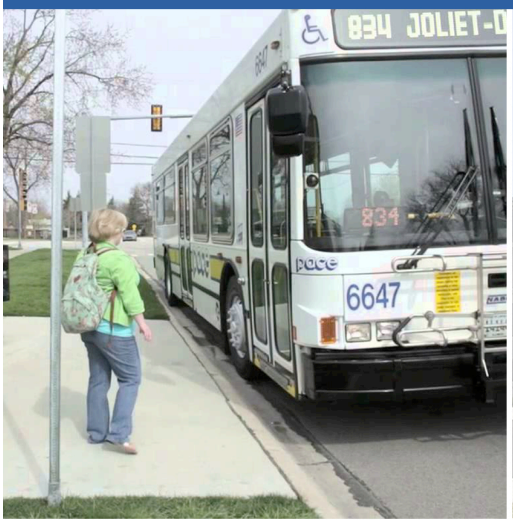
Pace Suburban Bus
Disparity Study 2015



COLETTE HOLT & ASSOCIATES

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AUG. 26TH 1818

About the Study Team

Colette Holt & Associates ("CHA") is a national law and consulting firm specializing in disparity studies, affirmative action contracting programs, expert witness services, compliance monitoring and strategic development related to inclusion, diversity and affirmative action. Founded in 1994, it is led by Colette Holt, J.D., a nationally recognized attorney and expert. In addition to Ms. Holt, the firm consists of Steven C Pitts, Ph. D., who serves as the team's economist and statistician, Robert C. Ashby, J.D., former Deputy Counsel at the US Department of Transportation, who serves as special counsel, Jeremy Jones, B.S, who serves as Assistant Economist, and Research Assistants Denise Oliver, B.S. and Katherine Wiggins, B.A. CHA is certified as a Disadvantaged Business Enterprise, Minority-Owned Business Enterprise and a Woman-Owned Business Enterprise by numerous agencies.

Trinal, Inc. ("Trinal") is a Chicago-based consulting firm specializing in procurement policy development and economic development program monitoring, including program management, certification, affirmative action and community outreach. Trinal is certified as a Disadvantaged Business Enterprise, Minority-Owned Business Enterprise and a Woman-Owned Business Enterprise by several agencies.

Sandi Llano & Associates, Inc. ("SLA") is a Chicago-based consulting firm Disadvantaged, Minority and Women Business programs, including outreach, program development, project monitoring and certification issues. SLA is certified as a Disadvantaged Business Enterprise, Minority-Owned Business Enterprise and a Woman-Owned Business Enterprise by several agencies.

Abaci Research & Consulting, LLC ("ARC") is a national firm specializing in data collection and management for disparity studies and other research related to contracting affirmative action programs. President Kim Stewart has almost a decade of experience supporting legally defensible disparity studies and serving as Assistant Project Director. ARC is certified as a Disadvantaged Business Enterprise and a Woman-Owned Business Enterprise by several agencies.

Acknowledgements

We wish to express special thanks to the following individuals who assisted in the conduct of the Study: Christina Perez and Judy Curley.

Thanks to Alan Stewart, Springboard Intermedia, for design of the Study cover.

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I. EXECUTIVE SUMMARY

Colette Holt & Associates was retained by Pace Suburban Bus ("Pace") to perform a study to determine the availability of Disadvantaged Business Enterprises ("DBEs") in its market area and evaluate its DBE program. The objective was to meet the requirements of strict constitutional scrutiny applicable to DBE programs and Pace's obligations as a recipient of Federal Transit Administration under 49 C.F.R. Part 26. We analyzed purchase order and contract data for calendar years 2008 through 2014.

A. Study Methodology and Data

The methodology for this study embodies the constitutional principles of *City of Richmond v. Croson* and *Adarand v. Peña*, the DBE program's regulatory requirements in Part 26, as well as best practices for designing DBE programs. Our approach has been specifically upheld by courts. It is also the approach developed by Ms. Holt for the National Academy of Sciences that is now the recommended standard for designing legally defensible disparity studies for transportation agencies.

We determined the availability of DBEs in Pace's geographic and industry market area. We further analyzed disparities in the wider economy, where affirmative action is rarely practiced, to evaluate whether barriers continue to impede opportunities for minorities and women when remedial intervention is not imposed. We gathered anecdotal data on DBEs' experiences with Pace's DBE program and barriers throughout the economy through focus groups with business owners and stakeholders, and interviews with agency staff. We also evaluated Pace's DBE program and race- and gender-neutral policies and procedures for their effectiveness and conformance with Part 26 and national standards for race-conscious initiatives.

Based on the results of these extensive analyses, we make recommendations for narrowly tailoring Pace's DBE programs.

B. Study Findings

1. Pace's Program

a. Program Elements

As a recipient of US Department of Transportation ("USDOT") funds through the Federal Transit Administration ("FTA"), Pace is required as a condition of receipt to implement a DBE program in compliance with 49 C.F.R. Part 26. Pace is also required to implement a DBE program for its non-federal-aid contracts under Illinois law. Pace's DBE program plan was updated in 2013 and has been

approved by FTA. Pace's interim triennial DBE goal is 2.0 percent. This FTA-approved goal must be reached solely through race-neutral measures; Pace is not authorized under the current approved goal setting methodology to set DBE goals on individual contracts.

DBE contract goals on non-federally-assisted contracts are recommended by the Pace project manager and approved or modified by the DBELO. Pace has explicit monitoring and enforcement mechanisms as part of its DBE program plan.

In addition to the standard components of the DBE program, Pace has adopted a Small Business Enterprise ("SBE") program to increase opportunities for small businesses to perform work for Pace as prime contractors. To be eligible, a firm must have been "active" for at least one year; be independent and not an affiliate or subsidiary of another firm; and meet the Small Business Administration's size standards[1] averaged over three years. The DBELO reviews applications. The SBE must perform the work of the contract with its own forces or subcontract work to another certified SBE, which subcontracting must be approved by the DBELO. Pace reserves some contracts for bidding only by SBEs. Pace project managers must identify whether the contract can be performed by a small business as part of the DBE goal certification process and they must provide a list of small businesses that might be able to work on the project as either a prime firm or a subcontractor.

Pace is an active participant in the annual Transportation Symposium conducted by the Chicago area transportation agencies, where DBEs and other small businesses participate in seminars, network with agency officials and other prime contractors and businesses. In addition, the DBELO sends email notifications to certified firms of opportunities in which they may be interested

b. Interviews

To explore the impacts of Pace's contracting policies and procedures and the implementation of the DBE program, we interviewed 48 individuals about their experiences and solicited their suggestions for changes. We solicited input about their experiences and suggestions for changes or improvements. Topics included:

- Outreach efforts to DBEs: Participants generally reported that outreach from Pace about upcoming opportunities and events was helpful and timely. While Pace does participate in interagency outreach events such as the annual Transit Symposium for the Chicago area agencies, targeted

[1] 13 C.F.R. Part 121.

networking events for DBEs and prime contractors for Pace projects were urged as one way to forge relationships.

- Contract size: Several DBEs suggested “unbundling” contracts into smaller scopes or smaller dollar values to increase their abilities to obtain prime and subcontract work.

- Payments: Most prime contractors reported that Pace pays timely. One recommendation was to reduce the amount of retainage held by Pace on contract progress payments.

- Access to information about technical assistance and supportive services programs: DBEs suggested Pace to provide to DBEs information about how to secure technical assistance, supportive services and access financing and bonding programs. Many resources are available in the Chicago area and through the State of Illinois. While not administered by Pace, links on its website and materials at meetings would help disseminate critical information about resources for success.

- Mentor-protégé relationships: General contractors generally supported the concept, but were concerned about not compromising the DBE’s independence or ability to perform a commercially useful function. Professional services firms had some positive experience with these types of relationships on Illinois Tollway projects, although with the caveat they my be developing competitors.

- Small business setasides: There was support from both DBEs and non-DBEs for the Small Business program.

- Meeting DBE contract goals: Most prime firms were able to meet the contract goals, and several supported the overall objectives of the program. Construction firms stated that they rarely if ever seek waivers of the goal. If they cannot meet the contract goal, they usually will not submit a bid. Some general contractors expressed frustration in getting competitive bids or timely paperwork from DBEs. Several prime firms asserted that it is more costly to use DBEs. Encouraging the use of joint venture arrangements between non-DBE and DBE prime contractors was mentioned as one method–although high risk–to increase participation and DBEs’ capacities.

- Contract performance monitoring and enforcement: In contrast to the monitoring efforts of some Chicago agencies, some DBEs reported that Pace monitors their utilization during contract performance. A major concern of prime contractors is how to determine how much assistance may be provided to a DBE during performance without compromising

either firm. Sometimes, the problems of doing business with a small firm are more than the general contractor is willing or able to address. One repeated recommendation for Pace is to implement an electronic data management system for the DBE program.

2. Pace's Industry and Geographic Markets

Part 26 requires that a recipient limit its race-based remedial program to firms doing business in its geographic and industry markets. We therefore examined a sample of approximately $433 million of agency spending to determine empirically the market areas for fiscal years 2008 through 2012. This represents 90% of all dollars in the data.

We applied a "90/90/90" rule, whereby we analyzed North American Industry Classification System ("NAICS") codes that cover over 90 percent of the total contract dollars; over 90 percent of the prime contract dollars; and over 90 percent of the subcontract dollars. We took this approach so that we could be assured that we provide an in depth picture of Pace's activities. Table A presents the distribution of the number of contracts and the amount of contract dollars across all industry sectors. Chapter IV provides tables disaggregated by dollars paid to prime contractors and dollars paid to subcontractors.

Table A: Industry Percentage Distribution of All Contracts by Dollars Paid, All Sectors

NAICS	NAICS Code Description	PCT Total Contract Dollars	Cumulative PCT Total Contract Dollars
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	21.84%	21.84%
561110	Office Administrative Services	17.68%	39.52%
336120	Heavy Duty Truck Manufacturing	7.33%	46.85%
423830	Industrial Machinery and Equipment Merchant Wholesalers	7.20%	54.05%
485113	Bus and Other Motor Vehicle Transit Systems	5.52%	59.57%
485410	School and Employee Bus Transportation	5.21%	64.78%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	3.91%	68.69%
334290	Other Communications Equipment Manufacturing	2.98%	71.67%
485510	Charter Bus Industry	2.70%	74.37%
541511	Custom Computer Programming Services	2.19%	76.56%

325110	Petrochemical Manufacturing	2.16%	78.72%
326211	Tire Manufacturing (except Retreading)	2.15%	80.87%
524210	Insurance Agencies and Brokerages	1.76%	82.63%
541110	Offices of Lawyers	1.71%	84.35%
541810	Advertising Agencies	1.38%	85.72%
238210	Electrical Contractors and Other Wiring Installation Contractors	1.34%	87.06%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	1.07%	88.14%
336211	Motor Vehicle Body Manufacturing	1.03%	89.17%
532112	Passenger Car Leasing	0.94%	90.11%
TOTAL			**100.00%**

Source: CHA analysis of Pace data.

We next determined the locations of firms in these NAICS codes to establish the industries in which the agency purchases. We applied the rule of thumb of identifying the firm locations that account for at least 75 percent of contract and subcontract dollar payments in the contract data file. Location was determined by ZIP code as listed in the file and aggregated into counties as the geographic unit.

Spending in Illinois accounted for 79.61% of all contract dollars paid in the product market. Of that total, the counties of Cook, DuPage, Kane, and Will accounted for 95.42 percent. Therefore, the state of Illinois constituted the geographic market area from which we drew our availability data. Table B presents data on how the contract dollars were spent across the state's counties.

Table 4: Distribution of Contracts in Pace's Product Market, by State

State	PCT of Total Contract Dollars Paid		State	PCT of Total Contract Dollars Paid
IL	79.610%		**PA**	0.189%
IN	8.019%		**TX**	0.043%
CA	7.997%		**AL**	0.037%
Canada	1.699%		**WI**	0.014%
GA	1.242%		**FL**	0.013%
IA	0.686%		**NJ**	0.003%
NY	0.447%			
			TOTAL	**100.00%**

Source: CHA analysis of Pace data.

3. Pace's Utilization of DBEs in Its Market Areas

The next step was to determine the dollar value of MWRD's utilization of DBEs in its market area constrained by geography and industry sector, as measured by payments to prime firms and associated subcontractors and disaggregated by race and gender. Because Pace lacked full records for payments to subcontractors other than firms certified as DBEs, we contacted the prime vendors to request that they describe in detail their contract and associated subcontracts, including race, gender and dollar amount paid to date. We further developed a Master D/M/WBE Directory based upon lists solicited from dozens of agencies and organizations. We used the results of this extensive data collection process to assign minority or woman status to the ownership of each firm in the analysis.

Table C presents the distribution of contract dollars by industry sectors by race and gender for federally-funded contracts. Table D presents the distribution of contract dollars by industry sectors by race and gender for locally-funded contracts. Chapter IV provides detailed breakdowns of these results.

Table C: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
237130	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
237310	0.0%	28.6%	0.0%	0.0%	4.5%	66.9%
238210	0.0%	0.0%	0.0%	0.0%	64.8%	35.2%
238910	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
238990	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
336211	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
423120	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
423830	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
532112	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
541330	0.0%	0.0%	0.0%	0.0%	4.3%	95.7%
541820	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
561730	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
TOTAL	**0.0%**	**0.6%**	**0.0%**	**0.0%**	**0.5%**	**98.8%**

Source: CHA analysis of Pace data.

Table D: Distribution of Contract Dollars by Race and Gender – No Federal Funds, All Sectors
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
237130	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
237310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

238210	0.4%	8.0%	0.0%	0.0%	0.7%	9.2%
238990	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
325110	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
326211	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
334290	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
334512	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
423120	0.0%	0.0%	1.3%	0.0%	4.9%	6.2%
423830	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
424720	1.1%	0.5%	0.0%	0.0%	0.0%	1.5%
441228	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
441320	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
485113	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
485410	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
485510	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
524210	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541110	0.0%	0.0%	0.0%	0.0%	6.9%	6.9%
541330	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541511	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541810	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541820	0.0%	0.0%	0.0%	0.0%	17.6%	17.6%
541850	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
561110	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
561720	87.7%	0.0%	0.0%	0.0%	0.0%	87.7%
561730	35.0%	0.0%	0.0%	0.0%	28.6%	63.6%
811121	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Total	**0.4%**	**0.4%**	**0.0%**	**0.0%**	**0.5%**	**1.3%**

Source: CHA analysis of Pace data.

4. Availability of DBEs in Pace's Market

Using the "custom census" approach to estimating availability and the further assignment of race and gender using the Master Directory and misclassification adjustments, we determined the aggregated availability of DBEs, weighted by Pace's spending in its geographic and industry markets to be 22.00 percent. Table E presents the weighted availability data for various racial and gender categories for federally-funded contracts. Table F presents the weighted availability data for various racial and gender categories for locally-funded contracts

Table E: Aggregated Weighted Availability – Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**1.64%**	**0.96%**	**0.96%**	**0.04%**	**6.21%**	**9.82%**	**90.18%**	**100.0%**

Source: CHA analysis of Pace data; Hoovers; CHA Master Directory.

Table F: Aggregated Weighted Availability – No Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**3.74%**	**1.34%**	**1.83%**	**0.07%**	**5.00%**	**12.07%**	**87.93%**	**100.0%**

Source: CHA analysis of Pace data; ; Hoovers; CHA Master Directory.

Because Pace's authority to set DBE goals is derivative– that is, it flows from federal and state law, not its own actions– it relies upon the determination of its grantor governments that there is a compelling interest in remedying discrimination based upon a strong basis in evidence. Therefore, it is not necessary for Pace to find that there are disparities in its contracting activities

5. Analysis of Race and Gender Disparities in the Illinois Economy

We explored the data and literature relevant to how discrimination in Pace's market and throughout the wider economy affects the ability of minorities and women to fairly and fully engage in Pace's contract opportunities. First, we analyzed the earnings of minorities and women relative to White men; the rates at which DBEs in Illinois form firms; and their earnings from those firms. Next, we summarized the literature on barriers to equal access to commercial credit. Finally, we summarized the literature on barriers to equal access to human capital. All three types of evidence have been found by the courts to be relevant and probative of whether a government will be a passive participant in overall marketplace discrimination without some type of affirmative interventions. Data and literature analyzed were the following:

- Data from the Census Bureau's Survey of Business Owners indicate very large disparities between DBE firms and non-DBE firms when examining the sales of all firms, the sales of employer firms (firms that employ at least one worker), or the payroll of employer firms.

- Data from the Census Bureau's American Community Survey ("ACS") indicate that Blacks, Hispanics, Native Americans, Asian/Pacific Islanders, Others, and White women were underutilized relative to White men. Controlling for other factors relevant to business outcomes, wages and business earnings were lower for these groups compared to White men.

Data from the ACS further indicate that non-Whites and White women are less likely to form businesses compared to similarly situated White men.

- The literature on barriers to access to commercial credit and the development of human capital further reports that minorities continue to face constraints on their entrepreneurial success based on race. These constraints negatively impact the ability of firms to form, to grow, and to succeed.

Taken together with other evidence such as anecdotal data and the judicial findings regarding the Illinois and Chicago-area construction industry, this is the type of proof that addresses whether, in the absence of DBE contract goals, it would be a passive participant in the discrimination systems found throughout Illinois. These economy-wide analyses are relevant and probative to whether the agency may continue to employ narrowly tailored race- and gender-conscious measures to ensure equal opportunities to access its contracts and associated subcontracts.

6. Qualitative Evidence of Race and Gender Disparities in Pace's Market

In addition to quantitative data, the courts look to anecdotal evidence of firms' marketplace experiences to evaluate whether the effects of current or past discrimination continue to impede opportunities for DBEs such that race-conscious measures are supportable. To explore this type of anecdotal evidence, we conducted four group interviews, totaling 54 participants, and one stakeholders meeting. Most reported that while progress has been made in reducing barriers on the basis of race and gender, inequities remain significant obstacles to full and fair opportunities.

- Discriminatory attitudes and negative perceptions of competency: Several participants reported that potential clients and customers display negative attitudes about the competency and professionalism of minorities and women. The assumption is that DBEs are less qualified. Bias against women in the construction industry and construction professional services remains a substantial obstacle to equal treatment and fair opportunities. Female owners reported the continuing effects of stereotypes about gender roles and sexist attitudes and behaviors from male colleagues and clients.

- Obtaining public sector work on an equal basis: There was almost universal agreement among minority and women owners that the DBE Program remains critical to reduce barriers to equal contracting opportunities and to open doors for Pace work. DBEs sought the right to

compete on a fair and equal basis. Without goals, DBEs believed they would be shut out of the market.

