/DBEs, especially in specialized industries.

There aren't that many DBEs to supplement your [engineering] team to get to these percentages.

I don't think 14 percent is unreasonable at all for a contract. Even 20. But we've seen some 28 percent, some 32 percent, which is just, trying to attain that much DBE participation is very difficult. Plus you're the prime. You have the total responsibility for the contract that you have to give maybe 25 to 30 percent of it away, and that bothers me. Especially when you don't have the workforce in the DBE community to meet that and so you have to supplement that.... It's not efficient. It's not something that we want to do and I don't think it benefits the Airport Authority but we feel like we've got to reach the goals. And so we just do what it takes. And we had one instance where there were a couple of DBE consultants that were, they were just going with one firm only. And so we were kind of left out in the cold because we couldn't draw enough out of our DBE to meet the percentage and so it really handicapped us.

We do a lot of coaching with the DBE.... What we help them do sometimes actually they'll go line it up and broker it to another [DBE]. It'll be a passthrough to them because they don't have the staff.

[The M/W/DBEs will] propose with you. They'll get into it and they may not have the full capability. And they're doing it. They're figuring how to get the work done.... And those are the ones where they're tough to get percentage in certain disciplines and stuff.

We fish through that list as much as we can and we try to compile a team based on several DBEs.

[T]he M/W/DBE mechanical guy that I'm going to find, A, he's not capable, B, he cannot do the work, C, he cannot fund the project. So, actually I'm just paying the fee.... [M/W/DBEs don't grow and graduate because] you got to have pride and desire.

It was a huge challenge to find somebody that did anything related to our contract.

Most of the good minority or women owned or disadvantaged businesses are really, really busy, as they should be.... We're just in an industry there's not a lot of [M/WBEs]. There are a couple of really good firms that we do partner with on certain projects.

There has also been some projects that we bid that we were not successful on that the minority contractor has been able to not perform.

That percentage is not out there of contractors that you want working on a certain size job.

The problem we get into is we won't get bids. They won't come in. And then it's a bad spot for us to be in. So we can go out and make this good faith effort. It's very difficult to show that even when you go through all the steps.

The majority of the time is we do not get pricing.

A lot of the businesses [outside construction and construction-related professional services] are not educated on how or know how to become certified.

Some general contractors stated that it was difficult to utilize M/W/DBEs because the small firms lacked the capital to finance their jobs.

People don't pay their bills.

Task order contracts were especially challenging to meet goals.

Sometimes the task doesn't involve full discipline.... You have a number contract wide. I don't know what the scope is. I get a task that I don't even really need anybody to do that. So it winds up being a hundred percent [professional discipline]. How do I get DBE participation out of that? When they give us a contract and tell us our participation goal that's on a [professional discipline] side. That's not on the construction or purchasing side.... We have 14, 16 tasks and the idea is that over the balance of those 16 tasks you will have made [the goal]. We got to go heavy on some to compensate for sometimes when you're light.... [Carving out a unified task would work,] but the DBEs in this town aren't capable really of doing that. There's no one stop shop that has it all.

Some general contractors stated that M/W/DBEs need to do more to market themselves so that bidders are aware of their qualifications.

What are the DBEs doing to build relationships with the other people?... You have to think outside the box. And be able to get in and see people that you normally don't see.... You just have to be more creative about getting in the door.

Huge key is relationship. It's not frat brothers, it's who I know. Do I know you, I want to work with you and I trust you.

We've gotten really involved [with the Memphis Minority Contractors Association] and went down and we had several events where we tried to just get to know each other and have a relationship. And it has opened some doors and we've gotten quite a few new people. But I don't care who they are, if they're competent and qualified and can give us a good competitive number.

One suggestion was to require subcontractors and suppliers to register with the Airport to provide information about their companies' capabilities.

You can look at the job and say, he's only got two dump trucks. He's not qualified to do this job, I need 25 for. So then you don't pick him out of your subcontractor list. But you got another guy over here that does have 25 trucks. He'll fit perfectly for what I need to do. If he meets the rest of my criteria for my job, let's talk to him.

They say what they're capable of and the Airport has posted it on their site.... Just something to look at and say, this is somebody I feel like that can do the scope of the work.

Some general contractors and non-M/W/DBE subcontractors went further and suggested that the Airport prequalify all subcontractors so they will know who can work on specific projects.

That would be very helpful to us.... Whatever the qualifications parameters would be, they've met them.

To expect us to do the background checks is kind of tough to do.

The dilemma ... [is] they're going to end up with one or maybe two people that will end up meeting their standards.

Prime firms sometimes felt that using M/W/DBEs increased their risks.

Often in these goals, we're looking for somebody and we've never worked with that person before. We don't know what their capability is. Our business, the way we work right now, we have a set of engineers, consultants that we work with.... And we almost don't have to tell them what they need to do. Because we've worked so long together that we communicate constantly and we produce a project much more efficiently than when we have to bring somebody in that we've never worked with before. And obviously then you open the possibility that that person really can't perform the work.

We've had really good experience with DBE engineers. Very good for the most part. But the few may [have] some issues. Or you got to realize, as a prime, any of us that are primes, we take on that liability. So, yes, it's the cost of doing business and all that. So in a way the Airport's transferring liability to grow other businesses.... But if you're trying to grow some, they could help alleviate the liability risk that we're taking it all on.

I get ... a legitimate bid, the guy's been around a long time. He's not a DBE and he's lower than [the DBE] in price and I choose [the DBE] in order to make the goal because I know the Airport Authority will not award it unless the goal is met, then all of a sudden I discriminate against that guy that turned in the lower bid and so I'm doing the work of being the guy violating somebody's civil right, not the Airport Authority. So that's the biggest concern I have because it's a liability we have of being the judge[and] jury for who's allowed to bid and who can't and so because the Airport cannot discriminate, they're putting so much pressure on us, so we discriminate.... So, then numerous jobs I haven't bid because I was going to have to do that to somebody. And we're not saying that if the system is working now, but we don't know if it's even legal.... I'm not trying to take anything from [the DBEs] away, because the program has been successful in so many ways for deserving people.... [But] when I get two bids and I look at them and I choose the guy because of the DBE, in my personal opinion, I just discriminated [against] the guy and opened myself up to some civil litigation.

Increased costs for using M/W/DBEs were reported by some general contractors.

If I want to bid a project and there's a DBE requirement, I have to find a DBE small contractor and I have to mentor him, I have to pay the fee, so I can qualify to bid the project.

I just know that in Memphis, that entities are paying a premium when they put a high goal. It's just costing taxpayers money.

[There is a] DBE certified in construction management. That's the catchall, where he does nothing at all but I give him my price, he turns in the bid and he gets the check and he pays me. But I [do the work].... He doesn't do any work. He doesn't have any employees. But ... he gets his three to six percent or whatever he wants to charge me.

I'm going to go with the [M/W/DBE] that I'm not sure will actually complete the job, and I'll take that risk [to be sure to meet the goal].... And that usually costs me money in some fashion. Time: this guy I'll have to spend every breathing moment as a project manager on two airport projects coaching, training, leading, guiding.... It comes out of our margin.

A non-M/W/DBE that usually functions as a subcontractor agreed that he has lost work even when he was the low bidder because the general contractor had to meet the goal.

We were not able to be utilized because we were not a DBE and they had to use it to make their goal.

However, a M/W/DBE disputed this.

We realize that it is a very competitive market out there and we don't try to use that DBE to the point that says we know that we could be 20, 30, \$40,000 higher than the next bidder and the Airport's going to let us have it.... We try to stay as competitive to keep

[the general contractors] in the market as well, to try to keep their price down to where they can be successful on the job as well. We know that they can't afford to put a 30 or 40, \$50,000 price higher than the next guy in there and expect to be competitive as far as the rest of the general contractors.

Some subcontractors are using M/W/DBEs to pass supplies through to help the general contractor to meet goals.

You end up including material and then services that we could supply ourselves.... You're just working somebody into the bid package for no other reason than to work them into it.... [We would] either self perform or go with our own truck and pick up the material whereas we're having to pay a middleman fee.... The material they're picking up and selling back to us you can count 60 percent.

We're asked to do the same thing.... You got to have creative ways to have them buy the material.

Several bidders stated that the Airport's goals were often too high or failed to account for the small amount of subcontracting potential for the contract.

[In contrast to MSCAA,] we've had some projects that the entity has contacted us and said, hey, we're thinking about putting 15 percent on this particular project. And we'll tell them the facts, the truth which is, yea, that's not a problem, or you're going to, you're going to pay extra if you do that. That's the kind of input that we appreciate. So that we have an opportunity to give realistic input.... [Prime contractors should be able to] suggest your own goal on this.

Someone has to analyze what the project scope is and see if there are opportunities there.

I would submit that there be some sort of a review with the industry's input on a particular project and the setting of that goal. I see more and more often that projects that have absolutely no subcontractor potential or very little, with a huge goal, and then we are left with either knowing that we can't meet a good faith effort unless we have, I don't know, a staff lawyer on board which I don't think any of the three companies you're talking to do. And not being able to fight that good faith effort, knowing that we'll probably lose it. And so then we have to go like you said earlier, go out and purchase a goal, at some fee. That's hard and it's not right.... We're put in a position of, like I said, either not bidding the work which we have chosen not to bid it if it's got an inordinate goal. And then we are forced to try to team with somebody.

[Sometimes] we're just going to take our chances and hope that no one gets the goal.

Whatever the difficulties in meeting goals, few participants reported trying to seek a reduction of a goal based on a demonstration of their good faith efforts to do so. There was a belief that either waivers would not be granted or the bidder would not receive the award.

[If] you don't meet your goals, you're not going to get the job. It's not a one of those deals where if you put all these documents together and prove that you don't have the DBEs they'll award it to you anyway. They don't. They just give it to the next bidder no matter what the cost is. And it's very arbitrary and it's really an insult to the program.

I've never heard of anybody asking for a waiver. I'd be surprised if they'd even consider it.

We would never ask for a waiver. We do what we got to do to meet the goal, period, case closed. And it can be tough sometimes.

It takes quite an effort to meet that criteria for good faith effort. I guess what I mean is you need to have a staff of people at bid time collecting all this good faith effort if you know you're not going to get it, and then present that. I'll say one contractor did that successfully in the last five years on one of the runway projects. At least that's what we heard.

The most common concern for prime contracts was the amount of paperwork required to be submitted with the bid.

Of all government entities [MSCAA is] by far the worse for documentation of just submitting a bid for minority participation.... It was a book that had to be turned in at bid time.

The amount of paperwork that has to be submitted with our bid is enormous, cumbersome and, in all honesty, almost impossible to get because they require original signatures of the subs that are the minority and everything else. And we don't know who we're using up until the last hour or eve closer to the bid time. If some of that was done after the fact to be followed up or something, it would be better. But it is a monumental task for whatever size job. It doesn't matter the size, big or small.

We get proposals that are incomplete. They exclude something that should be in their package and so you want to be very careful before you list someone because once their name's down it seems like everybody wants to write that in stone whether or not the individual or the subcontractor had the correct scope of work or not.

You [don't want to] make a mistake or not give everybody a fair chance because you've run out of time.

The process that the Airport has is extremely onerous on bid day. And that makes it difficult when we are trying to bid the job and there's a lot of moving parts on bid day and you've got a ton of paperwork that has to be turned in with the bids. You have to turn in a list of every subcontractor that gave a bid to you, you've got to turn in your project team and DBE assurance statements along with copies of certifications from every DBE that you're using.... You have to turn in their quote that they sent you. You have to turn in a Title VI Civil Rights thing with everybody that is on your team listed out. It's a lot of

information. We've had this discussion with the Airport before because if you realize what it's like on a bid day as a GC, we're taking subcontractor bids up until, we typically have somebody at the location that's going to, we're on the phone with trying to fill all this stuff out. And we've got subs turning in bids and things are changing right up until bid time so it's [difficult]. The process they have is very complicated to get a bid submitted.

Bid day is a nightmare. The paperwork is very, very difficult to turn around in a timely manner. If you can't reach a subcontractor or they're slow or if there's fax machine issues or whatever, you have to get together thirty-plus documents, thirty pieces of paper sometimes to turn in a bid.

Smaller prime contractors were specially challenged, and see the requirements as a competitive advantage given to large firms.

We only have three people in our office and what they're saying is a hundred percent correct. I would say at least fifty percent of the jobs that we'd like to bid at the Airport we don't bid because it takes a world of people to get all that paperwork and get it there in time. Unless it's a simple job we just pretty well walk away from it.

It's just physically not possible for our little setup we have.

Smaller general contractors ... [will] walk away from bidding projects because they simply don't have the manpower to do all of the paperwork to support their bid.

Some participants reported they no longer bid Airport work because of the burdensomeness of the submission requirements.

We've probably done three or four hundred projects out there until all this stuff started. They probably miss out on tons of bids from GCs and other people because they don't want to fool with all the paperwork.... It's got so ridiculous a lot of people won't even bother bidding the jobs out there for that exact reason.... They need to understand is, bottom line, how much this is costing them.... I'm not the only person out there that won't go through this and bid the airport.

We have kind of stopped bidding Airport work as a general because we really don't have the capacity to turn in your bid ... we physically can't get all the paperwork together.... You're at the mercy of some contractors who either are at their office to sign and fax and return their quotes or not.... If the airport wants more bidding and more competition and I guess more participation from their various minority programs then, or disadvantaged programs, then they need to do something about the bidding procedure because we've thrown in the towel on bidding as a general.

Others disagreed that firms were shunning MSCAA work.

I don't think you lose any bidders because of that process. The intent of it to put it in there is that so nobody reshops the price to try to resell the job after the bid which cuts down the margin on the DBE. So, it's really trying to make sure that the DBE's bid is honored and they're not extorted from it after their, the bid has been taken.... I think you turn in the subs you're going to use and you follow up with everything later.

There was general agreement that allowing some of the forms to be submitted shortly after the bid would alleviate much of this problem.

It would be very helpful if the requirement was to submit your bid and then follow up, even if it was a couple hours later that same day, with all of the backup information.

[The] idea of having some time to get all the other stuff put together just so that we don't make a mistake on bid day and get thrown out on a technicality [is good]. But overall, the basic running of the program, the people that are doing it, once we get the job, I've been very satisfied with.

A few times some of the bidders in the prebid have asked, hey can we turn in a price at two o'clock and then give us 24 hours to turn in the other? In other words, there's seven bidders and you're six out of seven, man don't make us go through it. So, that was a good compromise.

Most of the clients that we have dealt with in that case, if the Schedule of Values is due or list of subs, we do get 24 to 48 hours.

d. Monitoring of Goal Commitments

Most participants stated that MSCAA closely monitors commitments to M/W/DBE participation during contract performance.

[MSCAA has] been pretty scrutinizing in the way they monitor the participation level.... I've been impressed in the project that I've worked on with the Airport in the way they, they monitor and, and track compliance. I've also been impressed with the people that work with you who are always professional, always willing to give you, be very responsive to you.... I've done two projects with the Airport and on both those projects they've been consistently, you know, just high, high level of professionalism.... I don't have any complaints.

Some M/W/DBEs suggested that greater monitoring of contract performance was needed for contracts other than construction.

[The fee] gets spread thinner and thinner and thinner as you go forward in time and I understand how that happens. But I know that the Airport has in place tracking mechanisms so that they know but they don't know early enough that there's something going on so that you're at the end of the contract by the time all is lost. So there seems to be some place in the middle that they should check to see if the subs are on board, if they

utilized their MBEs. Not to the very end. That would be helpful. And then also at that same period of time they can check and see if we're getting paid.... [Current monitoring efforts aren't] not revealing the problems early enough.

e. Payment

There were few reports of slow or non-payment by the Airport, or slow or non-payment payment by prime firms to subcontractors.

Everything's going pretty well with us. We get paid on time. We haven't had any problems and when we have they take care of it right away. [The Airport staff is] always there to answer questions if we have one.... We enjoy working with them and they usually let us know what's going on.

No problem, no issues at all with the [payments].

Getting paid in a timely manner, I mean everything is fine. On my end it's just been the bidding process.

f. Assistance Programs for M/W/DBEs and Small Firms

Assistance with estimating bids was one suggestion to improvement M/W/DBEs' ability to win jobs both as subcontractors and as prime bidder.

For the [M/W/DBEs] that did bid the job and that were not successful, kind of give them a little bit of coaching or whatever to maybe help them in the next bid. This is what you think that you probably could have done differently.... Maybe that way [the Airport will] have a bigger pool of bidders and that way they'll get a better price.... Because a lot of times when you bid, you know, you don't really know how you did or, and if you wasn't chosen, why weren't you chosen?

A dedicated supportive services firm would increase access to information.

In Mississippi, with the Department of Transportation, they have a DBE support services internal piece. And there is an internal advocate that is a part of their civil rights division almost that allows them to find the primes and figure out what the opportunity is and then they present that. And then that DBE support services entity is a contracted individual that supports them. And that helps at least with the communication piece. That helps with the DBEs and the MBEs having at least access to what opportunities are.

g. Mentor-Protégé Initiatives

There was interest and support from M/W/DBEs for the concept of an Airport-approved and administered Mentor-Protégé initiative, in conformance with the requirements of 49 C.F.R. Appendix D.

I would love to see, as a very small business, is that they have some kind of mentoring program [to help with understanding contracts, managing change orders, *etc.*].

A mentoring program would be excellent.... I would love to get acquainted and to work with a large contractor. And that'll help like going through the paperwork to know the whole bidding process.... That paperwork alone is just a test.

The Airport could establish a mentorship program for minority businesses, grooming them to become prime contractors.

[Set] up some type of mentoring for smaller companies.

Several large non-M/W/DBEs expressed interest in participating.

I think the mentoring program has some validity. And I would see in some cases that I would certainly welcome it because in order to meet those higher goals, it's sometimes really difficult to do it only within P[lumbing] and E[lectrical], only consultant engineers on your team. Whereas you may need to start to consult with a DBE architect to share in some of that load.... You don't guide them through their work but you guide them through the interface with the Airport.

We started something probably seven, eight years ago and there are some DBEs ... [with whom we have] created alliances specifically to chase certain types of clients. Very specific and part of that alliance is we don't get paid for it but we actually influence their firm. And we coach and it's just something we do to be good business. And what that does is it builds a relationship so that it's not about let me call you and we'll get a fee so that I can meet a goal.... There are some positive things going out there that aren't required by a program.... I don't think it's going on a lot but I think it is [going on].

We were able to partner a minority firm in mentor-protégé type relationship and we're currently at about 34 percent participation at the airport [in another state].... And I think we've had maybe two small contractors that we've had to really help, carry through but it's worked very well.

I got associated with my [M/W/DBE] partner [through the program].... We've mentored [each other] and we work together, so we're doing fine.

We've attempted to [mentor M/W/DBEs] and we think the outcome is something really good. But first and foremost it has to make economic sense or we won't do it.

A rewards program to me would not be representative of cash or money value but percentage value.

It sounds great if we can do that because there are some smaller companies that we've worked with that we see great potential in. They just need a little help. You know, if you're a sole owner of a business it's hard to be an expert in accounting and in finance

and bonding and insurance and legal.... So, we can bring that educational experience to them. So, we have seen a benefit. We haven't figured out how to make it work really well with the restraints [that] are put on you. And I understand it's a fraud issue. I mean it's so easy for me to say that I'm mentoring you and you're doing nothing. Except I'm paying you a small fee just so I can get the project.

3. Airport Concessionaire Disadvantaged Business Enterprise Program

Similar to non-concession contracts, ACDBEs reported that the size of the opportunities was an impediment to them performing as prime operators.

We have tried before to get that and it's just that we're so small. They think we can't do it because we're small but we can.... Let us prove [ourselves], you know, maybe with something like [a smaller contract or a piece of a larger project] and then they'll see that we can handle it.

How do you build yourself up to compete with those larger businesses who are bidding? If you can't build up in your own backyard how do you build up at all?... They can break it up into small pieces and then there's medium pieces and large pieces to break it up into as well. If, she doesn't have to have the whole contract ... but they could cut off 20 percent and let her operate a piece of it as a prime.... Not only do you need to get them through the door but you need to kind of make a way for them to grow.

Without the current ACD[BE] program we wouldn't be there for sure. So it does work to that effect. But, expanding is difficult.... Can we become a small prime so to speak? Yes. But how do we get to that next level? We're kind of hitting that ceiling right there.... We made an attempt to expand and were shot down. Because the other side of it is, well if I let you guys get big enough, too big, then you're getting all the ACDBE participation and the goal of the program is to expand it to as many people, minorities and women as possible. So, if I become a small prime and I have three concepts in the airport, then you and you and you won't be able to get a piece of the action. So, did the program serve its purpose by lifting us higher and making us big enough to compete? Or did it shoot itself in the foot by, you know, keeping you guys out of the game, so to speak. So, that's what I'm running into with the program. So, it's been kind of challenging and our lease is coming up soon and we're going to have to figure out, you know, how to move this thing forward.

One recommendation was that MSCAA should consider direct contracts with small firms to assist them to grow, rather than relying on the master concessionaire approach.

Instead of bidding out most of the locations at one time you, they bid each individual location in the airport with the requirement of ACDBE participation or partnership in it for joint venture. So people who haven't been big enough to get in or can't bid three or four concepts at once, they can just go in one space and held that one restaurant. And then he's gaining experience, you know, the same experience that we have. And then get

in my position and try to figure out what to do next. So some of the more forward thinking airports have tried that out.

The large size of concessions contracts generally meant that ACDBEs needed to partner with non-certified firms, and M/W/DBEs stated that more guidance was needed from MSCAA on how to do that successfully.

[ACDBEs must partner with larger firms because] if you're partnering with larger entities or smaller entities and becoming larger I'm assuming you can take on more responsibility which allows for the Airport to continue to operate at its capacity dealing with these cuts in the lack of traffic as well as allowing these companies to grow.... The Airport could help to kind of create the guidelines of, well here's what we need to have happen.

4. M/W/DBE Program Committee

Seeking regular input from the contracting community was mentioned by many participants of all kinds. One possible approach is a committee of M/W/DBEs, large contractors and consultants, and Airport staff that would meet regularly to discuss challenges and suggest solutions.

Perhaps following up with that questionnaire with a conference like this, a little more focused and targeted where we feel we can speak freely could be productive.

H. Conclusion

Our interviews strongly suggest that MSCAA implements the DBE Program and ACDBE Program well within the parameters of 49 C.F.R. Part 26 and Part 23. Some improvements could be made, including unbundling more contracts; reviewing bonding, insurance, experience and payment requirements to reduce barriers to the participation of small firms; expanding the SBPP to industries beyond construction; providing additional supportive services to M/W/DBEs and other small firms; appointing an M/W/DBE advisory committee; providing additional information about contract awards, payments to prime contractors, requests for waivers, and subcontractor substitutions; reducing paperwork burdens at bid submission; and consideration of a mentor-protégé program and a surety bond guarantee program.

IX. Recommendations for Revised Contracting Policies and Procedures

This Disparity Study for MSCAA provides a thorough examination of the evidence regarding the experiences of M/W/DBEs in MSCAA's relevant markets. As required by strict scrutiny, the Study documents evidence of such firms' utilization by the Airport on its prime contracts and associated subcontracts, as well as their experiences related to obtaining contracts in the public and private sectors of the economy. The Study has accumulated both statistical and anecdotal evidence in this regard.

This evidence provides MSCAA with information necessary for its consideration of whether to implement renewed local funds M/W/DBE policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted M/W/DBEs to compete on a fair basis in MSCAA's contracting and procurement activity. It also provides MSCAA with evidence necessary to narrowly tailor its DBE Program for federal-aid contracts and its ACDBE Program for concession contracts.

Based upon the Study's results and findings, we offer the following recommendations for MSCAA's consideration:

A. Augment Race- and Gender-Neutral Initiatives

The courts and the DBE and ACDBE program regulations require that MSCAA use race-neutral approaches to the "maximum feasible" extent to meet overall goals.¹⁷⁴ This is a critical element of narrowly tailoring the Program, so that the burden on non-M/W/DBEs is no more than necessary to achieve the Airport's remedial purposes. Increased participation by M/W/DBEs through race-neutral measures can also reduce the need to set race-conscious contract goals in the future, another requirement of the regulations.¹⁷⁵ We therefore suggest the following enhancements to MSCAA's current efforts, based on the business owner interviews, the input of Airport staff, and our understanding of best practices for M/W/DBE programs.

1. Review Surety Bonding, Insurance and Experience Requirements

MSCAA should review surety bonding, insurance and experience requirements so that they are no greater than necessary to protect the Airport's interests. Several participants in the Study's business owner interviews stated that requirements more closely reflecting the risks and size of contracts would greatly assist all firms. This might include reducing or eliminating insurance requirements on smaller contracts and removing the cost of the surety bonds from the calculation of lowest apparent bidder on appropriate solicitations. MSCAA should review qualification requirements to ensure that M/W/DBEs, and smaller and newer firms generally, are not unfairly disadvantaged and that there is adequate competition for Airport work. For example, several

¹⁷⁴ 49 C.F.R. § 26.51(a). *See also* 49 C.F.R. § 23.25(d) ("You must maximize the use of race-neutral measures, obtaining as much as possible of the ACDBE participation needed to meet overall goals through such measures.").

¹⁷⁵ 49 C.F.R. § 26.51(f)(1).

business owners suggested that MSCAA permit experience requirements to be met by work on similar projects for agencies other than the Airport, especially that gained by working for other government agencies, in order to increase access for small firms and guard against unfair incumbent advantages.

2. Continue to Review Contract Size and Specifications to Increase Contract “Unbundling”

“Unbundling” contracts into smaller segments was endorsed by almost all firm owners, including many larger prime contractors, as one method to provide fairer access to MSCAA’s projects. M/W/DBEs and non-M/W/DBEs agreed that breaking up contracts so that small firms can submit bids or proposals would increase opportunities, especially for work as prime contractors. We support the Airport’s inclusion of unbundling in its recently adopted small business elements of the DBE Program submitted to the FAA. In conjunction with reduced insurance and bonding requirements where possible, smaller sized contracts are an important race-neutral component to a defensible program. Unbundling must be conducted, of course, within the constraints of the need to ensure efficiency and control costs.

3. Review MSCAA Payment Policies

Dozens of interview participants, of all firm types and sizes, listed the Airport’s current policy of not paying upfront for stored materials as a major impediment to doing business, especially for small firms and M/W/DBE subcontractors. This practice also reportedly affects smaller prime contractors’ ability to meet goals because of the negative effect on cash flow. MSCAA should review this policy and make all possible modifications to facilitate opportunities and increase competition.

4. Partner with Other Agencies to Increase Supportive Services Programs for DBEs

M/W/DBEs and prime contractors reported that more supportive services would enhance M/W/DBEs’ capacities as both prime contractors and subcontractors and the ability of prime contractors to meet goals. Areas mentioned included better accounting practices, correct and timely submission of certified payrolls, adequate cash flow maintenance, safety compliance, quality control, and general business skills.

MSCAA might consider partnering with other local governments to provide some of these types of services, both to save money and to increase the pool of firms that would participate.

5. Enhance the Small Business Participation Program

The Airport’s current SBPP, part of its compliance with the federal requirement to include elements to encourage participation by small business concerns,¹⁷⁶ sets aside appropriate contracts for bidding only by firms certified by the CCD as small businesses. This pilot effort

¹⁷⁶ 49 C.F.R. § 26.39.

has, so far, only been applied to construction contracts. There was wide support in our interviews for expanding this initiative to other industries, both to increase opportunities for M/W/DBEs and other small firms to perform as prime contractors and to reduce the necessity for the use of M/W/DBE contract goals.

MSCAA should consider expanding this program to include all industries and all types of procurements. This tool should also help address the underutilization of M/W/DBEs on locally-funded contracts, where the existing BDD Program has not yet achieved parity for M/W/DBEs.

6. Implement a Guaranteed Surety Bonding Program for Small Firms

Access to bonding and working capital were repeatedly mentioned in the interviews as significant barriers to the development and success of M/W/DBEs. MSCAA should consider implementing a program that helps to address these critical components necessary to increase M/W/DBEs' abilities to obtain Airport contracts and subcontracts.

One model for such a program is the City and County of San Francisco's Surety Bond and Financing Assistance Program¹⁷⁷. This Program makes bonding, financing and technical assistance available to eligible, certified contractors. The Program targets small contractors, including M/W/DBEs, and includes a guarantee pool that provides collateral for loans and bonds up to \$750,000 on local construction projects. A separate component targets contractors specifically for upcoming mega-projects. The Program includes:

- Bid, performance and payment bond guarantees to surety companies up to 40% of the bond amount or \$750,000, whichever is less.
- Loan guarantees to banks up to 50 percent of loan amount, or \$750,000, whichever is less.
- Cost subsidies for preparing financial statements of up to \$3,200, with the contractor paying the first \$500.
- Payment of funds control of funds disbursement fees up to 1% of the contract amount; and
- Individual counseling and group workshops on bonding, financing and business management.

7. Appoint a DBE and BDD Programs Advisory Committee

M/W/DBEs and non-M/W/DBEs generally supported the idea of MSCAA appointing an advisory committee to provide advice and input on the operations of the DBE and BDD Programs. Several owners stated that the discussions that occurred during the Study's interview sessions concerning the policies and operations of the Airport's contracting programs, and ways to increase M/W/DBEs' capacities, needs to continue. A quarterly meeting schedule was suggested. An advisory committee would be composed of certified firms, major prime contractors and consultants, non-M/W/DBE subcontractors and MSCAA staff with contracting and program responsibilities.

¹⁷⁷ See www.imwis.com/services/bonding/assistance/index.asp.

B. Continue to Implement Narrowly Tailored DBE Goals for Federally-Assisted Contracts

1. Continue Using the Study to Set the Overall Annual DBE Goal and ACDBE Goals

49 C.F.R. Part 26 and Part 23 require MSCAA to adopt an annual overall goal covering a three year period for DBE participation in its federally-funded projects and an overall ACDBE goal for concession contracts. This Study's availability estimates should be consulted to determine the Step 1 base figure for the relative availability of DBEs required by § 26.45(c) and the relative availability of ACDBEs required by § 23.51(c).

The statistical disparities in Chapter IV in the rates at which DBEs form businesses can serve as the basis for a Step 2 adjustment to the base figure, as described in § 26.45(d) and § 23.51(d), to reflect the level of DBE availability and ACDBE availability that would be expected in the absence of the disparities identified in that Chapter, recognizing the limitation that the Step 1 estimate is itself partly reflective of the effects of past and current discrimination. The disparities identified in Chapter IV serve as “demonstrable evidence that is logically and directly related to the effect for which the adjustment is sought.”¹⁷⁸

Alternatively, MSCAA is permitted to follow the Guidance of USDOT in evaluating whether to make a Step 2 adjustment by examining the past participation of M/W/DBEs in its federally-assisted contracts and comparing that to the Step 1 estimate of availability contained in Chapter III.

2. Continue Using the Study to Set DBE Contract Goals

DBEs overwhelmingly reported that contract goals are still necessary to ensure that they are solicited and used on a fair basis. The Authority's affirmative action programs were seen as vital to the continuing viability of their businesses. The anecdotal and statistical data strongly suggest that MSCAA should continue to set DBE and ACDBE contract goals to meet its overall annual goals.

The Study's detailed availability estimates should serve as the starting point for contract goal setting that meets MSCAA's constitutional responsibility to ensure that its implementation of Part 26 and Part 23 continues to be narrowly tailored to its geographic and procurement market area. MSCAA should weight the estimated scopes of the contract by the availability of M/WDBEs in those scopes.

3. Review and Enhance Program Compliance Procedures

Business owners, both M/W/DBEs and non-M/W/DBEs, were complimentary about the Airport's implementation of its DBE, ACDBE and BDD programs. Most certified firms indicated that they had positive experiences because the requirements were monitored and prime

¹⁷⁸ 49 CFR § 26.45(d)(3); *see also* §23.51(d).

contractors were held to their compliance commitments. Some requested more access to information, such as when the contract is awarded and when primes have received payment. Continued enhancement of the Airport's monitoring systems could help to address these concerns.

A substantial number of prime contractors reported that it was difficult to fulfill the goal and provide the required documentation with the bid, which MSCAA requires in order for the bid to be considered responsive to the solicitation. Of particular concern was the requirement that bidders submit all the quotes received from all firms, which is difficult because firms are taking subcontractor quotes up until the moment of bid submission. One approach that has worked well for other agencies would be to extend the time for submission of bids on larger procurements for a very short time—for example, the close of business on the bid or proposal due date—so that prime contractors and potential subcontractors have sufficient time to submit all required documentation. A related recommendation was to create web-based forms that can be uploaded to a secure MSCAA site so that there is less need to make copies and hand deliver paperwork.

To assist with meeting contract goals, the Airport could consider providing with the Invitation For Bid or the Request For Proposal the scopes of work that were used to set the contract goal. This would provide guidance to prime contractors on which specialties to concentrate on for making good faith efforts, as well as increase transparency about how the DBE and BDD programs function.

Further, records should be maintained on (1) requests for waivers of goals, in order to determine the accuracy of goal setting and identify areas for additional M/W/DBE outreach and (2) substitutions of firms listed to meet contract goals, in order to identify industries where substitutions are more likely and where M/W/DBEs may need supportive services to increase capabilities.

4. Consider Adopting a Mentor- Protégé Program

MSCAA should consider implementing a Mentor-Protégé Program, in conformance with the Guidelines of Appendix D to Part 26. This approach was welcomed by M/W/DBEs and several large prime contractors as a way to increase M/W/DBEs' capacity by assisting them— through the provision of training and assistance from other firms—to diversify into non-traditional areas of work and to compete in the marketplace outside the DBE and BDD programs. Elements of such a program should include formal program guidelines; an MSCAA approved written development plan; and a fee schedule to cover the direct and indirect costs for services provided by the Mentor for specific training and assistance to the Protégé. A Mentor-Protégé Program for federally-assisted contracts requires approval by FAA.

C. Continue the Business Diversity Development Program for Locally-Funded Contracts

The Study's results support the determination that MSCAA has a strong basis in evidence to continue to implement its Business Diversity Development (BDD) Program for its non-federal-aid contracts. The Study provides quantitative and qualitative evidence of discriminatory

practices and attitudes that impede opportunities for minorities and women on all Airport projects, regardless of the funding source. Minorities and women mostly agreed that contracting affirmative action is still needed to ensure equal opportunities for Airport contracts and associated subcontracts. The Study found disparities in M/W/DBEs' access to private sector contracts overall, and to those factors necessary for business success, such as access to commercial credit and capital, leading to the inference that discrimination is a significant cause of those disparities. Likewise, the anecdotal evidence supports the conclusion that discrimination remains a major barrier to the full and fair participation of minority- and women-owned firms on MSCAA's contracts. In sum, there is ample evidence that the Airport can continue to take affirmative steps to ensure that M/W/DBEs have equal contracting opportunities on all its contracts.

Study Tables 6.12 and 6.13¹⁷⁹ document utilization, availability, and disparity results based on dollars awarded for locally-funded contracts. For M/W/DBEs overall, large, adverse and statistically significant disparities were observed in Construction (award dollars and paid dollars), Construction-related professional services (award dollars), Services (paid dollars), and Commodities, Supplies and Equipment (award dollars and paid dollars). Large adverse disparities were also observed in the vast majority of categories for African Americans, Hispanics, Asian/Pacific Islanders, Native Americans and nonminority women. In most of these instances disparities were statistically significant as well.

Further, M/W/DBEs also experienced large and statistically significant disparities in their access to relevant opportunities in the overall economy surrounding MSCAA, including the construction and construction-related services sector. The analyses in Chapters IV and V of the Study document large, adverse and statistically significant disparities for M/W/DBEs in business formation, business owner earnings and access to commercial credit and capital when compared to similarly situated nonminority male-owned firms.

Anecdotal data in the Study also supports the conclusion that discriminatory barriers relevant to Airport contracting still exist. In Chapter VII, individual business owners recounted their experiences with discriminatory barriers to their full and fair participation in the Airport's contracting activities, and expressed concern about an inability to overcome these barriers should the use of goals on locally-funded contracts be discontinued.

The results in Tables 6.12 and 6.13 for MSCAA's locally-funded contracts, in tandem with this other quantitative and qualitative evidence in the Study, strongly suggests that discriminatory practices and attitudes continue to impede opportunities for minorities and women in MSCAA's markets, and therefore the use of race- and gender-conscious measures remains appropriate and necessary.

The BDD Program, based on evidence from the 2008 disparity study, has appropriately adopted the elements of the federal DBE program that the courts have held to be important for narrowly tailoring a race- and gender-conscious program: requiring that participating firms be small and be owned by economically disadvantaged persons; setting contract goals based on the

¹⁷⁹ See pp. 200-201, *supra*.

availability of firms to perform the anticipated scopes of the contract; and applying the provisions governing program implementation, such as demonstration of good faith efforts to meet contract goals, setting commercially useful function and contractor substitution standards, and employing prompt payment. We recommend that MSCAA continue these narrowly tailored measures, based upon the evidence in this new Study.

MSCAA should consider developing quantitative performance measures for certified firms and overall BDD Program success to evaluate its effectiveness in reducing the systemic barriers identified by the Study. In addition to meeting the overall, annual goal, possible benchmarks are increased bidding by certified firms; increased prime contracting by M/W/DBEs; increased capacity of certified firms measured by bonding limits, size of jobs, profitability, *etc.*; and program graduation rates. It would be informative to also track the progress of graduated firms to evaluate whether they succeed without race-conscious programs, and if not, why not.