7. Recommendations

Based upon the results of the statistical and anecdotal analyses, we make the following recommendations.

a. Augment Race- and Gender-Neutral Measures

The courts and the DBE Program regulations require that grantees use race-neutral[2] approaches to the maximum feasible extent to meet the annual DBE goal. This is a critical element of narrowly tailoring the program, so that the burden on non-DBEs is no more than necessary to achieve Pace's remedial purposes. Increased participation by DBEs through race-neutral measures will also reduce the need to set DBE contract goals. We therefore suggest the following enhancements of Pace's current efforts, based on the business owner interviews, the input of agency staff, and national best practices for DBE programs.

- Implement an electronic contracting data collection and monitoring system: Functionality should include contract compliance; full firm contact information; utilization plan capture; contract compliance, including verification of payments; contract goal setting; outreach tools; spend analysis of informal purchases and contracts; integrated email and fax notifications; access by authorized users; export/import integration with existing systems; and access by authorized Pace staff, prime contractors and subcontractors.

- Conduct DBE and prime contractor networking events on Pace projects: Pace participates in outreach and networking events in conjunction with other transportation agencies. Targeted networking events for DBEs and prime contractors for Pace projects were urged as one approach to forging relationships.

- Provide annual contracting forecasts: Annual or semi-annual contracting forecasts, whereby Pace projects approximately what it will spend at the general industry level or on specific projects, is a usual tool to reduce barriers.

- Increase contract "unbundling": "Unbundling" contracts into smaller segments was endorsed by several firm owners as one method to provide

[2] The term race-neutral as used here includes gender-neutral.

fair access to Pace's projects. Unbundling must be conducted, however, within the constraints of the need to ensure efficiency and limit costs to taxpayers. Pace should consider adding unbundling as a component in the small business elements of its DBE Program Plan, as this approach is an approved element under 49 C.F.R. § 26.39.

- Review retainage policies and procedures: Pace was reported to make timely payments to prime contracts, and few DBEs reported they had payment issues on Pace projects. However, Pace's policy to retain 10 percent of the contract price until final completion is a substantial burden for all firms in general and DBEs and small businesses in particular. We urge the agency to consider releasing retainage on a rolling basis, so that subcontractors who have fully performed and whose work has been accepted can be paid the full amount of the invoice. We further recommend that Pace not hold retainage at all on professional services contracts. Such a practice is highly unusual, and as with construction contracts, needlessly impacts DBEs and small firms.

- Assist with access to technical assistance and supportive services programs: Several DBEs requested help with navigating and accessing the various programs that are provided by agencies other than Pace to assist DBEs. One suggestion was for Pace to provide to DBEs information about how to secure technical assistance, supportive services and access financing and bonding programs. Many resources are available in the Chicago area and through the State of Illinois. While not administered by Pace, links on its website and materials at meetings would help disseminate critical information about resources for success.

- Ensure bidder non-discrimination and fairly priced subcontractor quotations: Pace should require bidders to maintain all subcontractor quotes received on larger projects. At Pace's discretion, the prices and scopes can then be compared to ensure that bidders are in fact soliciting and contracting with subcontractors on a non-discriminatory basis and that DBEs are not inflating quotes. Pace should also provide with the invitation for bid the scopes of work used to set the contract goal. The recent revisions to the DBE program regulations now mandate a similar approach.

- Enhance the Small Business Enterprise program: The current SBE program could be enhanced by clarifying the size standard and personal net worth tests; setting guidelines for which contracts should be considered for this program; setting an overall, annual internal target for dollars spent with SBEs; and using an electronic system to identify eligible firms and track projects.

b. Continue to Implement Narrowly Tailored Race- and Gender-Conscious Measures

- Use the study to set the overall annual DBE goal: 49 C.F.R. Part 26 requires that Pace adopt an annual overall goal for DBE participation in its federally-funded projects covering a three year period. This Study's availability estimates in Chapter IV should be consulted to determine the Step 1 base figure for the relative availability of DBEs required by § 26.45(c). It should also form the basis for the DBE goal for state-funded contracts. Our custom census is an alternative method permitted under § 26.45(c)(5), and is the only approach that has received repeated judicial approval. The statistical disparities in Chapter V in the rates at which DBEs form businesses can serve as the basis for a Step 2 in § 26.45(d) adjustment to reflect the level of DBE availability that would be expected in the absence of discrimination. However, we note that the case law in the Seventh Circuit Court of Appeals requires the goal for a race-based program to be the "plausible lower bound estimate," so any adjustment to the step 1 base figure must be very carefully considered

- Use the study to set DBE contract goals: The detailed availability estimates in the study should serve as the starting point for contract goal setting. Pace should weigh the estimated scopes of the contract by the availability of DBEs in those scopes as estimated in the study, and then adjust the result based on current market conditions. The electronic system should have a goal setting module and written procedures spelling out the steps should be drafted. Pace should bid some contracts that it determines have significant opportunities for DBE participation without goals. These "control contracts" can illuminate whether certified firms are used or even solicited in the absence of goals, as suggested by the study data. The development of some unremediated markets data will be probative of whether contract goals remain needed to level the playing field for minorities.

c. Develop Performance Measures for Program Success

MWRD should develop quantitative performance measures for DBEs and overall success of the program to evaluate its effectiveness in reducing the systemic barriers identified by the study. In addition to meeting goals, possible benchmarks might be the number of good faith effort waiver requests; the number and dollar amounts of bids rejected as non-responsive for failure to make good faith efforts to meet the goal; the number, type and dollar amount of DBE substitutions during contract performance; growth in the number, size and scopes of work of certified firms; and increased variety in the industries in which DBEs are awarded prime contracts and subcontracts.

II. LEGAL STANDARDS FOR DISADVANTAGED BUSINESS ENTERPRISE PROGRAMS

A. Summary of Constitutional Standards

To be effective, enforceable, and legally defensible, a race-based program for public contracts 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" in remedying race discrimination by current "strong evidence" of the persistence of discrimination. Such evidence may consist of the entity's "passive participation" in a system of racial exclusion.

- Any remedies adopted must be "narrowly tailored" to that discrimination, that is, the program must be directed at the types and depth of discrimination identified.[3]

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

- Statistical evidence of the underutilization of minority firms by the agency and/or throughout the agency's geographic and industry market area compared to their availability in the market area. These are as disparity indices, comparable to the type of "disparate impact" analysis used in employment discrimination cases.

- Anecdotal evidence of race-based barriers to the full and fair participation of minority firms in the market area and in seeking contracts with the agency, comparable to the "disparate treatment" analysis used in employment discrimination cases.[4] Anecdotal data can consist of interviews, surveys, public hearings, academic literature, judicial decisions, legislative reports, etc.

The narrow tailoring requirement has been met through the satisfaction of five factors to ensure that the remedy "fits" the evidence:

- The efficacy of race-neutral remedies at overcoming identified discrimination.

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[3] *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469 (1989).

[4] *Id.* at 509.

- The relationship of numerical benchmarks for government spending to the availability of minority- and women-owned firms and to subcontracting goal setting procedures.

- The congruence between the remedies adopted and the beneficiaries of those remedies.

- Any adverse impact of the relief on third parties.

- The duration of the program.[5]

In *Adarand v. Peña,*[6] the Supreme Court extended the analysis of strict scrutiny to race-based federal enactments such as the Disadvantaged Business Enterprise ("DBE") program for federally-assisted transportation contracts (which applies to Pace).[7] Just as in the 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 the evidence relied upon.

In general, courts have subjected preferences for Women-Owned Business Enterprises ("WBEs") to "intermediate scrutiny." Gender-based classifications must be supported by an "exceedingly persuasive justification" and be "substantially related" to the objective.[8] However, appellate courts, including the Seventh Circuit Court of Appeals, have applied strict scrutiny to the gender-based presumption of social disadvantage in reviewing the constitutionality of the DBE program.[9] Therefore, we advise that Pace evaluate gender-based remedies under the strict scrutiny standard.

Classifications not based on race, ethnicity, religion, national origin or gender are subject to the lesser standard of review of "rational basis" scrutiny, because the courts have held there are no equal protection implications under the Fourteenth Amendment for groups not subject to systemic discrimination.[10] In contrast to strict scrutiny of government action directed towards persons of "suspect classifications" such as racial and ethnic minorities, rational basis means the governmental action must only be "rationally related" to a "legitimate" government interest. Thus, preferences for persons with disabilities, veterans, etc. may be enacted with vastly less evidence than race- or gender-based measures to combat historic discrimination.

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[5] *United States v. Paradise*, 480 U.S. 149, 171 (1987).

[6] *Adarand v. Peña,* 515 U.S. 200 (1995).

[7] 49 C.F.R. Part 26.

[8] *Cf. United States v. Virginia*, 518 U.S. 515 (1996).

[9] *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715, 720 (7th Cir. 2007) ("*Northern Contracting III*").

[10] *United States v. Carolene Products Co.*, 304 U.S. 144 (1938).

Unlike most legal challenges, the defendant has the initial burden of producing "strong evidence" in support of a race-conscious program.[11] 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.[12] "[W]hen the proponent of an affirmative action plan produces sufficient evidence to support an inference of discrimination, the plaintiff must rebut that inference in order to prevail."[13] A plaintiff "cannot meet its burden of proof through conjecture and unsupported criticism of [the government's] evidence."[14] For example, in the challenge to the Minnesota and Nebraska DBE programs, "plaintiffs presented evidence that the data was susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground."[15] When the statistical information is sufficient to support the inference of discrimination, the plaintiff must prove that the statistics are flawed.[16] A plaintiff cannot rest upon general criticisms of studies or other evidence; it must carry the case that the government's proof is inadequate to meet strict scrutiny, rendering the legislation or governmental program illegal.[17]

There is no need of formal legislative findings of discrimination,[18] nor "an ultimate judicial finding of discrimination before [a local government] can take affirmative steps to eradicate discrimination."[19]

To meet strict scrutiny, studies have been conducted that gather the statistical and anecdotal evidence necessary to support the use of race- and gender-

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[11] *Aiken v. City of Memphis*, 37 F.3d 1155, 1162 (6th Cir. 1994).

[12] *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1166 (10th Cir. 2000), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941 (2001) ("*Adarand VII*"); *W.H. Scott Construction Co., Inc. v. City of Jackson, Mississippi*, 199 F.3d 206, 219 (5th Cir. 1999).

[13] *Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County*, 122 F.3d 895, 916 (11th Cir. 1997).

[14] *Concrete Works of Colorado, Inc. v. City and County of Denver,* 321 F.3d 950, 989, *cert. denied*, 540 U.S. 1027 (2003) (10th Cir. 2003) (*"Concrete Works III"*).

[15] *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964, 970 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004).

[16] *Engineering Contractors II*, 122 F.3d at 916; *Coral Construction Co. v. King County*, 941 F.2d. 910 921 (9th Cir. 1991).

[17] *Adarand VII*, 228 F.3d at 1166; *Engineering Contractors II*, 122 F.3d at 916; *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, 1522-1523 (10th Cir. 1994) ("*Concrete Works II*"); *Webster v. Fulton County, Georgia*, 51 F.Supp.2d 1354, 1364 (N.D. Ga. 1999); *see also Wygant v. Jackson Board of Education*, 476 U.S. 267, 277-278 (1986).

[18] *Webster*, 51 F.Supp.2d at 1364.

[19] *Concrete Works III*, 36 F.3d at 1522.

conscious measures to combat discrimination. These are commonly referred to as "disparity studies" because they analyze any disparities between the opportunities and experiences of minority- and women-owned firms and their actual utilization compared to white male-owned businesses. Quality studies also examine the elements of the agency's programs to determine whether they are sufficiently narrowly tailored. The following is a detailed discussion of the parameters for conducting studies leading to defensible programs that can establish an agency's compelling interest in remedying discrimination and developing narrowly tailored initiatives.

B. *City of Richmond v. J.A. Croson Co.*

The U.S. Supreme Court in the case of the *City of Richmond v. J.A. Croson Co.* established the constitutional contours of permissible race-based public contracting programs. Reversing long established law, the 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 historic victims of discrimination. Strict scrutiny requires that a government entity prove both its "compelling interest" in remedying identified discrimination based upon "strong evidence," and that the measures adopted to remedy that discrimination are "narrowly tailored" to that evidence. However benign the government's motive, race is always so suspect a classification that its use must pass the highest constitutional test of "strict scrutiny."

The Court struck down the City of Richmond's Minority Business Enterprise Plan that required prime contractors awarded City construction contracts to subcontract at least 30 percent of the project to Minority-Owned Business Enterprises ("MBEs"). A business located anywhere in the country which was at least 51 percent owned and controlled by "Black, Spanish-speaking, Oriental, Indian, Eskimo, or Aleut" citizens was eligible to participate. The Plan was adopted after a public hearing at which no direct evidence was presented that the City had discriminated on the basis of race in awarding contracts or that its prime contractors had discriminated against minority subcontractors. The only evidence before the City Council was: (a) Richmond's population was 50 percent Black, yet less than one percent of its prime construction contracts had been awarded to minority businesses; (b) local contractors' associations were virtually all White; (c) the City Attorney's opinion that the Plan was constitutional; and (d) general statements describing widespread racial discrimination in the local, Virginia, and national construction industries.

In affirming the court of appeals' determination that the Plan was unconstitutional, Justice Sandra Day O'Connor's plurality opinion rejected the extreme positions that local governments either have *carte blanche* to enact race-based legislation or must prove their own illegal conduct:

> [A] state or local subdivision…has the authority to eradicate the effects of private discrimination within its own legislative jurisdiction.… [Richmond]

> can use its spending powers to remedy private discrimination, if it identifies that discrimination with the particularity required by the Fourteenth Amendment… [I]f the City could show that it had essentially become a "passive participant" in a system of racial exclusion…[it] could take affirmative steps to dismantle such a system.[20]

Strict scrutiny of race-based remedies is required to determine whether racial classifications are in fact motivated by either notions of racial inferiority or blatant racial politics. This highest level of judicial review "smokes out" illegitimate uses of race by assuring that the legislative body is pursuing a goal important enough to warrant use of a highly suspect tool.[21] It further ensures that the means chosen "fit" this compelling goal so closely that there is little or no possibility that the motive for the classification was illegitimate racial prejudice or stereotype. The Court made clear that strict scrutiny seeks to expose racial stigma; racial classifications are said to create racial hostility if they are based on notions of racial inferiority.[22]

Race is so suspect a basis for government action that more than "societal" discrimination is required to restrain racial stereotyping or pandering. The Court provided no definition of "societal" discrimination or any guidance about how to recognize the ongoing realities of history and culture in evaluating race-conscious programs. The Court simply asserted that:

> [w]hile there is no doubt that the sorry history of both private and public discrimination in this country has contributed to a lack of opportunities for black entrepreneurs, this observation, standing alone, cannot justify a rigid racial quota in the awarding of public contracts in Richmond, Virginia…. [A]n amorphous claim that there has been past discrimination in a particular industry cannot justify the use of an unyielding racial quota. It is sheer speculation how many minority firms there would be in Richmond absent past societal discrimination.[23]

Richmond's evidence was found to be lacking in every respect. The City could not rely upon the disparity between its utilization of MBE prime contractors and Richmond's minority population because not all minority persons would be qualified to perform construction projects; general population representation is irrelevant. No data were presented about the availability of MBEs in either the

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[20] 488 U.S. at 491-92.

[21] *See also Grutter v. Bollinger*, 539 U.S. 306, 327 (2003) ("Not every decision influenced by race is equally objectionable, and strict scrutiny is designed to provide a framework for carefully examining the importance and the sincerity of the reasons advanced by the governmental decision maker for the use of race in that particular context.").

[22] 488 U.S. at 493.

[23] *Id.* at 499.

relevant market area or their utilization as subcontractors on City projects. According to Justice O'Connor, the extremely low MBE membership in local contractors' associations could be explained by "societal" discrimination or perhaps Blacks' lack of interest in participating as business owners in the construction industry. To be relevant, the City would have to demonstrate statistical disparities between eligible MBEs and actual membership in trade or professional groups. Further, Richmond presented no evidence concerning enforcement of its own anti-discrimination ordinance. Finally, Richmond could not rely upon Congress' determination that there has been nationwide discrimination in the construction industry. Congress recognized that the scope of the problem varies from market to market, and in any event it was exercising its powers under Section Five of the Fourteenth Amendment, whereas a local government is further constrained by the Amendment's Equal Protection Clause.

> 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."[24]

The foregoing analysis was applied only to Blacks. The Court then emphasized that there was "absolutely no evidence" against other minorities. "The random inclusion of racial groups that, as a practical matter, may have never suffered from discrimination in the construction industry in Richmond, suggests that perhaps the City's purpose was not in fact to remedy past discrimination."[25]

Having found that Richmond had not presented evidence in support of its compelling interest in remedying discrimination—the first prong of strict scrutiny—the Court went on to make two observations about the narrowness of the remedy—the second prong of strict scrutiny. First, Richmond had not considered race-neutral means to increase MBE participation. Second, the 30 percent quota had no basis in evidence, and was applied regardless of whether the individual MBE had suffered discrimination.[26] Further, Justice O'Connor rejected the argument that individualized consideration of Plan eligibility is too administratively burdensome.

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[24] *Id.* at 510.

[25] *Id.*

[26] *See Grutter*, 529 U.S. at 336-337 (quotas are not permitted; race must be used in a flexible, non-mechanical way).

Apparently recognizing that the opinion might be misconstrued to categorically eliminate all race-conscious contracting efforts, Justice O'Connor closed with these admonitions:

> 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 non-minority 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 based on 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.[27]

While much has been written about *Croson*, it is worth stressing what evidence was and was not before the Court. First, Richmond presented *no* evidence regarding the availability of MBEs to perform as prime contractors or subcontractors and *no* evidence of the utilization of minority-owned subcontractors on City contracts.[28] Nor did Richmond attempt to link the remedy it imposed to any evidence specific to the Program; it used the general population of the City rather than any measure of business availability.

Some commentators have taken this dearth of any particularized proof and argued that only the most particularized proof can suffice in all cases. They leap from the Court's rejection of Richmond's reliance on only the percentage of Blacks in the City's population to a requirement that only firms that bid or have the "capacity" or "willingness" to bid on a particular contract at a particular time can be considered in determining whether discrimination against Black businesses infects the local economy.[29]

This contention has been rejected explicitly by some courts. For example, in denying the plaintiff's summary judgment motion to enjoin the City of New York's M/WBE construction ordinance, the court stated that:

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[27] 488 U.S. at 509 (citations omitted).

[28] *Id.* at 502.

[29] *See, e.g., Northern Contracting III,* 473 F.3d at 723.

> [I]t is important to remember what the *Croson* plurality opinion did and did not decide. The Richmond program, which the *Croson* Court struck down, was insufficient because it was based on a comparison of the minority population in its entirety in Richmond, Virginia (50%) with the number of contracts awarded to minority businesses (.67%). There were no statistics presented regarding number of minority-owned contractors in the Richmond area, *Croson*, 488 U.S. at 499, and the Supreme Court was concerned with the gross generality of the statistics used in justifying the Richmond program. There is no indication that the statistical analysis performed by [the consultant] in the present case, which does contain statistics regarding minority contractors in New York City, is not sufficient as a matter of law under *Croson*.[30]

Further, Richmond made no attempt to narrowly tailor a goal for the procurement at issue that reflected the reality of the project. Arbitrary quotas, and the unyielding application of those quotas, 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 area. In contrast, the USDOT DBE Program avoids these pitfalls. 49 CFR Part 26 "provides for a flexible system of contracting goals that contrasts sharply with the rigid quotas invalidated in *Croson*."[31]

While strict scrutiny is designed to require clear articulation of the evidentiary basis for race-based decision-making and careful adoption of remedies to address discrimination, it is not, as Justice O'Connor stressed, an impossible test that no proof can meet. Strict scrutiny need not be "fatal in fact."

C. Strict Scrutiny as Applied to Federal Enactments

In *Adarand v. Peña*,[32] the Supreme Court again overruled long settled law and extended the analysis of strict scrutiny under the Due Process Clause of the Fourteenth Amendment to federal enactments. Just as in the local government context, when evaluating federal legislation and regulations:

> [t]he strict scrutiny test involves two questions. The first is whether the interest cited by the government as its reason for injecting the

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[30] *North Shore Concrete and Associates, Inc. v. City of New York,* 1998 U.S. Dist. Lexis 6785, *28-29 (E.D. N.Y. 1998); *see also Harrison & Burrowes Bridge Constructors, Inc. v. Cuomo,* 981 F.2d 50, 61-62 (2nd Cir. 1992) ("*Croson* made only broad pronouncements concerning the findings necessary to support a state's affirmative action plan"); *cf. Concrete Works II*, 36 F.3d at 1528 (City may rely on "data reflecting the number of MBEs and WBEs in the marketplace to defeat the challenger's summary judgment motion").

[31] *Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983, 994 (9th Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006).

[32] 515 U.S. 200 (1995) (*Adarand III*).

> consideration of race into the application of law is sufficiently compelling to overcome the suspicion that racial characteristics ought to be irrelevant so far as treatment by the government is concerned. The second is whether the government has narrowly tailored its use of race, so that race-based classifications are applied only to the extent absolutely required to reach the proffered interest. The strict scrutiny test is thus a recognition that while classifications based on race may be appropriate in certain limited legislative endeavors, such enactments must be carefully justified and meticulously applied so that race is determinative of the outcome in only the very narrow circumstances to which it is truly relevant.[33]

1. U.S. Department of Transportation's Disadvantaged Business Enterprise Program

To comply with *Adarand*, Congress reviewed and revised the Disadvantaged Business Enterprise (DBE) Program statute[34] and implementing regulations[35] for federal-aid contracts in the transportation industry. The program governs Pace's receipt of federal funds form the Federal Transit Administration ("FTA"). To date, every court that has considered the issue has found the regulations to be constitutional on their face.[36] These cases provide important guidance to Pace about how to narrowly tailor a program. For example, the Fourth Circuit noted with approval that North Carolina's M/WBE program for state-funded contracts largely mirrored Part 26.[37]

All courts have held that Congress had strong evidence of widespread race discrimination in the construction industry.[38] Relevant evidence before Congress included:

- Disparities between the earnings of minority-owned firms and similarly situated non-minority-owned firms;

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[33] *Adarand Constructors, Inc. v. Peña*, 965 F. Supp. 1556, 1569-1570 (D. Colo. 1997), *rev'd*, 228 F.3d 1147 (2000) ("*Adarand IV*"); *see also Adarand III*, 515 U.S. at 227.

[34] Transportation Equity Act for the 21st Century (TEA-21), Pub. L. No. 105-178 (b)(1), 112 Stat. 107, 113.

[35] 49 C.F.R. Part 26.

[36] *See, e.g., Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147 (10th Cir. 2000) ("*Adarand VII*"), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941, 534 U.S. 103 (2001); *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2004 U.S. Dist. LEXIS 3226 at *64 (N.D. Ill., Mar. 3, 2004) ("*Northern Contracting I*").

[37] *H.B. Rowe Co. v. Tippett*, 615 F.3d 233, 236 (4th Cir. 2010).

[38] *See also Western States*, 407 F.3d at 993 ("In light of the substantial body of statistical and anecdotal material considered at the time of TEA-21's enactment, Congress had a strong basis in evidence for concluding that-in at least some parts of the country-discrimination within the transportation contracting industry hinders minorities' ability to compete for federally funded contracts.").

- Disparities in commercial loan denial rates between Black business owners compared to similarly situated non-minority business owners;

- The large and rapid decline in minorities' participation in the construction industry when affirmative action programs were struck down or abandoned; and

- Various types of overt and institutional discrimination by prime contractors, trade unions, business networks, suppliers and sureties against minority contractors.[39]

The Eighth Circuit Court of Appeals took a "hard look" at the evidence Congress considered, and concluded that the legislature had:

> [S]pent decades compiling evidence of race discrimination in government highway contracting, of barriers to the formation of minority-owned construction businesses, and of barriers to entry. In rebuttal, [the plaintiffs] presented evidence that the data were susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.[40]

Next, the regulations were facially narrowly tailored. Unlike the prior program,[41] Part 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.

- The goal may be adjusted to reflect the availability of DBEs but for the effects of the DBE Program and of discrimination.

- The recipient must meet the maximum feasible portion of the goal through race-neutral measures as well as estimate that portion of the goal it predicts will be met through such measures.

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[39] *See id.*, 407 F.3d at 992-93.

[40] *Sherbrooke*, 345 F.3d. at 970; *see also Adarand VII*, 228 F.3d at 1175 (Plaintiff has not met its burden "of introducing credible, particularized evidence to rebut the government's initial showing of the existence of a compelling interest in remedying the nationwide effects of past and present discrimination in the federal construction procurement subcontracting market.").

[41] 49 C.F.R. Part 23.

- The use of quotas and set-asides is limited to only those situations where there is no other remedy.

- The goals are to be adjusted during the year to remain narrowly tailored.

- Absent bad faith administration of the Program, a recipient cannot be penalized for not meeting its goal.

- The presumption of social disadvantage for racial and ethnic minorities and women is rebuttable, "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."

- Exemptions and waivers from any or all Program requirements are available.[42]

These elements have led the courts to conclude that the program is narrowly tailored on its face. First, the regulations place strong emphasis on the use of race-neutral means to achieve minority and women participation. Relying upon *Grutter v. Bollinger*, the Eighth Circuit held that while "[n]arrow tailoring does not require the exhaustion of every conceivable race-neutral alternative…it does require serious, good faith consideration of workable race-neutral alternatives."[43]

The DBE Program is also flexible. Eligibility is limited to small firms owned by persons whose net worth is under a certain amount.[44] There are built-in Program time limits, and the recipient may terminate race-conscious contract goals if it meets its annual overall goal through race-neutral means for two consecutive years. Moreover, the authorizing legislation is subject to Congressional reauthorization that will ensure periodic public debate.

The court next held that the goals are tied to the relevant labor market. "Though the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*…."[45]

Finally, Congress has taken significant steps to minimize the race-conscious nature of the Program. "[W]ealthy minority owners and wealthy minority-owned

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[42] *Sherbrooke*, 345 F.3d. at 973.

[43] *Id.* at 972.

[44] The personal net worth limit was $750,000 when the DBE program regulations were amended to meet strict scrutiny in 1999. The limit was increased to $1.32 million in 2012, and is now indexed by the Consumer Price Index. 49 C.F.R. § 26.67(b)(1).

[45] *Id.*

firms are excluded, and certification is available to persons who are not presumptively [socially] disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor."[46]

DBE programs based upon a methodology similar to that for this Study for Pace, including the availability analysis and the examination of disparities in the business formation rates and business earnings of minorities and women compared to similarly situated non-minority males, have been held to be narrowly tailored in their application of Part 26. For example, in upholding the Minnesota Department of Transportation's DBE program using the same approach, the Eighth Circuit opined that while plaintiff attacked the study's data and methods,

> it failed to establish that better data was [sic] available or that Mn/DOT was otherwise unreasonable in undertaking this thorough analysis and in relying on its results. The precipitous drop in DBE participation in 1999, when no race-conscious methods were employed, supports Mn/DOT's conclusion that a substantial portion of its 2001 overall goal could not be met with race-neutral measures, and there is no evidence that Mn/DOT failed to adjust its use of race-conscious and race-neutral methods as the year progressed, as the DOT regulations require.[47]

2. U.S. Department of Defense's Small Disadvantaged Business Program

In 2008, the Federal Circuit Court of Appeals struck down the Department of Defense (DOD) program for Small Disadvantaged Businesses (SDBs) in *Rothe Development Corporation v. U.S. Department of Defense*.[48] The program set an overall annual goal of five percent for DOD contracting with SDBs and authorized various race-conscious measures to meet the goal.

In *Rothe VII,*[49] the appeals court held that the DOD program violated strict scrutiny because Congress did not have a "strong basis in evidence" upon which to conclude that DOD was a passive participant in racial discrimination in relevant markets across the country. The six local disparity studies upon which the DOD

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[46] *Id.* at 973.

[47] *Id.*

[48] *Rothe Development Corporation v. U.S. Department of Defense*, 545 F.3d 1023 (*Fed. Cir.* 2008). We note that the jurisdiction of the Court of Appeals for the Federal Circuit is limited to the jurisdiction described in 28 U.S.C. §§ 1292 (c) and (d) and 1295. Pursuant to 28 U.S.C. § 1295(a)(2), jurisdiction in *Rothe* was based upon the plaintiff's claim under the Tucker Act, 28 U.S.C. § 1346(a)(2), which governs contract claims against the United States.

[49] This opinion was the latest iteration of an 11-year-old challenge by a firm owned by a White female to the DOD's award of a contract to an Asian American–owned business despite the fact that plaintiff was the lowest bidder.

primarily relied for evidence of discrimination did not meet the compelling interest requirement, and its other statistical and anecdotal evidence did not rise to meet the heavy constitutional burden.

Of particular relevance to this report for Pace, the primary focus of the court's analysis was the six disparity studies. The court reaffirmed that such studies are relevant to the compelling interest analysis.[50] It then rejected *Rothe's* argument that data more than five years old must be discarded, stating "We decline to adopt such a *per se* rule here.… [The government] should be able to rely on the most recently available data so long as that data is reasonably up-to-date."[51]

In the absence of expert testimony about accepted econometric models of discrimination, the court was troubled by the failure of five of the studies to account for size differences and "qualifications" of the minority firms in the denominator of the disparity analysis, or as the court labeled it, "relative capacity."[52] The court was concerned about the studies' inclusion of possibly "unqualified" minority firms and the failure to account for whether a firm can perform more than one project at a time in two of the studies.[53] In the court's view, the combination of these perceived deficits rendered the studies insufficiently probative to meet Congress' burden.

The appellate court ignored the analyses in the cases upholding the USDOT DBE Program and the City of Denver's local affirmative action contracting program where the fallacy of "capacity" was debunked, all of which were cited extensively by the district court. It relied instead on a report from the USCCR, which adopts the views of anti-affirmative action writers, including those of Rothe's consultant.[54]

However, the court was careful to limit the reach of its review to the facts of the case:

> To be clear, we do *not* hold that the defects in the availability and capacity analyses in these six disparity studies render the studies wholly unreliable for any purpose. Where the calculated disparity ratios are low enough, we do not foreclose the possibility that an inference of discrimination might still be permissible for *some* of the minority groups in *some* of the studied industries in *some* of the jurisdictions. And we recognize that a minority owned firm's capacity and qualifications may themselves be affected by discrimination. But we hold that the defects we have noted detract

[50] *Rothe*, 545 F.3d at 1037-1038.

[51] *Id.* at 1038-1039.

[52] *Id.* at 1042.

[53] *Ibid.*

[54] U.S. Commission on Civil Rights, *Disparity Studies as Evidence of Discrimination in Federal Contracting* (May 2006): 79.

> dramatically from the probative value of these six studies, and, in conjunction with their limited geographic coverage, render the studies insufficient to form the statistical core of the "strong basis in evidence" required to uphold the statute.[55]

The Federal Circuit concluded its analysis of compelling interest by "stress[ing] that [its] holding is grounded in the particular terms of evidence offered by DOD and relied on by the district court in this case, and should not be construed as stating blanket rules, for example, about the reliability of disparity studies."[56]

Given the holding that Congress lacked a strong basis in evidence for the DOD program, the court did not rule on whether its provisions were narrowly tailored. The court did note, however, in its prior rulings that the program is flexible, limited in duration, and not unduly burdensome to third parties, and that the program has tended to narrow the reach of its remedies over time.[57]

D. Narrowly Tailoring Pace's Disadvantaged Business Enterprise Program

Congress and the Illinois General Assembly have already determined that there is a compelling interest in adopting a DBE program for those respective funding sources. Therefore, Pace's obligation is to ensure that its implementation of these statutory mandates is narrowly tailored.

The courts have repeatedly examined the following factors in determining whether race-based remedies are narrowly tailored to achieve their purpose:

- The efficacy of race-neutral remedies at overcoming identified discrimination;
- The relationship of numerical benchmarks for government spending to the availability of minority- and women-owned firms and to subcontracting goal setting procedures;
- The flexibility of the program requirements, including the provision for good faith efforts to meet goals and contract specific goal setting procedures;
- The congruence between the remedies adopted and the beneficiaries of those remedies;
- Any adverse impact of the relief on third parties; and

[55] *Rothe,* 545 F.3d at 1045.

[56] *Id.* at 1049.

[57] *Id.* at 1049.

- The duration of the program.[58]

It is imperative that remedies not operate as fixed quotas.[59] Programs that lack waivers for firms that fail to meet the subcontracting goals but make good faith efforts to do so have been struck down.[60] In *Croson*, the Court refers approvingly to the contract-by-contract waivers used in the DBE program.[61] This feature has been central to the holding that the DBE program meets the narrow tailoring requirement.[62]

1. Set Narrowly Tailored Goals

a. Overall, Annual DBE Goals

49 C.F.R. Part 26 requires Pace to use a two-step goal setting process to establish its overall triennial DBE goal for FTA-funded contracts. The goal must be based upon the relative availability of DBEs and reflect the level of DBE participation that would be expected absent the effects of discrimination.[63] Step 1 is to determine the base figure for DBE availability and one approved method is to use data from a disparity study.[64] Step 2 is to examine evidence available in the recipient's jurisdiction to determine whether to adjust the base figure. Pace must consider the current capacity of DBEs as measured by the volume of work DBEs have performed in recent years.[65] The agency may consider evidence from related fields such as statistical evidence of disparities in financing, bonding and insurance and data on employment, self-employment, etc.[66] "If you attempt to make an adjustment to your base figure to account for the continuing effects of past discrimination (often called the "but for" factor) or the effects of an ongoing DBE program, the adjustment must be based on demonstrable evidence that is logically and directly related to the effect for which the adjustment is sought"[67]

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[58] *United States v. Paradise*, 480 U.S. 149, 171 (1987); *see also Sherbrooke*, 345 F.3d at 971-972.

[59] *See* 49 C.F.R § 26.43 (quotas are not permitted and setaside contracts may be used only in limited and extreme circumstances "when no other method could be reasonably expected to redress egregious instances of discrimination").

[60] *See, e.g., BAGC v. Chicago*, 298 F. Supp.2d at 740 ("Waivers are rarely or never granted…The City program is a rigid numerical quota…formulistic percentages cannot survive strict scrutiny.").

[61] 488 U.S. at 508; *see also Adarand VII*, 228 F.3d at 1181.

[62] *See*, *e.g.*, *Sherbrooke*, 345 F.3d at 972.

[63] 49 C.F.R. § 26.45(b).

[64] 49 C.F.R. § 26.45(c)(3).

[65] 49 C.F.R. § 26.45(d)(1)(i).

[66] 49 C.F.R. § 26.45(d)(2).

[67] 49 C.F.R. § 26.45(d)(3).

The final result is to be expressed as a percentage of all FTA funds (exclusive of funds to be used for the purchase of transit vehicles). The "overall goals must provide for participation by all certified DBEs and must not be subdivided into group-specific goals."[68] Public participation and public notice are mandated.

Goal setting, however, is not an absolute science.[69] "Though the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*."[70]

To perform step 1–estimating the base figure of DBE availability–the study must conduct the following analyses. First it must empirically establish the geographic and product dimensions of its contracting and procurement market area. This is a fact driven inquiry; it may or may not be the case that the market area is the government's jurisdictional boundaries.[71] A commonly accepted definition of geographic market area for disparity studies is the locations that account for at least 75 percent of the agency's contract and subcontract dollar payments.[72] Likewise, the accepted approach is to analyze those detailed industries that make up at least 75 percent of the prime contract and subcontract payments for the Study period.[73] Second, it must calculate the availability of DBEs in Pace's market area.

b. Narrowly Tailored Contract Goals

In addition to the overall annual goal, Pace must set narrowly tailored goals on specific contracts where appropriate.

It is settled case law that goals for a particular solicitation should reflect the particulars of the contract, not reiterate annual aggregate targets. Pace must set contract goals must be based upon availability of DBEs to perform the anticipated scopes– including the work estimated to be performed by the prime firm– of the individual contract.[74] Not only is contract goal setting legally mandated,[75] but this

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[68] 49 C.F.R. § 26.45(h).

[69] In upholding New Jersey Transit's DBE program, the court held that "Plaintiffs have failed to provide evidence of another, more perfect, method" of goal setting. *GEOD Corp. v. New Jersey Transit Corp.*, 2009 U.S. Dist. LEXIS 74120, at *20 (D. N.J. 2009).

[70] *Sherbrooke*, 345 F.3d. at 972.

[71] *Concrete Works II*, 36 F.3d at 1520 (to confine data to strict geographic boundaries would ignore "economic reality").

[72] *"Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*," Transportation Research Board of the National Academy of Sciences, NCHRP Report, Issue No. 644, 2010, p. 49 ("National Disparity Study Guidelines").