Finally, to meet the requirements of strict constitutional scrutiny, MSCAA should continue its practice of regularly reviewing the evidentiary basis for the BDD Program and whether its implementation remains narrowly tailored to current evidence. A sunset date for the BDD Program, establishing when it will end unless reauthorized, is suggested to meet the constitutional requirement of narrow tailoring that race-conscious measures be used only when necessary.

References

- Acs, Z. and D. Evans (1994), "The determinants of variations in self-employment rates across countries and over time," Working Paper.
- Alba-Ramirez, A. (1994), "Self-employment in the midst of unemployment; the case of Spain and the United States," Applied Economics, 2, 189-204.
- Arai, A. B. (1997), "The road not taken, The transition from unemployment to self-employment in Canada, 1961-1994," Canadian Journal of Sociology, 22, Summer, 365-382.
- Areeda, P., L. Kaplow and A. Edlin (2004), Antitrust Analysis: Problems, Text, Cases, New York: Aspen Publishers, 6th ed.
- Aronson, R. L. (1991), Self-employment, ILR Press, Ithaca, NY, ILR Press.
- Bates, T. (1973), Black capitalism, a quantitative analysis, New York, Praeger.
- Bates, T. (1989), "The changing nature of minority business, a comparative analysis of Asian, non-minority, and black-owned businesses," The Review of Black Political Economy, 25-42.
- Bates, T. (1991a), "Discrimination and the capacity of Chicago metropolitan area minority and women-owned businesses," Report to the City of Chicago Department of Law.
- Bates, T. (1991b), "Commercial bank financing of white- and black-owned small business startups," Quarterly Review of Economics and Business, 31(1), 64-80.
- Bates, T. (1993), "Banking on black enterprise, the potential of emerging firms for revitalizing urban economies," Washington, DC, Joint Center for Political and Economic Studies.
- Bauer, P. W. and B. A. Cromwell (1994), "A Monte Carlo examination of bias tests in mortgage lending," Federal Reserve Bank of Cleveland Economic Review, 30(3), 27-40.
- Becker, G. S. (1957), The economics of discrimination, University of Chicago Press, Chicago, Illinois.
- Bernhardt, I. (1994), "Comparative advantage in self-employment and paid work," Canadian Journal of Economics, May 1994, 273-289.
- Black, J., D. de Meza and D. Jeffreys (1996), "House price, the supply of collateral and the enterprise economy," Economic Journal, 106(434), January, 60-75.
- Blanchflower, D. G. (2000), "Self-employment in OECD countries," Labour Economics, 7, September, 471-505.
- Blanchflower, D. G. (2009), "Minority self-employment in the United States and the impact of affirmative action programs," Annals of Finance, (5)3-4, 361-396.

- Blanchflower, D. G., P. Levine and D. Zimmerman (2003), "Discrimination In The Small Business Credit Market," Review of Economics and Statistics, 85(4), 930-943.
- Blanchflower, D. G. and B. Meyer (1994), "A longitudinal analysis of the young self-employed in Australia and the United States," Small Business Economics, 6, 1-20.
- Blanchflower, D. G. and A. J. Oswald (1990), "Self-employment and the enterprise culture," British Social Attitudes: The 1990 Report, edited by R. Jowell, S. Witherspoon and L. Brook, Aldershot: Gower.
- Blanchflower, D. G. and A. J. Oswald (1998), "What makes an entrepreneur?," Journal of Labor Economics, 16(1), January, 26-60.
- Blanchflower, D. G. and A. J. Oswald (2008), "What makes a young entrepreneur?," International Handbook on Youth and Young Adulthood, edited by Andy Furlong, in the Routledge International Handbook series.
- Blanchflower, D. G., A. J. Oswald and A. Stutzer (2001), "Latent entrepreneurship across nations," European Economic Review, 45, no. 4-6, May, 680-691.
- Blanchflower, D. G. and C. Shadforth (2007), "Entrepreneurship in the UK," Foundations and Trends in Entrepreneurship, 3(4), 257-364.
- Blanchflower, D. G. and J. S. Wainwright (2005), "An Analysis of the Impact of Affirmative Action Programs on Self-Employment in the Construction Industry?," National Bureau of Economic Research Working Paper Series, #11793, November.
- Blau, D. (1987), "A time-series analysis of self-employment in the United States," Journal of Political Economy, 95, 445-467.
- Bogenhold, D. and U. Staber (1991), "The decline and rise of self-employment," Employment and Society, 5, 223-239.
- Borjas, G. J. and S. Bronars (1989), "Consumer discrimination and self-employment," Journal of Political Economy, 97, 581-605.
- Bourdon, C. C. and R. E. Levitt (1980), Union and open-shop construction, compensation, work practices, and labor markets, Lexington, MA: Lexington Books.
- Broussard, N., R. Chami and G. Hess (2003), "(Why) do self-employed parents have more children?," Working Paper, September.
- Browne, L. E. and G. M. B. Tootell (1995), "Mortgage Lending in Boston-A Response to the Critics," New England Economic Review, September-October, 53-78.
- Cagetti, M. and M. DeNardi (2006), "Entrepreneurship, frictions and wealth," Journal of Political Economy, 114(5), 835-70.

Cavalluzzo, K. S. and L. C. Cavalluzzo (1998), "Market structure and discrimination, the case of small businesses," Journal of Money, Credit, and Banking, 30(4), November, 771-792.

Cavalluzzo, K. S., L. C. Cavalluzzo and J. Wolken (1999), "Competition, small business financing, and discrimination, evidence from a new survey," unpublished manuscript, Georgetown University, February.

Cloud, C. and G. Galster (1993), "What do we know about racial discrimination in mortgage markets," Review of Black Political Economy, 22(1), Summer, 101-120.

Coate, S. and S. Tennyson (1992), "Labor market discrimination, imperfect information and self-employment," Oxford Economic Papers, 44, 272-288.

Cole, R. A. (1998), "Availability of credit to small and minority-owned businesses, evidence from the 1993 National Survey of Small Business Finances," unpublished manuscript, Employment Policies Institute, Washington, DC, April 13.

Cowling, M. and P. Mitchell (1997), "The evolution of UK self-employment, A study of government policy and the role of the macroeconomy," Manchester School of Economic and Social Studies, 65, no. 4, September, 427-442.

Day, T. S. and S. J. Liebowitz (1998), "Mortgage lending to minorities, where's the bias?," Economic Inquiry, XXXVI, January, 3-28.

DeWit, G. and F. A. Van Winden (1990), "An empirical analysis of self-employment in the Netherlands," Economics Letters, 32, 97-100.

Dunn, T. A. and D. J. Holtz-Eakin (2000), "Financial capital, human capital, and the transition to self-employment: evidence from intergenerational links," Journal of Labor Economics, 18 (2): 282-305.

Eccles, R. G. (1981), "Bureaucratic versus craft administration: The relationship of market structure to the construction Firm," Administrative Science Quarterly, 26, 449-469.

Enchautegui, Maria E., M. Fix, P. Loprest, S. von der Lippe and D. Wissoker (1996), Do minority-owned businesses get a fair share of government contracts?, Washington, DC: The Urban Institute.

Evans, D. and B. Jovanovic (1989), "An estimated model of entrepreneurial choice under liquidity constraints," Journal of Political Economy, 97, 808-827.

Evans, D. and L. Leighton (1989), "Some empirical aspects of entrepreneurship," American Economic Review, 79, 519-535.

Executive Office of the President, Office of Management and Budget (2007), *North American Industrial Classification System: United States, 2007*, Lanham, MD: Bernan.

- Fairlie, R. W. (1999), "The absence of the African American owned business, an analysis of the dynamics of self-employment," Journal of Labor Economics, 17(1), 80-108.
- Fairlie, R. W. (2006), "Entrepreneurship among Disadvantaged Groups: An Analysis of the Dynamics of Self-Employment by Gender, Race and Education," Handbook of Entrepreneurship, Volume 2, eds. Simon C. Parker, Zoltan J. Acs and David R. Audretsch, New York: Springer Verlag.
- Fairlie R. W. and B. D. Meyer (1996), "Ethnic and Racial Self-Employment Differences and Possible Explanations," Journal of Human Resources, 31(4), 757-793.
- Fairlie R. W. and B. D. Meyer (1998), "Does immigration hurt Black self-employment?," Help or Hindrance? The Economic Implications of Immigration for Blacks, edited by D. S. Hamermesh and F. D. Bean, New York, Russell Sage Foundation.
- Fairlie R. W. and B. D. Meyer (2003), "The effect of immigration on native self-employment," Journal of Labor Economics, 21(3), 619-650.
- Fairlie, R. W. and B. D. Meyer (2000), "Trends in self-employment among white and black men during the twentieth century," Journal of Human Resources, XXXV(4), 643-669.
- Fairlie, R. W. and H. A. Krashinsky (2006), "Liquidity constraints, household wealth and entrepreneurship revisited," Working Paper, University of California, Santa Cruz.
- Fairlie, R. W. and A. Robb (2007a), "Why are black-owned businesses less successful than white-owned businesses? The role of families, inheritances, and business human capital," Journal of Labor Economics, 25(2), 289-323.
- Fairlie, R. W. and A. Robb (2007b) "Families, human capital, and small business: evidence from the Characteristics of Business Owners Survey," Industrial and Labor Relations Review, 60(2), 225-245.
- Ferri, G. and P. Simon (1997), "Constrained consumer lending, exploring business cycle patterns using the Survey of Consumer Finances," Working Paper, Princeton University.
- Foti, A. and M. Vivarelli (1994), "An econometric test of the self-employment model - the case of Italy," Small Business Economics, 6, no. 2, April, 81-93.
- Fuchs, V. (1982), "Self-employment and labor force participation of older males," Journal of Human Resources, 17, Fall, 339-357.
- Gould, F. E. (1980), "Investigation in construction entrepreneurship," Masters Thesis, MIT, May.
- Greene, W. H. (1997), Econometric Analysis, Third Edition, New Jersey, Prentice-Hall, 926-931.
- Haggerty, C., K. Grigorian, R. Harter and J. D. Wolken (2000), "The 1998 Survey of Small Business Finances: Sampling and Level of Effort Associated with Gaining Cooperation from

- Minority-Owned Businesses,” *Proceedings of the Second International Conference on Establishment Surveys*, Buffalo, NY, June 17-21.
- Hall, R. E. and F. Mishkin (1982), “The sensitivity of consumption to transitory income, estimates from panel data on households,” *Econometrica*, 50(2), 461-81.
- Harrison, G. W. (1998), “Mortgage lending in Boston, a reconsideration of the evidence,” *Economic Inquiry*, XXXVI, January, 29-38.
- Hayashi, F. (1985), “The effect of liquidity constraints on consumption, a cross-sectional analysis,” *Quarterly Journal of Economics*, 100(1), February, 183-206.
- Heckman, J. J. (1998), “Detecting discrimination,” *Journal of Economic Perspectives*, 12(2), Spring, 101-116.
- Holmes T. J. and J. A. Schmitz (1990), “A theory of entrepreneurship and its application to the study of business transfers,” *Journal of Political Economy*, 89, 265-294.
- Holtz-Eakin, D., D. Joulfaian and R. S. Harvey (1994a), “Entrepreneurial decisions and liquidity constraints,” *Journal of Political Economy*, 102, 53-75.
- Holtz-Eakin, D., D. Joulfaian and R. S. Harvey, (1994b), “Sticking it out, entrepreneurial survival and liquidity constraints,” *Rand Journal of Economics*, 25(2), Summer, 334-347.
- Horne, D. (1994), “Evaluating the role of race in mortgage lending,” *FDIC Banking Review*, 7(1), Spring/Summer, 1-15.
- Hout, M. and H. Rosen (2000), “Self-Employment, family background, and race,” *Journal of Human Resources*, 35, no. 4, Fall, 670-92.
- Hurst, E. and A. Lusardi (2004), “Liquidity Constraints, Household Wealth, and Entrepreneurship,” *Journal of Political Economy*, Vol. 112(2), April, 319-347.
- Jappelli, J. (1990), “Who is credit constrained in the U.S. economy?,” *Quarterly Journal of Economics*, 105(1), February, 219-234.
- Kanbur, S. M. R. (1990), “Entrepreneurial risk taking, inequality, and public policy, an application of inequality decomposition analysis to the general equilibrium effects of progressive taxation,” *Journal of Political Economy*, 90, 1-21.
- Kidd, M. (1993), “Immigrant wage differentials and the role of self-employment in Australia,” *Australian Economic Papers*, 32, no. 60, June, 92-115.
- Kihlstrom, R. E. and J. J. Laffont (1979), “A general equilibrium entrepreneurial theory of firm formation based on risk aversion,” *Journal of Political Economy*, 87, 719-848.
- Kuhn, P. J. and H. J. Schuetze (1998), “The dynamics of self-employment in Canada,” Working Paper, McMaster University.

- La Noue, G. (2006), "Remarks of George LaNoue," in Disparity Studies as Evidence of Discrimination in Federal Contracting, U.S. Commission on Civil Rights, Washington, DC.
- Ladd, H. F. (1998), "Evidence on discrimination in mortgage lending," Journal of Economic Perspectives, 12(2), Spring, 41-62.
- LaFerrere, A. and P. McEntee (1995), "Self-employment and intergenerational transfers of physical and human capital, An empirical analysis of French data," Economic and Social Review, 27, no. 1, October, 43-54.
- Lentz, B. F. and D. N. Laband (1990), "Entrepreneurial success and occupational inheritance among proprietors," Canadian Journal of Economics, 23, 563-579.
- Lindh, T. and H. Ohlsson (1996), "Self-employment and windfall gains, Evidence from the Swedish lottery," Economic Journal, 106(439), November, 1515-1526.
- Long, J. E. (1982), "The income tax and self-employment," National Tax Journal, 35, March, 31-42.
- Mach, T. L. and J. D. Wolken (2006), "Financial services used by small businesses: evidence from the 2003 Survey of Small Business Finances," Federal Reserve Bulletin, October 2006.
- Maddala, G.S. (1983). Limited Dependent and Qualitative Variables in Econometrics, Cambridge: Cambridge University Press.
- Maddala, G. S. and R. P. Trost (1994), "On measuring discrimination in loan markets," Econometric Methods and Applications, 2, United Kingdom, Elgar, G.S. Maddala (ed.), 267-290.
- Meager, N. (1992), "Does unemployment lead to self-employment?," Small Business Economics, 4, 87-103.
- Mora, M. T. and A. Dávila (2006), "Mexican immigrant self-employment along the U.S.-Mexico border: an analysis of 2000 Census data," Social Science Quarterly, 87(1), 91-109.
- Munnell, A. G., M. B. Tootell, L. E. Browne and J. McEneaney (1996), "Mortgage lending in Boston, interpreting HMDA data," American Economic Review, March, 86(1), 25-53.
- National Opinion Research Center (2005). "The 2003 Survey of Small Business Finances Methodology Report," mimeo, <http://www.federalreserve.gov/pubs/oss/oss3/ssbf03/ssbf03home.html#ssbf03results>.
- NERA Economic Consulting (2008), Race, Sex, and Business Enterprise: Evidence from Memphis, Tennessee.
- Myrdal, G. (1944), An American dilemma, the negro problem and modern democracy, Volume 1, New York, Harper & Row.

- Oaxaca, R. L. (1973), "Male-female wage differences in urban labor markets," International Economic Review, 14(3), October, 693-709.
- Olson, P. D., V. S. Zuiker and C. P. Montalto (2000), "Self-employed Hispanics and Hispanic wage earners: differences in earnings," Hispanic Journal of Behavioral Sciences, 22, 114-130.
- Parker, S. C. (2004), The Economics of Self-Employment and Entrepreneurship, Cambridge: Cambridge University Press.
- Pickles, A. R. and P. N. O'Farrell (1987), "An analysis of entrepreneurial behavior from male work histories," Regional Studies, 21, 425-444.
- Quinn, J. F. (1980), "Labor force participation patterns of older self-employed workers," Social Security Bulletin, 43, 17-28.
- Reardon, E. (1998), "Are the self-employed misfits or superstars?," Working Paper, Rand Corporation.
- Rees, H. and A. Shah (1986), "An empirical analysis of self-employment in the UK," Journal of Applied Econometrics, 1, 95-108.
- Robb, A. (2012). "Access to Capital among Young Firms, Minority-owned Firms, Women-owned Firms, and High-tech Firms," for SBA Office of Advocacy. April.
- Robb, A. (2010). "Beyond the Late, Lamented Survey of Small Business Finances," Newsletter of the Association of Public Data Users, 33, no. 2, March/April.
- Robles, B. J. and H. Cordero-Guzmán (2007), "Latino self-employment and entrepreneurship in the United States: an overview of the literature and data sources," The Annals of the American Academy of Political and Social Science, 613; 18-31.
- Robson, M. T. (1998a), "The rise in self-employment amongst UK males," Small Business Economics, 10, no. 3, 199-212.
- Robson, M. T. (1998b), "Self-employment in the UK regions," Applied Economics, 30, no. 3, March, 313-322.
- Schuetze, H. J. (1998), "Taxes, economic conditions and recent trends in male self-employment; a Canada-U.S. comparison," Working Paper, McMaster University, Hamilton, Ontario, Canada.
- Taylor, M. P. (1996), "Earnings, independence or unemployment; why become self-employed?," Oxford Bulletin of Economics and Statistics, 58, 2, 253-265.
- Taylor, P., R. Kochhar, R. Fry, G. Velasco and S. Motel (2011), "Twenty-to-One: Wealth Gaps Rise to Record Highs Between Whites, Blacks and Hispanics," Washington, DC: Pew Research Center for the People & the Press.

- Tootell, G. M. B. (1996), "Turning a critical eye on the critics," Mortgage lending, racial discrimination and federal policy, edited by J. Goering and R. Wienk, Urban Institute Press, Washington, DC.
- U.S. Census Bureau (2004a), "Percent Distribution of Household Net Worth, by Amount of Net Worth and Selected Characteristics: 2004," INTERNET:
<http://www.census.gov/hhes/www/wealth/2004/wlth04-4.html>.
- U.S. Census Bureau (2004b), "Median Value of Assets for Households, by Type of Asset Owned and Selected Characteristics: 2004," INTERNET:
<http://www.census.gov/hhes/www/wealth/2004/wlth04-1.html>.
- U.S. Chamber of Commerce (2005), Access to capital, what funding sources work for you?, U.S. Chamber of Commerce, Washington, DC.
- U.S. Commission on Civil Rights, (2006), Disparity Studies as Evidence of Discrimination in Federal Contracting.
- Yezer, M. J., R. F. Phillips and R. P. Trost (1994), "Bias in estimates of discrimination and default in mortgage lending; the effects of simultaneity and self-selection," Journal of Real Estate Finance and Economics, 9(3), 196-215.
- Wainwright, J. and C. Holt (2010), Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program, Transportation Research Board of the National Academies, NCHRP Report, Issue No. 644.
- Wainwright, J. (2012), Report of Defendant Intervenor's Expert in Geyer Signal, Inc. and Kevin Kissell v. Minnesota Department of Transportation, Thomas K. Sorel in his capacity as the Minnesota Commissioner of Transportation, and Mary Prescott in her capacity as Acting Director of the Office of Civil Rights, United States District Court for the District of Minnesota, Case No. 0:11-cv-00321-JRT, December 30.
- Wainwright, J. S. (2010), Report of Defendant's Expert in Kevcon, Inc. v. The United States, No. 09 625C (United States Court of Federal Claims), April 29.
- Wainwright, J. S. (2008), "Discrimination Facing Small Minority-Owned and Women-Owned Businesses in Commercial Credit Markets," Testimony before the United States Senate, Committee on Small Business and Entrepreneurship, Hearing on "Business Start-up Hurdles in Underserved Communities: Access to Venture Capital and Entrepreneurship Training," September 11.
- Wainwright, J. S. (2000), Racial discrimination and minority business enterprise, evidence from the 1990 Census, *Studies in Entrepreneurship Series*, edited by S. Bruchey, New York, Garland Publishing.

Appendix A. Glossary

ACS. *The American Community Survey.* The Census Bureau's ACS is an ongoing survey covering the same type of information collected in the decennial census. The ACS is sent to approximately 3 million addresses annually, including housing units in all counties in the 50 states and the District of Columbia.

African American: African American or “Black” refers to an individual having origins in any of the Black racial groups of Africa.

Aggregation, aggregated: Refers to the practice of combining smaller groups into larger groups. In the present context, this term is typically used in reference to the presentation of utilization, availability, or related statistics according to industry. For example, statistics presented for the “Construction” sector as a whole are more aggregated than separate statistics for “Building Construction,” “Heavy Construction,” and “Special Trades Construction” industries. See also “Disaggregation, disaggregated.”

Anecdotal evidence: Qualitative data regarding business owners' accounts of experiences with disparate treatment and other barriers to business success.

Asian or Asian/Pacific Islander: Refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islanders (except Native Hawaiians).

Availability: A term of art in disparity studies that refers to the percentage of a given population of businesses owned by one or more groups of interest. *See also* Utilization, Disparity Ratio.

Baseline Business Universe: The underlying population of business establishments that is used in an availability analysis. It is used as the denominator in a DBE availability measure.

Black: Or “African American” refers to an individual having origins in any of the Black racial groups of Africa.

Capacity: This term has no single definition. See Chapter III for discussion of this concept and its role in disparity studies.

Constitutional significance or substantive significance: An indication of how large or small a given disparity is. Under the EEOC's “four-fifths” rule, a disparity ratio is substantively significant if it is 0.8 or less on a scale of 0 to 1 or 80 or less on a scale of 1 to 100.

Decennial: Refers to the census conducted every decade by the U.S. Census Bureau. The last decennial census was conducted in 2010.

Demand-side: Refers to activity on the demand-side of an economic market. For example, when State agencies hire contractors or vendors they are creating market demand. *See also* “Supply-side.”

Dependent variable: In a regression analysis, a variable whose value is postulated to be influenced by one or more other “independent” or “exogenous” or “explanatory” variables. For example, in business owner earnings regressions, business owner earnings is the dependent variable, and other variables, such as industry, geographic location, or age, are the explanatory variables. *See also* “Independent variable,” “Exogenous variable.”

Disaggregation, disaggregated: Refers to the practice of splitting larger groups into smaller groups. In the present context, this term is typically used in reference to the presentation of utilization, availability, or related statistics according to industry. For example, statistics presented for “Building Construction,” “Heavy Construction,” and “Special Trades Construction” industries are more disaggregated than statistics for the “Construction” sector as a whole.

Disparate impact: A synonym for “disparity,” often used in the employment discrimination litigation context. A disparate impact occurs when a “good” outcome for a given group occurs significantly less often than expected given that group’s relative size, or when a “bad” outcome occurs significantly more often than expected.

Disparity ratio (or Disparity Index): A measure derived from dividing utilization by availability and multiplying the result by 100. A disparity ratio of less than 100 indicates that utilization is less than availability. A disparity ratio of 80 or less can be taken as evidence of disparate impact. *See also* Availability, Constitutional significance, Utilization.

Distribution. A set of numbers and their frequency of occurrence collected from measurements over a statistical population.

Econometrics, econometrically: Econometrics is the field of economics that concerns itself with the application of statistical inference to the empirical measurement of relationships postulated by economic theory. *See also* “Regression.”

Endogenous variable: A variable that is correlated with the residual in a regression analysis or equation. Endogenous variables should not be used in statistical tests for the presence of disparities. *See also* “Exogenous variable.”

Exogenous variable: A variable that is uncorrelated with the residual in a regression analysis or equation. Exogenous variables are appropriate for use in statistical tests for the presence of disparities. *See also* “Endogenous variable,” “Independent variable,” “Dependent variable.”

First-tier subcontractors: Subcontractors, subconsultants, or suppliers hired directly by the prime contractor.

Hispanic: Refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Independent variable: In a regression analysis, one or more variables that are postulated to influence or explain the value of another, “dependent” variable. For example, in business owner earnings regressions, business owner earnings is the dependent variable, and other variables,

such as industry, geographic location, or age, are the independent or explanatory variables. *See also* “Dependent variable,” “Exogenous variable.”

MBE: Minority-Owned Business Enterprise. A business establishment that is 51 percent or more owned and controlled by racial or ethnic minorities (*i.e.*, African Americans, Hispanics, Asians/Pacific Islander, or Native Americans).

Mean: A term of art in statistics, synonymous in this context with the arithmetic average. For example, the mean value of the series 1, 1, 2, 2, 2, 4, 5 is 2.43. This is derived by calculating the sum of all the values in the series (*i.e.*, 17) and dividing that sum by the number of elements in the series (*i.e.*, 7).

Median: A term of art in statistics, meaning the middle value of a series of numbers. For example, the median value of the series 1, 1, 2, 2, 2, 4, 5 is 2.

Microdata or micro-level data: Quantitative data rendered at the level of the individual person or business, as opposed to data rendered for groups or aggregates of individuals or businesses. For example, Dun and Bradstreet provides micro-level data on business establishments. The Census Bureau’s *Survey of Business Owners*, provides grouped or aggregated data on businesses.

Misclassification: In the present context, this term refers to a situation when a listing or directory of minority-owned or women-owned firms has incorrectly classified a firm’s race or gender status. For example, when a firm listed as Hispanic-owned is actually African American-owned, or when a firm listed as nonminority female-owned is actually nonminority male-owned. *See also* “Nonclassification.”

MSA: Metropolitan Statistical Area. As defined by the federal Office of Management and Budget, contains at least one urbanized area that has a total population of 50,000 or more, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.

NAICS: North American Industry Classification System. The standard system for classifying industry-based data in the U.S. Superseded the Standard Industrial Classification (SIC) System in 1997. *See also* “SIC.”

Nonclassification: In the present context, this term refers to a type of misclassification when a listing or directory has not identified firms as minority-owned or women-owned when, in fact, they are. *See* “Misclassification.”

NSSBF or SSBF. The *Survey of Small Business Finances*, formerly the *National Survey of Small Business Finances*, was produced jointly by the Federal Reserve Board and the U.S. Small Business Administration to provide a periodic statistical picture of small business finances. The SSBF was discontinued after 2003.

Native American: Refers to an individual having origins in any of the original peoples of North America, including Native Hawaiians.

Nonminority: Firms that are not DBEs, *i.e.*, not owned by African Americans, Hispanics, Asians/Pacific Islander, Native Americans, or White females.

PUMS: Public Use Microdata Sample. Both the decennial census and the American Community Survey publish PUMS products.

p-value: A standard measure used to represent the level of statistical significance. It states the numerical probability that the stated relationship is due to chance alone. For example, a p-value of 0.05 or 5 percent indicates that the chance a given statistical difference is due purely to chance is 1-in-20. *See also* “Statistical Significance.”

Regression, multiple regression, multivariate regression: A type of statistical analysis which examines the correlation between two variables (“regression”) or three or more variables (“multiple regression” or “multivariate regression”) in a mathematical model by determining the line of best fit through a series of data points. Econometric research typically employs regression analysis. *See also* “Econometrics.”

SBO: The Census Bureau’s *Survey of Business Owners* statistical data series is devoted to capturing statistical information on the nation’s minority-owned and women-owned business enterprises. Part of the five-year *Economic Census* series.

Set-aside, set-asides: A contracting practice where certain contracts or classes of contracts are reserved for competitive bidding exclusively among a given subset of contractors, for example minority-owned and women-owned contractors.

SIC: Standard Industrial Classification system. Prior to 1997, the standard system for classifying industry-based data in the U.S. Superseded by the North American Industry Classification System (NAICS). *See also* “NAICS.”

Statistical significance: A statistical outcome or result that is unlikely to have occurred as the result of random chance alone. The greater the statistical significance, the smaller the probability that it resulted from random chance alone. *See also* “p-value.”

SSBF. *See* NSSBF.

Stratified: In the present context, this refers to a statistical practice where random samples are drawn within different categories or “strata” such as time period, industry sector, or DBE status.

Substantive significance or constitutional significance: An indication of how large or small a given disparity is. Under the EEOC’s “four-fifths” rule, a disparity ratio is substantively significant if it is 0.8 or less on a scale of 0 to 1.

Supply-side: Refers to activity on the supply-side of an economic market. For example, when new businesses are formed, other things equal, the supply of contractors to the market is increased. *See also* “Demand-side.”

t-test, t-statistic, t-distribution: Often employed in disparity studies to determine the statistical significance of a particular disparity statistic. A t-test is a statistical hypothesis test based on a test statistic whose sampling distribution is a t-distribution. Various t-tests, strictly speaking, are aimed at testing hypotheses about populations with normal probability distributions. However, statistical research has shown that t-tests often provide quite adequate results for non-normally distributed populations as well.

Two-tailed (or two-sided) statistical test: A “two-tailed” test means that one is testing the hypothesis that two values, say u (utilization) and a (availability), are equal against the alternate hypothesis that u is not equal to a . In contrast, a one-sided test means that you are testing the hypothesis that u and a are equal against the alternate hypothesis u is not equal to a in only one direction. That is, that it is either larger than a or smaller than a .

Utilization: A term of art in disparity studies that refers to the percentage of a given amount of contracting and/or procurement dollars that is awarded or paid to businesses owned by one or more groups of interest. *See also* Availability, Disparity Ratio.

WBE: Women-Owned Business Enterprise: A business establishment that is 51 percent or more owned and controlled by nonminority women. In this Study, unless otherwise indicated, WBE refers to nonminority women-owned firms.

EWSC: Refers to the East and West South Central census divisions in the NSSBF and SSBF data sets. The EWSC includes the states of Tennessee, Mississippi, Arkansas, Alabama, Kentucky, Louisiana, Texas, and Oklahoma.

Appendix B. Legal Standards for Government Affirmative Action Contracting Programs

The Memphis-Shelby County Airport Authority (“MSCAA,” “Authority,” or “Airport”) has long been committed to including minority-owned, women-owned and disadvantaged business enterprises (“M/W/DBEs”) in its contracting and concessions activities. The Airport applies the requirements of 49 C.F.R. Part 26 to its non-concessions federally-assisted contracts and 49 C.F.R. Part 23 to its Airport Concessions opportunities. MSCAA also established a Business Diversity Development (“BDD”) Program for its locally-funded contracts. The BDD Program which it has operated since 1996, and has been revised numerous times since then, currently follows the requirements of 49 C.F.R. Part 26 as well.

The courts have made it clear that in order to implement race-based programs, entities like MSCAA must meet the judicial test of constitutional “strict scrutiny.”¹⁸⁰ Strict scrutiny requires a “compelling interest”¹⁸¹ (a “strong basis in evidence” of the persistence of discrimination,¹⁸²) -- and that government actors use “narrowly tailored”¹⁸³ measures to remediate that discrimination.

Congress has established the constitutionally required evidentiary basis for its compelling interest in remedying discrimination in the market for federally-assisted contracts¹⁸⁴ to meet the constitutional and regulatory mandates of Part 26 and Part 23. This study provides the evidence of discrimination in MSCAA’s own contracting markets. In addition, MSCAA must ensure that it administers its Disadvantaged Business Enterprise (“DBE”) Program, its Airport Concessionaire Disadvantaged Business Enterprise (“ACDBE”) Program, and its BDD Program in a narrowly tailored manner.

D. General Overview of Constitutional Standards

1. Strict Scrutiny and Minority-Owned Businesses

To be legally defensible, a race-based program must meet the judicial test of constitutional strict scrutiny. Strict scrutiny is the highest level of judicial review and consists of two elements:

- The government must establish its “compelling interest”¹⁸⁵ in remedying race discrimination by showing “a strong basis in evidence”¹⁸⁶ of the persistence of

¹⁸⁰ *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 493-494 (1989).

¹⁸¹ *Id.*, at 492.

¹⁸² *Id.* at 500 (citing *Wygant, et al. v. Jackson Board of Education, et al.*, 476 U.S. 267, 277 (1986)).

¹⁸³ *Id.*, 488 U.S. at 506-508. *See also, Wygant*, 476 U.S. at 274.

¹⁸⁴ *See, e.g., Adarand Constructors Inc. v. Slater*, 228 F.3d 1147, 1176 (10th Cir. 2000) (“*Adarand VII*”), *cert. dismissed as improvidently granted*, 534 U.S. 103 (2001); *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d 964, 970 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004).

¹⁸⁵ *Croson*, 488 U.S. at 492.

¹⁸⁶ *Id.* at 500, (citing *Wygant*, 476 U.S. at 277 (1986)).

discrimination. Such evidence may consist of demonstrating that the entity is a “‘passive participant’ in a system of racial exclusion....”¹⁸⁷

- Any remedies adopted must be narrowly tailored to that discrimination; that is, “the means chosen to accomplish the government’s asserted purpose are specifically and narrowly framed to accomplish that purpose.”¹⁸⁸

The compelling interest prong has been met through two types of proof:

- Statistical evidence of “identified discrimination in [the relevant] industry,”¹⁸⁹ typically established by showing the underutilization of minority-owned firms relative to their availability in the jurisdiction’s market area known as disparity indexes or disparity ratios.¹⁹⁰
- Anecdotal evidence of race-based barriers to the full and fair participation of minority-owned firms in the market area and in seeking contract opportunities with the agency.¹⁹¹

The narrow tailoring prong has been met through the assessment of several factors:

- Consideration of alternative, race-neutral means to increase M/W/DBE participation;¹⁹²
- The flexibility of the program requirements, including the availability of waiver provisions;¹⁹³
- The duration of the proposed relief,¹⁹⁴

¹⁸⁷ *Id.* at 492.

¹⁸⁸ *Sherbrooke*, 345 F.3d at 971. (citing *Grutter v. Bollinger*, 539 U.S. 306, 333 (2003)).

¹⁸⁹ *Croson*, 488 U.S. at 505.

¹⁹⁰ See J. Wainwright and C. Holt, *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*, Transportation Research Board of the National Academies, NCHRP Report, Issue No. 644, 2010, pp. 5-6.

¹⁹¹ *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, 1520 (10th Cir. 1994) (“*Concrete Works IP*”) (“Personal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a municipality’s institutional practices that exacerbate discriminatory market conditions are often particularly probative. Therefore, the government may include anecdotal evidence in its evidentiary mosaic of past or present discrimination.”) See also *Adarand VII* 228 F.3d at 1166 (“Both statistical and anecdotal evidence are appropriate in the strict scrutiny calculus, although anecdotal evidence by itself is not.”).

¹⁹² *Croson*, 488 U.S. at 507, citing *United States v. Paradise*, 480 U.S. 149, 171 (1987). See also *Adarand Constructors, Inc. v. Peña*, 515 U.S. 200, 237-238 (1995) (“*Adarand III*”).

¹⁹³ *Paradise*, 480 U.S. at 171; *Adarand VII*, 228 F.3d at 1177.

¹⁹⁴ *Croson*, 488 U.S. at 498, 509. See also *Paradise*, 480 U.S. at 171.

- The relationship of numerical participation goals to the availability of M/W/DBEs in the relevant market;¹⁹⁵
- The impact of the relief on third parties;¹⁹⁶ and
- The overinclusiveness or underinclusiveness of the racial classifications.¹⁹⁷

In *Adarand Constructors, Inc. v. Peña*,¹⁹⁸ the Court extended the analysis of strict scrutiny to race-based federal enactments such as the DBE Program. Just as in the state and local government context, the national government must have a compelling interest for the use of race and the remedies adopted must be narrowly tailored to meet that interest.

Finally, unlike most legal challenges, the government defendant in a *Croson* challenge has the initial burden of demonstrating a strong basis in evidence in support of the program. The plaintiff must then proffer evidence to rebut the government's case, and bears the ultimate burden of production and persuasion that the affirmative action program is unconstitutional.¹⁹⁹ A plaintiff "...cannot meet its burden of proof through conjecture and unsupported criticisms of [the government's] evidence. Rather it must present credible, particularized evidence."²⁰⁰

2. Intermediate Scrutiny and Women-Owned Businesses

While it has yet to directly address the question in the context of women-owned business enterprise ("WBE") preferences, the Supreme Court has traditionally subjected gender-based classifications to a lesser constitutional standard of review than strict scrutiny. "Intermediate scrutiny" requires an "exceedingly persuasive justification" that gender-based classifications serve "important governmental objectives," and that the means used to implement them are "substantially related to the achievement of those objectives."²⁰¹

In general, lower courts reviewing the constitutionality of the federal DBE Program have recognize that intermediate scrutiny applies to the Program's gender-based elements,

Precedent dictates, and the parties agree, that courts apply 'intermediate scrutiny' to statutes that classify on the basis of gender. ... Of course, intermediate scrutiny requires less of a showing than does 'the most exacting' strict scrutiny standard of review.

¹⁹⁵ *Paradise*, 480 U.S. at 171.

¹⁹⁶ *Id.*

¹⁹⁷ *Croson*, 488 U.S. at 506.

¹⁹⁸ 515 U.S. 200 (1995) ("*Adarand III*").

¹⁹⁹ *Adarand VII*, 228 F.3d at 1166.

²⁰⁰ *Concrete Works of Colorado, Inc. v. City and County of Denver, et al.*, 321 F.3d 950, 991 (10th Cir. 2003) ("*Concrete Works IV*"), *cert. denied*, 540 U.S. 1027 (2003)) (internal quotations omitted).

²⁰¹ *United States v. Virginia, et al.*, 518 U.S. 515, 523-524 (1996) (citing *Mississippi University for Women v. Hogan*, 458 U.S. 718, 724 (1982)).