[73] *Id.* at pp. 50-51.

[74] 49 C.F.R. § 26.51(e)(2).

[75] *See id*; *Coral Construction*, 941 F.2d at 924.

approach also reduces the need to conduct good faith efforts reviews as well as the temptation to create "front" companies and sham participation to meet unrealistic contract goals. While more labor intensive than defaulting to the annual, overall goals, there is no option to eschew narrowly tailoring program implementation because to do so would be more burdensome.

2. Apply Race- and Gender-Neutral Remedies to the Maximum Feasible Extent

The courts have held that race- and gender-neutral approaches are a necessary component of a defensible and effective DBE program[76] and the failure to seriously consider such remedies has been fatal to several programs.[77] To implement this standard, Pace is required under the program regulations to meet the "maximum feasible portion" of its overall goal using race-neutral measures.[78]

Difficulty in accessing procurement opportunities, restrictive bid specifications, excessive experience requirements, and overly burdensome insurance and/or bonding requirements, for example, might be addressed by Pace without resorting to the use of race or gender in its decision-making. Effective remedies include unbundling of contracts into smaller units, providing technical support, and developing programs to address issues of financing, bonding, and insurance important to all small and emerging businesses.[79] Further, governments have a duty to ferret out and punish discrimination against minorities and women by their contractors, staff, lenders, bonding companies or others.[80]

Pace must also estimate that portion of the goal it predicts will be met through race-neutral and race-conscious measures (*i.e.*, contract goals).[81] This requirement has been central to the holdings that the DBE regulations meet narrow tailoring.[82]

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[76] *Croson*, 488 U.S. at 507 (Richmond considered no alternatives to race-based quota); *Philadelphia III*, 91 F.3d at 609 (City's failure to consider race-neutral alternatives was particularly telling); *Webster*, 51 F.Supp.2d at 1380 (for over 20 years County never seriously considered race-neutral remedies); *cf. Aiken*, 37 F.3d at 1164 (failure to consider race-neutral method of promotions suggested a political rather than a remedial purpose).

[77] *See, e.g.*, *Florida A.G.C. Council, Inc. v. State of Florida*, Case No.: 4:03-CV-59-SPM at 10 (N. Dist. Fla. 2004) ("There is absolutely no evidence in the record to suggest that the Defendants contemplated race-neutral means to accomplish the objectives" of the statute.); *Engineering Contractors II*, 122 F.3d at 928.

[78] 49 CFR § 26.51(a).

[79] *Id.*

[80] *Croson*, 488 U.S. at 503 n.3; *Webster*, 51 F.Supp.2d at 1380.

[81] 49 CFR § 26.45(f)(3).

[82] *See, e.g., Sherbrooke*, 345 F.3d. at 973

One marker of the need to use contract goals to meet the annual goal is the results of solicitations without contract goals. This is excellent evidence of whether in the absence of affirmative market intervention, DBEs would receive dollars in proportion to their availability. Courts have held that such outcomes are an excellent indicator of whether discrimination continues to impact opportunities in public contracting. Evidence of race and gender discrimination in relevant "unremediated"[83] markets provides an important indicator of what level of actual DBE participation can be expected in the absence of goals.[84] The court in the Chicago case held that the "dramatic decline in the use of M/WBEs when an affirmative action program is terminated, and the paucity of use of such firms when no affirmative action program was ever initiated," was proof of the City's compelling interest in employing race- and gender-conscious measures.[85]

Narrow tailoring does not require that every race-neutral approach must be implemented and then proven ineffective before race-conscious remedies may be utilized.[86] While an entity must give good faith consideration to race-neutral alternatives, "strict scrutiny does not require exhaustion of every possible such alternative…however irrational, costly, unreasonable, and unlikely to succeed such alternative might be... [S]ome degree of practicality is subsumed in the exhaustion requirement."[87]

3. Ensure Flexible Goals and Requirements

It is imperative that remedies not operate as fixed quotas.[88] A DBE program must provide for contract awards to firms who fail to meet the contract goals but make good faith efforts to do so.[89] Further, firms that meet the goals cannot be favored over those who made good faith efforts. Part 26 contains extensive provisions regarding the standards and processes for establishing good faith efforts.[90]In

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[83] "Unremediated market" means "markets that do not have race- or gender-conscious subcontracting goals in place to remedy discrimination." *Northern Contracting II*, at *36.

[84] *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).

[85] *Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725, 737 (N.D. Ill. 2003); *see also Concrete Works IV*, 321 F.3d at 987-988.

[86] *Grutter*, 529 U.S. at 339.

[87] *Coral Construction*, 941 F.2d at 923.

[88] *See* 49 C.F.R 26.43 (quotas are not permitted and setaside contracts may be used only in limited and extreme circumstances "when no other method could be reasonably expected to redress egregious instances of discrimination").

[89] *See, e.g., BAGC v. Chicago*, 298 F. Supp.2d at 740 ("Waivers are rarely or never granted…The City program is a rigid numerical quota…formulistic percentages cannot survive strict scrutiny.").

[90] 49 C.F.R. § 26.53 and Appendix A.

Croson, the Court refers approvingly to these contract-by-contract waivers.[91] This feature has been central to the holding that the DBE program meets the narrow tailoring requirement.[92]

4. Evaluate the Burden on Third Parties

Narrow tailoring requires that Pace evaluate whether the program unduly burdens non-DBEs.[93] The burden of compliance need not be placed only upon those firms directly responsible for the discrimination. "Innocent" parties can be made to share some of the burden of the remedy for eradicating racial discrimination.[94] The proper focus is whether the burden on third parties is "too intrusive" or "unacceptable."

Burdens must be proven, and cannot constitute mere speculation by a plaintiff.[95] "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."[96]

To address this factor, the DBE regulations specifically provide that if a grantee determines that DBEs are "so overconcentrated in a certain type of work as to unduly burden the opportunity of non-DBE firms to participate in this type of work, you must devise appropriate measures to address this overconcentration."[97]

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[91] 488 U.S. at 508; *see also VII*, 228 F.3d at 1181.

[92] *See*, *e.g.*, *Sherbrooke*, 345 F.3d. at 972.

[93] *See Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Dade County* ("*Engineering Contractors I*"), 943 F.Supp. 1546, 1581-1582 (S.D. Fla. 1996) (County chose not to change its procurement system).

[94] *Concrete Works IV*, 321 F.3d at 973; *Wygant*, 476 U.S. at 280-281; *Adarand VII*, 228 F.3 at 1183 ("While there appears to be no serious burden on prime contractors, who are obviously compensated for any additional burden occasioned by the employment of DBE subcontractors, at the margin, some non-DBE subcontractors such as *Adarand* will be deprived of business opportunities"); *cf. Northern Contracting II*, at *5 ("Plaintiff has presented little evidence that it [sic] has suffered anything more than minimal revenue losses due to the program.").

[95] *See, e.g., Rowe*, 615 F.3d at 254 (prime bidder had no need for additional employees to perform program compliance and need not subcontract work it can self-perform).

[96] *Western States*, 407 F.3d at 995.

[97] 49 C.F.R. § 26.33(a).

5. Regularly Review the Effects of the Program

The courts require that race-based programs must have duration limits and "not last longer than the discriminatory effects it is designed to eliminate."[98] The DBE Program's periodic review by Congress has been repeatedly held to provide adequate durational limits.[99] Further, Pace must submit regular reports to FTA and the General Assembly. If Pace determines it will exceed its goal, it must reduce or eliminate the use of contract goals to the extent necessary to ensure that their use does not result in exceeding the overall goal.[100]

The legal test for data is the "most recent available data."[101] How old is too old is not definitively answered, but Pace would be wise to conduct a study at least once every five or six years.

F. Cases from the Seventh Circuit Court of Appeals

Two cases from the circuit governing Illinois illustrate almost all of these principles, and have provided significant guidance to other circuits and agencies across the country.

1. *Builders Association of Greater Chicago v. City of Chicago*

The City of Chicago relied upon the types and quality of evidence discussed above in establishing its strong basis in evidence for its M/WBE program designed to remedy discrimination against Black-, Hispanic- and women-owned construction firms.[102] However, the program as implemented in 2003, which had not been reviewed since its inception in 1990, was not sufficiently narrowly tailored to meet strict constitutional scrutiny. The court stayed the final order against operation of the Program for construction contracts for six months, to permit the City to review the ruling and adopt a new program.[103]

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[98] *Adarand III*, 515 U.S. at 238.

[99] *See Western States*, 407 F.3d at 995.

[100] 49 C.F.R. § 26.51(f)(2).

[101] *Rothe*, 545 F.3d at 1038-1039.

[102] *Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725 (N.D. Ill. 2003).

[103] A similar suit was filed against Cook County's Program, which was declared unconstitutional in 2000. *Builders Association of Greater Chicago v. County of Cook*, 123 F.Supp.2d 1087 (N.D. Ill. 2000); *aff'd*, 256 F.3d 642 (7th Cir. 2001). In contrast to the City of Chicago, Cook County presented very little statistical evidence and none directed towards establishing M/WBE availability, utilization, economy-wide evidence of disparities, or other proof beyond anecdotal testimony. It also provided no evidence related to narrow tailoring.

The opinion first reviews the historical proof of discrimination against minorities, particularly Blacks, in the Chicago construction industry. While not legally mandated, Chicago was a segregated city and "City government was implicated in that history." After the election of Harold Washington as the first Black mayor in 1983, several reports focused on the exclusion of minorities and women from City procurement opportunities as well as pervasive employment discrimination by City departments. Mayor Washington imposed an executive order mandating that at least 25 percent of City contracts be awarded to minority-owned businesses and 5 percent to women-owned businesses.

In response to *Croson*, Chicago commissioned a Blue Ribbon Panel to recommend an effective program that would survive constitutional challenge. Based upon the Panel's Report, and 18 days of hearings with over 40 witnesses and 170 exhibits, Chicago adopted a new program in 1990 that retained the 25 percent MBE and 5 percent WBE goals; added a Target Market, wherein contracts were limited to bidding only by M/WBEs; and provided that larger construction contracts could have higher goals.

The court held that the playing field for minorities and women in the Chicago area construction industry in 2003 was still not level. The City presented a great amount of statistical evidence. Despite the plaintiff's attacks about over-aggregation and disaggregation of data and which firms were included in the analyses, "a reasonably clear picture of the Chicago construction industry emerged… While the size of the disparities was disputed, it is evident that minority firms, even after adjustment for size, earn less and work less, and have less sales compared to other businesses." That there was perhaps overutilization of M/WBEs on City projects was not sufficient to abandon remedial efforts, as that result is "skewed by the program itself."

Further, while it is somewhat unclear whether disparities for Asians and Hispanics result from discrimination or the language and cultural barriers common to immigrants, there were two areas "where societal explanations do not suffice." The first is the market failure of prime contractors to solicit M/WBEs for non-goals work. Chicago's evidence was consistent with that presented of the effects of the discontinuance or absence of race-conscious programs throughout the country. Not only did the plaintiff fail to present credible alternative explanations for this universal phenomenon but also this result "follows as a matter of economics… [P]rime contractors, without any discriminatory intent or bias, are still likely to seek out the subcontractors with whom they have had a long and successful relationship… [T]he vestiges of past discrimination linger on to skew the marketplace and adversely impact M/WBEs disproportionately as more recent entrants to the industry… [T]he City has a compelling interest in preventing its tax dollars from perpetuating a market so flawed by past

discrimination that it restricts existing M/WBEs from unfettered competition in that market."[104]

The judge also relied upon the City's evidence of discrimination against minorities in the market for commercial loans. Even the plaintiff's experts were forced to concede that, at least as to Blacks, credit availability appeared to be a problem. Plaintiff's expert also identified discrimination against white females in one data set.

After finding that Chicago met the compelling interest prong, the court held that the City's program was not narrowly tailored to address these market distortions and barriers because:

- There was no meaningful individualized review of M/WBEs' eligibility;
- There was no sunset date for the ordinance or any means to determine a date;
- The graduation threshold of $27.5M was very high and few firms have graduated;
- There was no personal net worth limit;
- The percentages operated as quotas unrelated to the number of available firms;
- Waivers were rarely granted;
- No efforts were made to impact private sector utilization of M/WBEs; and
- Race-neutral measures had not been promoted, such as linked deposit programs, quick pay, contract downsizing, restricting prime contractors' self-performance, reducing bonds and insurance requirements, local bid preferences for subcontractors and technical assistance.

Chicago is the only city ever to have received a stay to permit revision of its program to meet narrow tailoring. It amended its ordinance to meet the court's 2004 deadline and continues to implement M/WBE subcontracting goals without interruption.

2. *Northern Contracting, Inc. v. Illinois Department of Transportation*

In this challenge to the constitutionality of the DBE program, the Seventh Circuit Court of Appeals affirmed the district court's trial verdict that the Illinois

[104] *BAGC v. Chicago*, 298 F. Supp.2d at 738.

Department of Transportation's application of Part 26 was narrowly tailored.[105] IDOT had a compelling interest in remedying discrimination in the market area for federally-funded highway contracts, and its DBE Plan was narrowly tailored to that interest and in conformance with the regulations.

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 an Availability Study to meet Part 26's requirements. The IDOT Study included a custom census of the availability of DBEs in IDOT's market area, weighted by the location of IDOT's contractors and the types of goods and services IDOT procures. The Study estimated that DBEs comprised 22.77 percent of IDOT's available firms.[106] It next examined whether and to what extent there are disparities between the rates at which DBEs form businesses relative to similarly situated non-minority men, and the relative earnings of those businesses. If disparities are large and statistically significant, then the inference of discrimination can be made. Controlling for numerous variables such as the owner's age, education, and the like, the Study found that in a race- and gender-neutral market area the availability of DBEs would be approximately 20.8 percent higher, for an estimate of DBE availability "but for" discrimination of 27.51 percent.

In addition to the IDOT Study, the court also relied upon:

- An Availability Study conducted for Metra, the Chicago-area commuter rail agency;
- Expert reports relied upon in *BAGC v. Chicago*;
- Expert reports and anecdotal testimony presented to the Chicago City Council in support of the City's revised M/WBE Procurement Program ordinance;
- Anecdotal evidence gathered at IDOT's public hearings on the DBE program;
- Data on DBE involvement in construction projects in markets without DBE goals;[107] and

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[105] *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 (7th Cir. 2007) (7th Cir. 2007) ("*Northern Contracting III").* Ms. Holt authored IDOT's DBE goal submission and testified as IDOT's expert witnesses at the trial.

[106] This baseline figure of DBE availability is the "step 1" estimate U.S. DOT grant recipients must make pursuant to 49 CFR §26.45.

[107] *Northern Contracting III,* 473 F.3d at 719 ("Also of note, IDOT examined the system utilized by the Illinois State Toll Highway Authority, which does not receive federal funding; though the Tollway has a DBE goal of 15 percent, this goal is completely voluntary -- the average DBE

- IDOT's "zero goal" experiment, where DBEs received approximately 1.5 percent of the total value of the contracts. This was designed to test the results of "race-neutral" contracting policies, that is, the utilization of DBEs on contracts without goals.

Based upon this record, the Court of Appeals agreed with the trial court's judgment that the Program was narrowly tailored. IDOT's plan was based upon sufficient proof of discrimination such that race-neutral measures alone would be inadequate to assure that DBEs operate on a "level playing field" for government contracts.

> The stark disparity in DBE participation rates on goals and non-goals contracts, when combined with the statistical and anecdotal evidence of discrimination in the relevant marketplaces, indicates that IDOT's 2005 DBE goal represents a "plausible lower-bound estimate" of DBE participation in the absence of discrimination.… Plaintiff presented no persuasive evidence contravening the conclusions of IDOT's studies, or explaining the disparate usage of DBEs on goals and non-goals contracts.… IDOT's proffered evidence of discrimination against DBEs was not limited to alleged discrimination by prime contractors in the award of subcontracts. IDOT also presented evidence that discrimination in the bonding, insurance, and financing markets erected barriers to DBE formation and prosperity. Such discrimination inhibits the ability of DBEs to bid on prime contracts, thus allowing the discrimination to indirectly seep into the award of prime contracts, which are otherwise awarded on a race- and gender-neutral basis. This indirect discrimination is sufficient to establish a compelling governmental interest in a DBE program…. Having established the existence of such discrimination, a governmental entity 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.[108]

3. *Midwest Fence, Corp. v. U.S. Department of Justice, Illinois Department of Transportation and Illinois Tollway*

Most recently, the challenge to the DBE regulations, IDOT's implementation of those regulations and its DBE program for state-funded contracts, and to the Illinois Tollway's[109] separate DBE program was rejected.[110]

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usage rate in 2002 and 2003 was 1.6 percent. On the basis of all of this data, IDOT adopted 22.77 percent as its Fiscal Year 2005 DBE goal.").

[108] *Northern Contracting II*, at *82 (internal citations omitted); *see Croson*, 488 U.S. at 492.

[109] The Tollway is authorized to construct, operate, regulate, and maintain Illinois' system of toll highways. The Tollway does not receive any federal funding to accomplish its goals.

Plaintiff Midwest Fence is a fencing and guardrail contractor owned and controlled by White males. From 2006-2010, Midwest generated average gross sales of approximately $18 million per year. It alleged that these programs fail to meet the requirement that they be based on strong evidence of discrimination, and that the remedies are neither narrowly tailored on their face or as applied. In sum, plaintiff's argument was that the agencies lacked proof of discrimination, and it bears an undue burden under the programs as a specialty trade firm that directly competes with DBEs for prime and subcontractors.

The district court granted summary judgment in favor of all defendants on all claims. First, like every prior decision and for the same reasons, the judge held that Part 26 is facially constitutional. Second, IDOT's implementation of the federal regulations was narrowly tailored because it was in conformance with the regulations and its program for state-funded contracts, modeled on Part 26, was based upon ample evidence of discrimination as proved through several disparity studies over many years. Third, the Tollway's DBE program "substantially mirrors that of Part 26" and was based on studies similar to those relied upon by IDOT.

Midwest's main objection to the defendants' evidence was that it failed to account for "capacity" when measuring DBE availability and underutilization. However, as is well established, "Midwest would have to come forward with "credible, particularized evidence" of its own, such as a neutral explanation for the disparity, or contrasting statistical data. [citation omitted] Midwest fails to make this showing here."[111] Midwest offered only conjecture about the defendants' studies supposed failure to account for capacity may or may not have impacted the studies' results. Plaintiff "fail[ed] to provide any independent statistical analysis or other evidence demonstrating actual bias."[112]

Turning to the Tollway's program, the court found its

> method of goal setting is identical to that prescribed by the Federal Regulations, which this Court has already found to be supported by "strong policy reasons." [citation omitted] Although the Tollway is not beholden to the Federal Regulations, those policy reasons are no different here.… [W]here the Tollway Defendants have provided persuasive evidence of discrimination in the Illinois road construction industry, the Court finds the Tollway Program's burden on non-DBE subcontractors to be permissible.… The Tollway's race-neutral measures are consistent with those suggested under the Federal Regulations. *See,* 49 U.S.C. § 26.51. The Court finds that the availability of these programs, which mirror

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[110] *Midwest Fence, Corp. v. USDOT et al*, 2015 WL 1396376 (N. D. Ill. March 24, 2015).

[111] *Id.* at *17.

[112] *Id.* at *18.

IDOT's, demonstrate 'serious, good faith consideration of workable race-neutral alternatives.' [citations omitted] In terms of flexibility, the Tollway Program, like the Federal Program, provides for waivers where prime contractors are unable to meet DBE participation goals, but have made good faith efforts to do so.… Because the Tollway demonstrated that waivers are available, routinely granted, and awarded or denied based on guidance found in the Federal Regulations, the Court finds the Tollway Program sufficiently flexible. Midwest's final challenge to the Tollway Program is that its goal-setting process is "secretive and impossible to scrutinize." [reference omitted] However, the Tollway has plainly laid out the two goal-setting procedures it has employed since the program's enactment.… The Tollway Defendants have provided a strong basis in evidence for their DBE Program. Midwest, by contrast, has not come forward with any concrete, affirmative evidence to shake this foundation.[113]

[113] *Id.* at *22-23.

III. PACE'S DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

This Chapter describes Pace's Disadvantaged Business Enterprise ("DBE") Program for federal-aid and locally-funded contracts.[114] The implementation of the DBE program for both funding sources for contracts is treated similarly. We therefore refer to the DBE program.

A. Elements of Pace's Disadvantaged Business Enterprise Program

As a recipient of US Department of Transportation ("USDOT") funds through the Federal Transit Administration ("FTA"), Pace is required as a condition of receipt to implement a DBE program in compliance with 49 C.F.R. Part 26.[115] In brief summary, Pace must:

- Keep and report various data to USDOT, including the utilization of DBEs on its federal-aid contracts and create a bidders list of all firms bidding to Pace as prime contractors and firms bidding to those prime contractors as subcontractors.[116]
- Adopt a non-discrimination policy statement.[117]
- Appoint a DBE Liaison Officer ("DBELO"), with substantial responsibilities and direct reporting to the chief executive office of the agency.[118]
- Make efforts to utilize DBE financial institutions.[119]
- Adopt a prompt payment mechanism for its prime contractors and for the prompt payment of subcontractors by prime contractors.[120]

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[114] The Regional Transportation Authority Act, 70 ILCS/3615/2.31 established a DBE program for the Authority and the Service Boards (the Chicago Transit Authority, Metra and Pace) for contracts not covered under the federally mandated DBE Program. The agencies must develop narrowly tailored DBE goals, monitor contractors' compliance and submit annual reports to the General Assembly.

[115] 49 C.F.R. §§ 26.3 and 26.21.

[116] 49 C.F.R. § 26.11.

[117] 49 C.F.R. § 26.23.

[118] 49 C.F.R. § 26.25.

[119] 49 C.F.R. § 26.27.

[120] 49 C.F.R. § 26.29.

- Create and maintain a DBE directory.[121] Pace is a member of the Illinois Unified Certification Program, and conducts DBE certifications. [122]

- Address possible overconcentration of DBEs in certain types of work.[123]

- Include elements to assist small businesses, such as unbundling contracts.[124]

Pace's DBE program plan was updated in 2013 and has been approved by FTA. Pace's interim triennial DBE goal is 2.0 percent. This FTA-approved goal must be reached solely through race-neutral measures; Pace is not authorized under the current approved goal setting methodology to set DBE goals on individual contracts.

DBE contract goals on non-federally-assisted contracts are recommended by the Pace project manager and approved or modified by the DBELO.

In addition to the standard components of the DBE program as provided in the USDOT DBE Sample Plan,[125] Pace has adopted a Small Business Enterprise ("SBE") program to increase opportunities for small businesses to perform work for Pace as prime contractors. To be eligible, a firm must have been "active" for at least one year; be independent and not an affiliate or subsidiary of another firm; and meet the Small Business Administration's size standards[126] averaged over three years. The DBELO reviews applications. The SBE must perform the work of the contract with its own forces or subcontract work to another certified SBE, which subcontracting must be approved by the DBELO.

Pace reserves some contracts for bidding only by SBEs. Pace project managers must identify whether the contract can be performed by a small business as part of the DBE goal certification process and they must provide a list of small businesses that might be able to work on the project as either a prime firm or a subcontractor.

Pace has explicit monitoring and enforcement mechanisms as part of its DBE program plan. These include:

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[121] www.pacebus.com.

[122] 49 C.F.R. § 26.31.

[123] 49 C.F.R. § 26.33.

[124] 49 C.R.F. § 26.39.

[125] http://www.fta.dot.gov/12326_5771.html.

[126] 13 C.F.R. Part 121.

- Providing detailed forms to establish a bidder's commitment to meet the goal, including checklists, instructions for counting DBE dollars for goal credit, a form to summarize DBE participation, affidavits from DBEs to confirm participation and joint venture forms;

- Requiring signed contracts between the prime vendor and the listed DBEs;

- Providing an Excel spreadsheet to prime vendors to document payments to DBEs;

- Conducting desk reviews of contractor compliance documents;

- Conducting work site visits to verify compliance and forms to document these reviews, with special forms for trucking firms and fuel suppliers; and

- Review of certified payrolls to determine which firms worked on the job.

If any deficiency is identified, the contractor will be notified and has 60 days to cure the deficiency. If the deficiency is not cured, the DBE department will determine non-compliance and recommend sanctions. Sanctions include but are not limited to withholding of payments; recommendations not to exercise renewal options, if any; termination of the contract; and debarment from future business with Pace.

Pace is an active participant in the annual Transportation Symposium conducted by the Chicago area transportation agencies, where DBEs and other small businesses participate in seminars, network with agency officials and other prime contractors and businesses. In addition, the DBELO sends email notifications to certified firms of opportunities in which they may be interested.

B. Experiences with Pace's DBE Program

To explore the impacts of race- and gender-neutral contracting policies and procedures and the implementation of Pace's DBE program, we interviewed 54 individuals about their experiences and solicited their suggestions for changes. The following are summaries of the topics discussed. Quotations are indented, and have been edited for readability. They are representative of the views expressed during four sessions by participants and one public meeting.

1. Outreach Efforts to DBEs

Participants generally reported that outreach from Pace about upcoming opportunities and events was helpful and timely.

> Pace is good with the communication. I get it via e-mail and I do get it via mail still that certain bids are coming up.

While Pace does participate in interagency outreach events such as the annual Transit Symposium for the Chicago area agencies, targeted networking events for DBEs and prime contractors for Pace projects were urged as one way to forge relationships.

> I would suggest that Metra and Pace [conduct] networking opportunities for prime contractors to meet some DBEs and then Pace emphasizing the real need for DBE participation.

3. Contract Size

Several DBEs suggested "unbundling" contracts into smaller scopes or smaller dollar values to increase their abilities to obtain prime and subcontract work. Unbundling is also an approved small business element under the DBE regulations.

> A big barrier … for a small DBE contractor, minority woman DBE contractor [is] the size of the packages gets so huge and the agencies put out these big packages that it's very difficult for the DBEs to bid on the packages…. To bond a four million dollar [trade] job, it's a lot different than to do a $800,000 [trade] job. So I think unbundling is a big thing because that's a barrier to DBEs..… If the owner doesn't tell [the general contractor] to do it, they're not going to do it.… They'd rather work with 6 subs than 16.

> The unbundling also has to be the responsibility of the agency as well.… The GC doesn't care.…The Tollway is unbundling projects with smaller quantity work that people like us can participate in. So it has to be Pace or whoever to say, okay, we're going to build a new building or we're going to do a major construction project for this year. We know companies that are smaller need to be a part of it so let's unbundle it. Let's not just give 50 million to some big GC to just give it to his buddies. Let's break it up in pieces. How about a million dollars on this piece or a million dollars on that piece and then that can get broken up to the smaller companies like ours to do the work.

> Unbundling … for any contract that has a zero DBE goal is something to consider.

4. Payments

Most prime contractors reported that Pace pays timely.

> We've never had an issue with Pace. Pace always pays out pretty well.

One recommendation was to reduce the amount of retainage held by Pace on contract progress payments.

> When you have a smaller company that can't necessarily afford to be on ten different projects and having ten percent [withheld as retainage], I mean basically that's their profit on every job. And I think it becomes pretty difficult for businesses to stay open. I've seen that happen where businesses basically have to close their doors because they can't afford to operate anymore, even though they are good companies.

5. Access to Information About Technical Assistance and Supportive Services Programs

Another suggestion was for Pace to provide to DBEs information about how to secure technical assistance, supportive services and access financing and bonding programs. Many resources are available in the Chicago area and through the State of Illinois. While not administered by Pace, links on its website and materials at meetings would help disseminate critical information about resources for success.

> I think that more information needs to be made available. All the options for the DBEs when we do these major pre-bid meetings to say that we are associated with the Illinois Finance Authority or we're associated with USDOT and that people need to start working on that right away to see if they can get some financing, some lines of credit available to them earlier because, yea, and avoid some of those problems…. The agencies as part of their technical assistance should be a little bit more on board with what are the options that we can help you with or send you to for help.

6. Mentor-Protégé Relationships

While there was general support for the concept of mentor-protégé programs, whereby a larger firm provides assistance to a DBE within specified guidelines and as approved by the agency, several general contractors expressed concerns about whether such an approach might later be held to have compromised the DBE's independence or interfered with the DBE's performing a commercially useful function.

> I don't want to cross those lines of what you can and cannot do, because we've had situations where we had a really good DBE sub that was in like say one area on the infrastructure side. We wanted to start training him to do something on the building side. And our people thought, oh we can just do a joint venture because as long as [it is] a subcontractor we can train them. No, no, no, you still can't do it as a JV, either.

> Mentor-protégé, we've just started to get into that. Our company has kind of stayed away from that. Joint ventures, they still don't like to do [those].

Professional services firms had some positive experience with these types of relationships on Illinois Tollway projects, although with the caveat they my be developing competitors.

> In our industry, there's a myriad of prequalification categories that we can either fit into or not. Most of the larger firms like ours, more or less we're prequalified in just about every skill.… [DBEs are] a small outfit, they only have a couple of people and the people that they have aren't experienced in this category over here. They're experienced in this but not in this other thing. So what you do is you bring them on and you say, okay we're going to teach you how to do this stuff and then that gives them the opportunity then to pick up that prequalification status and then maybe they have an opportunity to get more work down the line and hire some more people and get a little bit bigger. But, the whole concept being that they can eventually get to the point where they kind of graduate out of the program. They don't quote, unquote, need the program to help them anymore. They can now compete with us. Which is an interesting little dichotomy that we are creating our own competition.

7. Small Business Setasides

There was support from both DBEs and non-DBEs for the Small Business program.

> I think it's a good.… Do we want more successful general contractors or subcontractors?

> I would be in favor of seeing a small business set aside.… If [the agency] had a small business set aside then anybody that's qualified, and just qualified [for the program], can step in and start doing things.

8. Meeting M/WBE Contract Goals

Most prime firms were able to meet the contract goals.

> We don't seem to have an issue with [finding enough qualified DBEs].

> By the end of that [task order] contract, we are above the number we promised.

Several supported the overall objectives of the program.

> If it wasn't for the program, [DBEs] wouldn't have been included.… It's perception and unfortunately it still exists for some reason.
>
> [The DBE program] allows the next generation to come up and say that I want to be an engineer and start my own engineering firm and have an opportunity to get up the next day and work toward a goal, you know, and so it does a lot.

Design firms reported they almost always meet or exceed the goal, often as a business strategy.

> If the goal is 20 percent, we will, in an effort to show that our team is more open to the concept of sharing the wealth, we'll promise that we'll do 25 [percent]. So, we try to exceed the goal as kind of as a business development tool.**…** The contractors have a tougher time with it because they're low bid where ours is qualifications based. So based on our qualifications, as long as I can find DBE firms that have the qualifications to do the kind of work that we're looking for, I can use as much or as little as I feel like I need to.
>
> We do very much the same thing. We'll find ways to work different groups and [bring] different people in. We may even, on a smaller project, have to take staff from other companies and merge them in with our group so they're working together. But we find ways to make that number. There is no missing that number.
>
> We don't even consider [asking for a waiver].
>
> Getting a wavier on [engineering contracts] is almost unheard of unless you're talking about something that is extremely, extremely specific as it relates to a particular expertise where there's only a couple of firms that can do it.… [Otherwise,] there's no thought or talk of not making the goal. Ever.
>
> [To meet goals] on a typical project, at least for us, there tend to be services that are fairly easily parceled out. Survey work, for instance, is one. Maybe drainage design or something like that is something that you can just say, okay, we'll parcel that part of the project out and let another firm do that. Sometimes, if it's a very large project or a let's say a long project, a highway project or something like that, you might be able to parcel it out geographically.

Construction firms stated that they rarely if ever seek waivers of the goal. If they cannot meet the contract goal, they usually will not submit a bid.

> We don't ask for any waivers. We actually meet or exceed the goal, otherwise we don't bid on it.
>
> If we can't meet our goal, we just don't bid it.
>
> A lot of [general contractors] won't bid it if they can't [meet the goals].

While aware that waivers are available for bidders who establish their good faith efforts to meet contract goals, most general contractors did not submit waiver requests.

> We don't trust the good faith effort.
>
> If you're going to try to make a good faith effort, then the outreach you have to do is pretty incredible.

Some general contractors expressed frustration in getting competitive bids or timely paperwork from DBEs.

> You get [DBEs] that just will not respond to the bid, they just say I don't want to do it. If they don't know the contractor they're not inclined to work for somebody they don't know.… To say that there are contractors in the pool is only one small thing. Because yes, they're out there but they're not interested in bidding the work and therein lies the problem.

Several asserted that it is more costly to use DBEs.

> The cost going to the owner goes up quite a bit.
>
> Bid day always seems to come down to what's the cheapest DBE package.… It seems to always cost us more money [to meet the goal].… The majority of the time we're not using all of our lowest quotes because we have to meet the DBE participation.

DBEs turning down work was reported to occur in order for the firms to maintain their DBE certification by remaining under the size limit.

> [Capacity] is a common issue. But then on the flip side there are very good minority contractors out there. And then they run into a problem because they'll run into a threshold where they can't do more than X amount of dollars. Now you're kind of penalizing the ones that have worked their way up, become reputable contractors.
>
> Then what they do is they'll turn down jobs and just say I can't take it because then I'll exceed my threshold.

Encouraging the use of joint venture arrangements between non-DBE and DBE prime contractors was mentioned as one method to increase participation and DBEs' capacities.

> The intention and the spirit of a JV is the way to grow companies.… [Our JV partner was] a good contractor to start with but they were smaller, and trying to grow. And you look at them now, they're operating in multiple states.… They got to see how we run work and how we manage stuff.
>
> If you have a minority joint venture partner, even though they're putting up a percentage of the risk, they're putting up a percentage of their performance bond, [joint ventures are] frowned upon because of the [commercially] useful function [requirement]. And that's something I cannot understand … they're probably performing more of a useful function than a lot of these pass-through suppliers but there's no problem accepting them.

Using a DBE joint venture to meet the goal was seen as a high risk strategy.

> You have the spirit of [joint ventures] and then you have the technicalities of it. And the technicalities at any point can really trip you up in the whole thing and just depends on someone's interpretation of splitting hairs and how many hairs you want to split.… So, we just won't do the JVs, we won't do the mentor-protégés. Just too much risk to take on.
>
> If you do something with the joint ventures and do something to make it standardize[d], something that everybody can follow and understand, you'll see a lot more participation in that. … There are good minority general contractors out there, too.

9. Contract Performance Monitoring and Enforcement

Some DBEs reported that Pace monitors their utilization during contract performance.

> We had a Pace investigator come out a couple months ago and I mean it was really great. He wanted to make sure it was our trucks and he wanted to see our equipment. And he even said that he had a whole list of other DBEs he was investigating and he said some of them they have pictures of trucks on their website and he gets there and they have no equipment. So I'm really glad to see that people are following up on it.
>
> It wasn't until I got a call from Pace saying something about, maybe they needed a report or something. I said I don't even know what you're talking about. And then I remembered, oh I think it was two years ago I had bid or gave labor pricing to a contractor… [The contractor now] wanted a letter

> from me saying I can't do the work and that wasn't the case. I'm not going to write anything like that.… I wrote something like it just wasn't really worth it to us. But it wasn't that we weren't ready, willing and able, it was just not practical.

This picture was in contrast to the monitoring efforts of some Chicago agencies.

> We were to get five million dollars over five years of work, which was probably five to ten percent, whatever. We got $500,000.…. The program's necessary, but somebody's got to babysit it.
>
> I wasn't notified that I had the contract and second of all, the projects are close to being over now. But I think there's a real problem there with putting in our paperwork and then not using us.… [When the agency was notified of this non-compliance], they intervened a bit and as soon as the G[eneral C[ontractor] responded, gave us a couple days of work, then it was gone again. And so I have to start the process again of calling and getting them involved.
>
> A lot of these GCs got the game figured out.… You're going to think you got a job. It disappears. You never hear anything from anybody about it until it's too late or the city busts them or Pace busts them.
>
> The biggest problem with this program is somehow enforcing that or somehow finding a way so that the general contractors can't [not utilize the subs to which they committed at bid time]. Pretty much that's what happens and most of us work as subs.
>
> The biggest issue is who do you call at that moment to get a response because by the time the agency does anything, the job is over and done with.… There really has to be accountability from the agency side about … who do you call to get a response right away?

A major concern of prime contractors is how to determine how much assistance may be provided to a DBE during performance without compromising either firm.

> And some DBEs, there's a payment issue. They can't meet their payroll or [pay] their supplier and things like that. And right now I don't know about the rest of the firms, but we're very reluctant because we're not sure what assistance is really okay to give. Even though it's written down, there's that whole issue of fear.
>
> Joint checks are frowned upon.… Where they're having issues making payroll, if we're making payments to help them make their payroll, that's frowned upon even though it's money they earned, it's just not on the

same schedule as other subs.… We're asked to use these minority subcontractors, these DBEs, and they have a hard time performing.