Although the Supreme Court has established a ‘strong basis in evidence’ requirement for race-conscious measures subject to strict scrutiny, courts ‘work without an analogous evidentiary label from the Supreme Court’ for gender-conscious programs. Our sister circuits, however, provide guidance in formulating a governing evidentiary standard. These courts agree that such a measure ‘can rest safely on something less than the strong basis in evidence required to bear the weight of a race- or ethnicity-conscious program.’²⁰²

Lower courts evaluating the DBE Program have nevertheless sometimes applied strict scrutiny to the gender-based aspects of the DBE Program; not because the intermediate scrutiny standard did not apply but because the defendants failed to argue that it did,²⁰³ or because the outcome would not have differed under the application of the less stringent standard.²⁰⁴

For state or local WBE preferences, most lower courts have applied intermediate scrutiny.²⁰⁵ The Sixth Circuit Court of Appeals, however, is an exception. Prior to *Croson*, the Sixth Circuit employed an intermediate scrutiny standard to such preferences.²⁰⁶ Subsequent to *Croson*, it has applied strict scrutiny.²⁰⁷ MSCAA, therefore, should strive meet the strict scrutiny standard for any gender preferences in its contracting activities.

Below is a detailed discussion of the parameters for establishing MSCAA’s compelling interest in remedying discrimination and evaluating whether the remedies adopted to address that discrimination are narrowly tailored. The following are the legal and program development issues the Airport should consider in evaluating its DBE Program for federal-aid contracts, its ACDBE Program for concessions contracts and its BDD Program for locally-funded contracts.

²⁰² *H.B. Rowe Co. v. Tippet*, 615 F.3d 233, 242 (4th Cir. 2010), (citations omitted).

²⁰³ *Northern Contracting, Inc. v. Illinois*, 473 F.3d 715, 720 n.3 (7th Cir. 2007) (“IDOT does not argue for a more permissive standard for its gender-based initiatives and therefore we will apply strict scrutiny to the entire program.”). See also *Builders Ass’n of Greater Chicago, v. County of Cook*, 256 F.3d 642, 644-645 (7th Cir. 2001); *Milwaukee County Pavers Ass’n, v. Fiedler*, 922 F.2d 419, 422 (7th Cir. 1991).

²⁰⁴ *Western States Paving Co., v. Washington State Department of Transportation*, 407 F.3d 983, 991 n.6 (9th Cir. 2005), *cert. denied sub nom. City of Vancouver v. Western States Paving*, 546 U.S. 1170 (2006) (no need to conduct a separate analysis of sex-based classifications under intermediate scrutiny because it would not yield a different result from strict scrutiny).

²⁰⁵ See, e.g., *Associated Utility Contractors of Maryland v. Mayor of Baltimore*, 83 F.Supp.2d 613, 620 (D. Md. 2000); *W.H. Scott Construction Co., v. City of Jackson, Mississippi*, 199 F.3d 206, 215 n.9 (5th Cir. 1999); *Engineering Contractors Ass’n of South Florida. v. Metropolitan Dade County*, 122 F.3d 895, 907-911 (11th Cir. 1997); *Concrete Works II*, 36 F.3d at 1519; *Contractors Ass’n of Eastern Pennsylvania v. City of Philadelphia*, 6 F.3d 990, 1009-1011 (3rd Cir. 1993); *Coral Construction Co. v. King County*, 941 F.2d 910, 930-931 (9th Cir. 1991).

²⁰⁶ *Michigan Road Builders Ass’n v. Milliken*, 834 F.2d 583, 595 (6th Cir. 1987).

²⁰⁷ *Brunet. v. City of Columbus*, 1 F.3d 390, 404 (6th Cir. 1993) (“Under the precedent in this Circuit, gender based affirmative action plans are subject to strict scrutiny when challenged under the Equal Protection Clause.”) *cert. denied sub nom. Brunet v. Tucker*, 510 U.S. 1164 (1994). See also *Conlin v. Blanchard*, 890 F.2d 811, 816 (6th Cir. 1989).

3. ***City of Richmond v. J.A. Croson Co.***

City of Richmond v. J.A. Croson Co. established the constitutional contours of permissible race-based public contracting programs. Reversing long established law, the United States Supreme Court for the first time extended the highest level of judicial examination from measures designed to limit the rights and opportunities of minorities to legislation that benefits these victims of discrimination. Strict scrutiny requires that a government entity demonstrate a strong basis in evidence for its compelling interest in remedying identified discrimination²⁰⁸ and that the measures adopted to remedy that discrimination are narrowly tailored to that evidence.²⁰⁹

The Court struck down Richmond’s minority-owned business enterprise (“MBE”) policy that required prime contractors on City construction contracts to subcontract a minimum of 30 percent of the project to MBEs. A business located anywhere in the country that was at least 51 percent owned and controlled by “Black, Spanish-speaking, Oriental, Indian, Eskimo, or Aleut” citizens was eligible to participate. The policy was adopted after a public hearing at which no direct evidence was presented that the City had discriminated in awarding contracts or that its prime contractors had discriminated against minority subcontractors. The only evidence before the City Council was: (a) Richmond’s general population was 50 percent Black, yet only 0.67 percent of its prime construction contracts were awarded to MBEs; (b) local contractors’ associations were virtually all White; (c) the City Attorney’s opinion that the Plan was constitutional; and (d) general statements describing pervasive racial discrimination in the construction industry at the local, state and national levels.²¹⁰

Plaintiff J.A. Croson Company had submitted the sole bid to furnish and install stainless steel urinals and water closets in the Richmond city jail. Since the fixtures amounted to 75 percent of the total contract price, Croson had to find an MBE subcontractor to supply them in order to meet the 30 percent set-aside requirement. Croson was unable to identify any minority suppliers that were interested in or able to submit a timely quote. The one quote Croson eventually did receive came three weeks after the bid opening from an MBE supplier that was not an authorized dealer for either of the two specified manufacturers and was approximately 7 percent more than the price Croson had submitted in its bid. Croson requested a waiver of the 30 percent set-aside from the City or, alternately, a corresponding increase in the contract price to reflect the costs of using the MBE. Richmond refused to grant a waiver or to increase the contract price and also refused to allow an appeal of its decision.²¹¹ Croson sued.

In affirming the court of appeals’ determination that the Plan was unconstitutional, the Court’s plurality opinion rejected both the extreme positions 1) that state or local governments either have *carte blanche* to enact race-based legislation or 2) can only base a program on their own illegal discriminatory conduct.²¹² Instead, the court held that a local government could act to

²⁰⁸ *Croson*, 488 U.S. at 500 (citing *Wygant v. Jackson Board of Education*, 476 U.S. 267, 277 (1986)).

²⁰⁹ *Sherbrooke*, 345 F.3d at 971.

²¹⁰ *Croson*, 488 U.S. at 477-480.

²¹¹ *Id.* at 481-483.

²¹² *Id.* at 486.

address private discrimination within its jurisdiction so long as it does not violate the Fourteenth Amendment of the U.S. Constitution. As the Court stated:

Thus, if the City could show that it had essentially become a “passive participant” in a system of racial exclusion by elements in the local construction industry, we think it clear that the city could take affirmative steps to dismantle such a system. It is beyond dispute that any public entity, state or federal, has a compelling interest in assuring that public dollars, drawn from the tax contributions of all citizens, do not serve to finance the evil of private prejudice.²¹³

Richmond’s evidence was found by the Court to be lacking in almost every respect. The City could not rely upon the disparity between its utilization of MBE prime contractors and Richmond’s general minority population because not all minority persons would be qualified to perform construction projects. Moreover, no data were presented about the availability of MBEs in the relevant market. According to the Court,

In the case at hand, the City has not ascertained how many minority enterprises are present in the local construction market nor the level of their participation in City construction projects. The City points to no evidence that qualified minority contractors have been passed over for City contracts or subcontracts, either as a group or in any individual case. Under such circumstances, it is simply impossible to say that the City has demonstrated “a strong basis in evidence for its conclusion that remedial action was necessary.”²¹⁴

The Court’s analysis to this point had been applied only to African American business owners. The Court next noted that there was “absolutely no evidence” for other minority groups.²¹⁵ “If a 30% set-aside was ‘narrowly tailored’ to compensate black contractors for past discrimination, one may legitimately ask why they are forced to share this ‘remedial relief’ with an Aleut citizen who moves to Richmond tomorrow? The gross overinclusiveness of Richmond’s racial preference strongly impugns the city’s claim of remedial motivation.”²¹⁶

Having found that Richmond had not presented sufficient evidence to satisfy the first prong of strict scrutiny—compelling interest—the Court went on to make two additional observations about the second prong of strict scrutiny—narrow tailoring. First, there was no evidence that Richmond had considered any race-neutral means to increase MBE participation.²¹⁷ Second, the

²¹³ *Id.* at 492 (citations omitted).

²¹⁴ *Id.* at 510, (citing *Wygant*, 476 U.S. at 277).

²¹⁵ *Id.* at 506.

²¹⁶ *Id.* (citing *Wygant*, 476 U.S. at 284 n.13).

²¹⁷ *Id.* at 507 (citing *U.S. v. Paradise*, 480 U.S. at 171).

30 percent figure for the set-aside was not tied to any of the City's evidence, nor was there any consideration of whether an eligible MBE had suffered discrimination.²¹⁸

Apparently recognizing that the opinion might be misconstrued to categorically eliminate any race-conscious contracting efforts, a plurality of the Court explicitly stated:

Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the City of Richmond had evidence before it that nonminority contractors were systematically excluding minority businesses from subcontracting opportunities, it could take action to end the discriminatory exclusion. Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discriminatory exclusion could arise. Under such circumstances, the City could act to dismantle the closed business system by taking appropriate measures against those who discriminate on the basis of race or other illegitimate criteria. In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion.

...Moreover, evidence of a pattern of individual discriminatory acts can, if supported by appropriate statistical proof, lend support to a local government's determination that broader remedial relief is justified.²¹⁹

In the context of MSCAA's disparity study, it is worth considering what evidence was and was not before the Court. First, Richmond presented *no* evidence regarding the availability of MBEs and *no* evidence of MBE utilization that included subcontract activity on City contracts.²²⁰ Nor did Richmond attempt to link the remedy it imposed to any specific evidence beyond the general population of African Americans in the City: "In this case, the city does not even know how many MBE's (sic) in the relevant market are qualified to undertake prime or subcontracting work in public construction projects."²²¹

Further, Richmond made no attempt to narrowly tailor its goal for the procurement at issue to reflect the reality of the project. Arbitrary quotas, and their unyielding application, did not support the stated objective of ensuring equal access to City contracting opportunities. The *Croson* Court said nothing about the constitutionality of flexible subcontracting goals based upon the availability of MBEs to perform the scopes of the contract in the government's local market. The federal DBE program, discussed below, deliberately avoids these pitfalls since it

²¹⁸ *Id.* at 507-508. *See also Grutter*, 539 U.S. at 334 (quotas are not permitted; race must be used in a flexible, non-mechanical way).

²¹⁹ *Id.* at 509.

²²⁰ *Id.* at 502.

²²¹ *Id.*, (citing *Ohio Contractors Ass'n. v. Keip*, 713 F.2d, 167, 171 (6th Cir. 1983)).

“...provides for a flexible system of contracting goals that contrasts sharply with the rigid quotas invalidated in *Croson*.”²²²

While strict scrutiny is designed to require clear articulation of the evidentiary basis for race-based government decision-making and careful adoption of remedies to address discrimination, it does not, as the *Croson* plurality stressed, have to be an impossible test that no proof can meet. Strict scrutiny need not be “fatal in fact.”²²³

4. Strict Scrutiny as Applied to Federal Enactments

In *Adarand v. Peña*,²²⁴ (*Adarand III*) the Court again overruled long settled law and extended the analysis of strict scrutiny under the Due Process Clause of the Fourteenth Amendment to federal legislation. Since that decision, the courts have consistently applied many of the dictates of strict scrutiny to federal enactments such as the DBE Program that govern the Airport’s receipt of FAA funds.²²⁵

In the wake of *Adarand III*, Congress reviewed and revised the DBE Program statute²²⁶ and implementing regulations²²⁷ for federal-aid contracts in the transportation industry. To date, every court that has considered the issue has found the federal regulations to be facially constitutional.²²⁸ To date, the Sixth Circuit Court of Appeals has not opined on these regulations.

Strictly speaking, while binding only upon the DBE Program, these cases also provide important guidance to MSCAA about the types of evidence necessary to establish its compelling interest in continuing its local funds BDD Program (which also relies on Part 26) and how to narrowly tailor that Program. For example, the Fourth Circuit noted with approval that North Carolina’s M/WBE program for state-funded contracts largely mirrored Part 26.²²⁹

Congress had a strong basis in evidence for its conclusion of widespread race discrimination in the construction industry. Relevant evidence before Congress fell into four main categories: (1) evidence of discriminatory barriers to the formation of qualified MBEs, (2) evidence of discriminatory barriers to fair competition between existing MBEs and non-MBEs; (3) evidence from local disparity studies; and (4) evidence from the results of removing affirmative action

²²² *Western States*, 407 F.3d at 994.

²²³ *Adarand III*, 515 U.S. at 237.

²²⁴ *Id.* at, 227.

²²⁵ See, e.g. *Adarand VII*, 228 F.3d at 1155; *Northern Contracting*, 473 F.3d at 717. There are no reported cases concerning the constitutionality of the Airport Concessionaire Disadvantaged Business Enterprise Program. The 2005 revisions to 49 C.F.R. Part 23 were drafted to address *Adarand VII*.

²²⁶ Transportation Equity Act for the 21st Century (TEA-21), Pub. L. No. 105-178 §1101(b), 112 Stat. 107, 113 (1998).

²²⁷ 49 C.F.R. § 26 (1999).

²²⁸ See *Adarand VII*, 228 F.3d at 1155; *Sherbrooke* 345 F.3d at 968; *Western States*, 407 F.3d at 995; *Northern Contracting*, 473 F.3d at 717.

²²⁹ *H.B. Rowe*, 615 F.3d at 236-237.

programs.²³⁰ As the following subsections illustrate, the *Adarand VII* opinion also discussed a great deal of the evidence that was before the Congress contemporaneously to that decision.

a. Evidence Before Congress of Discriminatory Barriers to MBE Formation

- Discriminatory refusal by prime contractors to employ MBEs due to “old boy” networks;²³¹
- Discriminatory barriers to union membership preventing access to needed skills and experience;²³²
- Discriminatory denial of access to capital by banks and venture capitalists;²³³

b. Evidence Before Congress of Discriminatory Barriers to Fair Competition for Existing MBEs

- Discrimination by prime contractors, including pervasiveness of exclusionary business (also known as “old boy”) networks, bid shopping of low bids by MBEs, and refusal to solicit work from MBEs when affirmative action requirements were not present;²³⁴
- Discrimination by suppliers, including offering of special prices and discounts to non-MBEs that are unavailable to MBEs;²³⁵
- Discrimination by surety bonding companies, including higher rates of denial for MBEs, and higher prices for MBEs that weren’t denied.²³⁶

c. Evidence From Local Disparity Studies and Census Data

- Disparities between MBE availability and utilization in government contracting from 39 distinct local disparity studies;²³⁷
- 1987 Census data showing “disproportionately low minority business ownership and receipts for minority-owned business,” that led the U.S. Commission on Minority Business Development to conclude that “minorities are not underrepresented in business

²³⁰ *Adarand VII* 228 F.3d at 1167-1175. See also *Sherbrooke*, 345 F.3d at 969-970; *Western States*, 407 F.3d at 991-993; *Northern Contracting*, 473 F.3d at 720-721, and “Appendix—The Compelling Interest for Affirmative Action in Federal Procurement: A Preliminary Survey,” 61 Fed. Reg. 26050 (May 23, 1996).

²³¹ *Adarand VII*, 228 F.3d at 1168.

²³² *Id.* at 1168-1169.

²³³ *Id.* at 1169-1170.

²³⁴ *Id.* at 1170-1171.

²³⁵ *Id.* at 1172.

²³⁶ *Id.* at 1171-1172.

²³⁷ *Id.* at 1172-1174, (citing the Urban Institute report from Enchautegui, et al. (1996)).

because of choice or chance. Discrimination and benign neglect is the reason why our economy has been denied access to this vital resource.”²³⁸

d. Evidence From the Results of Removing Affirmative Action Programs

- Statistics and studies included in the Congressional Record showing “...ample evidence that when race-conscious public contracting programs are struck down or discontinued, minority business participation in the relevant market drops sharply or even disappears.”²³⁹

It should be noted that Congress has, of course, continued to collect these same types of evidence.²⁴⁰

Next, it is important to note that the federal government has taken significant steps to ensure that the DBE program is narrowly tailored. . 49 C.F.R. § 26 provides that:

- The overall goal must be based upon demonstrable evidence of the number of DBEs ready, willing and able to participate on the recipient’s federally assisted contracts.²⁴¹
- The goal may be adjusted to reflect the availability of DBEs but for the effects of the DBE Program and of discrimination.²⁴²
- The recipient must meet the maximum feasible portion of the goal through race-neutral measures,²⁴³ as well as estimate that portion of the goal it predicts will be met through such measures.²⁴⁴

²³⁸ *Id.* at 1174 (citations omitted).

²³⁹ *Id.* at 1174.

²⁴⁰ *See, e.g.* “The Department of Transportation’s Disadvantaged Business Enterprise Program, Hearing before the U.S. House Committee on Transportation and Infrastructure”; 111th Congress, 1st Sess., 111-18, (2009) and “Minority Contracting: Opportunities and Challenges for Current and Future Minority-Owned Businesses, Hearing before the U.S. House Subcommittee on Government Management, Organization and Procurement of the Committee on Oversight and Government Reform,” 111th Cong. 2nd Sess. 111-148 (2010) (*see esp.* Attachment A to the testimony of David A. Hinson, National Director of the Minority Business Development Agency of the U.S. Department of Commerce: “The Compelling Interest for Race- and Gender Conscious Federal Contracting Programs: An Update to the May 23, 1996 Review of Barriers for Minority- and Women Owned Businesses.”)

²⁴¹ 49 C.F.R. § 26.45(b).

²⁴² *Id.* at § 26.45(d).

²⁴³ *Id.* at § 26.51(a).

²⁴⁴ *Id.* at § 26.51(c).

- The use of quotas is not permitted,²⁴⁵ and set-asides are limited to only extreme circumstances when no other method could reasonably be expected to redress egregious instances of discrimination.²⁴⁶
- The goals are to be adjusted during the year to remain narrowly tailored.²⁴⁷
- Absent bad faith administration of the Program, a recipient cannot be penalized for not meeting its goal.²⁴⁸
- Prior to 2011, eligibility was limited to small firms owned by persons whose net worth is less than \$750,000. This subsection was revised in 2011, subsequent to judicial review, to raise the personal net worth limit to \$1,320,000, which reflected the rise in the Consumer Price Index from 1989.²⁴⁹
- The presumption of social disadvantage for racial and ethnic minorities and women is rebuttable,²⁵⁰ “...wealthy minority owners and wealthy minority firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage.”²⁵¹
- Exemptions from any or all Program requirements are available.²⁵²
- The authorizing legislation is subject to Congressional reauthorization that will ensure periodic public debate.²⁵³

DBE programs that were structured similarly to MSCAA’s DBE and BDD programs and were based upon studies with a methodology similar to that for MSCAA (including the availability analysis and the documentation of disparities in the business formation rates and business earnings of minorities and women compared to similarly situated nonminority males) have been held to be narrowly tailored in their application of Part 26. For example, the Minnesota Department of Transportation (“MnDOT”) relied upon a Study conducted by NERA to set its DBE goal. The Eighth Circuit opined that although the plaintiff attacked the data in the Study as

²⁴⁵ *Id.* at § 26.43(a); *cf.* 49 C.F.R. § 23.61 (“you must not use quotas or set-asides for ACDBE participation in your program.”).

²⁴⁶ *Id.* at § 26.43(b).

²⁴⁷ *Id.* at § 26.51(f).

²⁴⁸ *Id.* at § 26.47(a).

²⁴⁹ *Id.* at § 26.67(a)(2)(i); 76 Fed. Reg. 5086 (2011).

²⁵⁰ *Id.* at § 26.67(a).

²⁵¹ *Sherbrooke*, 345 F.3d. at 973.

²⁵² 49 C.F.R. § 26.15(a).

²⁵³ *Sherbrooke*, 345 F.3d. at 972.

unreliable, “[the plaintiff] failed to establish that better data was available or that MnDOT was otherwise unreasonable in undertaking this thorough analysis and in relying on its results.”²⁵⁴

Likewise, the Seventh Circuit Court of Appeals affirmed the district court’s trial verdict that the Illinois Department of Transportation’s application of Part 26 was narrowly tailored based in large part upon a study and expert trial testimony similar to that utilized for this Study.²⁵⁵ The court found that IDOT had a compelling interest in remedying discrimination in the market area for federally funded highway contracts, and that its DBE Plan was narrowly tailored to that interest and in conformance with the DBE Program regulations.²⁵⁶ To determine whether IDOT met its constitutional and regulatory burdens, the court reviewed the evidence of discrimination against minority and women construction firms in the Illinois area. IDOT had commissioned a NERA Study to meet Part 26’s requirements. Similar to this Study for MSCAA, the IDOT Study included a custom census of the availability of DBEs in IDOT’s market area,²⁵⁷ weighted by the location of IDOT’s contractors and the types of goods and services IDOT procures.

By contrast, in 2005 the Ninth Circuit Court of Appeals considered a challenge to a State’s DBE program which was not supported by a NERA study, or any similar disparity study aimed at determining the existence of discrimination.²⁵⁸ In *Western States*, the Ninth Circuit held that the USDOT DBE program was facially constitutional²⁵⁹ and that Washington State was not required to independently establish a compelling governmental interest for its DBE program since Congress had already done so.²⁶⁰ The court did, however, strike down Washington’s DBE program because of the way that the state applied the program. Specifically, the court found that the State did not have sufficient evidence about discrimination in its own market area to properly narrowly tailor the program.²⁶¹

We also note a 2008 decision from the Federal Circuit Court of Appeals that struck down the U.S. Department of Defense’ (“DOD”) Program for Small Disadvantaged Businesses (“SDBs”).²⁶² That program set an overall annual goal of five percent for DOD contracting with SDBs.²⁶³ The court held that Section 1207,²⁶⁴ which among other race-conscious remedies provided a ten percent bid preference to SDBs, violated strict scrutiny because Congress in 2006

²⁵⁴ *Id.* at 973.

²⁵⁵ *See Northern Contracting*, 473 F.3d at 718-720 (Dr. Wainwright testified as IDOT’s expert witness at the trial).

²⁵⁶ *Id.* at 721.

²⁵⁷ *Id.* at 718-719.

²⁵⁸ *Western States*, 407 F.3d at 1000.

²⁵⁹ *Id.* at 995.

²⁶⁰ *Id.* at 997.

²⁶¹ *Id.* at 1003.

²⁶² *Rothe Development Corporation v. Department of Defense*, 545 F.3d 1023 (Fed. Cir. 2008) (“*Rothe VII*”).

²⁶³ *Id.* at 1026.

²⁶⁴ 10 U.S.C. § 2323.

did not have a strong basis in evidence before it upon which to conclude that the DOD was a passive participant in racial discrimination in relevant markets across the country.²⁶⁵

E. MSCAA's Compelling Interest in Remedying Identified Discrimination in Its Contracting Market Area

1. Definition of MSCAA's Market Area

Croson counsels that a state or local government may only remedy discrimination within its own contracting market area. This Study employs long established economic principles to empirically establish the geographic and industry dimensions of MSCAA's contracting market area in order to ensure that the evidence is narrowly tailored.²⁶⁶ This also complies with Part 26's directive that grantees set goals based on the "relative availability of DBEs in your market."²⁶⁷

2. Examining Disparities Between M/W/DBE Availability and Utilization in MSCAA Contracting

The MSCAA Study also provides the required statistical examination of the availability of minorities and women to participate in the Airport's projects and its history of utilizing M/W/DBEs as contractors either at the subcontract or prime contract level. Simple disparities between the Memphis area's overall minority population and the Airport's and its prime contractors' utilization of minority- and women-owned firms alone are not enough.²⁶⁸ The primary inquiry is whether there are statistically significant disparities between the availability of M/W/DBEs and the utilization of such firms.

Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discriminatory exclusion could arise. Under such circumstances, the city could act to dismantle the closed business system by taking appropriate measures against those who discriminate on the basis of race or other illegitimate criteria. In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion.²⁶⁹

This is known as the "disparity index" or "disparity ratio." This index is calculated by dividing the utilization of M/W/DBEs by the availability of M/W/DBEs. An index less than 100 percent indicates that a given group is being utilized less than would be expected based on its availability.

²⁶⁵ *Rothe VII*, at 1027.

²⁶⁶ *Concrete Works II*, 36 F.3d at 1520 (to confine data to strict geographic boundaries would ignore "economic reality").

²⁶⁷ 49 C.F.R. §26.45(b).

²⁶⁸ *Croson*, 488 U.S. at 501-502.

²⁶⁹ *Croson*, 488 U.S. at 509 (citations omitted).

3. Examining Disparities in the Relevant Markets

It is also important to examine M/W/DBE participation in the absence of affirmative action goals, if such evidence is available.²⁷⁰ Such evidence can be even more compelling and important than the level of M/W/DBE participation in the government's own contracting, especially in cases where an affirmative action program is in place.²⁷¹ Evidence consistent with the presence of race and gender discrimination in the relevant overall markets within which MSCAA's prime contractors and subcontractors operate provides an important indicator of what level of actual M/W/DBE participation might be expected in the absence of government mandated affirmative efforts to contract with M/W/DBEs.²⁷²

The courts are clear that the government has a compelling interest in not financing the "evil of private prejudice" with public dollars.²⁷³ The MSCAA study provides the evidence for an inference of discrimination in numerous ways, including demonstrating that minority and female business utilization is below availability in relevant industries in the public sector, that business formation rates of minorities or women or the business earnings of minorities and women are significantly lower than those of similarly situated white males, that minority or female businesses are denied access to capital at rates significantly higher than those for similarly situated white males, and that nonminority prime contractors engage M/W/DBEs on projects with affirmative action goals but do not do so on projects without such goals. All of these types of evidence are present in MSCAA's Study, and demonstrate that, unless it continues to take action to address discrimination, the government could become a passive participant in a discriminatory marketplace.

4. Anecdotal Evidence

Personal accounts of experiences with discrimination in contracting opportunities are relevant because they speak to the question of whether observed statistical disparities are due to discrimination rather than to some other race-neutral cause or causes. Testimony about discrimination against minority- and women-owned firms by prime contractors, unions, bonding companies, suppliers and lenders has been found relevant regarding barriers both to minority contractors' business formation and to their success on governmental projects.²⁷⁴ While anecdotal evidence is insufficient standing alone, "[p]ersonal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a [government's] institutional practices that exacerbate

²⁷⁰ See, e.g. *Concrete Works IV*, 321 F.3d at 980 ("...disparity studies that measure the use of M/WBES in the relevant marketplace, in addition to those that measure the direct or indirect use of M/WBES in public contracting, are also probative.").

²⁷¹ See, e.g., *id.* at 985 ("Denver presented evidence that the high utilization of MBES on City projects was the result of the program and not the absence of discrimination.").

²⁷² See, e.g., *Western States*, 407 F.3d at 992 (Congress properly considered evidence of the "significant drop in racial minorities' participation in the construction industry" after state and local governments removed affirmative action provisions).

²⁷³ *Croson*, 488 U.S. at 492.

²⁷⁴ *Adarand VII*, 228 F.3d at 1168-1172.

discriminatory market conditions are often particularly probative.”²⁷⁵ Anecdotal evidence “may bring cold numbers convincingly to life.”²⁷⁶

There is no requirement that anecdotal testimony be verified, as befits the role of evidence in legislative decision-making proceedings. “[Plaintiff] offered no rationale as to why a fact finder could not rely on the State’s ‘unverified’ anecdotal data. Indeed, a fact finder could very well conclude that anecdotal evidence need not--indeed cannot--be verified because it is nothing more than a witness’ narrative of an incident told from the witness’ perspective and including the witness’ perceptions.”²⁷⁷ Likewise, the Tenth Circuit held that “Denver was not required to present corroborating evidence and [plaintiff] was free to present its own witnesses to either refute the incidents described by Denver’s witnesses or to relate their own perceptions on discrimination in the Denver construction industry.”²⁷⁸

F. Narrowly Tailoring MSCAA’s M/W/DBE Programs

As stated above, the U.S. Supreme Court has identified several factors that must be considered in determining whether race-and gender-based remedies are narrowly tailored to achieve their purpose:

- Consideration of alternative, race-neutral means to increase M/W/DBE participation;²⁷⁹
- The flexibility of the program requirements, including the availability of waiver provisions;²⁸⁰
- The duration of the proposed relief;²⁸¹
- The relationship of numerical participation goals to the availability of M/W/DBEs in the relevant market;²⁸²
- The impact of the relief on third parties;²⁸³ and
- The overinclusiveness or underinclusiveness of the racial classifications.²⁸⁴

²⁷⁵ *Concrete Works II*, 36 F.3d at 1520.

²⁷⁶ *Id.* at 1521 (citation omitted).

²⁷⁷ *H.B. Rowe*, 615 F.3d at 249 (quotations and citation omitted).

²⁷⁸ *Concrete Works IV*, 321 F.3d at 989.

²⁷⁹ *Croson*, 488 U.S. at 507 (citing *United States v. Paradise*, 480 U.S. 149, 171 (1987)). *See also Adarand III*, 515 U.S. at 237-238.

²⁸⁰ *Paradise*, 480 U.S. at 171. *See also, Adarand VII*, 228 F.3d at 1177.

²⁸¹ *Croson*, 488 U.S. at 498, 509. *See also Paradise*, 480 U.S. at 171.

²⁸² *Paradise*, 480 U.S. at 171.

²⁸³ *Id.*

1. Race- and Gender-Neutral Alternatives

Race- and gender-neutral²⁸⁵ approaches are a necessary component of a defensible and effective M/W/DBE program.²⁸⁶ Such measures include unbundling of contracts into smaller units, providing technical support, reviewing bid specifications and experience requirements and addressing issues of financing, bonding and insurance, which are important to all small and emerging businesses.²⁸⁷ However, while an entity must give good faith consideration to race-neutral alternatives, strict scrutiny does not require that every race-neutral approach must be implemented and then proven ineffective before race-conscious remedies may be utilized: “Narrow tailoring does not require exhaustion of every conceivable race-neutral alternative, but it does require serious, good faith consideration of workable race-neutral alternatives.”²⁸⁸ As is outlined in Chapter VIII of this report, MSCAA has tried, and continues to operate, a number of race-neutral strategies including: outreach and training, a race-neutral small business program and a race-neutral local business program.

2. Flexibility

It is imperative that remedies not operate as fixed quotas.²⁸⁹ The courts have generally written approvingly of providing waivers for firms that fail to meet the contract goals but make good faith efforts to do so. In *Croson*, the Court referred approvingly to the contract-by-contract waivers used in a program similar to the USDOT’s DBE Program.²⁹⁰ This feature has been central to the holding that the DBE Program meets the narrow tailoring requirement.²⁹¹ Federal regulations, which also apply to the BDD program, require that waivers are available in every instance in which a contract goal applies.²⁹²

3. Duration

Strict scrutiny requires that programs be regularly reviewed to determine whether race-conscious remedies are still warranted. The DBE Program’s periodic review by Congress has been repeatedly held to provide adequate durational limits.²⁹³ MSCAA has periodically conducted

²⁸⁴ *Croson*, 488 U.S. at 506.

²⁸⁵ 49 C.F.R. § 26.5 defines a “race-neutral measure or program is one that is, or can be, used to assist all small businesses. For purposes of this part, *race-neutral* includes gender-neutrality.” (emphasis in original). Section 26.51(b) provides a list of possible race-neutral means to meet DBE goals.

²⁸⁶ *Croson*, 488 U.S. at 507 (Richmond considered no alternatives to a race-based quota).

²⁸⁷ See 49 C.F.R. § 26.51.

²⁸⁸ *Sherbrooke*, 345 F.3d at 972, citing *Grutter*, 539 U.S. at 339 (quotations omitted).

²⁸⁹ *Croson*, 488 U.S. at 507-508. See also *Grutter*, 539 U.S. at 334 (quotas are not permitted; race must be used in a flexible, non-mechanical way).

²⁹⁰ *Id.*, 488 U.S. at 508.

²⁹¹ See, e.g., *Sherbrooke*, 345 F.3d at 972; *Western States*, 407 F.3d at 994.

²⁹² 49 C.F.R. § 26.53,

²⁹³ See, e.g., *Adarand VII*, 228 F.3d at 1179-1180; *Sherbrooke*, 345 F.3d at 972; *Western States*, 407 F.3d at 994.

disparity studies in order to, among other things, evaluate whether there is a continuing need for the BDD Program.²⁹⁴

4. Goal Setting

Numerical goals or benchmarks for M/W/DBE participation must be related to their availability in the relevant market: “The regulations require grantee States to set overall goals based upon the likely number of minority contractors that would have received federally assisted highway contracts but for the effects of past discrimination.”²⁹⁵

The DBE (and ACDBE) regulations, which also apply to MSCAA’s BDD Program, require grant recipients to estimate the availability of DBEs in their market areas in the absence of discrimination and to set goals accordingly.²⁹⁶

5. Sharing of the Burden by Third Parties

Strict scrutiny recognizes that third parties can be made to share some of the burden of the remedy for eradicating racial discrimination, as the court in *Adarand VII* noted,

While at the margin, some DBEs may be hired under the program in lieu of non-DBEs, the possibility that innocent parties will share the burden of a remedial program is itself insufficient to warrant the conclusion that the program is not narrowly tailored. To invalidate the...programs on that basis would be to render strict scrutiny effectively fatal, in contravention of Justice O’Connor’s clear statements to the contrary.²⁹⁷

Similarly, the 9th Circuit noted in *Western States*, “Implementation of the race-conscious contracting goals for which TEA-21 provides will inevitably result in bids submitted by non-DBE firms being rejected in favor of higher bids from DBEs. Although this places a very real burden on non-DBE firms, this fact alone does not invalidate TEA-21. If it did, all affirmative action programs would be unconstitutional because of the burden upon non-minorities.”²⁹⁸

MSCAA’s compliance with 49 C.F.R. Parts 23 and 26 in the operation of its ACDBE and DBE programs, as well as its decision to apply those same regulations to the BDD program, demonstrate the Authority’s efforts to limit the burden imposed upon third parties.

²⁹⁴ Prior to the present Study, MSCAA last completed a comprehensive disparity study in December 2008. See NERA (2008).

²⁹⁵ *Sherbrooke*, 345 F.3d at 972; see also *Western States*, 407 F.3d at 994; cf. *Croson*, 488 U.S. at 502 (“In this case, the city does not even know how many MBE’s in the relevant market are qualified to undertake prime or subcontracting work in public construction projects.”).

²⁹⁶ 49 C.F.R. § 26.45; 49 C.F.R § 23.51.

²⁹⁷ *Adarand VII*, 228 F.3 at 1183; see also *Western States*, 407 F.3d at 995.

²⁹⁸ *Western States*, 407 F.3d at 995 (citations omitted) (TEA-21, or the *Transportation Equity Act for the 21st Century*, P.L. 105-178 (1998) refers to the legislation that authorized federal surface transportation programs and the DBE regulations at the time this case was decided).

6. Over-inclusiveness and Under-inclusiveness of Remedies

The over- or under-inclusiveness of those persons to be included in the program is an additional consideration, and goes to whether the remedies truly target the evil identified. This factor has been interpreted by courts to mean that DBE-type programs must be carefully targeted and must exclude those who are demonstrably not-disadvantaged (such as very wealthy business owners).²⁹⁹ However, narrow tailoring does not require that each group included in the program suffer equally from discrimination.³⁰⁰

The DBE Program's rebuttable presumptions of social and economic disadvantage have been central to the courts' holdings that it is narrowly tailored,

While TEA-21 creates a rebuttable presumption that members of certain racial minorities fall within that class, the presumption is rebuttable, wealthy minority owners and wealthy minority-owned firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor.”³⁰¹

Moreover, under the federal regulations anyone can challenge the disadvantaged status of any firm.³⁰² Again, MSCAA is bound by these regulations in the application of its DBE and ACDBE programs and has voluntarily chosen to apply the same rules and restrictions to its BDD Program. Moreover, as this study illustrates, the statistical and anecdotal evidence, taken together, suggests that each of the racial groups targeted for assistance by MSCAA's DBE, ACDBE and BDD programs have experienced business discrimination in markets in which the MSCAA procures goods and services.

G. Conclusion

This summary of the constitutional law related to race- and gender conscious contracting programs provides a sense of the broad outlines of strict scrutiny as the courts have applied it to date. However, the cases are complex and the area of law continues to evolve. It is critically important that MSCAA continue to monitor legal developments and consult counsel with respect to the specific application of the law to its own policies and programs.

²⁹⁹ This final factor was not among those articulated in *Paradise*, but has been added based on the discussion in *Croson*. See, e.g., *Adarand VII*, 228 F.3d at 1183-1187 (noting that *Croson* includes over- and under-inclusiveness in the narrow tailoring factors).

³⁰⁰ *Concrete Works IV*, 321 F.3d at 971 (“The district court, however, apparently believed Denver could not satisfy its burden of introducing strong evidence unless it was able to show that each group suffered *equally* from discrimination. *Croson* imposes no such requirement.”) (emphasis in original)..

³⁰¹ *Sherbrooke*, 345 F.3d at 972-973; see also *Adarand VII*, 228 F.3d at 1183-1184 (personal net worth limit is element of narrow tailoring).

³⁰² 49 C.F.R. §26.87.

Table of Authorities

1. Cases

Adarand Constructors, Inc. v. Peña, 515 U.S. 200 (1995) (“*Adarand III*”).

Adarand Constructors, Inc. v. Slater, 228 F.3d 1147 (10th Cir. 2000) (“*Adarand VII*”), *cert. dismissed as improvidently granted*, 534 U.S. 103 (2001).

Associated Utility Contractors of Maryland, Inc. v. Mayor of Baltimore, 83 F.Supp.2d 613 (D. Md. 2000).

Brunet v. City of Columbus, et al., 1 F.3d 390 (6th Cir. 1993), *cert. denied sub nom. Brunet v. Tucker*, 510 U.S. 1164 (1994).

Builders Ass’n of Greater Chicago v. County of Cook, 256 F.3d 642 (7th Cir. 2001).

City of Richmond v. J.A. Croson Co., 488 U.S. 469 (1989).

Concrete Works of Colorado, Inc. v. City and County of Denver, et al. (“*Concrete Works II*”), 36 F.3d 1513 (10th Cir. 2003).

Concrete Works of Colorado, Inc. v. City and County of Denver, et al. (“*Concrete Works IV*”), 321 F.3d 950 (10th Cir. 2003), *cert. denied*, 540 U.S. 1027 (2003).

Conlin v. Blanchard, 890 F.2d 811 (6th Cir. 1989).

Contractors Ass’n of Eastern Pennsylvania v. City of Philadelphia, 6 F.3d 990 (3rd Cir. 1993).

Coral Construction Co. v. King County, 941 F.2d 910, 930-931 (9th Cir. 1991).

Engineering Contractors Ass’n of South Florida, Inc. v. Metropolitan Dade County, 122 F.3d 895 (11th Cir. 1997).

Grutter v. Bollinger, 539 U.S. 306, 333 (2003).

H. B. Rowe Company, v. Tippet, et al., 615 F.3d 233 (4th Cir. 2010).

Harrison & Burrowes Bridge Constructors, v. Mario M. Cuomo, 981 F.2d 50 (2nd Cir. 1992).

Michigan Road Builders Ass’n v. Milliken, et al., 834 F.2d 583 (6th Cir. 1987).

Milwaukee County Pavers Ass’n, v. Fiedler, 922 F.2d 419, 422 (7th Cir. 1991).

Northern Contracting, Inc. v. Illinois, et al., 473 F.3d 715 (7th Cir. 2007).

Ohio Contractors Ass’n, v. Keip, 713 F.2d 167, 171 (6th Cir. 1983).

Rothe Development Corporation v. U.S. Department of Defense, 545 F.3d 1023 (Fed. Cir. 2008) (“*Rothe VII*”).

Sherbrooke Turf, Inc. v. Minnesota Department of Transportation, 345 F.3d 964 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004).

United States v. Paradise, et al., 480 U.S. 149 (1987).

United States v. Virginia, et al., 518 U.S. 515 (1996).

W.H. Scott Construction Co. v. City of Jackson, Mississippi, 199 F.3d 206 (5th Cir. 1999).

Western States Paving Co., v. Washington Department of Transportation, 407 F.3d 983 (9th Cir. 2005), *cert. denied sub nom. City of Vancouver v. Western States Paving*, 546 U.S. 1170 (2006).

Wygant, v. Jackson Board of Education, 476 U.S. 267 (1986).

2. Statutes

10 U.S.C. § 2323.

Transportation Equity Act for the 21st Century (“TEA-21”), Pub. L. No. 105-178 §1011(b), 112 Stat. 107, 113 (1998).

3. Regulations

49 C.F.R. § 23

49 C.F.R. § 26

4. Reports

Enchautegui, Maria E., M. Fix, P. Loprest, S. von der Lippe and D. Wissoker (1996), *Do minority-owned businesses get a fair share of government contracts?*, Washington, DC: The Urban Institute.

NERA Economic Consulting (2008), *Race, Sex, and Business Enterprise: Evidence from Memphis, Tennessee*.

U.S. Commission on Civil Rights, (2006), *Disparity Studies as Evidence of Discrimination in Federal Contracting*.

Wainwright, J. and C. Holt (2010), *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*, Transportation Research Board of the National Academies, NCHRP Report, Issue No. 644.

Appendix C. Master M/W/DBE Directory Sources

A. Entities with lists of M/W/DBE firms that were duplicative of previously collected lists

Arkansas Contractors Licensing Board	City of Murfreesboro, TN Rover Public Transit
Arkansas Department of Emergency Management	Clarksville, TN Transit System
Arkansas Development Finance Authority	Downtown Memphis Commission
Amite County (MS) School District	FedEx
Arkansas Office of State Procurement	First Tennessee Bank
Central Arkansas Transit Authority	International Paper
Central Contractor Registration, Small Business Administration	Jackson, TN Airport Authority
Enterprise, MS School District	Jackson, TN Transit Authority
Little Rock National Airport	Johnson City, TN Transit
Mississippi Emergency Management Agency	Kingsport, TN Area Transit Service
National Association of Women Business Owners, Memphis Chapter	Knoxville Area Transit
Okolona, MS Municipal School District	Memphis Area Transit Authority
City of Memphis Renaissance Business Center	Memphis City Schools
Tennessee Economic Council on Women	Memphis Convention and Visitors Bureau
Tennessee Department of Finance and Administration	Memphis Light, Gas and Water
Tennessee Emergency Management Agency	Methodist Le Bonheur Hospital
United Indian Development Association	Metropolitan Knoxville Airport Authority
University of Tennessee Health Science Center	Nashville Metropolitan Transit Authority
West Memphis Municipal Airport	Shelby County, TN Division of Planning and Development
Bristol, TN Transit	Shelby County, TN Office of Purchasing
Chattanooga Area Regional Transportation Authority	Shelby County, TN Schools
Chattanooga Metropolitan Airport Authority	Smyrna, TN Airport
City of Jackson, TN Economic Development Department	Tennessee Department of Transportation, Aeronautics Division
	Tennessee Department of Transportation, Multimodal Transportation Resources
	Tennessee Valley Authority
	Tri-Cities, Tennessee Airport

B. Entities that had no directory, or their directory did not identify race and gender

African American Business Directory	Forrest County, MS School District
Association for Enterprise Opportunity	Forrest, MS Agricultural High School
American Indian Development Associates	Franklin County, MS Schools
Associated Minority Contractors of America	City of Germantown, TN
Amory, MS School District	Germantown, TN Chamber of Commerce
Alcorn, MS School District	Greene County, MS School District
Asian Women in Business	Greenwood, MS Public Schools
Bartlett, TN Chamber of Commerce	Grenada, MS School District
City of Bartlett, TN	Gulfport, MS Public Schools
Black Business Directory of Memphis	Hancock County, MS School District
Benoit, MS School District	Harrison County, MS School District
Benton County, MS School District	Hattiesburg, MS Public School District
Brownsville-Haywood County, TN	Haywood County, TN
Chamber of Commerce	Haywood County, TN Highway Department
Brookhaven, MS School District	Hinds County, MS School District
City of Brownsville, TN	Houston, MS School District
Calhoun County, MS School District	Holly Springs, MS Chamber of Commerce
Carroll County, MS School District	Holly Springs, MS School District
Chickasaw County, MS School District	Humphreys County, MS School District
Claiborne County, MS School District	Jackson County, MS School District
Clarke County, MS Chamber of Commerce	City of Jackson, MS
Clinton, MS Public School District	Jackson, TN Energy Authority
Coahoma County, MS School District	Jefferson County, MS Public School District
Copiah, MS School District	City of Jonesboro, Arkansas
Covington County, MS Schools	Kemper County, MS Schools
Corinth, MS School District	Kosciusko, MS School District
Cleveland, MS School District	Lee County, MS School District
Desoto County, MS	Leflore County, MS School District
Durant, MS Public School District	Latino Memphis
Fayette County, TN	Lowndes County, MS School District

Lumberton, MS School District	Pontotoc City, MS School District
Madison County, MS Schools	Prentiss, MS School District
McComb, MS School District	Quitman County, MS School District
Madison County, TN	Quitman, MS School District
Marshall County, MS School District	Richton, MS School District
Mississippi Department of Education	Roane State Community College
Meridian, MS Public Schools	Southern College of Optometry
Memphis Hispanic Chamber of Commerce	City of Senatobia, MS
City of Millington, TN	Shaw, MS School District
Memphis Minority Online	Shelby County, TN
Monroe County, MS School District	Southaven, MS Chamber of Commerce
Montgomery County, MS School District	South Panola, MS School District
Mound Bayou, MS School District	Southwest Tennessee Development District
Native American Business Alliance	State of Tennessee, Business Enterprise Resource Office
National Association of Minority Contractors, Memphis Chapter	Tunica County, MS
Natchez-Adams, MS School District	Women's Business Enterprise National Council
North Central Arkansas Regional Economic Development	Women's Exchange
Neshoba County, MS School District	West Bolivar, MS School District
Newton, MS Municipal School District	West Jasper, MS School District
Newton County, MS School District	Winona, MS School District
National Hispanic Professional Organization	City of West Memphis, AR
North Little Rock Chamber of Commerce	West Point, MS School District
North Bolivar, MS School District	City of Southaven, MS
North Panola, MS School District	Fayette County, TN Chamber of Commerce
North Pike, MS School District	Greater Pine Bluff, Arkansas Chamber of Commerce
Ocean Springs, MS. School District	Institute for Economic Development Census State Data Center
City of Olive Branch, MS	Knox County, TN
U.S. Department of Transportation	Memphis Black Pages
Oxford, MS School District	Middle Tennessee State University
Petal, MS School District	
Picayune, MS School District	

Minority Business Enterprise Legal Defense
and Education Fund
Northeast State, TN Community College
PAL Enterprises, LLC
Southwest Tennessee Community College
Tennessee Board of Regents

Tennessee Economic Development Council
University of Memphis
West Memphis, Arkansas Chamber of
Commerce
Women's Business Center, Inc.
Women's Yellow Pages of Greater St. Louis

C. Entities that were non responsive to repeated contacts

Arkansas Minority Business Development
Roundtable
Attala County, MS School District
Black Business Association of Memphis
Clay County, MS Public Schools
Coahoma, MS Agricultural High School
District
Hazlehurst City, MS School District
Jackson-Madison County African American
Chamber of Commerce
Little Rock Racial and Diversity
Commission
Memphis Minority Business Development
Center
National Association of Minority
Contractors
Nashville Area Hispanic Chamber of
Commerce
Nashville Black Chamber of Commerce
National Association of Women Business
Owners

National Association of Women in
Construction, Memphis Chapter
National Black Chamber of Commerce
National Center for American Indian
Enterprise Development
North Little Rock Economic Development
Corporation
National Minority Business Council Inc.
Rhodes College
Southwest Community College
Tate County, MS Economic Development
Foundation
Tunica, MS Airport Commission
Tupelo, MS Chamber of Commerce
Visible Music College
alt.consulting
Nashville State Community College
Tennessee Latin American Chamber of
Commerce

D. Entities that declined to provide the requested information

Choctaw County, MS Schools
Desoto County, MS
LeMoyne-Owen College

Minority Professional Network
Arkansas-Mississippi Minority Supplier
Development Council

Tennessee Minority Supplier Development Council

National Minority Supplier Development Council

National Association of Women in Construction

National Association of Women in Construction, Little Rock Chapter

National Electrical Contractors Association

National Women Business Owners Corporation

Society of Women Engineers

Tennessee State University

Tennessee Valley Authority Office of Economic Development

U.S. Hispanic Chamber of Commerce

U.S. Pan Asian American Chamber of Commerce

U.S. Women's Chamber of Commerce

Society of Entrepreneurs

Appendix D. Detailed Utilization, Availability & Disparity Tables

This appendix presents DBE utilization, availability, and disparity statistics analogous to those presented in Chapter VI, Tables 6.7 through 6.12, according to detailed NAICS Industry Groups.³⁰³

Twenty-four tables are presented; six each for Construction, AE-CRS, Services, and CSE, respectively. Within each procurement category the first two tables include all contracts regardless of funding source, with the first table using dollars awarded as the metric of utilization and the second table using dollars paid. The next two tables within each procurement category are restricted to federally-assisted contracts, and the final two tables to locally-funded contracts.

³⁰³ Comparable statistics were calculated at the NAICS Industry level as well (five-digit and six-digit NAICS). In the interest of space, these results are not reported here. Four-digit NAICS codes are most comparable to four-digit Standard Industrial Classification (SIC) codes, which were used prior to the advent of the NAICS system.

Table AD.1. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (All Funds) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	5.10	4.08	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	5.10	7.02	72.68
Nonminority female	0.13	15.44	0.84 ****
DBE total	5.23	22.45	23.29 **
Nonresidential Building Construction (NAICS 2362)			
African American	2.13	11.94	17.87
Hispanic	0.00	0.43	0.00
Asian	0.00	1.55	0.00 ***
Native American	54.05	1.98	
Minority	56.18	15.90	
Nonminority female	0.08	8.63	0.96 ****
DBE total	56.27	24.53	
Building Equipment Contractors (NAICS 2382)			
African American	4.99	12.42	40.18
Hispanic	0.33	2.78	11.95
Asian	2.82	0.33	
Native American	0.00	0.68	0.00 ****
Minority	8.14	16.20	50.26
Nonminority female	63.51	8.94	
DBE total	71.65	25.14	
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	35.86	12.12	
Hispanic	0.00	3.16	0.00 ****
Asian	0.00	0.00	
Native American	4.04	1.03	
Minority	39.90	16.30	
Nonminority female	0.23	8.64	2.67 ***
DBE total	40.13	24.94	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Specialty Trade Contractors (NAICS 2389)			
African American	7.96	14.32	55.58
Hispanic	0.00	2.76	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.75	0.00 ****
Minority	7.96	17.83	44.64
Nonminority female	0.20	9.12	2.23 **
DBE total	8.16	26.95	30.29
Utility System Construction (NAICS 2371)			
African American	0.00	3.86	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	4.18	0.00 ****
Native American	0.00	1.77	0.00
Minority	0.00	9.82	0.00 ****
Nonminority female	0.00	13.74	0.00 ****
DBE total	0.00	23.56	0.00 ****
Building Finishing Contractors (NAICS 2383)			
African American	1.94	12.09	16.02
Hispanic	0.00	3.40	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00
Minority	1.94	16.19	11.96 **
Nonminority female	24.17	8.39	
DBE total	26.11	24.58	
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	11.34	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.90	0.00
Native American	0.00	0.90	0.00
Minority	0.00	13.13	0.00 ****
Nonminority female	0.00	11.66	0.00 ****
DBE total	0.00	24.79	0.00 ****
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	52.22	3.19	
Hispanic	0.00	0.00	
Asian	0.00	1.28	0.00 ***
Native American	0.00	0.64	0.00 ***
Minority	52.22	5.11	
Nonminority female	0.00	7.67	0.00 ****
DBE total	52.22	12.78	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	9.92	0.00 ****
Nonminority female	0.00	6.47	0.00 ****
DBE total	0.00	16.39	0.00 ****
General Freight Trucking (NAICS 4841)			
African American	27.39	12.65	
Hispanic	0.00	1.30	0.00
Asian	0.00	4.00	0.00
Native American	0.00	0.08	0.00
Minority	27.39	18.03	
Nonminority female	72.61	7.09	
DBE total	100.00	25.12	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.97	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.19	0.00 ****
Native American	0.00	0.59	0.00 ****
Minority	0.00	4.75	0.00 ****
Nonminority female	0.00	7.13	0.00 ****
DBE total	0.00	11.88	0.00 ****
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	96.10	4.60	
Hispanic	0.00	0.00	
Asian	0.00	2.55	0.00 ****
Native American	0.00	3.27	0.00 ****
Minority	96.10	10.42	
Nonminority female	0.00	8.15	0.00 ****
DBE total	96.10	18.57	
Other Heavy and Civil Engineering Construction (NAICS 2379)			
African American	0.00	15.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.56	0.00
Minority	0.00	16.64	0.00 ****
Nonminority female	25.08	18.63	
DBE total	25.08	35.28	71.10

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	17.90	0.00 ****
Hispanic	0.00	0.70	0.00 ****
Asian	0.00	2.91	0.00 ****
Native American	0.00	1.07	0.00 ****
Minority	0.00	22.58	0.00 ****
Nonminority female	0.00	17.04	0.00 ****
DBE total	0.00	39.61	0.00 ****
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	2.62	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.66	0.00 ****
Native American	0.00	3.43	0.00 ****
Minority	0.00	8.70	0.00 ****
Nonminority female	17.81	10.95	
DBE total	17.81	19.65	90.63
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	22.86	0.00 ****
Hispanic	0.00	4.37	0.00 ****
Asian	0.00	0.00	
Native American	2.52	0.04	
Minority	2.52	27.27	9.25 ***
Nonminority female	43.77	19.03	
DBE total	46.29	46.30	99.98
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	5.27	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.44	0.00 ****
Native American	0.00	2.90	0.00 ****
Minority	0.00	10.61	0.00 ****
Nonminority female	100.00	20.93	
DBE total	100.00	31.54	
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	10.94	0.00 ****
Hispanic	0.00	1.47	0.00 ****
Asian	1.11	2.57	43.19
Native American	0.00	0.54	0.00 ***
Minority	1.11	15.52	7.15 ****
Nonminority female	0.86	15.21	5.67 ****
DBE total	1.97	30.73	6.42 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Support Activities for Crop Production (NAICS 1151)			
African American	0.00	9.86	0.00 ****
Hispanic	0.00	1.41	0.00
Asian	0.00	4.23	0.00
Native American	0.00	0.00	
Minority	0.00	15.49	0.00 ****
Nonminority female	100.00	5.63	
DBE total	100.00	21.13	
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	2.47	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00 ****
Native American	0.00	3.13	0.00 ****
Minority	0.00	8.20	0.00 ****
Nonminority female	95.43	11.63	
DBE total	95.43	19.83	
Employment Services (NAICS 5613)			
African American	0.00	25.05	0.00 ****
Hispanic	0.00	3.83	0.00
Asian	0.00	0.00	
Native American	0.00	0.20	0.00
Minority	0.00	29.08	0.00 ****
Nonminority female	100.00	21.69	
DBE total	100.00	50.77	
Remediation and Other Waste Management Services (NAICS 5629)			
African American	10.86	17.21	63.14
Hispanic	0.00	3.10	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.41	0.00
Minority	10.86	20.71	52.45
Nonminority female	8.17	38.83	21.05 **
DBE total	19.04	59.54	31.97 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	10.74	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00 ****
Native American	0.00	0.79	0.00 ****
Minority	0.00	14.03	0.00 ****
Nonminority female	100.00	25.44	
DBE total	100.00	39.48	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Chemical Product and Preparation Manufacturing (NAICS 3259)			
African American	0.00	6.22	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.71	0.00
Native American	0.00	0.71	0.00
Minority	0.00	7.64	0.00
Nonminority female	0.00	26.96	0.00 ****
DBE total	0.00	34.61	0.00 ****

Source and Notes: *See* Table 6.8.

Table AD.2. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (All Funds) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	6.51	4.08	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	6.51	7.02	92.76
Nonminority female	0.12	15.44	0.79 ****
DBE total	6.63	22.45	29.53 *
Building Equipment Contractors (NAICS 2382)			
African American	5.34	12.43	42.97
Hispanic	0.32	2.78	11.63
Asian	3.11	0.33	
Native American	0.00	0.68	0.00 ****
Minority	8.77	16.21	54.13
Nonminority female	61.45	8.92	
DBE total	70.22	25.13	
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	33.78	12.11	
Hispanic	0.00	3.10	0.00 ****
Asian	0.00	0.00	
Native American	3.53	1.05	
Minority	37.31	16.26	
Nonminority female	0.24	8.53	2.80 ***
DBE total	37.55	24.79	
Nonresidential Building Construction (NAICS 2362)			
African American	4.69	11.79	39.76
Hispanic	0.00	0.39	0.00
Asian	0.00	1.49	0.00 **
Native American	19.64	1.88	
Minority	24.33	15.54	
Nonminority female	0.11	9.00	1.27 ****
DBE total	24.44	24.54	99.59

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Specialty Trade Contractors (NAICS 2389)			
African American	10.89	14.79	73.64
Hispanic	0.00	2.83	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.72	0.00 ****
Minority	10.89	18.33	59.40
Nonminority female	0.24	9.11	2.59 *
DBE total	11.13	27.45	40.54
Utility System Construction (NAICS 2371)			
African American	0.00	3.89	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	4.23	0.00 ****
Native American	0.00	1.77	0.00
Minority	0.00	9.88	0.00 ****
Nonminority female	0.00	13.79	0.00 ****
DBE total	0.00	23.68	0.00 ****
Building Finishing Contractors (NAICS 2383)			
African American	1.96	12.07	16.26 *
Hispanic	0.00	3.40	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00
Minority	1.96	16.18	12.14 ***
Nonminority female	14.49	8.40	
DBE total	16.46	24.58	66.96
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	11.34	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.90	0.00
Native American	0.00	0.90	0.00
Minority	0.00	13.13	0.00 ****
Nonminority female	0.00	11.66	0.00 ****
DBE total	0.00	24.79	0.00 ****
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	44.84	3.19	
Hispanic	0.00	0.00	
Asian	0.00	1.28	0.00 ***
Native American	0.00	0.64	0.00 ***
Minority	44.84	5.11	
Nonminority female	0.00	7.67	0.00 ****
DBE total	44.84	12.78	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	9.92	0.00 ****
Nonminority female	0.00	6.47	0.00 ****
DBE total	0.00	16.39	0.00 ****
General Freight Trucking (NAICS 4841)			
African American	26.53	12.65	
Hispanic	0.00	1.30	0.00
Asian	0.00	4.00	0.00
Native American	0.00	0.08	0.00
Minority	26.53	18.03	
Nonminority female	73.47	7.09	
DBE total	100.00	25.12	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.97	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.19	0.00 ****
Native American	0.00	0.59	0.00 ****
Minority	0.00	4.75	0.00 ****
Nonminority female	0.00	7.13	0.00 ****
DBE total	0.00	11.88	0.00 ****
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	17.92	0.00 ****
Hispanic	0.00	0.70	0.00 ****
Asian	0.00	2.94	0.00 ****
Native American	0.00	1.08	0.00 ****
Minority	0.00	22.64	0.00 ****
Nonminority female	0.00	16.39	0.00 ****
DBE total	0.00	39.03	0.00 ****
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	2.62	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.66	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	8.74	0.00 ****
Nonminority female	15.57	10.84	
DBE total	15.57	19.57	79.55

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Heavy and Civil Engineering Construction (NAICS 2379)			
African American	0.00	15.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.56	0.00
Minority	0.00	16.64	0.00 ****
Nonminority female	31.94	18.63	
DBE total	31.94	35.28	90.54
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	94.75	4.60	
Hispanic	0.00	0.00	
Asian	0.00	2.55	0.00 ****
Native American	0.00	3.27	0.00 ****
Minority	94.75	10.42	
Nonminority female	0.00	8.15	0.00 ****
DBE total	94.75	18.57	
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	10.88	0.00 ****
Hispanic	0.00	1.48	0.00 ****
Asian	1.06	2.65	40.11
Native American	0.00	0.54	0.00 ***
Minority	1.06	15.56	6.84 ****
Nonminority female	1.96	15.28	12.82 ****
DBE total	3.02	30.84	9.80 ****
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	22.86	0.00 ****
Hispanic	0.00	4.37	0.00 ****
Asian	0.00	0.00	
Native American	4.98	0.04	
Minority	4.98	27.27	18.26 *
Nonminority female	56.62	19.03	
DBE total	61.60	46.30	
Support Activities for Crop Production (NAICS 1151)			
African American	0.00	9.86	0.00 ****
Hispanic	0.00	1.41	0.00
Asian	0.00	4.23	0.00
Native American	0.00	0.00	
Minority	0.00	15.49	0.00 ****
Nonminority female	100.00	5.63	
DBE total	100.00	21.13	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	2.47	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00 ****
Native American	0.00	3.13	0.00 ****
Minority	0.00	8.20	0.00 ****
Nonminority female	94.44	11.63	
DBE total	94.44	19.83	
Remediation and Other Waste Management Services (NAICS 5629)			
African American	14.47	17.21	84.08
Hispanic	0.00	3.10	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.41	0.00
Minority	14.47	20.71	69.84
Nonminority female	6.09	38.83	15.68 **
DBE total	20.55	59.54	34.52 ***
Employment Services (NAICS 5613)			
African American	0.00	25.05	0.00 ****
Hispanic	0.00	3.83	0.00
Asian	0.00	0.00	
Native American	0.00	0.20	0.00
Minority	0.00	29.08	0.00 ****
Nonminority female	100.00	21.69	
DBE total	100.00	50.77	
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	10.74	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00 ****
Native American	0.00	0.79	0.00 ****
Minority	0.00	14.03	0.00 ****
Nonminority female	100.00	25.44	
DBE total	100.00	39.48	
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	5.27	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.44	0.00 ****
Native American	0.00	2.90	0.00 ****
Minority	0.00	10.61	0.00 ****
Nonminority female	100.00	20.93	
DBE total	100.00	31.54	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Chemical Product and Preparation Manufacturing (NAICS 3259)			
African American	0.00	6.22	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.71	0.00
Native American	0.00	0.71	0.00
Minority	0.00	7.64	0.00
Nonminority female	0.00	26.96	0.00
DBE total	0.00	34.61	0.00

Source and Notes: See Table 6.8.

Table AD.3. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Federally-Funded) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	6.60	4.08	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	6.60	7.02	93.98
Nonminority female	0.17	15.44	1.09 ****
DBE total	6.76	22.45	30.13 *
Nonresidential Building Construction (NAICS 2362)			
African American	2.15	11.94	17.99
Hispanic	0.00	0.43	0.00
Asian	0.00	1.55	0.00
Native American	54.41	1.98	
Minority	56.56	15.90	
Nonminority female	0.08	8.63	0.97 ****
DBE total	56.65	24.53	
Building Equipment Contractors (NAICS 2382)			
African American	5.43	12.43	43.70
Hispanic	0.38	2.78	13.58
Asian	3.19	0.33	
Native American	0.00	0.68	0.00
Minority	9.00	16.21	55.53
Nonminority female	62.74	8.92	
DBE total	71.74	25.13	
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	36.86	12.06	
Hispanic	0.00	3.16	0.00 ****
Asian	0.00	0.00	
Native American	2.95	1.01	
Minority	39.81	16.24	
Nonminority female	0.24	8.59	2.76 ****
DBE total	40.05	24.83	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Specialty Trade Contractors (NAICS 2389)			
African American	9.39	14.60	64.32
Hispanic	0.00	2.80	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.73	0.00
Minority	9.39	18.13	51.79
Nonminority female	0.24	9.11	2.63 **
DBE total	9.63	27.25	35.35
Building Finishing Contractors (NAICS 2383)			
African American	2.11	12.25	17.25
Hispanic	0.00	3.46	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority	2.11	16.42	12.87 **
Nonminority female	25.64	8.37	
DBE total	27.76	24.78	
Utility System Construction (NAICS 2371)			
African American	0.00	3.73	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.92	0.00
Native American	0.00	1.77	0.00
Minority	0.00	9.42	0.00 ****
Nonminority female	0.00	13.43	0.00 ****
DBE total	0.00	22.85	0.00 ****
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	11.34	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.90	0.00
Native American	0.00	0.90	0.00
Minority	0.00	13.13	0.00
Nonminority female	0.00	11.66	0.00
DBE total	0.00	24.79	0.00
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	57.03	3.19	
Hispanic	0.00	0.00	
Asian	0.00	1.28	0.00
Native American	0.00	0.64	0.00
Minority	57.03	5.11	
Nonminority female	0.00	7.67	0.00 *
DBE total	57.03	12.78	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00
Native American	0.00	3.45	0.00
Minority	0.00	9.92	0.00
Nonminority female	0.00	6.47	0.00
DBE total	0.00	16.39	0.00 ****
General Freight Trucking (NAICS 4841)			
African American	27.60	12.65	
Hispanic	0.00	1.30	0.00
Asian	0.00	4.00	0.00
Native American	0.00	0.08	0.00
Minority	27.60	18.03	
Nonminority female	72.40	7.09	
DBE total	100.00	25.12	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.97	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.19	0.00
Native American	0.00	0.59	0.00
Minority	0.00	4.75	0.00
Nonminority female	0.00	7.13	0.00
DBE total	0.00	11.88	0.00
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	98.39	4.60	
Hispanic	0.00	0.00	
Asian	0.00	2.55	0.00
Native American	0.00	3.27	0.00
Minority	98.39	10.42	
Nonminority female	0.00	8.15	0.00 ****
DBE total	98.39	18.57	
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	17.90	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	2.91	0.00
Native American	0.00	1.07	0.00
Minority	0.00	22.58	0.00
Nonminority female	0.00	17.04	0.00
DBE total	0.00	39.61	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Heavy and Civil Engineering Construction (NAICS 2379)			
African American	0.00	15.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.56	0.00
Minority	0.00	16.64	0.00 ****
Nonminority female	32.14	18.63	
DBE total	32.14	35.28	91.12
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	2.63	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.65	0.00
Native American	0.00	3.75	0.00
Minority	0.00	9.03	0.00 ****
Nonminority female	3.10	9.52	32.52
DBE total	3.10	18.55	16.70
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	5.27	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.44	0.00
Native American	0.00	2.90	0.00
Minority	0.00	10.61	0.00
Nonminority female	100.00	20.93	
DBE total	100.00	31.54	
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	10.90	0.00 ****
Hispanic	0.00	1.48	0.00 ****
Asian	1.19	2.63	45.27
Native American	0.00	0.54	0.00 ***
Minority	1.19	15.55	7.67 ****
Nonminority female	0.93	15.26	6.08 ****
DBE total	2.12	30.82	6.88 ****
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	22.86	0.00 ****
Hispanic	0.00	4.37	0.00
Asian	0.00	0.00	
Native American	3.71	0.04	
Minority	3.71	27.27	13.60 **
Nonminority female	17.31	19.03	90.99
DBE total	21.02	46.30	45.40

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Support Activities for Crop Production (NAICS 1151)			
African American	0.00	9.86	0.00
Hispanic	0.00	1.41	0.00
Asian	0.00	4.23	0.00
Native American	0.00	0.00	
Minority	0.00	15.49	0.00
Nonminority female	100.00	5.63	
DBE total	100.00	21.13	
Employment Services (NAICS 5613)			
African American	0.00	25.05	0.00
Hispanic	0.00	3.83	0.00
Asian	0.00	0.00	
Native American	0.00	0.20	0.00
Minority	0.00	29.08	0.00
Nonminority female	100.00	21.69	
DBE total	100.00	50.77	
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	2.47	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00
Native American	0.00	3.13	0.00
Minority	0.00	8.20	0.00 ****
Nonminority female	96.43	11.63	
DBE total	96.43	19.83	
Remediation and Other Waste Management Services (NAICS 5629)			
African American	11.36	17.21	66.02
Hispanic	0.00	3.10	0.00
Asian	0.00	0.00	
Native American	0.00	0.41	0.00
Minority	11.36	20.71	54.84
Nonminority female	8.48	38.83	21.85 *
DBE total	19.84	59.54	33.33 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	10.74	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00
Native American	0.00	0.79	0.00
Minority	0.00	14.03	0.00 ****
Nonminority female	100.00	25.44	
DBE total	100.00	39.48	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Chemical Product and Preparation Manufacturing (NAICS 3259)			
African American	0.00	6.22	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.71	0.00
Native American	0.00	0.71	0.00
Minority	0.00	7.64	0.00
Nonminority female	0.00	26.96	0.00 ****
DBE total	0.00	34.61	0.00 ****

Source and Notes: See Table 6.8.

Table AD.4. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Federally-Funded) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	8.19	4.08	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	8.19	7.02	
Nonminority female	0.15	15.44	1.00 ****
DBE total	8.35	22.45	37.17
Building Equipment Contractors (NAICS 2382)			
African American	5.84	12.44	46.95
Hispanic	0.37	2.78	13.23
Asian	3.52	0.32	
Native American	0.00	0.68	0.00
Minority	9.73	16.22	59.99
Nonminority female	60.28	8.90	
DBE total	70.01	25.12	
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	38.25	12.06	
Hispanic	0.00	3.10	0.00 ****
Asian	0.00	0.00	
Native American	2.88	1.04	
Minority	41.13	16.20	
Nonminority female	0.24	8.49	2.87 ****
DBE total	41.37	24.69	
Nonresidential Building Construction (NAICS 2362)			
African American	4.75	11.78	40.28
Hispanic	0.00	0.39	0.00
Asian	0.00	1.48	0.00
Native American	19.89	1.87	
Minority	24.64	15.53	
Nonminority female	0.12	9.01	1.29 ****
DBE total	24.75	24.54	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Specialty Trade Contractors (NAICS 2389)			
African American	13.73	15.32	89.62
Hispanic	0.00	2.90	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.68	0.00
Minority	13.73	18.90	72.63
Nonminority female	0.30	9.10	3.27 *
DBE total	14.03	28.01	50.08
Utility System Construction (NAICS 2371)			
African American	0.00	3.75	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.95	0.00
Native American	0.00	1.77	0.00
Minority	0.00	9.47	0.00 ****
Nonminority female	0.00	13.47	0.00 ****
DBE total	0.00	22.95	0.00 ****
Building Finishing Contractors (NAICS 2383)			
African American	2.18	12.26	17.78
Hispanic	0.00	3.48	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00
Minority	2.18	16.45	13.26 ***
Nonminority female	15.25	8.37	
DBE total	17.43	24.82	70.22
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	11.34	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.90	0.00
Native American	0.00	0.90	0.00
Minority	0.00	13.13	0.00
Nonminority female	0.00	11.66	0.00
DBE total	0.00	24.79	0.00
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	49.59	3.19	
Hispanic	0.00	0.00	
Asian	0.00	1.28	0.00
Native American	0.00	0.64	0.00
Minority	49.59	5.11	
Nonminority female	0.00	7.67	0.00 *
DBE total	49.59	12.78	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00
Native American	0.00	3.45	0.00
Minority	0.00	9.92	0.00
Nonminority female	0.00	6.47	0.00
DBE total	0.00	16.39	0.00 ****
General Freight Trucking (NAICS 4841)			
African American	26.74	12.65	
Hispanic	0.00	1.30	0.00
Asian	0.00	4.00	0.00
Native American	0.00	0.08	0.00
Minority	26.74	18.03	
Nonminority female	73.26	7.09	
DBE total	100.00	25.12	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.97	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.19	0.00
Native American	0.00	0.59	0.00
Minority	0.00	4.75	0.00
Nonminority female	0.00	7.13	0.00
DBE total	0.00	11.88	0.00
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	17.92	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	2.94	0.00
Native American	0.00	1.08	0.00
Minority	0.00	22.64	0.00
Nonminority female	0.00	16.39	0.00
DBE total	0.00	39.03	0.00 ****
Other Heavy and Civil Engineering Construction (NAICS 2379)			
African American	0.00	15.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.56	0.00
Minority	0.00	16.64	0.00 ****
Nonminority female	32.90	18.63	
DBE total	32.90	35.28	93.25

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	97.91	4.60	
Hispanic	0.00	0.00	
Asian	0.00	2.55	0.00
Native American	0.00	3.27	0.00
Minority	97.91	10.42	
Nonminority female	0.00	8.15	0.00 ****
DBE total	97.91	18.57	
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	2.66	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.66	0.00
Native American	0.00	3.55	0.00
Minority	0.00	8.88	0.00 ****
Nonminority female	2.61	10.33	25.26
DBE total	2.61	19.21	13.58
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	10.83	0.00 ****
Hispanic	0.00	1.49	0.00 ****
Asian	1.14	2.73	41.95
Native American	0.00	0.55	0.00 ***
Minority	1.14	15.60	7.33 ****
Nonminority female	2.10	15.34	13.72 ****
DBE total	3.25	30.94	10.50 ****
Support Activities for Crop Production (NAICS 1151)			
African American	0.00	9.86	0.00
Hispanic	0.00	1.41	0.00
Asian	0.00	4.23	0.00
Native American	0.00	0.00	
Minority	0.00	15.49	0.00
Nonminority female	100.00	5.63	
DBE total	100.00	21.13	
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	22.86	0.00 ****
Hispanic	0.00	4.37	0.00
Asian	0.00	0.00	
Native American	8.48	0.04	
Minority	8.48	27.27	31.10 **
Nonminority female	26.12	19.03	
DBE total	34.60	46.30	74.74

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Employment Services (NAICS 5613)			
African American	0.00	25.05	0.00
Hispanic	0.00	3.83	0.00
Asian	0.00	0.00	
Native American	0.00	0.20	0.00
Minority	0.00	29.08	0.00
Nonminority female	100.00	21.69	
DBE total	100.00	50.77	
Remediation and Other Waste Management Services (NAICS 5629)			
African American	14.97	17.21	87.02
Hispanic	0.00	3.10	0.00
Asian	0.00	0.00	
Native American	0.00	0.41	0.00
Minority	14.97	20.71	72.29
Nonminority female	6.24	38.83	16.08 *
DBE total	21.22	59.54	35.63 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	10.74	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00
Native American	0.00	0.79	0.00
Minority	0.00	14.03	0.00 ****
Nonminority female	100.00	25.44	
DBE total	100.00	39.48	
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	2.47	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00
Native American	0.00	3.13	0.00
Minority	0.00	8.20	0.00 ****
Nonminority female	95.48	11.63	
DBE total	95.48	19.83	
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	5.27	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.44	0.00
Native American	0.00	2.90	0.00
Minority	0.00	10.61	0.00
Nonminority female	100.00	20.93	
DBE total	100.00	31.54	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Chemical Product and Preparation Manufacturing (NAICS 3259)			
African American	0.00	6.22	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.71	0.00
Native American	0.00	0.71	0.00
Minority	0.00	7.64	0.00
Nonminority female	0.00	26.96	0.00
DBE total	0.00	34.61	0.00
Alumina and Aluminum Production and Processing (NAICS 3313)			
African American	0.00	4.95	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00
Nonminority female	0.00	11.88	0.00
DBE total	0.00	19.80	0.00 ****

Source and Notes: See Table 6.8.