You want to help [the DBEs] out but then you're afraid how much can you help them.

Sometimes, the problems of doing business with a small firm are more than the general contractor is willing or able to address.

Some very fundamental issues that we have with DBEs is just the paperwork itself. And I'm not sure why that is continuing problem. What happens then is then that results in holding their payment up when they're needing to get paid. And it may be because they're too small, they're owner operator and everything else and don't have the staff. But it's very fundamental.… We have a prequalification process at [firm name]. They don't do that. And even though we've offered training..… I don't know if it's just reluctance to do it. There's also the time and effort to do it. I really don't know what it is but we struggle with that until this day and we're constantly still chasing them for that type of stuff. So, it becomes burdensome and then sometimes we just say, we're not going to use that DBE firm because it's just too much handholding and we can't keep chasing them for the paperwork that we never get.

One repeated recommendation for Pace is to implement an electronic data management system for the DBE program, similar to that used by the City of Chicago, the Chicago Transit Authority and several other local governments.

We participate on a lot of contracts with the city and so every month the city's e-mailing us where we have to verify the dollar amount that was spent. And I mean it has improved so much.

The good thing about the [Chicago Transit Authority's LCP Tracker and B2GNow] electronic] system [is that if] the GC is saying, well, we paid [firm name], I get an e-mail from CTA saying did they pay you this amount of money? And then I have to respond back. So if they didn't, I say no. But most of the time they have..… That's a good way of monitoring.… Have all the agencies have LCP Tracker so that we're all learning it anyway.… Don't have one, C[hicago] P[ublic] S[chools] doing something like this and then Pace is doing something different over here.… I have seen a stark difference from GC A on a job where there's Tracker versus GC A when there's no tracking.

One thing that the City of Chicago does now which is amazing is that on bid day they post the bid results, they have the bid tabs now on most of the jobs and then I can see right away whether I was listed or not.

C. Conclusion

The program review and the business owner and stakeholder interviews suggest that Pace is implementing the program in conformance with the requirements of Part 26. However, several enhancements will make it more effective. These include additional networking, outreach and matchmaking efforts; unbundling contracts, where appropriate; reducing or eliminating contract retainage; providing access to information about technical assistance, bonding and supportive services to DBEs; adopting a mentor-protégé initiative; expanding the Small Business program; and implementing an electronic data collection and monitoring system.

IV. UTILIZATION AND AVAILABILITY ANALYSIS FOR PACE

A. Contract Data Sources and Sampling Method

We analyzed purchase order and contract data for fiscal years 2008 through 2012 for Pace. The Final File for analysis contained 362 contracts, with a total award amount of $432,922,024. This represents 90% of all dollars in the data. The file of Pace contracts was developed through the following steps:

- From the initial pool of 841 contracts, we eliminated 255 purchases under $25,000, cancelled contracts, contracts with other governments, duplicate listings of contracts, etc.
- From the remaining 586 contracts, we identified 162 contracts with a total award amount of $5,833,669 that were between $25,000 and $50,000, and therefore had very little likelihood of subcontracting opportunities. These contracts are included in the Final File.
- For the remaining 424 large contracts, with a total award amount of $474,135,098, we contacted the prime firms in an effort to obtain complete contract records for the prime and subcontracting levels. We successfully collected data for 90% of the contract award dollars, worth $427,088,355.

This File was used to determine the geographic market area for the Study; to estimate the utilization of DBEs on those contracts; and to calculate DBE availability in Pace's marketplace.

B. Pace's Product and Geographic Markets

1. Pace's Product Market

A defensible availability study must determine empirically the industries that comprise the agency's product or industry market. The accepted approach is to analyze those detailed industries, as defined by 6-digit North American Industry, Classification System ("NAICS") codes,[127] that make up at least 75 percent of the prime contract and subcontract payments for the Study period.[128] However, for this Study, we went further, and applied a "90/90/90" rule, whereby we analyzed NAICS codes that cover over 90 percent of the total contract dollars; over 90 percent of the prime contract dollars; and over 90 percent of the subcontract

[127] www.census.gov/eos/www/naics.

[128] *"Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*," Transportation Research Board of the National Academy of Sciences, NCHRP Report, Issue No. 644, 2010, pp. 50-51 ("National Disparity Study Guidelines").

dollars. We took this approach so that we could be assured that we provide an in depth picture of Pace's activities.

Tables 1 through 3 present the NAICS codes used to define the product market when examining contracts disaggregated by level of contract (*i.e.*, was the firm receiving the contract a prime vendor or a subcontractor); the label for each NAICS code; and the industry percentage distribution of the number of contracts and spending across NAICS codes and funding source. The results in Tables 1 through 3 present Pace's *unconstrained* product market, which will be later constrained by the geographic market area, discussed below.

Table 1: Industry Percentage Distribution of All Contracts by Dollars Paid, All Sectors

NAICS	NAICS Code Description	PCT Total Contract Dollars	Cumulative PCT Total Contract Dollars
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	21.84%	21.84%
561110	Office Administrative Services	17.68%	39.52%
336120	Heavy Duty Truck Manufacturing	7.33%	46.85%
423830	Industrial Machinery and Equipment Merchant Wholesalers	7.20%	54.05%
485113	Bus and Other Motor Vehicle Transit Systems	5.52%	59.57%
485410	School and Employee Bus Transportation	5.21%	64.78%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	3.91%	68.69%
334290	Other Communications Equipment Manufacturing	2.98%	71.67%
485510	Charter Bus Industry	2.70%	74.37%
541511	Custom Computer Programming Services	2.19%	76.56%
325110	Petrochemical Manufacturing	2.16%	78.72%
326211	Tire Manufacturing (except Retreading)	2.15%	80.87%
524210	Insurance Agencies and Brokerages	1.76%	82.63%
541110	Offices of Lawyers	1.71%	84.35%
541810	Advertising Agencies	1.38%	85.72%
238210	Electrical Contractors and Other Wiring Installation Contractors	1.34%	87.06%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	1.07%	88.14%
336211	Motor Vehicle Body Manufacturing	1.03%	89.17%

532112	Passenger Car Leasing	0.94%	90.11%
TOTAL			**100.00%**

Source: CHA analysis of Pace data.

Table 2: Industry Percentage Distribution of Prime Contracts by Dollars Paid, All Sectors

NAICS	NAICS Code Description	PCT Total Contract Dollars	Cumulative PCT Total Contract Dollars
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	22.33%	22.33%
561110	Office Administrative Services	18.13%	40.45%
336120	Heavy Duty Truck Manufacturing	7.51%	47.97%
423830	Industrial Machinery and Equipment Merchant Wholesalers	7.38%	55.35%
485113	Bus and Other Motor Vehicle Transit Systems	5.66%	61.01%
485410	School and Employee Bus Transportation	5.34%	66.35%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	4.01%	70.36%
334290	Other Communications Equipment Manufacturing	3.06%	73.42%
485510	Charter Bus Industry	2.77%	76.19%
325110	Petrochemical Manufacturing	2.22%	78.41%
326211	Tire Manufacturing (except Retreading)	2.20%	80.61%
524210	Insurance Agencies and Brokerages	1.81%	82.42%
541110	Offices of Lawyers	1.71%	84.13%
541511	Custom Computer Programming Services	1.61%	85.74%
541810	Advertising Agencies	1.41%	87.15%
238210	Electrical Contractors and Other Wiring Installation Contractors	1.28%	88.43%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	1.05%	89.48%
532112	Passenger Car Leasing	0.97%	90.45%
TOTAL			**100.00%**

Source: CHA analysis of Pace data

Table 3: Industry Percentage Distribution of Sub Contracts by Dollars Paid, All Sectors

NAICS	NAICS Code Description	PCT Total Contract Dollars	Cumulative PCT Total Contract Dollars
541511	Custom Computer Programming Services	25.21%	25.21%
336211	Motor Vehicle Body Manufacturing	24.06%	49.27%
237130	Power and Communication Line and Related Structures Construction	6.33%	55.60%
561730	Landscaping Services	4.32%	59.92%
238210	Electrical Contractors and Other Wiring Installation Contractors	3.66%	63.58%
238910	Site Preparation Contractors	3.31%	66.89%
561720	Janitorial Services	3.07%	69.96%
237310	Highway, Street, and Bridge Construction	2.77%	72.73%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	2.54%	75.27%
541820	Public Relations Agencies	2.31%	77.58%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	1.93%	79.51%
541850	Outdoor Advertising	1.81%	81.32%
541110	Offices of Lawyers	1.61%	82.93%
561499	All Other Business Support Services	1.37%	84.31%
238990	All Other Specialty Trade Contractors	1.31%	85.61%
441320	Tire Dealers	1.25%	86.87%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	1.14%	88.01%
541330	Engineering Services	1.14%	89.15%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	1.09%	90.24%
TOTAL			**100.00%**

Source: CHA analysis of Pace data.

2. Pace's Geographic Market

The courts and Part 26 require that a local government limit the reach of its race- and gender-conscious contracting program for contracts it funds to its market area.[129] While it may be that Pace's service area borders comprise its market area, this element of the analysis must also be empirically established.[130]

To determine the relevant geographic market area, we applied the rule of thumb of identifying the firm locations that account for at least 75 percent of contract and subcontract dollar payments in the contract data file.[131] Location was determined by ZIP code as listed in the file and aggregated into counties as the geographic unit.

As presented in Table 4, spending in Illinois accounted for 79.61% of all contract dollars paid in Pace's unconstrained product market. Therefore, the state of Illinois constituted the geographic market area from which we drew our availability data. Table 5 presents data on how the contract dollars were spent across the state's counties.

Table 4: Distribution of Contracts in Pace's Product Market, by State

State	PCT of Total Contract Dollars Paid		State	PCT of Total Contract Dollars Paid
IL	79.610%		**PA**	0.189%
IN	8.019%		**TX**	0.043%
CA	7.997%		**AL**	0.037%
Canada	1.699%		**WI**	0.014%
GA	1.242%		**FL**	0.013%
IA	0.686%		**NJ**	0.003%
NY	0.447%			
			TOTAL	**100.00%**

Source: CHA analysis of Pace data.

[129] *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 508 (1989) (Richmond was specifically faulted for including minority contractors from across the country in its program based on the national evidence that supported the USDOT DBE program).

[130] *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, 1520 (10th Cir. 1994) (to confine data to strict geographic boundaries would ignore "economic reality").

[131] National Disparity Study Guidelines, p. 49.

Table 5: Distribution of Contracts in Pace's Product Market within Illinois, by County

County	PCT of Total Contract Dollars Paid		County	PCT of Total Contract Dollars Paid
Cook	56.017%		**Kane**	1.148%
Lake	23.068%		**McHenry**	0.878%
DuPage	11.686%		**Kendall**	0.058%
Will	7.140%		**DeKalb**	0.005%
			TOTAL	**100.00%**

Source: CHA analysis of Pace data.

C. Pace's Utilization of DBEs in Its Market Areas[132]

The next essential step was to determine the dollar value of Pace's utilization of DBEs in its geographic and constrained product market areas, as measured by payments to prime firms and subcontractors and disaggregated by race and gender.[133] Because the agency was unable to provide us with full records for payments to prime contractors and subcontractors other than firms certified as DBEs, we contacted the prime vendors to request that they describe in detail their contract and subcontracts, including race, gender and dollar amount paid to date. We used the results of this extensive contract data collection process to assign minority or female status to the ownership of each firm in the contract data file.

Table 6 presents data on the total contract dollars paid by Pace for each NAICS code and the share the contract dollars comprise of all industries, for federally-assisted contracts.

[132] While Sections C and D present data on utilization and availability for those federal-assisted and non-federally-assisted contracts aggregated at the level of all sectors, Appendix F presents this data disaggregated into key sub-sectors: Construction, Construction-related Services, Goods, and Other Services.

[133] When limiting analyzed contracts to those whose firms were located in the agency's geographic market (the State of Illinois), two NAICS codes which appeared in the earlier analysis dropped out because contracts in these areas were awarded to firms which were located outside of the geographic market. These two NAICS codes were 561499 (All Other Business Support Services) and 336120 (Heavy Duty Truck Manufacturing). This new product market area is what this study calls the constrained product market – the product market constrained by the geographic market of the agency.

Table 6: NAICS Code Distribution of Contract Dollars – Federal Funds, All Sectors

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
423830	Industrial Machinery and Equipment Merchant Wholesalers	14,377,811	64.1%
532112	Passenger Car Leasing	3,594,962	16.0%
326211	Tire Manufacturing (except Retreading)	2,260,000	10.1%
541330	Engineering Services	525,893	2.3%
237310	Highway, Street, and Bridge Construction	506,846	2.3%
561730	Landscaping Services	395,908	1.8%
238910	Site Preparation Contractors	311,081	1.4%
237130	Power and Communication Line and Related Structures Construction	160,562	0.7%
238990	All Other Specialty Trade Contractors	121,548	0.5%
238210	Electrical Contractors and Other Wiring Installation Contractors	93,565	0.4%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	56,417	0.3%
541820	Public Relations Agencies	8,605	0.0%
TOTAL		**22,413,198**	**100.0%**

Source: CHA analysis of Pace data.

Tables 7a through 7d also present the paid contract dollars (total dollars and share of total dollars) by NAICS codes for all industries, for federally-assisted contracts, this time disaggregated by race and gender.

Table 7a: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
237130	0	0	0	0	0	160,562
237310	0	145,196	0	0	22,799	338,851
238210	0	0	0	0	60,648	32,917
238910	0	0	0	0	0	311,081
238990	0	0	0	0	0	121,548
336211	0	0	0	0	0	2,260,000
423120	0	0	0	0	0	56,417
423830	0	0	0	0	0	14,377,811
532112	0	0	0	0	0	3,594,962
541330	0	0	0	0	22,572	503,320

541820	0	0	0	0	8,605	0
561730	0	0	0	0	0	395,908
TOTAL	**0**	**145,196**	**0**	**0**	**114,624**	**22,153,377**

Source: CHA analysis of Pace data.

Table 7b: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
237130	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
237310	0.0%	28.6%	0.0%	0.0%	4.5%	66.9%
238210	0.0%	0.0%	0.0%	0.0%	64.8%	35.2%
238910	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
238990	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
336211	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
423120	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
423830	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
532112	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
541330	0.0%	0.0%	0.0%	0.0%	4.3%	95.7%
541820	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
561730	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
TOTAL	**0.0%**	**0.6%**	**0.0%**	**0.0%**	**0.5%**	**98.8%**

Source: CHA analysis of Pace data.

Table 7c: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors (DBE, Non-DBE, Total)
(total dollars)

NAICS	DBE	Non-DBE	Total
237130	0	160,562	160,562
237310	167,995	338,851	506,846
238210	60,648	32,917	93,565
238910	0	311,081	311,081
238990	0	121,548	121,548
336211	0	2,260,000	2,260,000
423120	0	56,417	56,417
423830	0	14,377,811	14,377,811
532112	0	3,594,962	3,594,962

541330	22,572	503,320	525,893
541820	8,605	0	8,605
561730	0	395,908	395,908
TOTAL	**259,820**	**22,153,377**	**22,413,198**

Source: CHA analysis of Pace data.

Table 7d: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors, (DBE, Non-DBE, Total) (share of total dollars)

NAICS	DBE	Non-DBE	Total
237130	0.0%	100.0%	100.0%
237310	33.1%	66.9%	100.0%
238210	64.8%	35.2%	100.0%
238910	0.0%	100.0%	100.0%
238990	0.0%	100.0%	100.0%
336211	0.0%	100.0%	100.0%
423120	0.0%	100.0%	100.0%
423830	0.0%	100.0%	100.0%
532112	0.0%	100.0%	100.0%
541330	4.3%	95.7%	100.0%
541820	100.0%	0.0%	100.0%
561730	0.0%	100.0%	100.0%
TOTAL	**1.2%**	**98.8%**	**100.0%**

Source: CHA analysis of Pace data.

Table 8 presents data on the total contract dollars paid by Pace for each NAICS code and the share the contract dollars comprise of all industries, for non-federally-assisted contracts.

Table 8a: Share of Pace Spending by NAICS Code – No Federal Funds, All Sectors

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
561110	Office Administrative Services	67,307,279	26.30%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	50,824,196	19.80%
485113	Bus and Other Motor Vehicle Transit Systems	21,019,854	8.20%
485410	School and Employee Bus Transportation	19,839,822	7.70%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	14,891,476	5.80%

423830	Industrial Machinery and Equipment Merchant Wholesalers	13,004,071	5.10%
334290	Other Communications Equipment Manufacturing	11,242,928	4.40%
485510	Charter Bus Industry	10,270,269	4.00%
325110	Petrochemical Manufacturing	8,242,335	3.20%
326211	Tire Manufacturing (except Retreading)	8,179,848	3.20%
541110	Offices of Lawyers	6,838,862	2.70%
524210	Insurance Agencies and Brokerages	6,706,505	2.60%
238210	Electrical Contractors and Other Wiring Installation Contractors	5,012,096	2.00%
541810	Advertising Agencies	5,248,542	2.00%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	3,270,536	1.30%
541330	Engineering Services	1,851,039	0.70%
541820	Public Relations Agencies	1,181,575	0.50%
237130	Power and Communication Line and Related Structures Construction	434,478	0.20%
541850	Outdoor Advertising	169,811	0.10%
561720	Janitorial Services	328,576	0.10%
237310	Highway, Street, and Bridge Construction	3,290	0.00%
238990	All Other Specialty Trade Contractors	1,251	0.00%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	102,846	0.00%
441320	Tire Dealers	117,793	0.00%
541511	Custom Computer Programming Services	33,500	0.00%
561730	Landscaping Services	102,580	0.00%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	106,976	0.00%
TOTAL		**256,332,335**	**100.00%**

Source: CHA analysis of Pace data.

Tables 9a through 9d present the paid contract dollars (total dollars and share of total dollars) by NAICS codes for all industries, for non-federally-assisted contracts.