Table AD.5. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Locally-Funded) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.25	4.08	6.23
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	0.25	7.02	3.62
Nonminority female	0.00	15.44	0.00 ****
DBE total	0.25	22.45	1.13 **
Building Equipment Contractors (NAICS 2382)			
African American	1.78	12.36	14.38 **
Hispanic	0.00	2.76	0.00 ****
Asian	0.12	0.35	34.84
Native American	0.00	0.68	0.00 ****
Minority	1.90	16.16	11.76 ****
Nonminority female	69.12	9.08	
DBE total	71.01	25.24	
Utility System Construction (NAICS 2371)			
African American	0.00	4.28	0.00
Hispanic	0.00	0.00	
Asian	0.00	5.00	0.00
Native American	0.00	1.78	0.00
Minority	0.00	11.05	0.00 ****
Nonminority female	0.00	14.71	0.00 ****
DBE total	0.00	25.77	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Building Finishing Contractors (NAICS 2383)			
African American	0.00	10.25	0.00 ****
Hispanic	0.00	2.61	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.74	0.00
Minority	0.00	13.59	0.00 ****
Nonminority female	7.92	8.68	91.30
DBE total	7.92	22.27	35.57
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	14.13	0.00 ****
Hispanic	0.00	2.92	0.00 ****
Asian	0.00	0.00	
Native American	43.12	1.67	
Minority	43.12	18.72	
Nonminority female	0.00	10.47	0.00 ****
DBE total	43.12	29.19	
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	22.86	0.00 ****
Hispanic	0.00	4.37	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.04	0.00
Minority	0.00	27.27	0.00 ****
Nonminority female	100.00	19.03	
DBE total	100.00	46.30	
Other Heavy and Civil Engineering Construction (NAICS 2379)			
African American	0.00	15.08	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.56	0.00
Minority	0.00	16.64	0.00
Nonminority female	0.00	18.63	0.00
DBE total	0.00	35.28	0.00
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	0.00	3.19	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.28	0.00 ****
Native American	0.00	0.64	0.00
Minority	0.00	5.11	0.00 ****
Nonminority female	0.00	7.67	0.00 ****
DBE total	0.00	12.78	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	2.56	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.65	0.00 ****
Native American	0.00	3.29	0.00 ****
Minority	0.00	8.50	0.00 ****
Nonminority female	66.80	11.66	
DBE total	66.80	20.16	
Nonresid. Building Constr. (NAICS 2362)			
African American	0.00	12.12	0.00 ****
Hispanic	0.00	0.47	0.00
Asian	0.00	1.62	0.00
Native American	0.00	2.09	0.00
Minority	0.00	16.30	0.00 ****
Nonminority female	0.00	8.20	0.00 ****
DBE total	0.00	24.51	0.00 ****
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	2.47	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00 ****
Native American	0.00	3.13	0.00 ****
Minority	0.00	8.20	0.00 ****
Nonminority female	90.55	11.63	
DBE total	90.55	19.83	
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	9.92	0.00 ****
Nonminority female	0.00	6.47	0.00 ****
DBE total	0.00	16.39	0.00 ****
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	12.79	0.00 ****
Hispanic	0.00	1.60	0.00 ***
Asian	0.00	3.14	0.00 ****
Native American	0.00	0.54	0.00 ***
Minority	0.00	18.08	0.00 ****
Nonminority female	0.00	11.74	0.00 ****
DBE total	0.00	29.82	0.00

Source and Notes: See Table 6.8.

Table AD.6. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Locally-Funded) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.26	4.08	6.43
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	0.26	7.02	3.74
Nonminority female	0.00	15.44	0.00 ****
DBE total	0.26	22.45	1.17 **
Building Equipment Contractors (NAICS 2382)			
African American	1.73	12.36	13.99 **
Hispanic	0.00	2.76	0.00 ****
Asian	0.12	0.35	33.80
Native American	0.00	0.68	0.00 ****
Minority	1.85	16.15	11.43 ****
Nonminority female	69.90	9.09	
DBE total	71.75	25.24	
Utility System Construction (NAICS 2371)			
African American	0.00	4.28	0.00
Hispanic	0.00	0.00	
Asian	0.00	5.00	0.00
Native American	0.00	1.78	0.00
Minority	0.00	11.05	0.00 ****
Nonminority female	0.00	14.71	0.00 ****
DBE total	0.00	25.77	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Building Finishing Contractors (NAICS 2383)			
African American	0.00	10.28	0.00 ****
Hispanic	0.00	2.62	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.73	0.00
Minority	0.00	13.63	0.00 ****
Nonminority female	7.66	8.63	88.70
DBE total	7.66	22.26	34.39
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	14.13	0.00 ****
Hispanic	0.00	2.92	0.00 ****
Asian	0.00	0.00	
Native American	32.42	1.67	
Minority	32.42	18.72	
Nonminority female	0.00	10.47	0.00 ****
DBE total	32.42	29.19	
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	22.86	0.00 ****
Hispanic	0.00	4.37	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.04	0.00
Minority	0.00	27.27	0.00 ****
Nonminority female	100.00	19.03	
DBE total	100.00	46.30	
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	0.00	3.19	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.28	0.00 ****
Native American	0.00	0.64	0.00
Minority	0.00	5.11	0.00 ****
Nonminority female	0.00	7.67	0.00 ****
DBE total	0.00	12.78	0.00 ****
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	2.56	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.65	0.00 ****
Native American	0.00	3.29	0.00 ****
Minority	0.00	8.50	0.00 ****
Nonminority female	66.80	11.66	
DBE total	66.80	20.16	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nonresid. Building Constr. (NAICS 2362)			
African American	0.00	12.12	0.00 ****
Hispanic	0.00	0.47	0.00
Asian	0.00	1.62	0.00
Native American	0.00	2.09	0.00
Minority	0.00	16.30	0.00 ****
Nonminority female	0.00	8.20	0.00 ****
DBE total	0.00	24.51	0.00 ****
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	9.92	0.00 ****
Nonminority female	0.00	6.47	0.00 ****
DBE total	0.00	16.39	0.00 ****
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	2.47	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00 ****
Native American	0.00	3.13	0.00 ****
Minority	0.00	8.20	0.00 ****
Nonminority female	89.52	11.63	
DBE total	89.52	19.83	
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	12.79	0.00 ****
Hispanic	0.00	1.60	0.00 ***
Asian	0.00	3.14	0.00 ****
Native American	0.00	0.54	0.00 ***
Minority	0.00	18.08	0.00 ****
Nonminority female	0.00	11.74	0.00 ****
DBE total	0.00	29.82	0.00 ****
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.58	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.63	0.00 ****
Native American	0.00	3.39	0.00 ****
Minority	0.00	8.60	0.00 ****
Nonminority female	0.00	11.27	0.00 ****
DBE total	0.00	19.87	0.00 ****

Source and Notes: See Table 6.8.

**Table AD.7. Industry Group Utilization, Availability, and Disparity Results for MSCAA
AE-CRS Contracting (All Funds) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	9.18	12.29	74.67
Hispanic	0.00	1.53	0.00 ****
Asian	6.61	2.59	
Native American	0.00	0.52	0.00 ***
Minority	15.79	16.94	93.23
Nonminority female	4.48	12.65	35.44
DBE total	20.27	29.59	68.52
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.27	15.74	1.72 ****
Hispanic	0.00	1.98	0.00 ****
Asian	0.00	1.49	0.00 ****
Native American	0.00	0.87	0.00 ****
Minority	0.27	20.08	1.35 ****
Nonminority female	53.18	15.21	
DBE total	53.45	35.30	
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****
Printing and Related Support Activities (NAICS 3231)			
African American	44.30	10.13	
Hispanic	0.00	0.00	
Asian	0.00	1.27	0.00 ****
Native American	0.00	1.27	0.00 ****
Minority	44.30	12.66	
Nonminority female	7.47	16.46	45.39
DBE total	51.77	29.11	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.00	9.74	0.00 ****
Hispanic	0.00	1.84	0.00
Asian	0.00	0.73	0.00
Native American	0.00	0.66	0.00
Minority	0.00	12.98	0.00 ****
Nonminority female	99.81	13.22	
DBE total	99.81	26.20	

Source and Notes: See Table 6.8.

**Table AD.8. Industry Group Utilization, Availability, and Disparity Results for MSCAA
AE-CRS Contracting (All Funds) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	11.47	12.23	93.84
Hispanic	0.00	1.61	0.00 ****
Asian	8.60	3.13	
Native American	0.00	0.55	0.00 ***
Minority	20.07	17.52	
Nonminority female	5.48	12.50	43.83
DBE total	25.55	30.02	85.11
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.32	15.75	2.00 ****
Hispanic	0.00	1.98	0.00 **
Asian	0.00	1.50	0.00 **
Native American	0.00	0.87	0.00 **
Minority	0.32	20.11	1.57 ****
Nonminority female	43.58	15.28	
DBE total	43.90	35.39	
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****
Specialized Design Services (NAICS 5414)			
African American	0.00	15.64	0.00 ****
Hispanic	0.00	1.62	0.00
Asian	0.00	1.62	0.00
Native American	0.00	0.72	0.00
Minority	0.00	19.60	0.00 ****
Nonminority female	0.00	21.01	0.00 ****
DBE total	0.00	40.61	0.00 ****

Source and Notes: See Table 6.8.

**Table AD.9. Industry Group Utilization, Availability, and Disparity Results for MSCAA
AE-CRS Contracting (Federally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	11.05	12.31	89.76
Hispanic	0.00	1.61	0.00 ****
Asian	7.94	3.14	
Native American	0.00	0.55	0.00 ***
Minority	18.99	17.61	
Nonminority female	6.48	12.39	52.27
DBE total	25.47	30.00	84.89
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.31	15.75	1.98 ****
Hispanic	0.00	1.96	0.00
Asian	0.00	1.42	0.00
Native American	0.00	0.84	0.00
Minority	0.31	19.96	1.56 ****
Nonminority female	52.60	14.70	
DBE total	52.91	34.66	
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.00	9.74	0.00 ****
Hispanic	0.00	1.84	0.00
Asian	0.00	0.73	0.00
Native American	0.00	0.66	0.00
Minority	0.00	12.98	0.00 ****
Nonminority female	99.81	13.22	
DBE total	99.81	26.20	

Source and Notes: See Table 6.8.

**Table AD.10. Industry Group Utilization, Availability, and Disparity Results for MSCAA
AE-CRS Contracting (Federally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	11.31	12.29	92.02
Hispanic	0.00	1.61	0.00 ****
Asian	8.38	3.15	
Native American	0.00	0.55	0.00 ***
Minority	19.69	17.60	
Nonminority female	6.37	12.42	51.30
DBE total	26.06	30.02	86.80
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.35	15.76	2.24 ***
Hispanic	0.00	1.98	0.00
Asian	0.00	1.51	0.00
Native American	0.00	0.87	0.00
Minority	0.35	20.12	1.75 ****
Nonminority female	43.98	15.27	
DBE total	44.34	35.39	
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****
Specialized Design Services (NAICS 5414)			
African American	0.00	15.64	0.00
Hispanic	0.00	1.62	0.00
Asian	0.00	1.62	0.00
Native American	0.00	0.72	0.00
Minority	0.00	19.60	0.00
Nonminority female	0.00	21.01	0.00
DBE total	0.00	40.61	0.00 ****

Source and Notes: See Table 6.8.

**Table AD.11. Industry Group Utilization, Availability, and Disparity Results for MSCAA
AE-CRS Contracting (Locally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	5.59	12.25	45.67
Hispanic	0.00	1.39	0.00 ***
Asian	4.08	1.54	
Native American	0.00	0.47	0.00
Minority	9.67	15.65	61.81
Nonminority female	0.68	13.16	5.18 ***
DBE total	10.35	28.81	35.93
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.70	0.00 ****
Hispanic	0.00	8.33	0.00 ****
Asian	0.00	0.83	0.00 ****
Native American	0.00	0.41	0.00
Minority	0.00	12.27	0.00 ****
Nonminority female	0.00	17.13	0.00 ****
DBE total	0.00	29.40	0.00 ****
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	12.22	0.00 ****
Hispanic	0.00	1.79	0.00 ****
Asian	0.00	0.89	0.00
Native American	0.00	0.72	0.00
Minority	0.00	15.63	0.00 ****
Nonminority female	57.04	16.06	
DBE total	57.04	31.69	

Source and Notes: See Table 6.8.

**Table AD.12. Industry Group Utilization, Availability, and Disparity Results for MSCAA
AE-CRS Contracting (Locally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	12.16	11.95	
Hispanic	0.00	1.61	0.00 ***
Asian	9.51	3.06	
Native American	0.00	0.56	0.00 ***
Minority	21.67	17.18	
Nonminority female	1.71	12.81	13.33 **
DBE total	23.38	29.99	77.96
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.70	0.00 ****
Hispanic	0.00	8.33	0.00 ****
Asian	0.00	0.83	0.00 ****
Native American	0.00	0.41	0.00
Minority	0.00	12.27	0.00 ****
Nonminority female	0.00	17.13	0.00 ****
DBE total	0.00	29.40	0.00 ****
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	16.00	0.00 ****
Hispanic	0.00	2.04	0.00 ****
Asian	0.00	1.67	0.00 ****
Native American	0.00	0.82	0.00
Minority	0.00	20.53	0.00 ****
Nonminority female	40.23	14.91	
DBE total	40.23	35.44	

Source and Notes: See Table 6.8.

Table AD.13. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (All Funds) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Services to Buildings and Dwellings (NAICS 5617)			
African American	30.18	29.00	
Hispanic	0.00	3.69	0.00 ****
Asian	0.00	0.27	0.00
Native American	0.00	0.22	0.00
Minority	30.18	33.18	90.97
Nonminority female	0.06	21.20	0.30 ****
DBE total	30.25	54.38	55.63
Investigation and Security Services (NAICS 5616)			
African American	94.75	24.33	
Hispanic	0.00	4.46	0.00 ****
Asian	0.00	0.33	0.00
Native American	0.00	0.07	0.00
Minority	94.75	29.19	
Nonminority female	0.00	19.64	0.00 ****
DBE total	94.75	48.83	
Other Personal Services (NAICS 8129)			
African American	0.00	21.76	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.04	0.00
Native American	0.00	1.20	0.00
Minority	0.00	26.00	0.00 ****
Nonminority female	0.00	15.45	0.00
DBE total	0.00	41.45	0.00 ****
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)			
African American	2.54	7.67	33.13
Hispanic	0.00	1.12	0.00
Asian	0.00	1.01	0.00
Native American	0.00	0.00	
Minority	2.54	9.79	25.94
Nonminority female	32.63	4.33	
DBE total	35.17	14.12	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Legal Services (NAICS 5411)			
African American	8.81	10.00	88.10
Hispanic	0.00	1.79	0.00
Asian	0.00	0.65	0.00
Native American	0.00	0.68	0.00
Minority	8.81	13.13	67.09
Nonminority female	1.00	13.81	7.22
DBE total	9.81	26.95	36.40
Insurance Carriers (NAICS 5241)			
African American	0.00	8.06	0.00
Hispanic	0.00	1.00	0.00
Asian	0.00	1.00	0.00
Native American	0.00	0.00	
Minority	0.00	10.05	0.00
Nonminority female	0.00	6.16	0.00
DBE total	0.00	16.20	0.00
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	14.02	0.00 ****
Hispanic	2.23	1.65	
Asian	0.00	0.93	0.00 ****
Native American	0.00	0.67	0.00
Minority	2.23	17.27	12.89 ****
Nonminority female	1.97	17.74	11.11 ****
DBE total	4.20	35.01	11.99 ****
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.12	11.11	1.10 *
Hispanic	26.51	1.66	
Asian	0.00	3.22	0.00 ****
Native American	0.00	0.62	0.00
Minority	26.63	16.60	
Nonminority female	0.00	15.51	0.00 ****
DBE total	26.63	32.11	82.93
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	10.02	0.00
Hispanic	0.00	1.73	0.00
Asian	0.00	0.67	0.00
Native American	0.00	0.61	0.00
Minority	0.00	13.04	0.00
Nonminority female	0.00	14.55	0.00
DBE total	0.00	27.59	0.00

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Financial Investment Activities (NAICS 5239)			
African American	27.64	7.04	
Hispanic	0.00	1.06	0.00
Asian	0.00	1.57	0.00
Native American	0.00	0.00	
Minority	27.64	9.67	
Nonminority female	0.00	2.82	0.00
DBE total	27.64	12.49	
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	56.29	4.18	
Hispanic	0.00	0.00	
Asian	0.00	3.06	0.00 ****
Native American	0.00	3.18	0.00 ****
Minority	56.29	10.42	
Nonminority female	0.00	10.80	0.00 ****
DBE total	56.29	21.22	
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	12.39	12.28	
Hispanic	0.00	1.60	0.00 ****
Asian	22.40	3.23	
Native American	0.00	0.56	0.00 ***
Minority	34.78	17.67	
Nonminority female	3.37	12.60	26.73 **
DBE total	38.15	30.27	
Drycleaning and Laundry Services (NAICS 8123)			
African American	0.07	10.85	0.67 *
Hispanic	0.00	0.00	
Asian	0.00	1.91	0.00 ****
Native American	0.00	0.64	0.00
Minority	0.07	13.40	0.54 ***
Nonminority female	0.00	8.94	0.00 ****
DBE total	0.07	22.34	0.33 ****
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)			
African American	0.00	18.04	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.04	0.00
Native American	0.00	1.01	0.00
Minority	0.00	22.09	0.00
Nonminority female	0.00	14.17	0.00
DBE total	0.00	36.26	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Waste Treatment and Disposal (NAICS 5622)			
African American	0.00	20.80	0.00 ****
Hispanic	0.00	4.23	0.00
Asian	0.00	0.00	
Native American	0.00	0.22	0.00
Minority	0.00	25.25	0.00 ****
Nonminority female	0.00	22.23	0.00 ****
DBE total	0.00	47.49	0.00 ****
Nondepository Credit Intermediation (NAICS 5222)			
African American	0.00	7.21	0.00
Hispanic	0.00	0.99	0.00
Asian	0.00	0.99	0.00
Native American	0.00	0.00	
Minority	0.00	9.18	0.00 ****
Nonminority female	0.00	7.10	0.00
DBE total	0.00	16.29	0.00 ****
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	9.69	0.00
Hispanic	0.00	1.38	0.00
Asian	0.00	4.15	0.00
Native American	0.00	0.00	
Minority	0.00	15.23	0.00
Nonminority female	100.00	5.54	
DBE total	100.00	20.77	
Building Equipment Contractors (NAICS 2382)			
African American	0.00	12.14	0.00 ****
Hispanic	0.00	2.78	0.00 ****
Asian	0.00	0.19	0.00 ****
Native American	0.00	0.70	0.00 ****
Minority	0.00	15.81	0.00 ****
Nonminority female	14.96	8.76	
DBE total	14.96	24.57	60.91
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	33.82	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.22	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	0.00	35.64	0.00 ****
Nonminority female	0.00	15.00	0.00 ****
DBE total	0.00	50.65	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	6.29	0.00 ****
Hispanic	0.00	1.00	0.00 ****
Asian	0.00	1.00	0.00 ****
Native American	0.00	3.42	0.00 ****
Minority	0.00	11.72	0.00 ****
Nonminority female	0.00	2.64	0.00 ****
DBE total	0.00	14.36	0.00 ****
Consumer Goods Rental (NAICS 5322)			
African American	0.00	6.66	0.00 ****
Hispanic	0.00	0.98	0.00
Asian	0.00	0.98	0.00
Native American	0.00	1.64	0.00
Minority	0.00	10.26	0.00 ****
Nonminority female	0.00	6.63	0.00 ****
DBE total	0.00	16.90	0.00 ****
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.51	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	3.25	0.00 ****
Minority	0.00	8.33	0.00 ****
Nonminority female	0.00	9.18	0.00 ****
DBE total	0.00	17.51	0.00 ****
Other Support Services (NAICS 5619)			
African American	46.50	23.20	
Hispanic	0.00	4.20	0.00 ****
Asian	0.00	0.02	0.00
Native American	0.00	0.17	0.00
Minority	46.50	27.58	
Nonminority female	0.00	20.63	0.00 ****
DBE total	46.50	48.21	96.44

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00 ****
Hispanic	0.00	0.89	0.00 ****
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.00	
Minority	0.00	12.95	0.00 ****
Nonminority female	0.00	8.38	0.00 ****
DBE total	0.00	21.33	0.00 ****
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.97	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.19	0.00 ****
Native American	0.00	0.59	0.00 ****
Minority	0.00	4.75	0.00 ****
Nonminority female	0.00	7.13	0.00 ****
DBE total	0.00	11.88	0.00 ****
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	13.89	0.00 ****
Hispanic	0.00	1.57	0.00 ****
Asian	0.00	3.16	0.00 ****
Native American	0.00	1.41	0.00 ****
Minority	0.00	20.03	0.00 ****
Nonminority female	4.12	11.92	34.59 ****
DBE total	4.12	31.95	12.91 ****
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	4.64	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	2.89	0.00 ****
Minority	0.00	10.10	0.00 ****
Nonminority female	0.00	18.66	0.00 ****
DBE total	0.00	28.76	0.00 ****
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	4.03	0.00 ****
Hispanic	0.00	1.67	0.00 ****
Asian	0.00	2.40	0.00 ****
Native American	0.00	3.12	0.00 ****
Minority	0.00	11.21	0.00 ****
Nonminority female	0.00	10.77	0.00 ****
DBE total	0.00	21.98	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Printing and Related Support Activities (NAICS 3231)			
African American	9.19	14.05	65.42
Hispanic	0.00	0.00	
Asian	0.00	0.78	0.00 ****
Native American	0.00	1.45	0.00 ****
Minority	9.19	16.29	56.45
Nonminority female	22.73	22.84	99.49
DBE total	31.92	39.13	81.58
Personal and Household Goods Repair and Maintenance (NAICS 8114)			
African American	0.00	20.02	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00 ****
Native American	0.00	1.05	0.00 ****
Minority	0.00	24.06	0.00 ****
Nonminority female	0.00	16.23	0.00 ****
DBE total	0.00	40.29	0.00 ****
Offices of Physicians (NAICS 6211)			
African American	0.00	10.56	0.00
Hispanic	0.00	1.34	0.00
Asian	0.00	4.35	0.00
Native American	0.00	0.13	0.00
Minority	0.00	16.38	0.00
Nonminority female	0.00	7.74	0.00
DBE total	0.00	24.12	0.00

Source and Notes: See Table 6.8.

Table AD.14. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (All Funds) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Services to Buildings and Dwellings (NAICS 5617)			
African American	28.10	29.15	96.40
Hispanic	0.00	3.67	0.00 ****
Asian	0.00	0.28	0.00
Native American	0.00	0.22	0.00
Minority	28.10	33.32	84.33
Nonminority female	0.06	21.25	0.30 ****
DBE total	28.16	54.57	51.61
Other Personal Services (NAICS 8129)			
African American	0.00	21.94	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.07	0.00
Native American	0.00	1.21	0.00
Minority	0.00	26.22	0.00 ****
Nonminority female	0.00	14.62	0.00
DBE total	0.00	40.83	0.00 ****
Investigation and Security Services (NAICS 5616)			
African American	92.24	24.20	
Hispanic	0.00	4.40	0.00 ****
Asian	0.00	0.28	0.00
Native American	0.00	0.08	0.00
Minority	92.24	28.96	
Nonminority female	0.00	19.91	0.00 ****
DBE total	92.24	48.87	
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)			
African American	2.64	7.67	34.43
Hispanic	0.00	1.12	0.00
Asian	0.00	1.01	0.00
Native American	0.00	0.00	
Minority	2.64	9.79	26.96
Nonminority female	33.90	4.33	
DBE total	36.54	14.12	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Insurance Carriers (NAICS 5241)			
African American	0.00	8.06	0.00
Hispanic	0.00	1.00	0.00
Asian	0.00	1.00	0.00
Native American	0.00	0.00	
Minority	0.00	10.05	0.00
Nonminority female	0.00	6.16	0.00
DBE total	0.00	16.20	0.00
Legal Services (NAICS 5411)			
African American	5.00	10.00	50.00
Hispanic	0.00	1.79	0.00
Asian	0.00	0.65	0.00
Native American	0.00	0.68	0.00
Minority	5.00	13.13	38.08
Nonminority female	1.04	13.81	7.53
DBE total	6.04	26.95	22.42
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	13.68	0.00 ****
Hispanic	0.21	1.65	12.73
Asian	0.00	0.85	0.00 **
Native American	0.00	0.66	0.00
Minority	0.21	16.84	1.25 ****
Nonminority female	2.13	17.65	12.07 ****
DBE total	2.34	34.48	6.79 ****
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.15	11.11	1.39
Hispanic	33.50	1.66	
Asian	0.00	3.22	0.00 **
Native American	0.00	0.62	0.00
Minority	33.66	16.60	
Nonminority female	0.00	15.51	0.00 ****
DBE total	33.66	32.11	
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	10.02	0.00
Hispanic	0.00	1.73	0.00
Asian	0.00	0.67	0.00
Native American	0.00	0.61	0.00
Minority	0.00	13.04	0.00
Nonminority female	0.00	14.55	0.00
DBE total	0.00	27.59	0.00

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Financial Investment Activities (NAICS 5239)			
African American	27.64	7.04	
Hispanic	0.00	1.06	0.00
Asian	0.00	1.57	0.00
Native American	0.00	0.00	
Minority	27.64	9.67	
Nonminority female	0.00	2.82	0.00
DBE total	27.64	12.49	
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	56.29	4.18	
Hispanic	0.00	0.00	
Asian	0.00	3.06	0.00 ****
Native American	0.00	3.18	0.00 ****
Minority	56.29	10.42	
Nonminority female	0.00	10.80	0.00 ****
DBE total	56.29	21.22	
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	12.39	12.28	
Hispanic	0.00	1.60	0.00 ****
Asian	22.40	3.23	
Native American	0.00	0.56	0.00 ***
Minority	34.78	17.67	
Nonminority female	3.37	12.60	26.73 ***
DBE total	38.15	30.27	
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)			
African American	0.00	18.12	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.07	0.00
Native American	0.00	1.02	0.00
Minority	0.00	22.21	0.00
Nonminority female	0.00	13.42	0.00
DBE total	0.00	35.63	0.00 ****
Waste Treatment and Disposal (NAICS 5622)			
African American	0.00	20.80	0.00 ****
Hispanic	0.00	4.23	0.00
Asian	0.00	0.00	
Native American	0.00	0.22	0.00
Minority	0.00	25.25	0.00 ****
Nonminority female	0.00	22.23	0.00 ****
DBE total	0.00	47.49	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Drycleaning and Laundry Services (NAICS 8123)			
African American	0.12	10.97	1.07 *
Hispanic	0.00	0.00	
Asian	0.00	1.94	0.00 ****
Native American	0.00	0.65	0.00
Minority	0.12	13.55	0.87 ***
Nonminority female	0.00	8.39	0.00 ****
DBE total	0.12	21.94	0.54 ****
Other Support Services (NAICS 5619)			
African American	16.20	21.86	74.12
Hispanic	0.00	4.47	0.00 ****
Asian	0.00	0.04	0.00
Native American	0.00	0.08	0.00
Minority	16.20	26.44	61.28
Nonminority female	0.00	19.46	0.00 ****
DBE total	16.20	45.91	35.30 *
Building Equipment Contractors (NAICS 2382)			
African American	0.00	12.14	0.00 ****
Hispanic	0.00	2.78	0.00 ****
Asian	0.00	0.19	0.00 ****
Native American	0.00	0.70	0.00 ****
Minority	0.00	15.81	0.00 ****
Nonminority female	14.96	8.76	
DBE total	14.96	24.57	60.91
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	33.82	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.22	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	0.00	35.64	0.00 ****
Nonminority female	0.00	15.00	0.00 ****
DBE total	0.00	50.65	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	6.29	0.00 ****
Hispanic	0.00	1.00	0.00 ****
Asian	0.00	1.00	0.00 ****
Native American	0.00	3.42	0.00 ****
Minority	0.00	11.72	0.00 ****
Nonminority female	0.00	2.64	0.00 ****
DBE total	0.00	14.36	0.00 ****
Consumer Goods Rental (NAICS 5322)			
African American	0.00	6.66	0.00 ****
Hispanic	0.00	0.98	0.00
Asian	0.00	0.98	0.00
Native American	0.00	1.64	0.00
Minority	0.00	10.26	0.00 ****
Nonminority female	0.00	6.63	0.00 ****
DBE total	0.00	16.90	0.00 ****
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.51	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	3.25	0.00 ****
Minority	0.00	8.33	0.00 ****
Nonminority female	0.00	9.18	0.00 ****
DBE total	0.00	17.51	0.00 ****
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.97	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.19	0.00 ****
Native American	0.00	0.59	0.00 ****
Minority	0.00	4.75	0.00 ****
Nonminority female	0.00	7.13	0.00 ****
DBE total	0.00	11.88	0.00 ****
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	13.89	0.00 ****
Hispanic	0.00	1.57	0.00 ****
Asian	0.00	3.16	0.00 ****
Native American	0.00	1.41	0.00 ****
Minority	0.00	20.03	0.00 ****
Nonminority female	4.12	11.92	34.59 ****
DBE total	4.12	31.95	12.91 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	4.64	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	2.89	0.00 ****
Minority	0.00	10.10	0.00 ****
Nonminority female	0.00	18.66	0.00 ****
DBE total	0.00	28.76	0.00 ****
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	4.03	0.00 ****
Hispanic	0.00	1.67	0.00 ****
Asian	0.00	2.40	0.00 ****
Native American	0.00	3.12	0.00 ****
Minority	0.00	11.21	0.00 ****
Nonminority female	0.00	10.77	0.00 ****
DBE total	0.00	21.98	0.00 ****
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00 ****
Hispanic	0.00	0.89	0.00 ****
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.00	
Minority	0.00	12.95	0.00 ****
Nonminority female	0.00	8.38	0.00 ****
DBE total	0.00	21.33	0.00 ****
Printing and Related Support Activities (NAICS 3231)			
African American	9.19	14.05	65.42
Hispanic	0.00	0.00	
Asian	0.00	0.78	0.00 ****
Native American	0.00	1.45	0.00 ****
Minority	9.19	16.29	56.45
Nonminority female	22.73	22.84	99.49
DBE total	31.92	39.13	81.58
Personal and Household Goods Repair and Maintenance (NAICS 8114)			
African American	0.00	20.12	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.02	0.00 ****
Native American	0.00	1.06	0.00 ****
Minority	0.00	24.20	0.00 ****
Nonminority female	0.00	15.48	0.00 ****
DBE total	0.00	39.68	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	47.29	0.00 ****
Hispanic	0.00	3.10	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	50.39	0.00 ****
Nonminority female	0.00	12.40	0.00 ****
DBE total	0.00	62.79	0.00 ****
Hardware Manufacturing (NAICS 3325)			
African American	0.00	4.95	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****

Source and Notes: See Table 6.8.

Table AD.15. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (Federally-Funded) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	14.00	0.00 ****
Hispanic	5.48	1.63	
Asian	0.00	0.89	0.00
Native American	0.00	0.67	0.00
Minority	5.48	17.18	31.87
Nonminority female	0.00	18.92	0.00 ****
DBE total	5.48	36.10	15.17 ****
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.00	11.11	0.00 ****
Hispanic	47.57	1.66	
Asian	0.00	3.22	0.00
Native American	0.00	0.62	0.00
Minority	47.57	16.60	
Nonminority female	0.00	15.51	0.00 ****
DBE total	47.57	32.11	
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	14.12	12.21	
Hispanic	0.00	1.62	0.00 ****
Asian	23.11	3.31	
Native American	0.00	0.56	0.00 ***
Minority	37.23	17.70	
Nonminority female	3.84	12.60	30.48 *
DBE total	41.07	30.30	
Legal Services (NAICS 5411)			
African American	100.00	10.00	
Hispanic	0.00	1.79	0.00
Asian	0.00	0.65	0.00
Native American	0.00	0.68	0.00
Minority	100.00	13.13	
Nonminority female	0.00	13.81	0.00
DBE total	100.00	26.95	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00
Hispanic	0.00	0.89	0.00
Asian	0.00	0.89	0.00
Native American	0.00	0.00	
Minority	0.00	12.95	0.00
Nonminority female	0.00	8.38	0.00
DBE total	0.00	21.33	0.00

Source and Notes: See Table 6.8.

Table AD16. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (Federally-Funded) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.00	11.11	0.00 ****
Hispanic	43.12	1.66	
Asian	0.00	3.22	0.00
Native American	0.00	0.62	0.00
Minority	43.12	16.60	
Nonminority female	0.00	15.51	0.00 ****
DBE total	43.12	32.11	
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	13.88	0.00 ****
Hispanic	0.58	1.60	36.02
Asian	0.00	0.85	0.00
Native American	0.00	0.66	0.00
Minority	0.58	16.99	3.40 ****
Nonminority female	0.00	19.16	0.00 ****
DBE total	0.58	36.15	1.60 ****
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	14.12	12.21	
Hispanic	0.00	1.62	0.00 ****
Asian	23.11	3.31	
Native American	0.00	0.56	0.00 ***
Minority	37.23	17.70	
Nonminority female	3.84	12.60	30.48 *
DBE total	41.07	30.30	
Legal Services (NAICS 5411)			
African American	100.00	10.00	
Hispanic	0.00	1.79	0.00
Asian	0.00	0.65	0.00
Native American	0.00	0.68	0.00
Minority	100.00	13.13	
Nonminority female	0.00	13.81	0.00
DBE total	100.00	26.95	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00
Hispanic	0.00	0.89	0.00
Asian	0.00	0.89	0.00
Native American	0.00	0.00	
Minority	0.00	12.95	0.00
Nonminority female	0.00	8.38	0.00
DBE total	0.00	21.33	0.00

Source and Notes: See Table 6.8.

Table AD.17. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (Locally-Funded) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Services to Buildings and Dwellings (NAICS 5617)			
African American	30.18	29.00	
Hispanic	0.00	3.69	0.00 ****
Asian	0.00	0.27	0.00
Native American	0.00	0.22	0.00
Minority	30.18	33.18	90.97
Nonminority female	0.06	21.20	0.30 ****
DBE total	30.25	54.38	55.63
Investigation and Security Services (NAICS 5616)			
African American	94.75	24.33	
Hispanic	0.00	4.46	0.00 ****
Asian	0.00	0.33	0.00
Native American	0.00	0.07	0.00
Minority	94.75	29.19	
Nonminority female	0.00	19.64	0.00 ****
DBE total	94.75	48.83	
Other Personal Services (NAICS 8129)			
African American	0.00	21.76	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.04	0.00
Native American	0.00	1.20	0.00
Minority	0.00	26.00	0.00 ****
Nonminority female	0.00	15.45	0.00
DBE total	0.00	41.45	0.00 ****
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)			
African American	2.54	7.67	33.13
Hispanic	0.00	1.12	0.00
Asian	0.00	1.01	0.00
Native American	0.00	0.00	
Minority	2.54	9.79	25.94
Nonminority female	32.63	4.33	
DBE total	35.17	14.12	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Insurance Carriers (NAICS 5241)			
African American	0.00	8.06	0.00
Hispanic	0.00	1.00	0.00
Asian	0.00	1.00	0.00
Native American	0.00	0.00	
Minority	0.00	10.05	0.00
Nonminority female	0.00	6.16	0.00
DBE total	0.00	16.20	0.00
Legal Services (NAICS 5411)			
African American	4.18	10.00	41.81
Hispanic	0.00	1.79	0.00
Asian	0.00	0.65	0.00
Native American	0.00	0.68	0.00
Minority	4.18	13.13	31.84
Nonminority female	1.05	13.81	7.59
DBE total	5.23	26.95	19.41
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	14.03	0.00 ****
Hispanic	0.00	1.67	0.00 ****
Asian	0.00	0.95	0.00
Native American	0.00	0.67	0.00
Minority	0.00	17.32	0.00 ****
Nonminority female	3.32	16.94	19.62
DBE total	3.32	34.26	9.70 ****
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	10.02	0.00
Hispanic	0.00	1.73	0.00
Asian	0.00	0.67	0.00
Native American	0.00	0.61	0.00
Minority	0.00	13.04	0.00
Nonminority female	0.00	14.55	0.00
DBE total	0.00	27.59	0.00
Other Financial Investment Activities (NAICS 5239)			
African American	27.64	7.04	
Hispanic	0.00	1.06	0.00
Asian	0.00	1.57	0.00
Native American	0.00	0.00	
Minority	27.64	9.67	
Nonminority female	0.00	2.82	0.00
DBE total	27.64	12.49	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	56.29	4.18	
Hispanic	0.00	0.00	
Asian	0.00	3.06	0.00 ****
Native American	0.00	3.18	0.00 ****
Minority	56.29	10.42	
Nonminority female	0.00	10.80	0.00 ****
DBE total	56.29	21.22	
Drycleaning and Laundry Services (NAICS 8123)			
African American	0.07	10.85	0.67 *
Hispanic	0.00	0.00	
Asian	0.00	1.91	0.00 ****
Native American	0.00	0.64	0.00
Minority	0.07	13.40	0.54 ***
Nonminority female	0.00	8.94	0.00 ****
DBE total	0.07	22.34	0.33 ****
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)			
African American	0.00	18.04	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.04	0.00
Native American	0.00	1.01	0.00
Minority	0.00	22.09	0.00
Nonminority female	0.00	14.17	0.00
DBE total	0.00	36.26	0.00 ****
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.27	11.11	2.48 *
Hispanic	0.09	1.66	5.55
Asian	0.00	3.22	0.00
Native American	0.00	0.62	0.00
Minority	0.37	16.60	2.21
Nonminority female	0.00	15.51	0.00 ****
DBE total	0.37	32.11	1.14 ****
Waste Treatment and Disposal (NAICS 5622)			
African American	0.00	20.80	0.00 ****
Hispanic	0.00	4.23	0.00
Asian	0.00	0.00	
Native American	0.00	0.22	0.00
Minority	0.00	25.25	0.00 ****
Nonminority female	0.00	22.23	0.00 ****
DBE total	0.00	47.49	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nondepository Credit Intermediation (NAICS 5222)			
African American	0.00	7.21	0.00
Hispanic	0.00	0.99	0.00
Asian	0.00	0.99	0.00
Native American	0.00	0.00	
Minority	0.00	9.18	0.00 ****
Nonminority female	0.00	7.10	0.00
DBE total	0.00	16.29	0.00 ****
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	9.69	0.00
Hispanic	0.00	1.38	0.00
Asian	0.00	4.15	0.00
Native American	0.00	0.00	
Minority	0.00	15.23	0.00
Nonminority female	100.00	5.54	
DBE total	100.00	20.77	
Building Equipment Contractors (NAICS 2382)			
African American	0.00	12.14	0.00 ****
Hispanic	0.00	2.78	0.00 ****
Asian	0.00	0.19	0.00 ****
Native American	0.00	0.70	0.00 ****
Minority	0.00	15.81	0.00 ****
Nonminority female	14.96	8.76	
DBE total	14.96	24.57	60.91
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	33.82	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.22	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	0.00	35.64	0.00 ****
Nonminority female	0.00	15.00	0.00 ****
DBE total	0.00	50.65	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	6.29	0.00 ****
Hispanic	0.00	1.00	0.00 ****
Asian	0.00	1.00	0.00 ****
Native American	0.00	3.42	0.00 ****
Minority	0.00	11.72	0.00 ****
Nonminority female	0.00	2.64	0.00 ****
DBE total	0.00	14.36	0.00 ****
Consumer Goods Rental (NAICS 5322)			
African American	0.00	6.66	0.00 ****
Hispanic	0.00	0.98	0.00
Asian	0.00	0.98	0.00
Native American	0.00	1.64	0.00
Minority	0.00	10.26	0.00 ****
Nonminority female	0.00	6.63	0.00 ****
DBE total	0.00	16.90	0.00 ****
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.51	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	3.25	0.00 ****
Minority	0.00	8.33	0.00 ****
Nonminority female	0.00	9.18	0.00 ****
DBE total	0.00	17.51	0.00 ****
Other Support Services (NAICS 5619)			
African American	48.27	23.27	
Hispanic	0.00	4.18	0.00 ****
Asian	0.00	0.02	0.00
Native American	0.00	0.17	0.00
Minority	48.27	27.65	
Nonminority female	0.00	20.70	0.00 ****
DBE total	48.27	48.35	99.84
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	12.64	0.00 ****
Hispanic	0.00	1.42	0.00 ***
Asian	17.33	1.83	
Native American	0.00	0.48	0.00
Minority	17.33	16.37	
Nonminority female	0.00	12.54	0.00 ****
DBE total	17.33	28.92	59.91

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.97	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.19	0.00 ****
Native American	0.00	0.59	0.00 ****
Minority	0.00	4.75	0.00 ****
Nonminority female	0.00	7.13	0.00 ****
DBE total	0.00	11.88	0.00 ****
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	13.89	0.00 ****
Hispanic	0.00	1.57	0.00 ****
Asian	0.00	3.16	0.00 ****
Native American	0.00	1.41	0.00 ****
Minority	0.00	20.03	0.00 ****
Nonminority female	1.33	11.92	11.13 ****
DBE total	1.33	31.95	4.15 ****
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	4.64	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	2.89	0.00 ****
Minority	0.00	10.10	0.00 ****
Nonminority female	0.00	18.66	0.00 ****
DBE total	0.00	28.76	0.00 ****
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	4.03	0.00 ****
Hispanic	0.00	1.67	0.00 ****
Asian	0.00	2.40	0.00 ****
Native American	0.00	3.12	0.00 ****
Minority	0.00	11.21	0.00 ****
Nonminority female	0.00	10.77	0.00 ****
DBE total	0.00	21.98	0.00 ****
Printing and Related Support Activities (NAICS 3231)			
African American	9.19	14.05	65.42
Hispanic	0.00	0.00	
Asian	0.00	0.78	0.00 ****
Native American	0.00	1.45	0.00 ****
Minority	9.19	16.29	56.45
Nonminority female	22.73	22.84	99.49
DBE total	31.92	39.13	81.58

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Personal and Household Goods Repair and Maintenance (NAICS 8114)			
African American	0.00	20.02	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00 ****
Native American	0.00	1.05	0.00 ****
Minority	0.00	24.06	0.00 ****
Nonminority female	0.00	16.23	0.00 ****
DBE total	0.00	40.29	0.00 ****
Offices of Physicians (NAICS 6211)			
African American	0.00	10.56	0.00
Hispanic	0.00	1.34	0.00
Asian	0.00	4.35	0.00
Native American	0.00	0.13	0.00
Minority	0.00	16.38	0.00
Nonminority female	0.00	7.74	0.00
DBE total	0.00	24.12	0.00
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00 ****
Hispanic	0.00	0.89	0.00 ****
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.00	
Minority	0.00	12.95	0.00 ****
Nonminority female	0.00	8.38	0.00 ****
DBE total	0.00	21.33	0.00 ****

Source and Notes: See Table 6.8.

Table AD.18. Industry Group Utilization, Availability, and Disparity Results for MSCAA Services Contracting (Locally-Funded) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Services to Buildings and Dwellings (NAICS 5617)			
African American	28.10	29.15	96.40
Hispanic	0.00	3.67	0.00 ****
Asian	0.00	0.28	0.00
Native American	0.00	0.22	0.00
Minority	28.10	33.32	84.33
Nonminority female	0.06	21.25	0.30 ****
DBE total	28.16	54.57	51.61
Other Personal Services (NAICS 8129)			
African American	0.00	21.94	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.07	0.00
Native American	0.00	1.21	0.00
Minority	0.00	26.22	0.00 ****
Nonminority female	0.00	14.62	0.00
DBE total	0.00	40.83	0.00 ****
Investigation and Security Services (NAICS 5616)			
African American	92.24	24.20	
Hispanic	0.00	4.40	0.00 ****
Asian	0.00	0.28	0.00
Native American	0.00	0.08	0.00
Minority	92.24	28.96	
Nonminority female	0.00	19.91	0.00 ****
DBE total	92.24	48.87	
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)			
African American	2.64	7.67	34.43
Hispanic	0.00	1.12	0.00
Asian	0.00	1.01	0.00
Native American	0.00	0.00	
Minority	2.64	9.79	26.96
Nonminority female	33.90	4.33	
DBE total	36.54	14.12	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Insurance Carriers (NAICS 5241)			
African American	0.00	8.06	0.00
Hispanic	0.00	1.00	0.00
Asian	0.00	1.00	0.00
Native American	0.00	0.00	
Minority	0.00	10.05	0.00
Nonminority female	0.00	6.16	0.00
DBE total	0.00	16.20	0.00
Legal Services (NAICS 5411)			
African American	0.00	10.00	0.00
Hispanic	0.00	1.79	0.00
Asian	0.00	0.65	0.00
Native American	0.00	0.68	0.00
Minority	0.00	13.13	0.00 ****
Nonminority female	1.09	13.81	7.92
DBE total	1.09	26.95	4.06
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	13.54	0.00 ****
Hispanic	0.00	1.68	0.00 ****
Asian	0.00	0.84	0.00
Native American	0.00	0.66	0.00
Minority	0.00	16.73	0.00 ****
Nonminority female	3.35	16.72	20.03
DBE total	3.35	33.45	10.01 ****
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	10.02	0.00
Hispanic	0.00	1.73	0.00
Asian	0.00	0.67	0.00
Native American	0.00	0.61	0.00
Minority	0.00	13.04	0.00
Nonminority female	0.00	14.55	0.00
DBE total	0.00	27.59	0.00
Other Financial Investment Activities (NAICS 5239)			
African American	27.64	7.04	
Hispanic	0.00	1.06	0.00
Asian	0.00	1.57	0.00
Native American	0.00	0.00	
Minority	27.64	9.67	
Nonminority female	0.00	2.82	0.00
DBE total	27.64	12.49	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	56.29	4.18	
Hispanic	0.00	0.00	
Asian	0.00	3.06	0.00 ****
Native American	0.00	3.18	0.00 ****
Minority	56.29	10.42	
Nonminority female	0.00	10.80	0.00 ****
DBE total	56.29	21.22	
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)			
African American	0.00	18.12	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.07	0.00
Native American	0.00	1.02	0.00
Minority	0.00	22.21	0.00
Nonminority female	0.00	13.42	0.00
DBE total	0.00	35.63	0.00 ****
Waste Treatment and Disposal (NAICS 5622)			
African American	0.00	20.80	0.00 ****
Hispanic	0.00	4.23	0.00
Asian	0.00	0.00	
Native American	0.00	0.22	0.00
Minority	0.00	25.25	0.00 ****
Nonminority female	0.00	22.23	0.00 ****
DBE total	0.00	47.49	0.00 ****
Drycleaning and Laundry Services (NAICS 8123)			
African American	0.12	10.97	1.07 *
Hispanic	0.00	0.00	
Asian	0.00	1.94	0.00 ****
Native American	0.00	0.65	0.00
Minority	0.12	13.55	0.87 ***
Nonminority female	0.00	8.39	0.00 ****
DBE total	0.12	21.94	0.54 ****
Other Support Services (NAICS 5619)			
African American	16.41	21.87	75.05
Hispanic	0.00	4.46	0.00 ****
Asian	0.00	0.04	0.00
Native American	0.00	0.08	0.00
Minority	16.41	26.45	62.06
Nonminority female	0.00	19.47	0.00 ****
DBE total	16.41	45.92	35.75

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.69	11.11	6.19
Hispanic	0.23	1.66	13.88
Asian	0.00	3.22	0.00
Native American	0.00	0.62	0.00
Minority	0.92	16.60	5.53
Nonminority female	0.00	15.51	0.00 ****
DBE total	0.92	32.11	2.86 **
Building Equipment Contractors (NAICS 2382)			
African American	0.00	12.14	0.00 ****
Hispanic	0.00	2.78	0.00 ****
Asian	0.00	0.19	0.00 ****
Native American	0.00	0.70	0.00 ****
Minority	0.00	15.81	0.00 ****
Nonminority female	14.96	8.76	
DBE total	14.96	24.57	60.91
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	33.82	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.22	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	0.00	35.64	0.00 ****
Nonminority female	0.00	15.00	0.00 ****
DBE total	0.00	50.65	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	12.71	0.00 ****
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	0.00	16.11	0.00 ****
Nonminority female	0.00	9.13	0.00 ****
DBE total	0.00	25.24	0.00 ****
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	6.29	0.00 ****
Hispanic	0.00	1.00	0.00 ****
Asian	0.00	1.00	0.00 ****
Native American	0.00	3.42	0.00 ****
Minority	0.00	11.72	0.00 ****
Nonminority female	0.00	2.64	0.00 ****
DBE total	0.00	14.36	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Consumer Goods Rental (NAICS 5322)			
African American	0.00	6.66	0.00 ****
Hispanic	0.00	0.98	0.00
Asian	0.00	0.98	0.00
Native American	0.00	1.64	0.00
Minority	0.00	10.26	0.00 ****
Nonminority female	0.00	6.63	0.00 ****
DBE total	0.00	16.90	0.00 ****
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.51	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	3.25	0.00 ****
Minority	0.00	8.33	0.00 ****
Nonminority female	0.00	9.18	0.00 ****
DBE total	0.00	17.51	0.00 ****
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	12.64	0.00 ****
Hispanic	0.00	1.42	0.00 ***
Asian	17.33	1.83	
Native American	0.00	0.48	0.00
Minority	17.33	16.37	
Nonminority female	0.00	12.54	0.00 ****
DBE total	17.33	28.92	59.91
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.97	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.19	0.00 ****
Native American	0.00	0.59	0.00 ****
Minority	0.00	4.75	0.00 ****
Nonminority female	0.00	7.13	0.00 ****
DBE total	0.00	11.88	0.00 ****
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	13.89	0.00 ****
Hispanic	0.00	1.57	0.00 ****
Asian	0.00	3.16	0.00 ****
Native American	0.00	1.41	0.00 ****
Minority	0.00	20.03	0.00 ****
Nonminority female	1.33	11.92	11.13 ****
DBE total	1.33	31.95	4.15 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	4.64	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	2.89	0.00 ****
Minority	0.00	10.10	0.00 ****
Nonminority female	0.00	18.66	0.00 ****
DBE total	0.00	28.76	0.00 ****
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	4.03	0.00 ****
Hispanic	0.00	1.67	0.00 ****
Asian	0.00	2.40	0.00 ****
Native American	0.00	3.12	0.00 ****
Minority	0.00	11.21	0.00 ****
Nonminority female	0.00	10.77	0.00 ****
DBE total	0.00	21.98	0.00 ****
Printing and Related Support Activities (NAICS 3231)			
African American	9.19	14.05	65.42
Hispanic	0.00	0.00	
Asian	0.00	0.78	0.00 ****
Native American	0.00	1.45	0.00 ****
Minority	9.19	16.29	56.45
Nonminority female	22.73	22.84	99.49
DBE total	31.92	39.13	81.58
Personal and Household Goods Repair and Maintenance (NAICS 8114)			
African American	0.00	20.12	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.02	0.00 ****
Native American	0.00	1.06	0.00 ****
Minority	0.00	24.20	0.00 ****
Nonminority female	0.00	15.48	0.00 ****
DBE total	0.00	39.68	0.00 ****
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	47.29	0.00 ****
Hispanic	0.00	3.10	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	50.39	0.00 ****
Nonminority female	0.00	12.40	0.00 ****
DBE total	0.00	62.79	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hardware Manufacturing (NAICS 3325)			
African American	0.00	4.95	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****

Source and Notes: See Table 6.8.

Table AD.19. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (All Funds) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.04	3.64	1.15 ****
Hispanic	0.00	0.65	0.00 ****
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.32	0.00 ****
Minority	0.04	10.20	0.41 ****
Nonminority female	14.28	8.18	
DBE total	14.33	18.38	77.95
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)			
African American	6.11	3.23	
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00 ****
Native American	0.00	3.30	0.00 ****
Minority	6.11	9.04	67.61 ***
Nonminority female	0.00	14.70	0.00 ****
DBE total	6.11	23.74	25.74 ****
Automobile Dealers (NAICS 4411)			
African American	8.24	10.79	76.35
Hispanic	0.00	1.35	0.00 ****
Asian	0.00	4.06	0.00 ****
Native American	0.00	0.02	0.00
Minority	8.24	16.22	50.79
Nonminority female	0.00	6.58	0.00 ****
DBE total	8.24	22.80	36.14 *
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	3.31	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.79	0.00 ****
Native American	0.00	3.26	0.00 ****
Minority	0.00	9.36	0.00 ****
Nonminority female	1.83	11.22	16.35 ****
DBE total	1.83	20.58	8.92 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hardware Manufacturing (NAICS 3325)			
African American	0.00	4.95	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)			
African American	0.00	4.04	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00 ****
Native American	0.00	0.81	0.00 ****
Minority	0.00	6.60	0.00 ****
Nonminority female	0.00	10.85	0.00 ****
DBE total	0.00	17.45	0.00 ****
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	2.79	3.44	80.99
Hispanic	0.00	0.78	0.00 ****
Asian	0.00	2.56	0.00 ****
Native American	0.00	3.19	0.00 ****
Minority	2.79	9.98	27.92
Nonminority female	2.40	11.93	20.11 ***
DBE total	5.19	21.91	23.67 ****
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	3.91	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.13	0.00 ****
Native American	0.00	0.56	0.00 ****
Minority	0.00	5.61	0.00 ****
Nonminority female	0.00	13.30	0.00 ****
DBE total	0.00	18.90	0.00 ****
Software Publishers (NAICS 5112)			
African American	0.00	9.08	0.00 ****
Hispanic	0.00	3.65	0.00 ****
Asian	0.00	1.02	0.00
Native American	0.00	0.00	
Minority	0.00	13.75	0.00 ****
Nonminority female	0.00	3.26	0.00 ****
DBE total	0.00	17.02	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.49	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.54	0.00 ****
Native American	0.00	3.26	0.00 ****
Minority	0.00	8.29	0.00 ****
Nonminority female	3.29	11.44	28.78 ****
DBE total	3.29	19.73	16.69 ****
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	4.01	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.61	0.00 ****
Native American	0.00	0.80	0.00
Minority	0.00	6.42	0.00 ****
Nonminority female	0.00	9.63	0.00 ****
DBE total	0.00	16.06	0.00 ****
Computer and Peripheral Equipment Manufacturing (NAICS 3341)			
African American	0.00	17.23	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.44	0.00 ****
Native American	0.00	0.72	0.00 ****
Minority	0.00	19.39	0.00 ****
Nonminority female	0.00	8.64	0.00 ****
DBE total	0.00	28.03	0.00 ****
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	6.72	0.00 ****
Hispanic	0.00	1.02	0.00 ****
Asian	0.00	1.02	0.00 ****
Native American	0.00	0.87	0.00 ****
Minority	0.00	9.63	0.00 ****
Nonminority female	0.40	3.35	11.92
DBE total	0.40	12.97	3.08 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	11.34	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.90	0.00
Native American	0.00	0.90	0.00
Minority	0.00	13.13	0.00 ****
Nonminority female	0.00	11.66	0.00 ****
DBE total	0.00	24.79	0.00 ****
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	19.13	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.34	0.00 ****
Native American	0.00	0.67	0.00
Minority	0.00	21.14	0.00 ****
Nonminority female	0.00	8.90	0.00 ****
DBE total	0.00	30.04	0.00 ****
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)			
African American	0.00	11.83	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.29	0.00 ****
Native American	0.00	0.64	0.00 ****
Minority	0.00	13.76	0.00 ****
Nonminority female	0.00	8.04	0.00 ****
DBE total	0.00	21.80	0.00 ****
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	14.85	0.00 ****
Hispanic	0.00	2.14	0.00 ****
Asian	0.00	2.31	0.00 ****
Native American	0.00	1.23	0.00 ****
Minority	0.00	20.53	0.00 ****
Nonminority female	0.00	17.03	0.00 ****
DBE total	0.00	37.55	0.00 ****
Building Equipment Contractors (NAICS 2382)			
African American	0.00	12.05	0.00 ****
Hispanic	0.00	2.78	0.00 ****
Asian	0.00	0.16	0.00 ****
Native American	0.00	0.70	0.00 ****
Minority	0.00	15.69	0.00 ****
Nonminority female	4.79	8.74	54.84
DBE total	4.79	24.44	19.62 ***

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)			
African American	0.00	7.15	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.89	0.00 ****
Minority	0.00	8.94	0.00 ****
Nonminority female	0.00	11.62	0.00 ****
DBE total	0.00	20.55	0.00 ****
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	3.77	0.00 ****
Hispanic	0.00	1.38	0.00 ****
Asian	0.00	2.44	0.00 ****
Native American	0.00	3.12	0.00 ****
Minority	0.00	10.70	0.00 ****
Nonminority female	0.00	10.67	0.00 ****
DBE total	0.00	21.38	0.00 ****
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.00	4.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	0.00	7.02	0.00 ****
Nonminority female	53.69	15.44	
DBE total	53.69	22.45	
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.25	2.55	9.65
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00 ****
Native American	0.00	4.24	0.00 ****
Minority	0.25	9.39	2.62 ****
Nonminority female	0.00	7.55	0.00 ****
DBE total	0.25	16.93	1.45 ****
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	33.82	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.22	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	0.00	35.64	0.00 ****
Nonminority female	0.00	15.00	0.00 ****
DBE total	0.00	50.65	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	2.63	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.15	0.00 ****
Native American	0.00	4.70	0.00 ****
Minority	0.00	10.48	0.00 ****
Nonminority female	7.09	8.05	88.10
DBE total	7.09	18.53	38.28 ****
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	10.27	0.00 ****
Hispanic	0.00	1.60	0.00 ****
Asian	0.00	4.24	0.00 ****
Native American	0.00	0.04	0.00
Minority	0.00	16.15	0.00 ****
Nonminority female	0.00	6.59	0.00 ****
DBE total	0.00	22.74	0.00 ****
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	0.00	3.85	0.00 ****
Hispanic	0.00	0.43	0.00
Asian	0.00	1.15	0.00 ***
Native American	0.00	0.57	0.00
Minority	0.00	6.00	0.00 ****
Nonminority female	0.00	7.65	0.00 ****
DBE total	0.00	13.65	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	5.46	12.71	42.97
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	5.46	16.11	33.92
Nonminority female	12.50	9.13	
DBE total	17.97	25.24	71.18

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.27	6.70	4.03
Hispanic	0.00	0.00	
Asian	0.00	1.92	0.00 ****
Native American	0.00	1.69	0.00 ****
Minority	0.27	10.31	2.62 ****
Nonminority female	0.69	17.36	3.96 ***
DBE total	0.96	27.67	3.46 ****
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	19.13	0.00 ****
Hispanic	0.00	0.07	0.00
Asian	0.00	3.03	0.00 ****
Native American	0.00	1.08	0.00 ****
Minority	0.00	23.31	0.00 ****
Nonminority female	3.01	15.78	19.10
DBE total	3.01	39.09	7.71
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	3.41	12.41	27.45 ***
Hispanic	0.00	1.49	0.00 ****
Asian	0.00	1.13	0.00 ****
Native American	0.00	2.45	0.00 ****
Minority	3.41	17.49	19.48 ****
Nonminority female	93.97	28.40	
DBE total	97.37	45.89	
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)			
African American	0.00	9.40	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00 ****
Native American	0.00	2.67	0.00 ****
Minority	0.00	14.58	0.00 ****
Nonminority female	98.09	13.44	
DBE total	98.09	28.03	
Home Furnishings Stores (NAICS 4422)			
African American	0.00	11.08	0.00 ****
Hispanic	0.00	1.30	0.00 ****
Asian	0.00	4.06	0.00 ****
Native American	0.00	0.14	0.00
Minority	0.00	16.59	0.00 ****
Nonminority female	0.00	7.80	0.00 ****
DBE total	0.00	24.38	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Facilities Support Services (NAICS 5612)			
African American	100.00	26.15	
Hispanic	0.00	3.94	0.00
Asian	0.00	0.00	
Native American	0.00	0.09	0.00
Minority	100.00	30.18	
Nonminority female	0.00	17.99	0.00 ****
DBE total	100.00	48.18	
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)			
African American	0.00	2.96	0.00 ****
Hispanic	0.00	0.00	
Asian	2.49	2.84	87.44
Native American	0.00	3.26	0.00 ****
Minority	2.49	9.06	27.46 ****
Nonminority female	15.09	7.50	
DBE total	17.58	16.56	
Building Material and Supplies Dealers (NAICS 4441)			
African American	2.10	9.93	21.18 ****
Hispanic	0.00	1.32	0.00 ****
Asian	0.00	4.25	0.00 ****
Native American	0.00	0.35	0.00 ****
Minority	2.10	15.85	13.26 ****
Nonminority female	0.00	7.84	0.00 ****
DBE total	2.10	23.69	8.87 ****
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.41	0.00 ****
Hispanic	0.00	1.34	0.00 ****
Asian	0.00	2.33	0.00 ****
Native American	0.00	0.13	0.00
Minority	0.00	11.21	0.00 ****
Nonminority female	0.00	22.20	0.00 ****
DBE total	0.00	33.41	0.00 ****
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	12.03	0.00 ****
Hispanic	33.78	1.31	
Asian	0.00	4.01	0.00 ****
Native American	0.00	0.03	0.00
Minority	33.78	17.37	
Nonminority female	0.00	7.01	0.00 ****
DBE total	33.78	24.38	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	11.03	0.00 ****
Hispanic	0.00	3.04	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00 ****
Minority	0.00	14.78	0.00 ****
Nonminority female	0.00	10.72	0.00 ****
DBE total	0.00	25.50	0.00 ****
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00 ****
Hispanic	0.00	0.89	0.00 ****
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.00	
Minority	0.00	12.95	0.00 ****
Nonminority female	0.00	8.38	0.00 ****
DBE total	0.00	21.33	0.00 ****
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	3.19	0.00 ****
Hispanic	0.00	4.34	0.00 ****
Asian	0.00	1.14	0.00 ****
Native American	0.00	0.57	0.00 ****
Minority	0.00	9.24	0.00 ****
Nonminority female	0.00	15.18	0.00 ****
DBE total	0.00	24.42	0.00 ****
Electronic Shopping and Mail-Order Houses (NAICS 4541)			
African American	0.00	15.00	0.00 ****
Hispanic	0.00	3.33	0.00 ****
Asian	67.82	1.43	
Native American	0.00	0.00	
Minority	67.82	19.76	
Nonminority female	0.00	28.81	0.00 ****
DBE total	67.82	48.57	
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	20.93	0.00 ****
Hispanic	0.00	4.65	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	25.58	0.00 ****
Nonminority female	0.00	18.60	0.00 ****
DBE total	0.00	44.19	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.00	3.29	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.71	0.00 ****
Native American	0.00	3.63	0.00 ****
Minority	0.00	9.62	0.00 ****
Nonminority female	0.00	7.50	0.00 ****
DBE total	0.00	17.13	0.00 ****
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)			
African American	0.00	14.57	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.64	0.00 ****
Native American	0.00	0.64	0.00 ****
Minority	0.00	15.85	0.00 ****
Nonminority female	1.68	26.16	6.43 ****
DBE total	1.68	42.01	4.00 ****
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	1.26	18.51	6.81 ****
Hispanic	0.00	0.00	
Asian	0.00	3.06	0.00 ****
Native American	0.00	1.15	0.00 ****
Minority	1.26	22.72	5.55 ****
Nonminority female	0.00	16.06	0.00 ****
DBE total	1.26	38.77	3.25 ****
Gasoline Stations (NAICS 4471)			
African American	0.00	9.90	0.00 ****
Hispanic	0.00	1.33	0.00
Asian	0.00	4.74	0.00 ****
Native American	0.00	0.10	0.00
Minority	0.00	16.06	0.00 ****
Nonminority female	0.00	7.07	0.00 ****
DBE total	0.00	23.14	0.00 ****
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	9.92	0.00 ****
Nonminority female	0.00	6.47	0.00 ****
DBE total	0.00	16.39	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)			
African American	0.00	11.31	0.00 ****
Hispanic	0.00	1.21	0.00 ****
Asian	0.00	4.10	0.00 ****
Native American	0.00	0.48	0.00
Minority	0.00	17.09	0.00 ****
Nonminority female	0.00	13.40	0.00 ****
DBE total	0.00	30.49	0.00 ****
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	4.64	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	2.89	0.00 ****
Minority	0.00	10.10	0.00 ****
Nonminority female	18.85	18.66	
DBE total	18.85	28.76	65.55
Investigation and Security Services (NAICS 5616)			
African American	0.00	22.36	0.00 ****
Hispanic	0.00	4.02	0.00 ****
Asian	0.00	0.00	
Native American	0.00	1.82	0.00 ****
Minority	0.00	28.20	0.00 ****
Nonminority female	0.00	20.75	0.00 ****
DBE total	0.00	48.95	0.00 ****
Other Support Services (NAICS 5619)			
African American	0.00	23.13	0.00 ****
Hispanic	0.00	4.21	0.00 ****
Asian	0.00	0.02	0.00
Native American	0.00	0.16	0.00
Minority	0.00	27.53	0.00 ****
Nonminority female	0.00	20.58	0.00 ****
DBE total	0.00	48.11	0.00 ****
Electrical Equipment Manufacturing (NAICS 3353)			
African American	0.00	36.63	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.32	0.00
Native American	0.00	0.66	0.00
Minority	0.00	38.61	0.00 ****
Nonminority female	0.00	7.92	0.00 ****
DBE total	0.00	46.53	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	6.52	0.00 ****
Hispanic	0.00	2.81	0.00 ****
Asian	0.00	1.05	0.00 ****
Native American	0.00	0.00	
Minority	0.00	10.38	0.00 ****
Nonminority female	0.00	2.91	0.00 ****
DBE total	0.00	13.29	0.00 ****
Glass and Glass Product Manufacturing (NAICS 3272)			
African American	0.00	5.06	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.63	0.00
Native American	0.00	0.63	0.00
Minority	0.00	6.33	0.00 ****
Nonminority female	0.00	33.23	0.00 ****
DBE total	0.00	39.56	0.00 ****
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maint. (NAICS 8113)			
African American	0.00	17.42	0.00 ****
Hispanic	0.00	1.32	0.00 ****
Asian	0.00	2.80	0.00 ****
Native American	0.00	2.37	0.00 ****
Minority	0.00	23.91	0.00 ****
Nonminority female	0.00	13.88	0.00 ****
DBE total	0.00	37.78	0.00 ****
Other Food Manufacturing (NAICS 3119)			
African American	0.00	4.95	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00 ****
Native American	0.00	0.99	0.00 ****
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Utility System Construction (NAICS 2371)			
African American	0.00	1.75	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.75	0.00
Minority	0.00	3.51	0.00
Nonminority female	0.00	8.77	0.00 ****
DBE total	0.00	12.28	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Motor Vehicle Dealers (NAICS 4412)			
African American	0.00	8.54	0.00 ****
Hispanic	0.00	1.22	0.00
Asian	0.00	10.33	0.00 ****
Native American	0.00	0.00	
Minority	0.00	20.09	0.00 ****
Nonminority female	0.00	4.88	0.00 ****
DBE total	0.00	24.98	0.00 ****
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)			
African American	0.00	5.68	0.00 ****
Hispanic	0.00	1.91	0.00 ****
Asian	0.00	1.81	0.00 ****
Native American	0.00	0.00	
Minority	0.00	9.41	0.00 ****
Nonminority female	0.00	21.78	0.00 ****
DBE total	0.00	31.19	0.00 ****
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	14.05	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.78	0.00 ****
Native American	0.00	1.45	0.00 ****
Minority	0.00	16.29	0.00 ****
Nonminority female	76.66	22.84	
DBE total	76.66	39.13	
Consumer Goods Rental (NAICS 5322)			
African American	0.00	15.05	0.00 ****
Hispanic	0.00	0.93	0.00
Asian	0.00	0.93	0.00
Native American	0.00	0.70	0.00
Minority	0.00	17.61	0.00 ****
Nonminority female	0.00	3.86	0.00 ****
DBE total	0.00	21.47	0.00 ****
Office Supplies, Stationery, and Gift Stores (NAICS 4532)			
African American	0.00	7.21	0.00 ****
Hispanic	0.00	0.94	0.00
Asian	0.00	1.42	0.00
Native American	0.00	0.00	
Minority	0.00	9.57	0.00 ****
Nonminority female	0.00	28.84	0.00 ****
DBE total	0.00	38.41	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	4.95	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00 ****
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Other Electrical Equipment and Component Manufacturing (NAICS 3359)			
African American	0.00	3.54	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.41	0.00
Native American	0.00	0.71	0.00
Minority	0.00	5.66	0.00 ****
Nonminority female	0.00	13.25	0.00 ****
DBE total	0.00	18.91	0.00 ****
Building Finishing Contractors (NAICS 2383)			
African American	0.00	12.42	0.00 ****
Hispanic	0.00	3.61	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00
Minority	0.00	16.74	0.00 ****
Nonminority female	0.00	8.43	0.00 ****
DBE total	0.00	25.16	0.00 ****
Rubber Product Manufacturing (NAICS 3262)			
African American	0.00	10.13	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.27	0.00
Native American	0.00	1.27	0.00
Minority	0.00	12.66	0.00 ****
Nonminority female	0.00	16.46	0.00 ****
DBE total	0.00	29.11	0.00 ****
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)			
African American	0.00	4.40	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.99	0.00
Native American	0.00	0.50	0.00
Minority	0.00	5.88	0.00 ****
Nonminority female	0.00	17.48	0.00 ****
DBE total	0.00	23.36	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Specialized Design Services (NAICS 5414)			
African American	0.00	15.64	0.00 ****
Hispanic	0.00	1.62	0.00
Asian	0.00	1.62	0.00
Native American	0.00	0.72	0.00
Minority	0.00	19.60	0.00 ****
Nonminority female	99.36	21.01	
DBE total	99.36	40.61	
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	0.00	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	0.00	
Nonminority female	0.00	0.00	
DBE total	0.00	0.00	
Scientific Research and Development Services (NAICS 5417)			
African American	0.00	13.67	0.00 ****
Hispanic	0.00	1.69	0.00
Asian	0.00	2.36	0.00
Native American	0.00	0.63	0.00
Minority	0.00	18.36	0.00 ****
Nonminority female	0.00	13.11	0.00 ****
DBE total	0.00	31.47	0.00 ****
General Rental Centers (NAICS 5323)			
African American	0.00	6.67	0.00
Hispanic	0.00	1.11	0.00
Asian	0.00	1.11	0.00
Native American	0.00	0.00	
Minority	0.00	8.89	0.00
Nonminority female	0.00	2.22	0.00
DBE total	0.00	11.11	0.00
Spring and Wire Product Manufacturing (NAICS 3326)			
African American	0.00	3.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.74	0.00
Minority	0.00	5.94	0.00 ****
Nonminority female	7.80	8.91	87.52
DBE total	7.80	14.85	52.51

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Limited-Service Eating Places (NAICS 7222)			
African American	71.21	8.28	
Hispanic	0.00	3.14	0.00
Asian	0.00	15.06	0.00 ****
Native American	0.00	0.61	0.00
Minority	71.21	27.09	
Nonminority female	0.00	10.76	0.00 ****
DBE total	71.21	37.84	

Source and Notes: See Table 6.8.