Table 9a: Distribution of Contract Dollars by Race and Gender – No Federal Funds, All Sectors
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
237130	0	434,478	0	0	0	434,478
237310	0	0	0	0	0	0
238210	22,050	402,060	0	0	36,178	460,288
238990	0	0	0	0	1,251	1,251
325110	0	0	0	0	0	0
326211	0	0	0	0	0	0
334290	0	0	0	0	0	0
334512	0	0	0	0	0	0
423120	0	0	42,662	0	160,883	203,546
423830	0	0	0	0	0	0
424720	536,140	239,074	0	0	0	775,214
441228	0	0	0	0	0	0
441320	117,793	0	0	0	0	117,793
485113	0	0	0	0	0	0
485410	0	0	0	0	0	0
485510	0	0	0	0	0	0
524210	0	0	0	0	0	0
541110	0	0	0	0	475,261	475,261
541330	0	0	0	0	0	0
541511	0	0	0	0	0	0
541810	0	0	0	0	0	0
541820	0	0	0	0	208,500	208,500
541850	0	0	0	0	169,811	169,811
561110	0	0	0	0	0	0
561720	288,206	0	0	0	0	288,206
561730	35,920	0	0	0	29,315	65,235
811121	0	0	0	0	106,976	106,976
Total	**1,000,109**	**1,075,612**	**42,662**	**0**	**1,188,175**	**3,306,558**

Source: CHA analysis of Pace data.

Table 9b: Distribution of Contract Dollars by Race and Gender – No Federal Funds, All Sectors
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
237130	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
237310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
238210	0.4%	8.0%	0.0%	0.0%	0.7%	9.2%
238990	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
325110	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
326211	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
334290	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
334512	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
423120	0.0%	0.0%	1.3%	0.0%	4.9%	6.2%
423830	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
424720	1.1%	0.5%	0.0%	0.0%	0.0%	1.5%
441228	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
441320	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
485113	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
485410	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
485510	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
524210	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541110	0.0%	0.0%	0.0%	0.0%	6.9%	6.9%
541330	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541511	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541810	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541820	0.0%	0.0%	0.0%	0.0%	17.6%	17.6%
541850	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
561110	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
561720	87.7%	0.0%	0.0%	0.0%	0.0%	87.7%
561730	35.0%	0.0%	0.0%	0.0%	28.6%	63.6%
811121	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Total	**0.4%**	**0.4%**	**0.0%**	**0.0%**	**0.5%**	**1.3%**

Source: CHA analysis of Pace data.

Table 9c: Distribution of Contract Dollars by Race and Gender – No Federal Funds, All Sectors (DBE, Non-DBE, Total)
(total dollars)

NAICS	DBE	Non-DBE	Total
237130	434,478	0	434,478
237310	0	3,290	3,290
238210	460,288	4,551,808	5,012,096

238990	1,251	0	1,251
325110	0	8,242,335	8,242,335
326211	0	8,179,848	8,179,848
334290	0	11,242,928	11,242,928
334512	0	102,846	102,846
423120	203,546	3,066,991	3,270,536
423830	0	13,004,071	13,004,071
424720	775,214	50,048,982	50,824,196
441228	0	14,891,476	14,891,476
441320	117,793	0	117,793
485113	0	21,019,854	21,019,854
485410	0	19,839,822	19,839,822
485510	0	10,270,269	10,270,269
524210	0	6,706,505	6,706,505
541110	475,261	6,363,601	6,838,862
541330	0	1,851,039	1,851,039
541511	0	33,500	33,500
541810	0	5,248,542	5,248,542
541820	208,500	973,075	1,181,575
541850	169,811	0	169,811
561110	0	67,307,279	67,307,279
561720	288,206	40,370	328,576
561730	65,235	37,345	102,580
811121	106,976	0	106,976
Total	**3,306,558**	**253,025,777**	**256,332,335**

Source: CHA analysis of Pace data.

Table 9d: Distribution of Contract Dollars by Race and Gender – No Federal Funds, All Sectors (DBE, Non-DBE, Total)
(share of total dollars)

NAICS	DBE	Non-DBE	Total
237130	100.0%	0.0%	100.0%
237310	0.0%	100.0%	100.0%
238210	9.2%	90.8%	100.0%
238990	100.0%	0.0%	100.0%
325110	0.0%	100.0%	100.0%
326211	0.0%	100.0%	100.0%
334290	0.0%	100.0%	100.0%
334512	0.0%	100.0%	100.0%
423120	6.2%	93.8%	100.0%
423830	0.0%	100.0%	100.0%
424720	1.5%	98.5%	100.0%
441228	0.0%	100.0%	100.0%

441320	100.0%	0.0%	100.0%
485113	0.0%	100.0%	100.0%
485410	0.0%	100.0%	100.0%
485510	0.0%	100.0%	100.0%
524210	0.0%	100.0%	100.0%
541110	6.9%	93.1%	100.0%
541330	0.0%	100.0%	100.0%
541511	0.0%	100.0%	100.0%
541810	0.0%	100.0%	100.0%
541820	17.6%	82.4%	100.0%
541850	100.0%	0.0%	100.0%
561110	0.0%	100.0%	100.0%
561720	87.7%	12.3%	100.0%
561730	63.6%	36.4%	100.0%
811121	100.0%	0.0%	100.0%
Total	**1.3%**	**98.7%**	**100.0%**

Source: CHA analysis of Pace data.

D. The Availability of DBEs in Pace's Markets

1. Methodological Framework

Estimates of the availability of minority- and female-owned firms in Pace's market area are a critical component of the analysis of possible barriers to equal opportunities to participate in the agency's contracting activities. These availability estimates are compared to the utilization percentage of dollars received by DBEs to examine whether these firms receive parity.[134] Availability estimates are also crucial for Pace to set narrowly tailored contract goals.

We applied the "custom census" approach to estimating availability. As recognized by Illinois courts and the National Model Disparity Study Guidelines,[135] this methodology is superior to the other methods for at least four reasons.

[134] For our analysis, the term "DBE" includes firms that are certified by the Illinois Unified Certification Program and firms that are not certified. As discussed in Chapter II, the inclusion of all minority- and female-owned businesses in the pool casts the broad net approved by the courts that supports the remedial nature of the programs. See *Northern Contracting, Inc. v. PACE Department of Transportation*, 473 F.3d 715, 723 (7th Cir. 2007) (The "remedial nature of the federal scheme militates in favor of a method of DBE availability calculation that casts a broader net."*).*

[135] National Disparity Study Guidelines, pp.57-58.

First, it provides an internally consistent and rigorous "apples to apples" comparison between firms in the availability numerator and those in the denominator. Other approaches often have different definitions for the firms in the numerator (*e.g.*, certified DBEs) and the denominator (*e.g.*, registered vendors).

Next, by examining a comprehensive group of firms, it "casts a broader net" beyond those known to the agency. As recognized by the Seventh Circuit, this comports with the remedial nature of contracting affirmative action programs by seeking to bring in businesses that have historically been excluded. A custom census is less likely to be tainted by the effects of past and present discrimination than other methods, such as bidders lists, because it seeks out firms in the agency's markets areas that have not been able to access its opportunities.

Third, this approach is less impacted by variables affected by discrimination. Factors such as firm age, size, qualifications and experience are all elements of business success where discrimination would be manifested. Most courts have held that the results of discrimination– which impact factors affecting capacity– should not be the benchmark for a program designed to ameliorate the effects of discrimination. They have acknowledged that minority and women firms may be smaller, newer, and otherwise less competitive than non-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.[136]

Fourth, it has been upheld by every court that has reviewed it, including in the successful defenses of the Illinois State Toll Highway's DBE program,[137] the Illinois Department of Transportation's DBE program, [138] and the M/WBE construction program for the City of Chicago.[139]

2. Estimation of DBE Availability

To conduct the custom census for this study, we took the following steps:

1. Created a database of representative, recent, and completed stated contracts;

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[136] For a detailed discussion of the role of capacity in disparity studies, see the National Disparity Study Guidelines, Appendix B, "Understanding Capacity."

[137] *Midwest Fence, Corp. v. U.S. Department of Transportation et al*, 1:10-cv-05627 (N. Dist. Ill., March 24, 2015).

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

[139] *Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725 (N.D. Ill. 2003).

2. Identified Pace's relevant geographic market by counties;

3. Identified Pace's relevant product market by 6-digit NAICS codes;

4. Counted all businesses in the relevant markets using Dun & Bradstreet/Hoovers databases;

5. Identified listed minority-owned and female-owned businesses in the relevant markets; and

6. Assigned ownership status to all other firms in the relevant markets.

As described in sections B and C of this Chapter, we first determined Pace's market area and its utilization of firms by 6-digit NAICS codes, aggregated industries and total dollars spent. Based on these results, the share of total dollars spent in each NAICS code for firms in the market area was used to create the overall DBE availability estimate for each NAICS code, the availability estimates for each aggregated industry and the availability estimates for all industries.

We purchased the firm information from Hoovers for the firms in the NAICS codes located in Pace's market area. Hoovers, a Dun & Bradstreet company, maintains a comprehensive, extensive and regularly updated listing of all firms conducting business. The database includes a vast amount of information on each firm, including location and detailed industry codes, and is the broadest publicly available data source for firm information.

In past years, the data from Hoovers (then Dun & Bradstreet) contained detailed information on the racial identity of the owner(s) of firm. However, recently Hoovers changed its practice and currently, the data simply identify a firm as being minority-owned.[140] This change required us to revise our approach to determining the racial identity of firms' ownership so as to provide narrowly tailored and accurate analyses concerning possible disparity in an agency's contracting practices.

To provide race detail and improve the accuracy of the race and sex assignments, we created a Master D/M/WBE Directory that combined the results of an exhaustive search for directories and other lists containing information about minority and women-owned businesses. This included the Illinois Unified Certification Program; City of Chicago; Cook County; Illinois Department of Central Management Services; and many others. In total, we contacted 119 organizations for this Study. The resulting list of minority businesses is comprehensive and provides data to supplement the Hoovers data base by

[140] The variable is labeled: "Is Minority Owned" and values for the variable can be either "yes" or "no".

disaggregating the broad category of “minority-owned” into specific racial groupings. The list of these groups is provided in Appendix A.

We used information from the Master Directory to estimate the specific racial identity of firms in the Hoovers database that are listed as minority-owned. The process involved the following steps:

1. Sort Hoovers by the 6-digit NAICS codes that comprise Pace’s product market area;
2. Identify the number of minority-owned firms in these NAICS codes;
3. Sort the Master Directory by each 6-digit NAICS code in Pace’s product market area;
4. Determine the number of firms in each NAICS code that are minority owned (some firms in the Master Directory are woman-owned firms);
5. Determine the percentage of the minority-owned firms that are owned by:
    a. Blacks
    b. Hispanics
    c. Asians
    d. Native Americans; and
6. Apply these percentages to the number of minority-owned firms in Hoovers.

Below is an example of how this process works after Hoovers and the Master Directory have been sorted and the number of minority-owned firms in each NAICS code has been identified in Hoovers:

1. Hoovers data base (basic counts in original)

NAICS	Is Minority Owned	Total Firms (Overall)
99999	200	2000

2. Master Directory (basic count in original)

NAICS	Black	Hispanic	Asian	Native American	Total
99999	40	20	4	16	80

3. Master Directory (percentages)

NAICS	Black	Hispanic	Asian	Native American	Total
99999	50%	25%	5%	20%	100%

4. Hoovers data base (with Master Directory percentages applied)

NAICS	Black	Hispanic	Asian	Native American	Is Minority-Owned	Total Firms (Overall)
99999	100	50	10	40	200	2000

An important element to determining availability is to properly assign a race and gender label to each firm owner. As discussed above, we took the answers that Hoovers provides to two broad questions ("Is the firm minority-owned" and "Is the firm female-owned") and disaggregated the responses to the "minority owned" question into specific racial categories. However, another concern is that firm ownership has been racially misclassified. There can be three sources of the misclassification: 1. A firm that has been classified as non-DBE owned is actually DBE owned. 2. A firm that has been classified as DBE owned is actually non-DBE owned. 3. A firm that has been classified as a particular type of DBE firm (*e.g.*, Black) is actually another type of DBE firm (*e.g.*, Hispanic.

Based upon the results of these classifications and further assignments, we estimated the availability of DBEs as a percentage of total firms. DBE unweighted availability is defined as the number of DBEs divided by the total number of firms in Pace's market area.

Tables 10a and 10b present data on the unweighted availability by race and gender and by NAICS codes for all industries, for federally-assisted contracts, and for non-federally-assisted contracts, respectively, in the product market.

Table 10a: Unweighted Availability – Federal Funds,
All Sectors
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
237130	16.25%	10.72%	8.93%	0.10%	7.00%	43.00%	57.00%	100.00%
237310	6.64%	4.71%	2.19%	0.07%	7.96%	21.58%	78.42%	100.00%
238210	3.09%	1.33%	1.34%	0.05%	7.84%	13.65%	86.35%	100.00%
238910	3.15%	2.25%	1.21%	0.04%	7.38%	14.03%	85.97%	100.00%
238990	1.53%	0.93%	0.76%	0.03%	5.62%	8.87%	91.13%	100.00%
326211	0.00%	0.00%	0.00%	0.00%	10.00%	10.00%	90.00%	100.00%
336211	1.72%	0.91%	1.02%	0.06%	14.81%	18.52%	81.48%	100.00%
423120	2.38%	1.32%	1.72%	0.06%	4.11%	9.59%	90.41%	100.00%

423830	1.54%	0.87%	0.91%	0.05%	5.80%	9.16%	90.84%	100.00%
532112	0.00%	0.00%	0.00%	0.00%	2.22%	2.22%	97.78%	100.00%
541330	4.99%	2.85%	5.04%	0.12%	5.64%	18.63%	81.37%	100.00%
541820	3.20%	1.72%	1.30%	0.06%	17.22%	23.50%	76.50%	100.00%
561730	1.54%	1.18%	0.73%	0.04%	5.22%	8.70%	91.30%	100.00%
TOTAL	**2.89%**	**1.72%**	**1.68%**	**0.05%**	**6.65%**	**13.00%**	**87.00%**	**100.00%**

Source: CHA analysis of Pace data; Hoovers; CHA Master Directory.

Table 10b: Unweighted Availability – No Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
237130	16.25%	10.72%	8.93%	0.10%	7.00%	43.00%	57.00%	100.00%
237310	6.64%	4.71%	2.19%	0.07%	7.96%	21.58%	78.42%	100.00%
238210	3.09%	1.33%	1.34%	0.05%	7.84%	13.65%	86.35%	100.00%
238990	1.53%	0.93%	0.76%	0.03%	5.62%	8.87%	91.13%	100.00%
325110	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
326211	0.00%	0.00%	0.00%	0.00%	10.00%	10.00%	90.00%	100.00%
334290	2.32%	2.90%	6.38%	0.07%	5.00%	16.67%	83.33%	100.00%
334512	3.86%	0.98%	1.10%	0.06%	8.00%	14.00%	86.00%	100.00%
423120	2.38%	1.32%	1.72%	0.06%	4.11%	9.59%	90.41%	100.00%
423830	1.54%	0.87%	0.91%	0.05%	5.80%	9.16%	90.84%	100.00%
424720	1.90%	0.73%	1.08%	0.04%	3.22%	6.97%	93.03%	100.00%
441228	0.13%	0.07%	0.08%	0.00%	2.60%	2.89%	97.11%	100.00%
441320	1.21%	0.83%	0.72%	0.04%	3.35%	6.14%	93.86%	100.00%
485113	14.11%	3.60%	6.48%	0.22%	4.88%	29.28%	70.72%	100.00%
485410	13.99%	3.04%	3.41%	0.19%	9.28%	29.91%	70.09%	100.00%
485510	6.63%	4.07%	3.25%	0.18%	7.06%	21.19%	78.81%	100.00%
524210	0.92%	0.42%	0.47%	0.03%	7.11%	8.95%	91.05%	100.00%
541110	0.67%	0.36%	0.35%	0.02%	5.16%	6.56%	93.44%	100.00%
541330	4.99%	2.85%	5.04%	0.12%	5.64%	18.63%	81.37%	100.00%
541511	5.24%	2.30%	5.14%	0.12%	5.51%	18.30%	81.70%	100.00%
541810	2.34%	1.22%	1.14%	0.06%	13.49%	18.26%	81.74%	100.00%
541820	3.20%	1.72%	1.30%	0.06%	17.22%	23.50%	76.50%	100.00%
541850	3.60%	1.86%	1.15%	0.06%	8.33%	15.00%	85.00%	100.00%
561110	1.51%	0.70%	0.78%	0.04%	3.85%	6.89%	93.11%	100.00%
561720	4.71%	1.88%	1.88%	0.10%	12.09%	20.66%	79.34%	100.00%
561730	1.54%	1.18%	0.73%	0.04%	5.22%	8.70%	91.30%	100.00%
811121	1.05%	0.60%	0.72%	0.03%	3.66%	6.06%	93.94%	100.00%
TOTAL	**2.05%**	**1.06%**	**1.23%**	**0.04%**	**6.26%**	**10.65%**	**89.35%**	**100.00%**

Source: CHA analysis of Pace data; ; Hoovers; CHA Master Directory.

To further meet the constitutional and regulatory requirement that the availability estimates that will be used to set goals are narrowly tailored, we then weighted the availability estimate for each of the aggregated industries in the NAICS codes by the share of Pace's spending in each code. Tables 11a and 11b present these weights for federally-assisted contracts, and for non-federally assisted contracts, respectively. Tables 12a and 12b present the final estimates of the weighted averages of all the individual 6-digit level availability estimates in Pace's market area, for federally-assisted contracts, and for non-federally-assisted contracts, respectively.

Table 11a: Share of Pace Spending by NAICS Code – Federal Funds, All Sectors

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
423830	Industrial Machinery and Equipment Merchant Wholesalers	64.1%
532112	Passenger Car Leasing	16.0%
326211	Tire Manufacturing (except Retreading)	10.1%
541330	Engineering Services	2.3%
237310	Highway, Street, and Bridge Construction	2.3%
561730	Landscaping Services	1.8%
238910	Site Preparation Contractors	1.4%
237130	Power and Communication Line and Related Structures Construction	0.7%
238990	All Other Specialty Trade Contractors	0.5%
238210	Electrical Contractors and Other Wiring Installation Contractors	0.4%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.3%
541820	Public Relations Agencies	0.0%
TOTAL		**100.0%**

Source: CHA analysis of Pace data.

Table 11b: Share of Pace Spending by NAICS Code – No Federal Funds, All Sectors

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
561110	Office Administrative Services	26.30%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	19.80%
485113	Bus and Other Motor Vehicle Transit Systems	8.20%
485410	School and Employee Bus Transportation	7.70%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	5.80%
423830	Industrial Machinery and Equipment Merchant Wholesalers	5.10%
334290	Other Communications Equipment Manufacturing	4.40%
485510	Charter Bus Industry	4.00%
325110	Petrochemical Manufacturing	3.20%
326211	Tire Manufacturing (except Retreading)	3.20%
541110	Offices of Lawyers	2.70%
524210	Insurance Agencies and Brokerages	2.60%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.00%
541810	Advertising Agencies	2.00%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	1.30%
541330	Engineering Services	0.70%
541820	Public Relations Agencies	0.50%
237130	Power and Communication Line and Related Structures Construction	0.20%
541850	Outdoor Advertising	0.10%
561720	Janitorial Services	0.10%
237310	Highway, Street, and Bridge Construction	0.00%
238990	All Other Specialty Trade Contractors	0.00%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	0.00%

441320	Tire Dealers	0.00%
541511	Custom Computer Programming Services	0.00%
561730	Landscaping Services	0.00%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	0.00%
TOTAL		**100.00%**

Source: CHA analysis of Pace data.