Table AD.20. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (All Funds) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)			
African American	6.11	3.23	
Hispanic	0.00	0.00	
African American	6.11	3.23	
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00 ****
Native American	0.00	3.30	0.00 ****
Minority	6.11	9.04	67.61 ***
Nonminority female	0.00	14.70	0.00 ****
DBE total	6.11	23.74	25.74 ****
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.05	3.37	1.58 ****
Hispanic	0.00	0.83	0.00 ****
Asian	0.00	2.60	0.00 ****
Native American	0.00	3.34	0.00 ****
Minority	0.05	10.14	0.53 ****
Nonminority female	18.23	8.19	
DBE total	18.28	18.32	99.76
Automobile Dealers (NAICS 4411)			
African American	8.24	10.79	76.30
Hispanic	0.00	1.35	0.00 ****
Asian	0.00	4.06	0.00 ****
Native American	0.00	0.02	0.00
Minority	8.24	16.22	50.76
Nonminority female	0.00	6.58	0.00 ****
DBE total	8.24	22.80	36.12 *
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	3.31	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.79	0.00 ****
Native American	0.00	3.26	0.00 ****
Minority	0.00	9.36	0.00 ****
Nonminority female	1.83	11.22	16.35 ****
DBE total	1.83	20.58	8.92 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)			
African American	0.00	4.04	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00 ****
Native American	0.00	0.81	0.00 ****
Minority	0.00	6.60	0.00 ****
Nonminority female	0.00	10.85	0.00 ****
DBE total	0.00	17.45	0.00 ****
Hardware Manufacturing (NAICS 3325)			
African American	0.00	4.95	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	2.77	3.44	80.45
Hispanic	0.00	0.78	0.00 ****
Asian	0.00	2.56	0.00 ****
Native American	0.00	3.19	0.00 ****
Minority	2.77	9.98	27.76
Nonminority female	2.38	11.93	19.98 ****
DBE total	5.15	21.91	23.52 ****
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	3.91	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.13	0.00 ****
Native American	0.00	0.56	0.00 ****
Minority	0.00	5.60	0.00 ****
Nonminority female	0.00	13.28	0.00 ****
DBE total	0.00	18.89	0.00 ****
Software Publishers (NAICS 5112)			
African American	0.00	9.08	0.00 ****
Hispanic	0.00	3.65	0.00 ****
Asian	0.00	1.02	0.00
Native American	0.00	0.00	
Minority	0.00	13.75	0.00 ****
Nonminority female	0.00	3.26	0.00 ****
DBE total	0.00	17.02	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.49	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.54	0.00 ****
Native American	0.00	3.26	0.00 ****
Minority	0.00	8.29	0.00 ****
Nonminority female	3.24	11.45	28.34 ****
DBE total	3.24	19.74	16.44 ****
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	4.00	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.60	0.00 ****
Native American	0.00	0.80	0.00
Minority	0.00	6.40	0.00 ****
Nonminority female	0.00	9.60	0.00 ****
DBE total	0.00	16.00	0.00 ****
Computer and Peripheral Equipment Manufacturing (NAICS 3341)			
African American	0.00	17.23	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.44	0.00 ****
Native American	0.00	0.72	0.00 ****
Minority	0.00	19.39	0.00 ****
Nonminority female	0.00	8.64	0.00 ****
DBE total	0.00	28.03	0.00 ****
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	6.72	0.00 ****
Hispanic	0.00	1.02	0.00 ****
Asian	0.00	1.02	0.00 ****
Native American	0.00	0.87	0.00 ****
Minority	0.00	9.63	0.00 ****
Nonminority female	0.40	3.35	11.92
DBE total	0.40	12.97	3.08 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	11.34	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.90	0.00
Native American	0.00	0.90	0.00
Minority	0.00	13.13	0.00 ****
Nonminority female	0.00	11.66	0.00 ****
DBE total	0.00	24.79	0.00 ****
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	19.13	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.34	0.00 ****
Native American	0.00	0.67	0.00
Minority	0.00	21.14	0.00 ****
Nonminority female	0.00	8.90	0.00 ****
DBE total	0.00	30.04	0.00 ****
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)			
African American	0.00	11.83	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.29	0.00 ****
Native American	0.00	0.64	0.00 ****
Minority	0.00	13.76	0.00 ****
Nonminority female	0.00	8.04	0.00 ****
DBE total	0.00	21.80	0.00 ****
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	14.85	0.00 ****
Hispanic	0.00	2.14	0.00 ****
Asian	0.00	2.31	0.00 ****
Native American	0.00	1.23	0.00 ****
Minority	0.00	20.53	0.00 ****
Nonminority female	0.00	17.03	0.00 ****
DBE total	0.00	37.55	0.00 ****
Building Equipment Contractors (NAICS 2382)			
African American	0.00	12.05	0.00 ****
Hispanic	0.00	2.78	0.00 ****
Asian	0.00	0.16	0.00 ****
Native American	0.00	0.70	0.00 ****
Minority	0.00	15.69	0.00 ****
Nonminority female	4.79	8.74	54.84
DBE total	4.79	24.44	19.62 ***

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)			
African American	0.00	7.15	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.89	0.00 ****
Minority	0.00	8.94	0.00 ****
Nonminority female	0.00	11.62	0.00 ****
DBE total	0.00	20.55	0.00 ****
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	3.77	0.00 ****
Hispanic	0.00	1.38	0.00 ****
Asian	0.00	2.44	0.00 ****
Native American	0.00	3.12	0.00 ****
Minority	0.00	10.70	0.00 ****
Nonminority female	0.00	10.67	0.00 ****
DBE total	0.00	21.38	0.00 ****
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.00	4.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	0.00	7.02	0.00 ****
Nonminority female	52.41	15.44	
DBE total	52.41	22.45	
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.25	2.55	9.65
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00 ****
Native American	0.00	4.24	0.00 ****
Minority	0.25	9.39	2.62 ****
Nonminority female	0.00	7.55	0.00 ****
DBE total	0.25	16.93	1.45 ****
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	33.82	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.22	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	0.00	35.64	0.00 ****
Nonminority female	0.00	15.00	0.00 ****
DBE total	0.00	50.65	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	2.63	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.15	0.00 ****
Native American	0.00	4.70	0.00 ****
Minority	0.00	10.48	0.00 ****
Nonminority female	7.09	8.05	88.10
DBE total	7.09	18.53	38.28 ****
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	10.27	0.00 ****
Hispanic	0.00	1.60	0.00 ****
Asian	0.00	4.24	0.00 ****
Native American	0.00	0.04	0.00
Minority	0.00	16.15	0.00 ****
Nonminority female	0.00	6.59	0.00 ****
DBE total	0.00	22.74	0.00 ****
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	0.00	3.85	0.00 ****
Hispanic	0.00	0.42	0.00
Asian	0.00	1.15	0.00 ***
Native American	0.00	0.57	0.00
Minority	0.00	6.00	0.00 ****
Nonminority female	0.00	7.65	0.00 ****
DBE total	0.00	13.64	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	5.46	12.71	42.97
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	5.46	16.11	33.92
Nonminority female	12.50	9.13	
DBE total	17.97	25.24	71.18

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.27	6.70	4.03 ****
Hispanic	0.00	0.00	
Asian	0.00	1.92	0.00 ****
Native American	0.00	1.69	0.00 ****
Minority	0.27	10.31	2.62 ****
Nonminority female	0.69	17.36	3.96 ****
DBE total	0.96	27.67	3.46 ****
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	19.26	0.00 ****
Hispanic	0.00	0.07	0.00
Asian	0.00	3.06	0.00 ****
Native American	0.00	1.09	0.00 ****
Minority	0.00	23.48	0.00 ****
Nonminority female	3.01	15.00	20.09
DBE total	3.01	38.48	7.83
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	3.41	12.41	27.45 ****
Hispanic	0.00	1.49	0.00 ****
Asian	0.00	1.13	0.00 ****
Native American	0.00	2.45	0.00 ****
Minority	3.41	17.49	19.48 ****
Nonminority female	93.97	28.40	
DBE total	97.37	45.89	
Home Furnishings Stores (NAICS 4422)			
African American	0.00	11.08	0.00 ****
Hispanic	0.00	1.30	0.00 ****
Asian	0.00	4.06	0.00 ****
Native American	0.00	0.14	0.00
Minority	0.00	16.59	0.00 ****
Nonminority female	0.00	7.80	0.00 ****
DBE total	0.00	24.38	0.00 ****
Facilities Support Services (NAICS 5612)			
African American	100.00	26.15	
Hispanic	0.00	3.94	0.00
Asian	0.00	0.00	
Native American	0.00	0.09	0.00
Minority	100.00	30.18	
Nonminority female	0.00	17.99	0.00 ****
DBE total	100.00	48.18	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)			
African American	0.00	2.96	0.00 ****
Hispanic	0.00	0.00	
Asian	2.49	2.84	87.44
Native American	0.00	3.26	0.00 ****
Minority	2.49	9.06	27.46 ****
Nonminority female	15.09	7.50	
DBE total	17.58	16.56	
Building Material and Supplies Dealers (NAICS 4441)			
African American	2.10	9.93	21.18 ****
Hispanic	0.00	1.32	0.00 ****
Asian	0.00	4.25	0.00 ****
Native American	0.00	0.35	0.00 ****
Minority	2.10	15.85	13.26 ****
Nonminority female	0.00	7.84	0.00 ****
DBE total	2.10	23.69	8.87 ****
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.41	0.00 ****
Hispanic	0.00	1.34	0.00 ****
Asian	0.00	2.33	0.00 ****
Native American	0.00	0.13	0.00
Minority	0.00	11.21	0.00 ****
Nonminority female	0.00	22.20	0.00 ****
DBE total	0.00	33.41	0.00 ****
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	12.03	0.00 ****
Hispanic	33.78	1.31	
Asian	0.00	4.01	0.00 ****
Native American	0.00	0.03	0.00
Minority	33.78	17.37	
Nonminority female	0.00	7.01	0.00 ****
DBE total	33.78	24.38	
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	11.03	0.00 ****
Hispanic	0.00	3.04	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00 ***
Minority	0.00	14.78	0.00 ****
Nonminority female	0.00	10.72	0.00 ****
DBE total	0.00	25.50	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00 ****
Hispanic	0.00	0.89	0.00 ****
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.00	
Minority	0.00	12.95	0.00 ****
Nonminority female	0.00	8.38	0.00 ****
DBE total	0.00	21.33	0.00 ****
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	3.19	0.00 ****
Hispanic	0.00	4.34	0.00 ****
Asian	0.00	1.14	0.00 ****
Native American	0.00	0.57	0.00 ****
Minority	0.00	9.24	0.00 ****
Nonminority female	0.00	15.18	0.00 ****
DBE total	0.00	24.42	0.00 ****
Electronic Shopping and Mail-Order Houses (NAICS 4541)			
African American	0.00	15.00	0.00 ****
Hispanic	0.00	3.33	0.00 ****
Asian	67.82	1.43	
Native American	0.00	0.00	
Minority	67.82	19.76	
Nonminority female	0.00	28.81	0.00 ****
DBE total	67.82	48.57	
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.00	3.29	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.71	0.00 ****
Native American	0.00	3.63	0.00 ****
Minority	0.00	9.62	0.00 ****
Nonminority female	0.00	7.50	0.00 ****
DBE total	0.00	17.13	0.00 ****
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)			
African American	0.00	14.57	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.64	0.00 ****
Native American	0.00	0.64	0.00 ****
Minority	0.00	15.85	0.00 ****
Nonminority female	1.68	26.16	6.43 ****
DBE total	1.68	42.01	4.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	1.26	18.70	6.74 ****
Hispanic	0.00	0.00	
Asian	0.00	3.09	0.00 ****
Native American	0.00	1.16	0.00 ****
Minority	1.26	22.94	5.50 ****
Nonminority female	0.00	15.20	0.00 ****
DBE total	1.26	38.14	3.31 ****
Gasoline Stations (NAICS 4471)			
African American	0.00	9.90	0.00 ****
Hispanic	0.00	1.33	0.00
Asian	0.00	4.74	0.00 ****
Native American	0.00	0.10	0.00
Minority	0.00	16.06	0.00 ****
Nonminority female	0.00	7.07	0.00 ****
DBE total	0.00	23.14	0.00 ****
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	9.92	0.00 ****
Nonminority female	0.00	6.47	0.00 ****
DBE total	0.00	16.39	0.00 ****
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)			
African American	0.00	11.31	0.00 ****
Hispanic	0.00	1.21	0.00 ****
Asian	0.00	4.10	0.00 ****
Native American	0.00	0.48	0.00
Minority	0.00	17.09	0.00 ****
Nonminority female	0.00	13.40	0.00 ****
DBE total	0.00	30.49	0.00 ****
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	4.64	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	2.89	0.00 ****
Minority	0.00	10.10	0.00 ****
Nonminority female	18.85	18.66	
DBE total	18.85	28.76	65.55

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Investigation and Security Services (NAICS 5616)			
African American	0.00	22.36	0.00 ****
Hispanic	0.00	4.02	0.00 ****
Asian	0.00	0.00	
Native American	0.00	1.82	0.00 ****
Minority	0.00	28.20	0.00 ****
Nonminority female	0.00	20.75	0.00 ****
DBE total	0.00	48.95	0.00 ****
Other Support Services (NAICS 5619)			
African American	0.00	23.13	0.00 ****
Hispanic	0.00	4.21	0.00 ****
Asian	0.00	0.02	0.00
Native American	0.00	0.16	0.00
Minority	0.00	27.53	0.00 ****
Nonminority female	0.00	20.58	0.00 ****
DBE total	0.00	48.11	0.00 ****
Electrical Equipment Manufacturing (NAICS 3353)			
African American	0.00	36.63	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.32	0.00
Native American	0.00	0.66	0.00
Minority	0.00	38.61	0.00 ****
Nonminority female	0.00	7.92	0.00 ****
DBE total	0.00	46.53	0.00 ****
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	6.52	0.00 ****
Hispanic	0.00	2.81	0.00 ****
Asian	0.00	1.05	0.00 ****
Native American	0.00	0.00	
Minority	0.00	10.38	0.00 ****
Nonminority female	0.00	2.91	0.00 ****
DBE total	0.00	13.29	0.00 ****
Glass and Glass Product Manufacturing (NAICS 3272)			
African American	0.00	5.06	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.63	0.00
Native American	0.00	0.63	0.00
Minority	0.00	6.33	0.00 ****
Nonminority female	0.00	33.23	0.00 ****
DBE total	0.00	39.56	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maint. (NAICS 8113)			
African American	0.00	17.59	0.00 ****
Hispanic	0.00	1.32	0.00 ****
Asian	0.00	2.83	0.00 ****
Native American	0.00	2.38	0.00 ****
Minority	0.00	24.11	0.00 ****
Nonminority female	0.00	13.09	0.00 ****
DBE total	0.00	37.21	0.00 ****
Other Food Manufacturing (NAICS 3119)			
African American	0.00	4.95	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00 ****
Native American	0.00	0.99	0.00 ****
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Utility System Construction (NAICS 2371)			
African American	0.00	1.75	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.75	0.00
Minority	0.00	3.51	0.00
Nonminority female	0.00	8.77	0.00 ****
DBE total	0.00	12.28	0.00 ****
Other Motor Vehicle Dealers (NAICS 4412)			
African American	0.00	8.54	0.00 ****
Hispanic	0.00	1.22	0.00
Asian	0.00	10.33	0.00 ****
Native American	0.00	0.00	
Minority	0.00	20.09	0.00 ****
Nonminority female	0.00	4.88	0.00 ****
DBE total	0.00	24.98	0.00 ****
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)			
African American	0.00	5.68	0.00 ****
Hispanic	0.00	1.91	0.00 ****
Asian	0.00	1.81	0.00 ****
Native American	0.00	0.00	
Minority	0.00	9.41	0.00 ****
Nonminority female	0.00	21.78	0.00 ****
DBE total	0.00	31.19	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	14.05	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.78	0.00 ****
Native American	0.00	1.45	0.00 ****
Minority	0.00	16.29	0.00 ****
Nonminority female	76.66	22.84	
DBE total	76.66	39.13	
Consumer Goods Rental (NAICS 5322)			
African American	0.00	15.05	0.00 ****
Hispanic	0.00	0.93	0.00
Asian	0.00	0.93	0.00
Native American	0.00	0.70	0.00
Minority	0.00	17.61	0.00 ****
Nonminority female	0.00	3.86	0.00 ****
DBE total	0.00	21.47	0.00 ****
Office Supplies, Stationery, and Gift Stores (NAICS 4532)			
African American	0.00	7.21	0.00 ****
Hispanic	0.00	0.94	0.00
Asian	0.00	1.42	0.00
Native American	0.00	0.00	
Minority	0.00	9.57	0.00 ****
Nonminority female	0.00	28.84	0.00 ****
DBE total	0.00	38.41	0.00 ****
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	4.95	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00 ****
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Other Electrical Equipment and Component Manufacturing (NAICS 3359)			
African American	0.00	3.47	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.39	0.00
Native American	0.00	0.69	0.00
Minority	0.00	5.54	0.00 ****
Nonminority female	0.00	13.32	0.00 ****
DBE total	0.00	18.86	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Building Finishing Contractors (NAICS 2383)			
African American	0.00	12.42	0.00 ****
Hispanic	0.00	3.61	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00
Minority	0.00	16.74	0.00 ****
Nonminority female	0.00	8.43	0.00 ****
DBE total	0.00	25.16	0.00 ****
Rubber Product Manufacturing (NAICS 3262)			
African American	0.00	10.13	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.27	0.00
Native American	0.00	1.27	0.00
Minority	0.00	12.66	0.00 ****
Nonminority female	0.00	16.46	0.00 ****
DBE total	0.00	29.11	0.00 ****
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)			
African American	0.00	4.40	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.99	0.00
Native American	0.00	0.50	0.00
Minority	0.00	5.88	0.00 ****
Nonminority female	0.00	17.48	0.00 ****
DBE total	0.00	23.36	0.00 ****
Specialized Design Services (NAICS 5414)			
African American	0.00	15.64	0.00 ****
Hispanic	0.00	1.62	0.00
Asian	0.00	1.62	0.00
Native American	0.00	0.72	0.00
Minority	0.00	19.60	0.00 ****
Nonminority female	99.36	21.01	
DBE total	99.36	40.61	
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	0.00	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	0.00	
Nonminority female	0.00	0.00	
DBE total	0.00	0.00	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Scientific Research and Development Services (NAICS 5417)			
African American	0.00	13.67	0.00 ****
Hispanic	0.00	1.69	0.00
Asian	0.00	2.36	0.00
Native American	0.00	0.63	0.00
Minority	0.00	18.36	0.00 ****
Nonminority female	0.00	13.11	0.00 ****
DBE total	0.00	31.47	0.00 ****
General Rental Centers (NAICS 5323)			
African American	0.00	6.67	0.00
Hispanic	0.00	1.11	0.00
Asian	0.00	1.11	0.00
Native American	0.00	0.00	
Minority	0.00	8.89	0.00
Nonminority female	0.00	2.22	0.00
DBE total	0.00	11.11	0.00
Spring and Wire Product Manufacturing (NAICS 3326)			
African American	0.00	3.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.74	0.00
Minority	0.00	5.94	0.00 ****
Nonminority female	7.80	8.91	87.52
DBE total	7.80	14.85	52.51
Limited-Service Eating Places (NAICS 7222)			
African American	71.21	8.28	
Hispanic	0.00	3.14	0.00
Asian	0.00	15.06	0.00 ****
Native American	0.00	0.61	0.00
Minority	71.21	27.09	
Nonminority female	0.00	10.76	0.00 ****
DBE total	71.21	37.84	
Clay Product and Refractory Manufacturing (NAICS 3271)			
African American	0.00	5.72	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.51	0.00
Native American	0.00	0.51	0.00
Minority	0.00	6.73	0.00
Nonminority female	0.00	23.25	0.00
DBE total	0.00	29.98	0.00

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Beverage Manufacturing (NAICS 3121)			
African American	0.00	3.81	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.52	0.00
Native American	0.00	0.76	0.00
Minority	0.00	6.09	0.00 ****
Nonminority female	0.00	16.83	0.00 ****
DBE total	0.00	22.92	0.00 ****
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)			
African American	0.00	2.58	0.00
Hispanic	0.00	0.00	
Asian	0.00	4.13	0.00 ****
Native American	0.00	3.30	0.00
Minority	0.00	10.02	0.00 ****
Nonminority female	0.00	10.24	0.00 ****
DBE total	0.00	20.26	0.00

Source and Notes: See Table 6.8.

Table AD.21. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (Federally-Funded) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hardware Manufacturing (NAICS 3325)			
African American	0.00	4.95	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00
Nonminority female	0.00	11.88	0.00
DBE total	0.00	19.80	0.00 ****
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	4.60	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.55	0.00
Native American	0.00	3.27	0.00
Minority	0.00	10.42	0.00 ****
Nonminority female	0.00	8.15	0.00 ****
DBE total	0.00	18.57	0.00 ****
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.00	4.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	0.00	7.02	0.00 ****
Nonminority female	100.00	15.44	
DBE total	100.00	22.45	
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	19.59	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.94	0.00
Native American	0.00	1.07	0.00
Minority	0.00	23.60	0.00
Nonminority female	0.00	15.71	0.00
DBE total	0.00	39.31	0.00 ****

Source and Notes: See Table 6.8.

Table AD.22. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (Federally-Funded) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hardware Manufacturing (NAICS 3325)			
African American	0.00	4.95	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00
Nonminority female	0.00	11.88	0.00
DBE total	0.00	19.80	0.00 ****
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.00	4.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	0.00	7.02	0.00 ****
Nonminority female	100.00	15.44	
DBE total	100.00	22.45	
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	19.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.97	0.00
Native American	0.00	1.08	0.00
Minority	0.00	23.76	0.00
Nonminority female	0.00	14.94	0.00
DBE total	0.00	38.70	0.00 ****
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	4.60	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.55	0.00
Native American	0.00	3.27	0.00
Minority	0.00	10.42	0.00 ****
Nonminority female	0.00	8.15	0.00 ****
DBE total	0.00	18.57	0.00 ****

Source and Notes: See Table 6.8.

Table AD.23. Industry Group Utilization, Availability, and Disparity Results for MSCAA Commodities Contracting (Locally-Funded) (Dollars Awarded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)			
African American	6.11	3.23	
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00 ****
Native American	0.00	3.30	0.00 ****
Minority	6.11	9.04	67.61 ***
Nonminority female	0.00	14.70	0.00 ****
DBE total	6.11	23.74	25.74 ****
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.05	3.36	1.60 ****
Hispanic	0.00	0.83	0.00 ****
Asian	0.00	2.60	0.00 ****
Native American	0.00	3.34	0.00 ****
Minority	0.05	10.13	0.53 ****
Nonminority female	18.37	8.19	
DBE total	18.42	18.32	
Automobile Dealers (NAICS 4411)			
African American	8.24	10.79	76.35
Hispanic	0.00	1.35	0.00 ****
Asian	0.00	4.06	0.00 ****
Native American	0.00	0.02	0.00
Minority	8.24	16.22	50.79
Nonminority female	0.00	6.58	0.00 ****
DBE total	8.24	22.80	36.14 *
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	3.31	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.79	0.00 ****
Native American	0.00	3.26	0.00 ****
Minority	0.00	9.36	0.00 ****
Nonminority female	1.83	11.22	16.35 ****
DBE total	1.83	20.58	8.92 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)			
African American	0.00	4.04	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00 ****
Native American	0.00	0.81	0.00 ****
Minority	0.00	6.60	0.00 ****
Nonminority female	0.00	10.85	0.00 ****
DBE total	0.00	17.45	0.00 ****
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	2.79	3.44	80.99
Hispanic	0.00	0.78	0.00 ****
Asian	0.00	2.56	0.00 ****
Native American	0.00	3.19	0.00 ****
Minority	2.79	9.98	27.92
Nonminority female	2.40	11.93	20.11 ****
DBE total	5.19	21.91	23.67 ****
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	3.91	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.13	0.00 ****
Native American	0.00	0.56	0.00 ****
Minority	0.00	5.61	0.00 ****
Nonminority female	0.00	13.30	0.00 ****
DBE total	0.00	18.90	0.00 ****
Software Publishers (NAICS 5112)			
African American	0.00	9.08	0.00 ****
Hispanic	0.00	3.65	0.00 ****
Asian	0.00	1.02	0.00
Native American	0.00	0.00	
Minority	0.00	13.75	0.00 ****
Nonminority female	0.00	3.26	0.00 ****
DBE total	0.00	17.02	0.00 ****
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.49	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.54	0.00 ****
Native American	0.00	3.26	0.00 ****
Minority	0.00	8.29	0.00 ****
Nonminority female	3.29	11.44	28.78 ****
DBE total	3.29	19.73	16.69 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	4.01	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.61	0.00 ****
Native American	0.00	0.80	0.00
Minority	0.00	6.42	0.00 ****
Nonminority female	0.00	9.63	0.00 ****
DBE total	0.00	16.06	0.00 ****
Computer and Peripheral Equipment Manufacturing (NAICS 3341)			
African American	0.00	17.23	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.44	0.00 ****
Native American	0.00	0.72	0.00 ****
Minority	0.00	19.39	0.00 ****
Nonminority female	0.00	8.64	0.00 ****
DBE total	0.00	28.03	0.00 ****
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	6.72	0.00 ****
Hispanic	0.00	1.02	0.00 ****
Asian	0.00	1.02	0.00 ****
Native American	0.00	0.87	0.00 ****
Minority	0.00	9.63	0.00 ****
Nonminority female	0.40	3.35	11.92
DBE total	0.40	12.97	3.08 ****
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	11.34	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.90	0.00
Native American	0.00	0.90	0.00
Minority	0.00	13.13	0.00 ****
Nonminority female	0.00	11.66	0.00 ****
DBE total	0.00	24.79	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	19.13	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.34	0.00 ****
Native American	0.00	0.67	0.00
Minority	0.00	21.14	0.00 ****
Nonminority female	0.00	8.90	0.00 ****
DBE total	0.00	30.04	0.00 ****
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)			
African American	0.00	11.83	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.29	0.00 ****
Native American	0.00	0.64	0.00 ****
Minority	0.00	13.76	0.00 ****
Nonminority female	0.00	8.04	0.00 ****
DBE total	0.00	21.80	0.00 ****
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	14.85	0.00 ****
Hispanic	0.00	2.14	0.00 ****
Asian	0.00	2.31	0.00 ****
Native American	0.00	1.23	0.00 ****
Minority	0.00	20.53	0.00 ****
Nonminority female	0.00	17.03	0.00 ****
DBE total	0.00	37.55	0.00 ****
Building Equipment Contractors (NAICS 2382)			
African American	0.00	12.05	0.00 ****
Hispanic	0.00	2.78	0.00 ****
Asian	0.00	0.16	0.00 ****
Native American	0.00	0.70	0.00 ****
Minority	0.00	15.69	0.00 ****
Nonminority female	4.79	8.74	54.84
DBE total	4.79	24.44	19.62 ***
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)			
African American	0.00	7.15	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.89	0.00 ****
Minority	0.00	8.94	0.00 ****
Nonminority female	0.00	11.62	0.00 ****
DBE total	0.00	20.55	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	3.77	0.00 ****
Hispanic	0.00	1.38	0.00 ****
Asian	0.00	2.44	0.00 ****
Native American	0.00	3.12	0.00 ****
Minority	0.00	10.70	0.00 ****
Nonminority female	0.00	10.67	0.00 ****
DBE total	0.00	21.38	0.00 ****
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.25	2.55	9.65 ****
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00 ****
Native American	0.00	4.24	0.00 ****
Minority	0.25	9.39	2.62 ****
Nonminority female	0.00	7.55	0.00 ****
DBE total	0.25	16.93	1.45 ****
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	33.82	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.22	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	0.00	35.64	0.00 ****
Nonminority female	0.00	15.00	0.00 ****
DBE total	0.00	50.65	0.00 ****
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	2.63	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.15	0.00 ****
Native American	0.00	4.70	0.00 ****
Minority	0.00	10.48	0.00 ****
Nonminority female	7.09	8.05	88.10
DBE total	7.09	18.53	38.28 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	10.27	0.00 ****
Hispanic	0.00	1.60	0.00 ****
Asian	0.00	4.24	0.00 ****
Native American	0.00	0.04	0.00
Minority	0.00	16.15	0.00 ****
Nonminority female	0.00	6.59	0.00 ****
DBE total	0.00	22.74	0.00 ****
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	0.00	3.85	0.00 ****
Hispanic	0.00	0.43	0.00
Asian	0.00	1.15	0.00 ****
Native American	0.00	0.57	0.00
Minority	0.00	6.00	0.00 ****
Nonminority female	0.00	7.65	0.00 ****
DBE total	0.00	13.65	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	5.46	12.71	42.97
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	5.46	16.11	33.92
Nonminority female	12.50	9.13	
DBE total	17.97	25.24	71.18
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.27	6.70	4.03 ****
Hispanic	0.00	0.00	
Asian	0.00	1.92	0.00 ****
Native American	0.00	1.69	0.00 ****
Minority	0.27	10.31	2.62 ****
Nonminority female	0.69	17.36	3.96 ****
DBE total	0.96	27.67	3.46 ****
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	3.41	12.41	27.45 ****
Hispanic	0.00	1.49	0.00 ****
Asian	0.00	1.13	0.00 ****
Native American	0.00	2.45	0.00 ****
Minority	3.41	17.49	19.48 ****
Nonminority female	93.97	28.40	
DBE total	97.37	45.89	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)			
African American	0.00	9.40	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00 ****
Native American	0.00	2.67	0.00 ****
Minority	0.00	14.58	0.00 ****
Nonminority female	98.09	13.44	
DBE total	98.09	28.03	
Home Furnishings Stores (NAICS 4422)			
African American	0.00	11.08	0.00 ****
Hispanic	0.00	1.30	0.00
Asian	0.00	4.06	0.00 ****
Native American	0.00	0.14	0.00
Minority	0.00	16.59	0.00 ****
Nonminority female	0.00	7.80	0.00 ****
DBE total	0.00	24.38	0.00 ****
Facilities Support Services (NAICS 5612)			
African American	100.00	26.15	
Hispanic	0.00	3.94	0.00
Asian	0.00	0.00	
Native American	0.00	0.09	0.00
Minority	100.00	30.18	
Nonminority female	0.00	17.99	0.00 ****
DBE total	100.00	48.18	
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)			
African American	0.00	2.96	0.00 ****
Hispanic	0.00	0.00	
Asian	2.49	2.84	87.44
Native American	0.00	3.26	0.00 ****
Minority	2.49	9.06	27.46 ****
Nonminority female	15.09	7.50	
DBE total	17.58	16.56	
Building Material and Supplies Dealers (NAICS 4441)			
African American	2.10	9.93	21.18 ****
Hispanic	0.00	1.32	0.00 ****
Asian	0.00	4.25	0.00 ****
Native American	0.00	0.35	0.00 ****
Minority	2.10	15.85	13.26 ****
Nonminority female	0.00	7.84	0.00 ****
DBE total	2.10	23.69	8.87 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.41	0.00 ****
Hispanic	0.00	1.34	0.00 ****
Asian	0.00	2.33	0.00 ****
Native American	0.00	0.13	0.00
Minority	0.00	11.21	0.00 ****
Nonminority female	0.00	22.20	0.00 ****
DBE total	0.00	33.41	0.00 ****
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	12.03	0.00 ****
Hispanic	33.78	1.31	
Asian	0.00	4.01	0.00 ****
Native American	0.00	0.03	0.00
Minority	33.78	17.37	
Nonminority female	0.00	7.01	0.00 ****
DBE total	33.78	24.38	
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.00	4.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	0.00	7.02	0.00 ****
Nonminority female	0.00	15.44	0.00 ****
DBE total	0.00	22.45	0.00 ****
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	11.05	0.00 ****
Hispanic	0.00	3.11	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00 ****
Minority	0.00	14.86	0.00 ****
Nonminority female	0.00	10.45	0.00 ****
DBE total	0.00	25.32	0.00 ****
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00 ****
Hispanic	0.00	0.89	0.00 ****
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.00	
Minority	0.00	12.95	0.00 ****
Nonminority female	0.00	8.38	0.00 ****
DBE total	0.00	21.33	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	3.19	0.00 ****
Hispanic	0.00	4.34	0.00 ****
Asian	0.00	1.14	0.00 ****
Native American	0.00	0.57	0.00 ****
Minority	0.00	9.24	0.00 ****
Nonminority female	0.00	15.18	0.00 ****
DBE total	0.00	24.42	0.00 ****
Electronic Shopping and Mail-Order Houses (NAICS 4541)			
African American	0.00	15.00	0.00 ****
Hispanic	0.00	3.33	0.00 ****
Asian	67.82	1.43	
Native American	0.00	0.00	
Minority	67.82	19.76	
Nonminority female	0.00	28.81	0.00 ****
DBE total	67.82	48.57	
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	20.93	0.00 ****
Hispanic	0.00	4.65	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	25.58	0.00 ****
Nonminority female	0.00	18.60	0.00 ****
DBE total	0.00	44.19	0.00 ****
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.00	3.29	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.71	0.00 ****
Native American	0.00	3.63	0.00 ****
Minority	0.00	9.62	0.00 ****
Nonminority female	0.00	7.50	0.00 ****
DBE total	0.00	17.13	0.00 ****
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)			
African American	0.00	14.57	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.64	0.00 ****
Native American	0.00	0.64	0.00 ****
Minority	0.00	15.85	0.00 ****
Nonminority female	1.68	26.16	6.43 ****
DBE total	1.68	42.01	4.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	1.26	18.51	6.81 ****
Hispanic	0.00	0.00	
Asian	0.00	3.06	0.00 ****
Native American	0.00	1.15	0.00 ****
Minority	1.26	22.72	5.55 ****
Nonminority female	0.00	16.06	0.00 ****
DBE total	1.26	38.77	3.25 ****
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	18.41	0.00 ****
Hispanic	0.00	0.17	0.00
Asian	0.00	3.16	0.00 ****
Native American	0.00	1.11	0.00 ****
Minority	0.00	22.85	0.00 ****
Nonminority female	6.99	15.89	43.98 ****
DBE total	6.99	38.74	18.04 ****
Gasoline Stations (NAICS 4471)			
African American	0.00	9.90	0.00 ****
Hispanic	0.00	1.33	0.00
Asian	0.00	4.74	0.00 ****
Native American	0.00	0.10	0.00
Minority	0.00	16.06	0.00 ****
Nonminority female	0.00	7.07	0.00 ****
DBE total	0.00	23.14	0.00 ****
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	9.92	0.00 ****
Nonminority female	0.00	6.47	0.00 ****
DBE total	0.00	16.39	0.00 ****
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)			
African American	0.00	11.31	0.00 ****
Hispanic	0.00	1.21	0.00 ****
Asian	0.00	4.10	0.00 ****
Native American	0.00	0.48	0.00
Minority	0.00	17.09	0.00 ****
Nonminority female	0.00	13.40	0.00 ****
DBE total	0.00	30.49	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	4.64	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	2.89	0.00 ****
Minority	0.00	10.10	0.00 ****
Nonminority female	18.85	18.66	
DBE total	18.85	28.76	65.55
Investigation and Security Services (NAICS 5616)			
African American	0.00	22.36	0.00 ****
Hispanic	0.00	4.02	0.00 ****
Asian	0.00	0.00	
Native American	0.00	1.82	0.00 ****
Minority	0.00	28.20	0.00 ****
Nonminority female	0.00	20.75	0.00 ****
DBE total	0.00	48.95	0.00 ****
Other Support Services (NAICS 5619)			
African American	0.00	23.13	0.00 ****
Hispanic	0.00	4.21	0.00 ****
Asian	0.00	0.02	0.00
Native American	0.00	0.16	0.00
Minority	0.00	27.53	0.00 ****
Nonminority female	0.00	20.58	0.00 ****
DBE total	0.00	48.11	0.00 ****
Electrical Equipment Manufacturing (NAICS 3353)			
African American	0.00	36.63	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.32	0.00
Native American	0.00	0.66	0.00
Minority	0.00	38.61	0.00 ****
Nonminority female	0.00	7.92	0.00 ****
DBE total	0.00	46.53	0.00 ****
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	6.52	0.00 ****
Hispanic	0.00	2.81	0.00 ****
Asian	0.00	1.05	0.00 ****
Native American	0.00	0.00	
Minority	0.00	10.38	0.00 ****
Nonminority female	0.00	2.91	0.00 ****
DBE total	0.00	13.29	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Glass and Glass Product Manufacturing (NAICS 3272)			
African American	0.00	5.06	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.63	0.00
Native American	0.00	0.63	0.00
Minority	0.00	6.33	0.00 ****
Nonminority female	0.00	33.23	0.00 ****
DBE total	0.00	39.56	0.00 ****
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maint. (NAICS 8113)			
African American	0.00	17.42	0.00 ****
Hispanic	0.00	1.32	0.00 ****
Asian	0.00	2.80	0.00 ****
Native American	0.00	2.37	0.00 ****
Minority	0.00	23.91	0.00 ****
Nonminority female	0.00	13.88	0.00 ****
DBE total	0.00	37.78	0.00 ****
Other Food Manufacturing (NAICS 3119)			
African American	0.00	4.95	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00 ****
Native American	0.00	0.99	0.00 ****
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Utility System Construction (NAICS 2371)			
African American	0.00	1.75	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.75	0.00
Minority	0.00	3.51	0.00
Nonminority female	0.00	8.77	0.00
DBE total	0.00	12.28	0.00 ****
Other Motor Vehicle Dealers (NAICS 4412)			
African American	0.00	8.54	0.00 ****
Hispanic	0.00	1.22	0.00
Asian	0.00	10.33	0.00 ****
Native American	0.00	0.00	
Minority	0.00	20.09	0.00 ****
Nonminority female	0.00	4.88	0.00 ****
DBE total	0.00	24.98	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)			
African American	0.00	5.68	0.00 ****
Hispanic	0.00	1.91	0.00 ****
Asian	0.00	1.81	0.00 ****
Native American	0.00	0.00	
Minority	0.00	9.41	0.00 ****
Nonminority female	0.00	21.78	0.00 ****
DBE total	0.00	31.19	0.00 ****
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	14.05	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.78	0.00 ****
Native American	0.00	1.45	0.00 ****
Minority	0.00	16.29	0.00 ****
Nonminority female	76.66	22.84	
DBE total	76.66	39.13	
Consumer Goods Rental (NAICS 5322)			
African American	0.00	15.05	0.00 ****
Hispanic	0.00	0.93	0.00
Asian	0.00	0.93	0.00
Native American	0.00	0.70	0.00
Minority	0.00	17.61	0.00 ****
Nonminority female	0.00	3.86	0.00 ****
DBE total	0.00	21.47	0.00 ****
Office Supplies, Stationery, and Gift Stores (NAICS 4532)			
African American	0.00	7.21	0.00 ****
Hispanic	0.00	0.94	0.00
Asian	0.00	1.42	0.00
Native American	0.00	0.00	
Minority	0.00	9.57	0.00 ****
Nonminority female	0.00	28.84	0.00 ****
DBE total	0.00	38.41	0.00 ****
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	4.95	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00 ****
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Electrical Equipment and Component Manufacturing (NAICS 3359)			
African American	0.00	3.54	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.41	0.00
Native American	0.00	0.71	0.00
Minority	0.00	5.66	0.00 ****
Nonminority female	0.00	13.25	0.00 ****
DBE total	0.00	18.91	0.00 ****
Building Finishing Contractors (NAICS 2383)			
African American	0.00	12.42	0.00 ****
Hispanic	0.00	3.61	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00
Minority	0.00	16.74	0.00 ****
Nonminority female	0.00	8.43	0.00 ****
DBE total	0.00	25.16	0.00 ****
Rubber Product Manufacturing (NAICS 3262)			
African American	0.00	10.13	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.27	0.00
Native American	0.00	1.27	0.00
Minority	0.00	12.66	0.00 ****
Nonminority female	0.00	16.46	0.00 ****
DBE total	0.00	29.11	0.00 ****
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)			
African American	0.00	4.40	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.99	0.00
Native American	0.00	0.50	0.00
Minority	0.00	5.88	0.00 ****
Nonminority female	0.00	17.48	0.00 ****
DBE total	0.00	23.36	0.00 ****
Specialized Design Services (NAICS 5414)			
African American	0.00	15.64	0.00 ****
Hispanic	0.00	1.62	0.00
Asian	0.00	1.62	0.00
Native American	0.00	0.72	0.00
Minority	0.00	19.60	0.00 ****
Nonminority female	99.36	21.01	
DBE total	99.36	40.61	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	0.00	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	0.00	
Nonminority female	0.00	0.00	
DBE total	0.00	0.00	
Scientific Research and Development Services (NAICS 5417)			
African American	0.00	13.67	0.00 ****
Hispanic	0.00	1.69	0.00
Asian	0.00	2.36	0.00
Native American	0.00	0.63	0.00
Minority	0.00	18.36	0.00 ****
Nonminority female	0.00	13.11	0.00 ****
DBE total	0.00	31.47	0.00 ****
General Rental Centers (NAICS 5323)			
African American	0.00	6.67	0.00
Hispanic	0.00	1.11	0.00
Asian	0.00	1.11	0.00
Native American	0.00	0.00	
Minority	0.00	8.89	0.00
Nonminority female	0.00	2.22	0.00
DBE total	0.00	11.11	0.00
Spring and Wire Product Manufacturing (NAICS 3326)			
African American	0.00	3.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.74	0.00
Minority	0.00	5.94	0.00 ****
Nonminority female	7.80	8.91	87.52
DBE total	7.80	14.85	52.51
Limited-Service Eating Places (NAICS 7222)			
African American	71.21	8.28	
Hispanic	0.00	3.14	0.00
Asian	0.00	15.06	0.00 ****
Native American	0.00	0.61	0.00
Minority	71.21	27.09	
Nonminority female	0.00	10.76	0.00 ****
DBE total	71.21	37.84	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Clay Product and Refractory Manufacturing (NAICS 3271)			
African American	0.00	5.72	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.51	0.00
Native American	0.00	0.51	0.00
Minority	0.00	6.73	0.00
Nonminority female	0.00	23.25	0.00
DBE total	0.00	29.98	0.00
Beverage Manufacturing (NAICS 3121)			
African American	0.00	3.81	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.52	0.00
Native American	0.00	0.76	0.00
Minority	0.00	6.09	0.00 ****
Nonminority female	0.00	16.83	0.00 ****
DBE total	0.00	22.92	0.00 ****
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)			
African American	0.00	2.58	0.00
Hispanic	0.00	0.00	
Asian	0.00	4.13	0.00 ****
Native American	0.00	3.30	0.00
Minority	0.00	10.02	0.00 ****
Nonminority female	0.00	10.24	0.00 ****
DBE total	0.00	20.26	0.00 ****
Personal and Household Goods Repair and Maintenance (NAICS 8114)			
African American	0.00	19.59	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	4.35	0.00 ****
Native American	0.00	1.10	0.00 ****
Minority	0.00	25.04	0.00 ****
Nonminority female	0.00	14.42	0.00 ****
DBE total	0.00	39.46	0.00 ****
Clothing Stores (NAICS 4481)			
African American	0.00	13.48	0.00 ****
Hispanic	0.00	1.21	0.00 ****
Asian	0.00	3.93	0.00 ****
Native American	0.00	0.30	0.00
Minority	0.00	18.92	0.00 ****
Nonminority female	0.00	10.29	0.00 ****
DBE total	0.00	29.22	0.00 ****

Source and Notes: See Table 6.8.

Table AD.24. Industry Group Utilization, Availability, and Disparity Results for MSCAA Construction Contracting (Locally-Funded) (Dollars Paid)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)			
African American	6.11	3.23	
Hispanic	0.00	0.00	
Asian	0.00	2.51	0.00 ****
Native American	0.00	3.30	0.00 ****
Minority	6.11	9.04	67.61 ***
Nonminority female	0.00	14.70	0.00 ****
DBE total	6.11	23.74	25.74 ****
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.05	3.36	1.60 ****
Hispanic	0.00	0.83	0.00 ****
Asian	0.00	2.60	0.00 ****
Native American	0.00	3.34	0.00 ****
Minority	0.05	10.13	0.53 ****
Nonminority female	18.37	8.19	
DBE total	18.42	18.32	
Automobile Dealers (NAICS 4411)			
African American	8.24	10.79	76.30
Hispanic	0.00	1.35	0.00 ****
Asian	0.00	4.06	0.00 ****
Native American	0.00	0.02	0.00
Minority	8.24	16.22	50.76
Nonminority female	0.00	6.58	0.00 ****
DBE total	8.24	22.80	36.12 *
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	3.31	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.79	0.00 ****
Native American	0.00	3.26	0.00 ****
Minority	0.00	9.36	0.00 ****
Nonminority female	1.83	11.22	16.35 ****
DBE total	1.83	20.58	8.92 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)			
African American	0.00	4.04	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00 ****
Native American	0.00	0.81	0.00 ****
Minority	0.00	6.60	0.00 ****
Nonminority female	0.00	10.85	0.00 ****
DBE total	0.00	17.45	0.00 ****
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	2.77	3.44	80.45
Hispanic	0.00	0.78	0.00 ****
Asian	0.00	2.56	0.00 ****
Native American	0.00	3.19	0.00 ****
Minority	2.77	9.98	27.76
Nonminority female	2.38	11.93	19.98 ****
DBE total	5.15	21.91	23.52 ****
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	3.91	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.13	0.00 ****
Native American	0.00	0.56	0.00 ****
Minority	0.00	5.60	0.00 ****
Nonminority female	0.00	13.28	0.00 ****
DBE total	0.00	18.89	0.00 ****
Software Publishers (NAICS 5112)			
African American	0.00	9.08	0.00 ****
Hispanic	0.00	3.65	0.00 ****
Asian	0.00	1.02	0.00
Native American	0.00	0.00	
Minority	0.00	13.75	0.00 ****
Nonminority female	0.00	3.26	0.00 ****
DBE total	0.00	17.02	0.00 ****
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	2.49	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.54	0.00 ****
Native American	0.00	3.26	0.00 ****
Minority	0.00	8.29	0.00 ****
Nonminority female	3.24	11.45	28.34 ****
DBE total	3.24	19.74	16.44 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	4.00	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.60	0.00 ****
Native American	0.00	0.80	0.00
Minority	0.00	6.40	0.00 ****
Nonminority female	0.00	9.60	0.00 ****
DBE total	0.00	16.00	0.00 ****
Computer and Peripheral Equipment Manufacturing (NAICS 3341)			
African American	0.00	17.23	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.44	0.00 ****
Native American	0.00	0.72	0.00 ****
Minority	0.00	19.39	0.00 ****
Nonminority female	0.00	8.64	0.00 ****
DBE total	0.00	28.03	0.00 ****
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	6.72	0.00 ****
Hispanic	0.00	1.02	0.00 ****
Asian	0.00	1.02	0.00 ****
Native American	0.00	0.87	0.00 ****
Minority	0.00	9.63	0.00 ****
Nonminority female	0.40	3.35	11.92
DBE total	0.40	12.97	3.08 ****
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	11.34	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.90	0.00
Native American	0.00	0.90	0.00
Minority	0.00	13.13	0.00 ****
Nonminority female	0.00	11.66	0.00 ****
DBE total	0.00	24.79	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	19.13	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.34	0.00 ****
Native American	0.00	0.67	0.00
Minority	0.00	21.14	0.00 ****
Nonminority female	0.00	8.90	0.00 ****
DBE total	0.00	30.04	0.00 ****
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)			
African American	0.00	11.83	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.29	0.00 ****
Native American	0.00	0.64	0.00 ****
Minority	0.00	13.76	0.00 ****
Nonminority female	0.00	8.04	0.00 ****
DBE total	0.00	21.80	0.00 ****
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	14.85	0.00 ****
Hispanic	0.00	2.14	0.00 ****
Asian	0.00	2.31	0.00 ****
Native American	0.00	1.23	0.00 ****
Minority	0.00	20.53	0.00 ****
Nonminority female	0.00	17.03	0.00 ****
DBE total	0.00	37.55	0.00 ****
Building Equipment Contractors (NAICS 2382)			
African American	0.00	12.05	0.00 ****
Hispanic	0.00	2.78	0.00 ****
Asian	0.00	0.16	0.00 ****
Native American	0.00	0.70	0.00 ****
Minority	0.00	15.69	0.00 ****
Nonminority female	4.79	8.74	54.84
DBE total	4.79	24.44	19.62 ***
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)			
African American	0.00	7.15	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.89	0.00 ****
Minority	0.00	8.94	0.00 ****
Nonminority female	0.00	11.62	0.00 ****
DBE total	0.00	20.55	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	3.77	0.00 ****
Hispanic	0.00	1.38	0.00 ****
Asian	0.00	2.44	0.00 ****
Native American	0.00	3.12	0.00 ****
Minority	0.00	10.70	0.00 ****
Nonminority female	0.00	10.67	0.00 ****
DBE total	0.00	21.38	0.00 ****
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.25	2.55	9.65 ****
Hispanic	0.00	0.00	
Asian	0.00	2.60	0.00 ****
Native American	0.00	4.24	0.00 ****
Minority	0.25	9.39	2.62 ****
Nonminority female	0.00	7.55	0.00 ****
DBE total	0.25	16.93	1.45 ****
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	33.82	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.22	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	0.00	35.64	0.00 ****
Nonminority female	0.00	15.00	0.00 ****
DBE total	0.00	50.65	0.00 ****
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	2.63	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.15	0.00 ****
Native American	0.00	4.70	0.00 ****
Minority	0.00	10.48	0.00 ****
Nonminority female	7.09	8.05	88.10
DBE total	7.09	18.53	38.28 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	10.27	0.00 ****
Hispanic	0.00	1.60	0.00 ****
Asian	0.00	4.24	0.00 ****
Native American	0.00	0.04	0.00
Minority	0.00	16.15	0.00 ****
Nonminority female	0.00	6.59	0.00 ****
DBE total	0.00	22.74	0.00 ****
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	0.00	3.85	0.00 ****
Hispanic	0.00	0.42	0.00
Asian	0.00	1.15	0.00 ****
Native American	0.00	0.57	0.00
Minority	0.00	6.00	0.00 ****
Nonminority female	0.00	7.65	0.00 ****
DBE total	0.00	13.64	0.00 ****
Other Specialty Trade Contractors (NAICS 2389)			
African American	5.46	12.71	42.97
Hispanic	0.00	2.53	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.86	0.00 ****
Minority	5.46	16.11	33.92
Nonminority female	12.50	9.13	
DBE total	17.97	25.24	71.18
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.27	6.70	4.03 ****
Hispanic	0.00	0.00	
Asian	0.00	1.92	0.00 ****
Native American	0.00	1.69	0.00 ****
Minority	0.27	10.31	2.62 ****
Nonminority female	0.69	17.36	3.96 ****
DBE total	0.96	27.67	3.46 ****
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	3.41	12.41	27.45 ****
Hispanic	0.00	1.49	0.00 ****
Asian	0.00	1.13	0.00 ****
Native American	0.00	2.45	0.00 ****
Minority	3.41	17.49	19.48 ****
Nonminority female	93.97	28.40	
DBE total	97.37	45.89	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Home Furnishings Stores (NAICS 4422)			
African American	0.00	11.08	0.00 ****
Hispanic	0.00	1.30	0.00
Asian	0.00	4.06	0.00 ****
Native American	0.00	0.14	0.00
Minority	0.00	16.59	0.00 ****
Nonminority female	0.00	7.80	0.00 ****
DBE total	0.00	24.38	0.00 ****
Facilities Support Services (NAICS 5612)			
African American	100.00	26.15	
Hispanic	0.00	3.94	0.00
Asian	0.00	0.00	
Native American	0.00	0.09	0.00
Minority	100.00	30.18	
Nonminority female	0.00	17.99	0.00 ****
DBE total	100.00	48.18	
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)			
African American	0.00	2.96	0.00 ****
Hispanic	0.00	0.00	
Asian	2.49	2.84	87.44
Native American	0.00	3.26	0.00 ****
Minority	2.49	9.06	27.46 ****
Nonminority female	15.09	7.50	
DBE total	17.58	16.56	
Building Material and Supplies Dealers (NAICS 4441)			
African American	2.10	9.93	21.18 ****
Hispanic	0.00	1.32	0.00 ****
Asian	0.00	4.25	0.00 ****
Native American	0.00	0.35	0.00 ****
Minority	2.10	15.85	13.26 ****
Nonminority female	0.00	7.84	0.00 ****
DBE total	2.10	23.69	8.87 ****
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.41	0.00 ****
Hispanic	0.00	1.34	0.00 ****
Asian	0.00	2.33	0.00 ****
Native American	0.00	0.13	0.00
Minority	0.00	11.21	0.00 ****
Nonminority female	0.00	22.20	0.00 ****
DBE total	0.00	33.41	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	12.03	0.00 ****
Hispanic	33.78	1.31	
Asian	0.00	4.01	0.00 ****
Native American	0.00	0.03	0.00
Minority	33.78	17.37	
Nonminority female	0.00	7.01	0.00 ****
DBE total	33.78	24.38	
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.00	4.08	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	2.93	0.00 ****
Minority	0.00	7.02	0.00 ****
Nonminority female	0.00	15.44	0.00 ****
DBE total	0.00	22.45	0.00 ****
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	11.05	0.00 ****
Hispanic	0.00	3.11	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00 ****
Minority	0.00	14.86	0.00 ****
Nonminority female	0.00	10.45	0.00 ****
DBE total	0.00	25.32	0.00 ****
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	11.17	0.00 ****
Hispanic	0.00	0.89	0.00 ****
Asian	0.00	0.89	0.00 ****
Native American	0.00	0.00	
Minority	0.00	12.95	0.00 ****
Nonminority female	0.00	8.38	0.00 ****
DBE total	0.00	21.33	0.00 ****
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	3.19	0.00 ****
Hispanic	0.00	4.34	0.00 ****
Asian	0.00	1.14	0.00 ****
Native American	0.00	0.57	0.00 ****
Minority	0.00	9.24	0.00 ****
Nonminority female	0.00	15.18	0.00 ****
DBE total	0.00	24.42	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electronic Shopping and Mail-Order Houses (NAICS 4541)			
African American	0.00	15.00	0.00 ****
Hispanic	0.00	3.33	0.00 ****
Asian	67.82	1.43	
Native American	0.00	0.00	
Minority	67.82	19.76	
Nonminority female	0.00	28.81	0.00 ****
DBE total	67.82	48.57	
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.00	3.29	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.71	0.00 ****
Native American	0.00	3.63	0.00 ****
Minority	0.00	9.62	0.00 ****
Nonminority female	0.00	7.50	0.00 ****
DBE total	0.00	17.13	0.00 ****
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)			
African American	0.00	14.57	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.64	0.00 ****
Native American	0.00	0.64	0.00 ****
Minority	0.00	15.85	0.00 ****
Nonminority female	1.68	26.16	6.43 ****
DBE total	1.68	42.01	4.00 ****
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	1.26	18.70	6.74 ****
Hispanic	0.00	0.00	
Asian	0.00	3.09	0.00 ****
Native American	0.00	1.16	0.00 ****
Minority	1.26	22.94	5.50 ****
Nonminority female	0.00	15.20	0.00 ****
DBE total	1.26	38.14	3.31 ****
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	18.54	0.00 ****
Hispanic	0.00	0.17	0.00
Asian	0.00	3.19	0.00 ****
Native American	0.00	1.12	0.00 ****
Minority	0.00	23.02	0.00 ****
Nonminority female	6.99	15.11	46.27 ***
DBE total	6.99	38.13	18.33 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Gasoline Stations (NAICS 4471)			
African American	0.00	9.90	0.00 ****
Hispanic	0.00	1.33	0.00
Asian	0.00	4.74	0.00 ****
Native American	0.00	0.10	0.00
Minority	0.00	16.06	0.00 ****
Nonminority female	0.00	7.07	0.00 ****
DBE total	0.00	23.14	0.00 ****
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	3.88	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.59	0.00 ****
Native American	0.00	3.45	0.00 ****
Minority	0.00	9.92	0.00 ****
Nonminority female	0.00	6.47	0.00 ****
DBE total	0.00	16.39	0.00 ****
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)			
African American	0.00	11.31	0.00 ****
Hispanic	0.00	1.21	0.00 ****
Asian	0.00	4.10	0.00 ****
Native American	0.00	0.48	0.00
Minority	0.00	17.09	0.00 ****
Nonminority female	0.00	13.40	0.00 ****
DBE total	0.00	30.49	0.00 ****
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	4.64	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	2.57	0.00 ****
Native American	0.00	2.89	0.00 ****
Minority	0.00	10.10	0.00 ****
Nonminority female	18.85	18.66	
DBE total	18.85	28.76	65.55
Investigation and Security Services (NAICS 5616)			
African American	0.00	22.36	0.00 ****
Hispanic	0.00	4.02	0.00 ****
Asian	0.00	0.00	
Native American	0.00	1.82	0.00 ****
Minority	0.00	28.20	0.00 ****
Nonminority female	0.00	20.75	0.00 ****
DBE total	0.00	48.95	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Support Services (NAICS 5619)			
African American	0.00	23.13	0.00 ****
Hispanic	0.00	4.21	0.00 ****
Asian	0.00	0.02	0.00
Native American	0.00	0.16	0.00
Minority	0.00	27.53	0.00 ****
Nonminority female	0.00	20.58	0.00 ****
DBE total	0.00	48.11	0.00 ****
Electrical Equipment Manufacturing (NAICS 3353)			
African American	0.00	36.63	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.32	0.00
Native American	0.00	0.66	0.00
Minority	0.00	38.61	0.00 ****
Nonminority female	0.00	7.92	0.00 ****
DBE total	0.00	46.53	0.00 ****
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	6.52	0.00 ****
Hispanic	0.00	2.81	0.00 ****
Asian	0.00	1.05	0.00 ****
Native American	0.00	0.00	
Minority	0.00	10.38	0.00 ****
Nonminority female	0.00	2.91	0.00 ****
DBE total	0.00	13.29	0.00 ****
Glass and Glass Product Manufacturing (NAICS 3272)			
African American	0.00	5.06	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.63	0.00
Native American	0.00	0.63	0.00
Minority	0.00	6.33	0.00 ****
Nonminority female	0.00	33.23	0.00 ****
DBE total	0.00	39.56	0.00 ****
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maint. (NAICS 8113)			
African American	0.00	17.59	0.00 ****
Hispanic	0.00	1.32	0.00 ****
Asian	0.00	2.83	0.00 ****
Native American	0.00	2.38	0.00 ****
Minority	0.00	24.11	0.00 ****
Nonminority female	0.00	13.09	0.00 ****
DBE total	0.00	37.21	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Food Manufacturing (NAICS 3119)			
African American	0.00	4.95	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00 ****
Native American	0.00	0.99	0.00 ****
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Utility System Construction (NAICS 2371)			
African American	0.00	1.75	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	1.75	0.00
Minority	0.00	3.51	0.00
Nonminority female	0.00	8.77	0.00
DBE total	0.00	12.28	0.00 ****
Other Motor Vehicle Dealers (NAICS 4412)			
African American	0.00	8.54	0.00 ****
Hispanic	0.00	1.22	0.00
Asian	0.00	10.33	0.00 ****
Native American	0.00	0.00	
Minority	0.00	20.09	0.00 ****
Nonminority female	0.00	4.88	0.00 ****
DBE total	0.00	24.98	0.00 ****
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)			
African American	0.00	5.68	0.00 ****
Hispanic	0.00	1.91	0.00 ****
Asian	0.00	1.81	0.00 ****
Native American	0.00	0.00	
Minority	0.00	9.41	0.00 ****
Nonminority female	0.00	21.78	0.00 ****
DBE total	0.00	31.19	0.00 ****
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	14.05	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	0.78	0.00 ****
Native American	0.00	1.45	0.00 ****
Minority	0.00	16.29	0.00 ****
Nonminority female	76.66	22.84	
DBE total	76.66	39.13	

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Consumer Goods Rental (NAICS 5322)			
African American	0.00	15.05	0.00 ****
Hispanic	0.00	0.93	0.00
Asian	0.00	0.93	0.00
Native American	0.00	0.70	0.00
Minority	0.00	17.61	0.00 ****
Nonminority female	0.00	3.86	0.00 ****
DBE total	0.00	21.47	0.00 ****
Office Supplies, Stationery, and Gift Stores (NAICS 4532)			
African American	0.00	7.21	0.00 ****
Hispanic	0.00	0.94	0.00
Asian	0.00	1.42	0.00
Native American	0.00	0.00	
Minority	0.00	9.57	0.00 ****
Nonminority female	0.00	28.84	0.00 ****
DBE total	0.00	38.41	0.00 ****
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	4.95	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.98	0.00 ****
Native American	0.00	0.99	0.00
Minority	0.00	7.92	0.00 ****
Nonminority female	0.00	11.88	0.00 ****
DBE total	0.00	19.80	0.00 ****
Other Electrical Equipment and Component Manufacturing (NAICS 3359)			
African American	0.00	3.47	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.39	0.00
Native American	0.00	0.69	0.00
Minority	0.00	5.54	0.00 ****
Nonminority female	0.00	13.32	0.00 ****
DBE total	0.00	18.86	0.00 ****
Building Finishing Contractors (NAICS 2383)			
African American	0.00	12.42	0.00 ****
Hispanic	0.00	3.61	0.00 ****
Asian	0.00	0.00	
Native American	0.00	0.71	0.00
Minority	0.00	16.74	0.00 ****
Nonminority female	0.00	8.43	0.00 ****
DBE total	0.00	25.16	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Rubber Product Manufacturing (NAICS 3262)			
African American	0.00	10.13	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.27	0.00
Native American	0.00	1.27	0.00
Minority	0.00	12.66	0.00 ****
Nonminority female	0.00	16.46	0.00 ****
DBE total	0.00	29.11	0.00 ****
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)			
African American	0.00	4.40	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.99	0.00
Native American	0.00	0.50	0.00
Minority	0.00	5.88	0.00 ****
Nonminority female	0.00	17.48	0.00 ****
DBE total	0.00	23.36	0.00 ****
Specialized Design Services (NAICS 5414)			
African American	0.00	15.64	0.00 ****
Hispanic	0.00	1.62	0.00
Asian	0.00	1.62	0.00
Native American	0.00	0.72	0.00
Minority	0.00	19.60	0.00 ****
Nonminority female	99.36	21.01	
DBE total	99.36	40.61	
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	0.00	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	0.00	
Nonminority female	0.00	0.00	
DBE total	0.00	0.00	
Scientific Research and Development Services (NAICS 5417)			
African American	0.00	13.67	0.00 ****
Hispanic	0.00	1.69	0.00
Asian	0.00	2.36	0.00
Native American	0.00	0.63	0.00
Minority	0.00	18.36	0.00 ****
Nonminority female	0.00	13.11	0.00 ****
DBE total	0.00	31.47	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
General Rental Centers (NAICS 5323)			
African American	0.00	6.67	0.00
Hispanic	0.00	1.11	0.00
Asian	0.00	1.11	0.00
Native American	0.00	0.00	
Minority	0.00	8.89	0.00
Nonminority female	0.00	2.22	0.00
DBE total	0.00	11.11	0.00
Spring and Wire Product Manufacturing (NAICS 3326)			
African American	0.00	3.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.74	0.00
Minority	0.00	5.94	0.00 ****
Nonminority female	7.80	8.91	87.52
DBE total	7.80	14.85	52.51
Limited-Service Eating Places (NAICS 7222)			
African American	71.21	8.28	
Hispanic	0.00	3.14	0.00
Asian	0.00	15.06	0.00 ****
Native American	0.00	0.61	0.00
Minority	71.21	27.09	
Nonminority female	0.00	10.76	0.00 ****
DBE total	71.21	37.84	
Clay Product and Refractory Manufacturing (NAICS 3271)			
African American	0.00	5.72	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.51	0.00
Native American	0.00	0.51	0.00
Minority	0.00	6.73	0.00
Nonminority female	0.00	23.25	0.00
DBE total	0.00	29.98	0.00
Beverage Manufacturing (NAICS 3121)			
African American	0.00	3.81	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	1.52	0.00
Native American	0.00	0.76	0.00
Minority	0.00	6.09	0.00 ****
Nonminority female	0.00	16.83	0.00 ****
DBE total	0.00	22.92	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)			
African American	0.00	2.58	0.00
Hispanic	0.00	0.00	
Asian	0.00	4.13	0.00 ****
Native American	0.00	3.30	0.00
Minority	0.00	10.02	0.00 ****
Nonminority female	0.00	10.24	0.00 ****
DBE total	0.00	20.26	0.00 ****
Personal and Household Goods Repair and Maintenance (NAICS 8114)			
African American	0.00	19.76	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	4.38	0.00 ****
Native American	0.00	1.11	0.00 ****
Minority	0.00	25.25	0.00 ****
Nonminority female	0.00	13.61	0.00 ****
DBE total	0.00	38.86	0.00 ****
Clothing Stores (NAICS 4481)			
African American	0.00	13.48	0.00 ****
Hispanic	0.00	1.21	0.00 ****
Asian	0.00	3.93	0.00 ****
Native American	0.00	0.30	0.00
Minority	0.00	18.92	0.00 ****
Nonminority female	0.00	10.29	0.00 ****
DBE total	0.00	29.22	0.00 ****

Source and Notes: See Table 6.8.

Table AD.25. Industry Group Utilization, Availability, and Disparity Results for MSCAA Concessions (Car Rental Included)

NAICS Industry / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Automotive Equipment Rental and Leasing (NAICS 5321)			
African American	0.00	0.00	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	0.00	
Nonminority female	0.00	0.00	
DBE total	0.00	0.00	
Limited-Service Eating Places (NAICS 7222)			
African American	29.01	8.28	
Hispanic	0.00	3.14	0.00 ****
Asian	0.00	15.06	0.00 ****
Native American	0.00	0.61	0.00 ****
Minority	29.01	27.09	
Nonminority female	0.00	10.76	0.00 ****
DBE total	29.01	37.84	76.65 ****
Book, Periodical, and Music Stores (NAICS 4512)			
African American	26.46	3.89	
Hispanic	0.00	0.73	0.00 ****
Asian	0.00	1.09	0.00 ****
Native American	0.00	0.00	
Minority	26.46	5.71	
Nonminority female	0.00	11.13	0.00 ****
DBE total	26.46	16.83	
Full-Service Restaurants (NAICS 7221)			
African American	0.30	9.27	3.19 ****
Hispanic	0.00	3.92	0.00 ****
Asian	0.00	14.91	0.00 ****
Native American	0.00	0.49	0.00
Minority	0.30	28.58	1.04 ****
Nonminority female	0.00	11.60	0.00 ****
DBE total	0.30	40.19	0.74 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Personal Services (NAICS 8129)			
African American	0.03	21.74	0.13 ****
Hispanic	0.00	0.01	0.00
Asian	0.00	3.04	0.00 ****
Native American	0.00	1.20	0.00
Minority	0.03	25.99	0.11 ****
Nonminority female	0.00	15.49	0.00 ****
DBE total	0.03	41.48	0.07 ****
Traveler Accommodation (NAICS 7211)			
African American	0.00	7.29	0.00
Hispanic	0.00	2.92	0.00
Asian	0.00	20.83	0.00 ****
Native American	0.00	0.48	0.00
Minority	0.00	31.52	0.00 ****
Nonminority female	0.00	9.08	0.00 ****
DBE total	0.00	40.60	0.00 ****
Activities Related to Credit Intermediation (NAICS 5223)			
African American	0.00	8.68	0.00 ****
Hispanic	0.00	2.16	0.00
Asian	0.00	1.02	0.00
Native American	0.00	1.14	0.00
Minority	0.00	12.99	0.00 ****
Nonminority female	98.59	3.11	
DBE total	98.59	16.10	
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)			
African American	0.00	6.60	0.00 ****
Hispanic	0.00	1.46	0.00
Asian	0.00	1.78	0.00
Native American	0.00	0.00	
Minority	0.00	9.84	0.00 ****
Nonminority female	0.00	25.94	0.00 ****
DBE total	0.00	35.79	0.00 ****
Clothing Stores (NAICS 4481)			
African American	0.00	12.09	0.00 ****
Hispanic	0.00	1.21	0.00
Asian	0.00	4.01	0.00
Native American	0.00	0.59	0.00
Minority	0.00	17.89	0.00 ****
Nonminority female	0.00	12.15	0.00 ****
DBE total	0.00	30.04	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Jewelry, Luggage, and Leather Goods Stores (NAICS 4483)			
African American	0.00	11.31	0.00 ****
Hispanic	0.00	1.21	0.00
Asian	0.00	4.10	0.00
Native American	0.00	0.48	0.00
Minority	0.00	17.09	0.00 ****
Nonminority female	0.00	13.40	0.00 ****
DBE total	0.00	30.49	0.00 ****
Specialty Food Stores (NAICS 4452)			
African American	0.00	9.14	0.00 ****
Hispanic	0.00	1.31	0.00
Asian	0.00	3.92	0.00
Native American	0.00	0.00	
Minority	0.00	14.37	0.00 ****
Nonminority female	0.00	10.68	0.00 ****
DBE total	0.00	25.04	0.00 ****
Taxi and Limousine Service (NAICS 4853)			
African American	0.00	9.86	0.00 ****
Hispanic	0.00	1.41	0.00 ****
Asian	0.00	4.23	0.00 ****
Native American	0.00	0.00	
Minority	0.00	15.49	0.00 ****
Nonminority female	0.00	5.63	0.00 ****
DBE total	0.00	21.13	0.00 ****
Depository Credit Intermediation (NAICS 5221)			
African American	0.00	6.82	0.00 ****
Hispanic	0.00	1.07	0.00
Asian	0.00	1.07	0.00
Native American	0.00	0.00	
Minority	0.00	8.96	0.00 ****
Nonminority female	0.00	2.14	0.00 ****
DBE total	0.00	11.10	0.00 ****
Other Transit and Ground Passenger Transportation (NAICS 4859)			
African American	0.00	27.23	0.00 ****
Hispanic	0.00	0.99	0.00
Asian	0.00	3.29	0.00 ****
Native American	0.00	0.33	0.00
Minority	0.00	31.85	0.00 ****
Nonminority female	0.00	9.94	0.00 ****
DBE total	0.00	41.79	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	5.41	9.82	55.13
Hispanic	0.00	1.84	0.00
Asian	0.00	0.61	0.00
Native American	0.00	0.61	0.00
Minority	5.41	12.88	42.01
Nonminority female	0.00	11.04	0.00
DBE total	5.41	23.93	22.62
Consumer Goods Rental (NAICS 5322)			
African American	0.00	9.94	0.00
Hispanic	0.00	0.98	0.00
Asian	0.00	0.98	0.00
Native American	0.00	0.00	
Minority	0.00	11.89	0.00
Nonminority female	0.00	6.15	0.00
DBE total	0.00	18.04	0.00
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	6.52	0.00
Hispanic	0.00	2.81	0.00
Asian	0.00	1.05	0.00
Native American	0.00	0.00	
Minority	0.00	10.38	0.00
Nonminority female	0.00	2.91	0.00
DBE total	0.00	13.29	0.00 ****
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.41	0.00
Hispanic	0.00	1.34	0.00
Asian	0.00	2.33	0.00
Native American	0.00	0.13	0.00
Minority	0.00	11.21	0.00
Nonminority female	0.00	22.20	0.00
DBE total	0.00	33.41	0.00
Cable and Other Subscription Programming (NAICS 5152)			
African American	0.00	6.86	0.00
Hispanic	0.00	1.07	0.00
Asian	0.00	1.07	0.00
Native American	0.00	0.00	
Minority	0.00	8.99	0.00 ****
Nonminority female	0.00	3.98	0.00
DBE total	0.00	12.97	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	0.00	18.51	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.06	0.00
Native American	0.00	1.15	0.00
Minority	0.00	22.72	0.00 ****
Nonminority female	0.00	16.06	0.00 ****
DBE total	0.00	38.77	0.00 ****
Other Telecommunications (NAICS 5179)			
African American	0.00	7.99	0.00
Hispanic	0.00	1.01	0.00
Asian	0.00	1.01	0.00
Native American	0.00	1.59	0.00
Minority	0.00	11.58	0.00
Nonminority female	100.00	3.48	
DBE total	100.00	15.06	
Personal Care Services (NAICS 8121)			
African American	16.67	21.30	78.24
Hispanic	0.00	0.00	
Asian	0.00	2.88	0.00
Native American	0.00	2.16	0.00
Minority	16.67	26.34	63.27 ****
Nonminority female	0.00	16.22	0.00 ****
DBE total	16.67	42.56	39.16 ****

Source and Notes: See Table 6.14.

Table AD.26. Industry Group Utilization, Availability, and Disparity Results for MSCAA Concessions (Car Rental Excluded)

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Activities Related to Credit Intermediation (NAICS 5223)			
African American	0.00	8.68	0.00 ****
Hispanic	0.00	2.16	0.00
Asian	0.00	1.02	0.00
Native American	0.00	1.14	0.00
Minority	0.00	12.99	0.00 ****
Nonminority female	98.59	3.11	
DBE total	98.59	16.10	
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)			
African American	0.00	6.60	0.00 ****
Hispanic	0.00	1.46	0.00
Asian	0.00	1.78	0.00
Native American	0.00	0.00	
Minority	0.00	9.84	0.00 ****
Nonminority female	0.00	25.94	0.00 ****
DBE total	0.00	35.79	0.00 ****
Clothing Stores (NAICS 4481)			
African American	0.00	12.09	0.00 ****
Hispanic	0.00	1.21	0.00
Asian	0.00	4.01	0.00
Native American	0.00	0.59	0.00
Minority	0.00	17.89	0.00 ****
Nonminority female	0.00	12.15	0.00 ****
DBE total	0.00	30.04	0.00 ****
Jewelry, Luggage, and Leather Goods Stores (NAICS 4483)			
African American	0.00	11.31	0.00 ****
Hispanic	0.00	1.21	0.00
Asian	0.00	4.10	0.00
Native American	0.00	0.48	0.00
Minority	0.00	17.09	0.00 ****
Nonminority female	0.00	13.40	0.00 ****
DBE total	0.00	30.49	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Specialty Food Stores (NAICS 4452)			
African American	0.00	9.14	0.00 ****
Hispanic	0.00	1.31	0.00
Asian	0.00	3.92	0.00
Native American	0.00	0.00	
Minority	0.00	14.37	0.00 ****
Nonminority female	0.00	10.68	0.00 ****
DBE total	0.00	25.04	0.00 ****
Taxi and Limousine Service (NAICS 4853)			
African American	0.00	9.86	0.00 ****
Hispanic	0.00	1.41	0.00 ****
Asian	0.00	4.23	0.00 ****
Native American	0.00	0.00	
Minority	0.00	15.49	0.00 ****
Nonminority female	0.00	5.63	0.00 ****
DBE total	0.00	21.13	0.00 ****
Depository Credit Intermediation (NAICS 5221)			
African American	0.00	6.82	0.00 ****
Hispanic	0.00	1.07	0.00
Asian	0.00	1.07	0.00
Native American	0.00	0.00	
Minority	0.00	8.96	0.00 ****
Nonminority female	0.00	2.14	0.00 ****
DBE total	0.00	11.10	0.00 ****
Other Transit and Ground Passenger Transportation (NAICS 4859)			
African American	0.00	27.23	0.00 ****
Hispanic	0.00	0.99	0.00
Asian	0.00	3.29	0.00 ****
Native American	0.00	0.33	0.00
Minority	0.00	31.85	0.00 ****
Nonminority female	0.00	9.94	0.00 ****
DBE total	0.00	41.79	0.00 ****
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	5.41	9.82	55.13
Hispanic	0.00	1.84	0.00
Asian	0.00	0.61	0.00
Native American	0.00	0.61	0.00
Minority	5.41	12.88	42.01
Nonminority female	0.00	11.04	0.00
DBE total	5.41	23.93	22.62

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Consumer Goods Rental (NAICS 5322)			
African American	0.00	9.94	0.00
Hispanic	0.00	0.98	0.00
Asian	0.00	0.98	0.00
Native American	0.00	0.00	
Minority	0.00	11.89	0.00
Nonminority female	0.00	6.15	0.00
DBE total	0.00	18.04	0.00
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	6.52	0.00
Hispanic	0.00	2.81	0.00
Asian	0.00	1.05	0.00
Native American	0.00	0.00	
Minority	0.00	10.38	0.00
Nonminority female	0.00	2.91	0.00
DBE total	0.00	13.29	0.00 ****
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.41	0.00
Hispanic	0.00	1.34	0.00
Asian	0.00	2.33	0.00
Native American	0.00	0.13	0.00
Minority	0.00	11.21	0.00
Nonminority female	0.00	22.20	0.00
DBE total	0.00	33.41	0.00
Cable and Other Subscription Programming (NAICS 5152)			
African American	0.00	6.86	0.00
Hispanic	0.00	1.07	0.00
Asian	0.00	1.07	0.00
Native American	0.00	0.00	
Minority	0.00	8.99	0.00 ****
Nonminority female	0.00	3.98	0.00
DBE total	0.00	12.97	0.00 ****
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	0.00	18.51	0.00 ****
Hispanic	0.00	0.00	
Asian	0.00	3.06	0.00
Native American	0.00	1.15	0.00
Minority	0.00	22.72	0.00 ****
Nonminority female	0.00	16.06	0.00 ****
DBE total	0.00	38.77	0.00 ****

Appendix D. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Telecommunications (NAICS 5179)			
African American	0.00	7.99	0.00
Hispanic	0.00	1.01	0.00
Asian	0.00	1.01	0.00
Native American	0.00	1.59	0.00
Minority	0.00	11.58	0.00
Nonminority female	100.00	3.48	
DBE total	100.00	15.06	
Personal Care Services (NAICS 8121)			
African American	16.67	21.30	78.24
Hispanic	0.00	0.00	
Asian	0.00	2.88	0.00
Native American	0.00	2.16	0.00
Minority	16.67	26.34	63.27 ****
Nonminority female	0.00	16.22	0.00 ****
DBE total	16.67	42.56	39.16 ****

Source and Notes: See Table 6.14.



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