Table 12a: Aggregated Weighted Availability – Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**1.64%**	**0.96%**	**0.96%**	**0.04%**	**6.21%**	**9.82%**	**90.18%**	**100.0%**

Source: CHA analysis of Pace data; Hoovers; CHA Master Directory.

Table 12b: Aggregated Weighted Availability – No Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**3.74%**	**1.34%**	**1.83%**	**0.07%**	**5.00%**	**12.07%**	**87.93%**	**100.0%**

Source: CHA analysis of Pace data; ; Hoovers; CHA Master Directory.

These weighted availability estimates for federally-assisted contracts can be used by Pace to set its DBE goal under 49 C.F.R. § 26.45(c), an approved method and one that has been upheld by the Illinois courts. It may use the weighted availability estimates for non-federally-assisted contracts to set goals on other projects pursuant to its state authorizing legislation.

Because Pace's authority to set DBE goals is derivative– that is, it flows from federal and state law, not its own actions– it relies upon the determination of its grantor governments that there is a compelling interest in remedying discrimination based upon a strong basis in evidence. Therefore, it is not necessary for Pace to find that there are disparities in its contracting activities, as discussed in Chapter II.

V. ANALYSIS OF DISPARITIES IN THE ILLINOIS ECONOMY

A. Introduction

A key element to determine the need for government intervention through contract goals in the sectors of the economy where the Pace procures goods and services is an analysis of the extent of disparities in those sectors independent of the agency's intervention through its contracting affirmative action programs. The courts have repeatedly held that analysis of disparities in the rates at which minority- and women-owned business enterprises ("MWBEs") in the government's markets form businesses compared to similar non-M/WBEs, and their earnings from such businesses, are highly relevant to the determination whether the market functions properly for all firms regardless of the race or gender of their ownership.[141]

The courts have repeatedly held that analysis of disparities in the rates at which M/WBEs in the government's markets form businesses compared to similar non-M/WBEs, their earnings from such businesses, and their access to capital markets are highly relevant to the determination whether the market functions properly for all firms regardless of the race or gender of their ownership. These analyses contributed to the successful defense of Chicago's construction program.[142] As explained by the Tenth Circuit, this type of evidence

> demonstrates the existence of two kinds of discriminatory barriers to minority subcontracting enterprises, both of which show a strong link between racial disparities in the federal government's disbursements of public funds for construction contracts and the channeling of those funds due to private discrimination. The first discriminatory barriers are to the formation of qualified minority subcontracting enterprises due to private discrimination, precluding from the outset competition for public construction contracts by minority enterprises. The second discriminatory barriers are to fair competition between minority and non-minority subcontracting enterprises, again due to private discrimination, precluding existing minority firms from effectively competing for public construction contracts. The government also presents further evidence in the form of local disparity studies of minority subcontracting and studies of local subcontracting markets after the removal of affirmative action programs.… The government's evidence is particularly striking in the area of the race-

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[141] See the discussion in Chapter X of the legal standards applicable to contracting affirmative action programs.

[142] *Builders Association of Greater Chicago v. City of Chicago*, 298 F.Supp.2d 725 (N.D. Ill. 2003) (holding that City of Chicago's M/WBE program for local construction contracts met compelling interest using this framework).

> based denial of access to capital, without which the formation of minority subcontracting enterprises is stymied.[143]

Business discrimination studies and lending studies are relevant and probative because they show a strong link between the disbursement of public funds and the channeling of those funds due to private discrimination. "Evidence that private discrimination results in barriers to business formation is relevant because it demonstrates that M/WBEs are precluded *at the outset* from competing for public construction contracts. Evidence of barriers to fair competition is also relevant because it again demonstrates that *existing* M/WBEs are precluded from competing for public contracts."[144] Despite the contentions of plaintiffs that possibly dozens of factors might influence the ability of any individual to succeed in business, the courts have rejected such impossible tests and held that business formation studies are not flawed because they cannot control for subjective descriptions such as "quality of education," "culture" and "religion."

For example, in unanimously upholding the USDOT DBE Program, the courts agree that disparities between the earnings of minority-owned firms and similarly situated non-minority-owned firms and the disparities in commercial loan denial rates between Black business owners compared to similarly situated non-minority business owners are strong evidence of the continuing effects of discrimination.[145] The Eighth Circuit Court of Appeals took a "hard look" at the evidence Congress considered, and concluded that the legislature had

> spent decades compiling evidence of race discrimination in government highway contracting, of barriers to the formation of minority-owned construction businesses, and of barriers to entry. In rebuttal, [the plaintiffs] presented evidence that the data were susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.[146]

To conduct this type of court-approved economy-wide analysis, we utilized U.S. Bureau of the Census datasets to address the central question whether firms

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[143] *Adarand VII*, 228 F.3d at 1168-69 .

[144] *Id.*

[145] *Id.; Western States*, 407 F.3d at 993; *Northern Contracting I,* 2004 U.S. Dist. LEXIS 3226 at *64.

[146] *Sherbrooke*, 345 F.3d. at 970; *see also Adarand VII*, 228 F.3d at 1175 (plaintiff has not met its burden "of introducing credible, particularized evidence to rebut the government's initial showing of the existence of a compelling interest in remedying the nationwide effects of past and present discrimination in the federal construction procurement subcontracting market.").

owned by non-Whites and White women face disparate treatment in Pace's marketplace.[147]

We explored the existence of any disparities by analyzing two datasets, each of which permits examination of the issue from a unique vantage point.

- The Census Bureau's *Survey of Business Owners* allows us to examine disparities using individual firms as the basic unit of analysis.

- The Census Bureau's *American Community Survey* allows us to examine disparities using individual entrepreneurs as the basic unit of analysis.[148]

Using both data sets, we found disparities for minorities and women across most industry sectors in Pace's marketplace.

B. Summary of Findings

1. Disparities in Firm Sales and Payroll

One way to measure equity is to examine the share of total sales and/or payroll a group has relative to its share of total firms. Parity would be represented by the ratio of sales or payroll share over the share of total firms equaling 100% (*i.e.*, a group has 10% of total sales and comprises 10% of all firms.) A ratio that is less than 100% indicates an underutilization of a demographic group, and a ratio of more than 100% indicates an overutilization of a demographic group. Table 1 presents data from the Census Bureau's Survey of Business Owners that indicate very large disparities between non-White and White women-owned firms when examining the sales of all firms, the sales of employer firms (firms that employ at least one worker), or the payroll of employer firms. In contrast, the firms that were not non-White and not White women-owned were overutilized using the identical metric.[149]

[147] While this is often described as a "private sector analysis," a more accurate description is an "economy-wide" analysis because expenditures by the public sector are included in the Census databases.

[148] Data from 2007-2011 American Community Survey are the most recent for a five year period.

[149] The Survey of Business Owners data available via American Fact Finder do not permit the use of regression analysis on these results.

Table 1. Disparity Ratios of Firm Utilization Measures
All Industries,
Survey of Business Owners, 2007

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Non-whites	11.2%	20.3%	28.0%
White Women	14.6%	20.5%	28.1%
Not Non-White/Not White Women	161.0%	124.3%	122.0%

Source: CHA Calculations from Survey of Business Owners

2. Disparities in Wages and Business Earnings

Another way to measure equity is to examine how the economic utilization of particular demographic groups compares to White men. Multiple regression statistical techniques allowed us to examine the impact of race and gender on economic outcome while controlling for other factors, such as education, that might impact outcomes.[150] Using these techniques and data from the Census Bureau's American Community Survey, we found that Blacks, Latinos, Native Americans, Asian/Pacific Islanders, Others, and White women were underutilized relative to White men: controlling for other factors relevant to business success, wages and business earnings were lower for these groups compared to White men. We report wages and business earnings because disparities in wages and business earnings can lead to disparities in business outcomes. These findings are presented in Table 2. Parity would exist if the figures in Table 2 were 0.0%; in other words, non-Whites and White women would be utilized identical to White men. When the Table indicates that the wage differential between Blacks and White men is -34.3%, for example, this means that wages received by Blacks are 34.3% less than wages received by similar White men. Because of these disparities, the rates at which these groups formed businesses were lower than the business formation rate of similarly-situated White men.

[150] See Appendix A for more information on multiple regression statistical analysis.

Table 2. Economic Outcome Differentials of Minorities and White Women Relative to White Males All Industries, American Community Survey, 2007-2011

Demographic Group	Wages Differentials Relative to White Men (% Change)	Business Earnings Relative to White Men (% Change)
Black	-34.3%	-44.4%
Latino	-12.1%	-25.5%
Native American	-32.6%	-49.3%
Asian/Pacific Islander	-30.5%	-24.2%
Other	-23.4%	-12.3%
White Women	-33.9%	-53.2%

Source: CHA calculations from the American Community Survey

3. Disparities in Business Formation

A third method of exploring differences in economic outcomes is to examine the rate at which different demographic groups form businesses. We developed these business formation rates using data from the U.S. Bureau of the Census' American Community Survey. Table 3a presents these results. The Table indicates that White men have higher business formation rates compared to non-Whites and White women. Table 3b explores the same question but utilizes multiple regression analysis to control for important factors beyond race and gender. This Table indicates that non-Whites and White women are less likely to form businesses compared to similarly situated White men. For instance, Blacks are 4.9% less likely to form a business compared to White men after other key explanatory variables are controlled. These Tables reinforce the notion that there are significant differences in the rate of non-Whites and White women to form business compared to the rate of White men. These differences support the inference that minority- and women-owned business enterprises ("M/WBEs") suffer major barriers to equal access to entrepreneurial opportunities in the overall Illinois economy.

Table 3a. Business Formation Rates
All Industries,
American Community Survey, 2007-2011

Demographic Group	Business Formation Rates
Black	4.5%
Latino	4.7%
Native American	8.6%
Asian/Pacific Islander	8.4%
Other	5.9%
Non-White	5.2%
White Women	6.9%
Non-White Male	6.0%
White Male	11.2%

Source: CHA calculations from the American Community Survey

Table 3b. Business Formation Probabilities Relative to White Males
All Industries,
American Community Survey, 2007-2011

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-4.9%
Latino	-3.2%
Native American	-3.0%
Asian/Pacific Islander	-1.4%
Other	-0.9%
White Women	-2.6%

Source: CHA calculations from the American Community Survey

Overall, the results of our analyses of the Illinois economy demonstrate that minorities and White women continue to face race- and gender-based barriers to equal opportunities as firm owners, and to equal opportunities to earn wages and salaries that impact their ability to form firms and to earn income from those firms. While not dispositive, this suggests that absent some affirmative

intervention in the current operations of the Illinois marketplace, Pace will function as a passive participant in these potentially discriminatory outcomes.[151]

C. Disparate Treatment in the Marketplace: Evidence from the Census Bureau's 2007 Survey of Business Owners

Every five years, the Census Bureau administers the *Survey of Business Owners* ("SBO") to collect data on particular characteristics of businesses that report to the Internal Revenue Service receipts of $1,000 or more.[152] The 2007 SBO was released on August 16, 2012, so our analysis reflects the most current data available. The SBO collects demographic data on business owners disaggregated into the following groups:[153],[154]

- Non-Hispanic Blacks
- Latinos
- Non-Hispanic Native Americans
- Non-Hispanic Asians
- Non-Hispanic White Women
- Non-Hispanic White Men
- Firms Equally Owned by Non-Whites and Whites
- Firms Equally Owned by Men and Women
- Firms where the ownership could not be classified
- Publicly-Owned Firms

For purposes of this analysis, the first four groups were aggregated to form a Non-White category. Since our interest is the treatment of non-White-owned firms

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[151] Various appendices to this Chapter contain additional data and methodological explanations. Appendix A provides a "Further Explanation of the Multiple Regression Analysis." Appendix B provides a "Further Explanation of Probit Regression Analysis." Appendix C discusses the meaning and role of "Significance Levels." Appendix D provides detailed "Additional Data from the Analysis of the Survey of Business Owners." Appendix E provides "Additional Data from the Analysis of American Community Survey."

[152] *See* http://www.census.gov/econ/sbo/about.html for more information on the Survey.

[153] Race and gender labels reflect the categories used by the Census Bureau.

[154] For expository purposes, the adjective "Non-Hispanic" will not be used in this chapter; the reader should assume that any racial group referenced does not include members of that group who identify ethnically as Latino.

and White women-owned firms, the last five groups were aggregated to form one category. To ensure this aggregated group is described accurately, we label this group “not non-White/non-White women”. While this label is cumbersome, it is important to be clear this group includes firms whose ownership extends beyond White men, such as firms that are not classifiable or that are publicly traded and thus have no racial ownership.

In addition to the ownership demographic data, the Survey also gathers information on the sales, number of paid employees, and payroll for each reporting firm.

To examine those sectors in which Pace purchases, we analyzed economy-wide SBO data on the following sectors:

- Construction
- Professional, Scientific and Technical Services
- Information technology
- Goods
- Services

However, the nature of the SBO data– a sample of all businesses, not the entire universe of all businesses– required some adjustments. In particular, we had to define the sectors at the 2-digit North American Industry Classification System (“NAICS”) code level and therefore our sector definitions do not exactly correspond to the definitions used to analyze Pace’s contract data in Chapter IV, where we are able to determine sectors at the 6-digit NAICS code level. At a more detailed level, the number of firms sampled in particular demographic and sector cells may be so small that the Census Bureau does not report the information, either to avoid disclosing data on businesses that can be identified or because the small sample size generates unreliable estimates of the universe.[155] We therefore report 2-digit data.

Table 4 presents information on which NAICS codes were used to define each sector.

[155] Even with these broad sector definitions, there was an insufficient number of Native American owned firms to perform our analysis on this demographic group. This limitation also arose for Latinos and Asians in the Services sector.

Table 4. 2-Digit NAICS Code Definition of Sector

SBO Sector Label	2-Digit NAICS Codes
Construction	23
Professional, Scientific, and Technical Services[156]	54
Information	51
Goods	31,42, 44
Services	48, 52, 53, 56, 61, 62, 71, 72, 81

The balance of this Chapter section reports the findings of the SBO analysis. For each sector, we present data describing the sector and report disparities within the sector.

1. All SBO Industries

For a baseline analysis, we examined all industries in the state of Illinois. Table 5 presents data on the percentage share that each group has of the total of each of the following six business outcomes:

- The number of all firms
- The sales and receipts of all firms
- The number of firms with employees (employer firms)
- The sales and receipts of all employer firms
- The number of paid employees
- The annual payroll of employers firms

Panel A of Table 5 presents data for the four basic non-White racial groups:

- Black
- Latino
- Native American
- Asian

[156] This sector includes (but is broader than just) construction-related services. It is impossible to narrow this category to construction-related services without losing the capacity to conduct race and gender specific analyses.

Panel B of Table 5 presents data for six types of firm ownership:

- Non-white
- White Women
- White Men
- Equally non-Whites and Whites
- Equally women and men
- Firms that are publicly owned or not classifiable

Categories in the second panel are mutually exclusive. Hence, firms that are non-White and equally owned by men and women are classified as non-White and firms that are equally owned by non-Whites and Whites and equally owned by men and women are classified as equally owned by non-Whites and Whites.[157]

[157] Some of the figures in Panel B may not correspond to the related figures in Panel A because of discrepancies in how the SBO reports the data

Table 5. Percentage Demographic Distribution of Sales and Payroll Data
All Industries, 2007

	Total Number of Firms (All Firms)	Sales & Receipts - All Firms ($1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts - All Firms with Paid Employees (Employer Firms) ($1,000)	Number of Paid Employees	Annual payroll ($1,000)
Panel A: Distribution of Non-White Firms						
Black	9.3%	0.5%	1.5%	0.3%	0.8%	0.6%
Latino	5.0%	0.7%	3.0%	0.6%	1.5%	0.9%
Native American	0.3%	0.0%	0.2%	0.0%	0.1%	0.0%
Asian	5.2%	1.2%	6.3%	1.1%	1.9%	1.4%
Panel B: Distribution of All Firms						
Non-White	19.8%	2.2%	9.6%	2.0%	3.9%	2.7%
White Women	21.3%	3.1%	13.8%	2.8%	5.4%	3.9%
White Men	42.3%	25.4%	50.5%	24.7%	32.2%	29.4%
Equally Non-White & White	1.0%	0.1%	0.4%	0.1%	0.2%	0.2%
Equally Women & Men	12.1%	3.1%	14.8%	2.8%	5.4%	3.5%
Firms Not Classifiable	3.5%	66.0%	10.9%	67.6%	52.9%	60.3%
All Firms	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

Since the central issue is the possible disparate treatment of non-White and White women firms, Table 6 re-aggregates the last four groups– White men; equally non-White and White; equally women and men; and firms not classifiable– into one group: Not Non-White/Not White Women.[158] We then present the shares each group has of the six indicators of firm utilization. These data were then used to calculate three disparity ratios, presented in Table 7:

- Ratio of sales and receipts share for all firms over the share of total number of all firms.

[158] Again, while a cumbersome nomenclature, it is important to remain clear that this category includes firms other than those identified as owned by White men.

- Ratio of sales and receipts share for employer firms over the share of total number of employer firms.

- Ratio of annual payroll share over the share of total number of employer firms.

For example, the disparity ratio of sales and receipts share for all firms over the share of total number of all firms for Black firms is 13.9% (as shown in Table 7). This is derived by taking the Black share of sales and receipts for all firms (1.3%) and dividing it by the Black share of total number of all firms (9.6%) that are presented in Table 6. If Black-owned firms earned a share of sales equal to their share of total firms, the disparity would have been 100%. An index less than 100 percent indicates that a given group is being utilized less than would be expected based on its availability, and courts have adopted the Equal Employment Opportunity Commission's "80 percent" rule that a ratio less than 80 percent presents a *prima facie* case of discrimination.[159] Except for the Black ratio of payroll to the number of employer firms, all disparity ratios for non-White firms and White women firms are below this threshold.[160]

[159] 29 C.F.R. § 1607.4(D) ("A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact.").

[160] Because the data in Tables 6 and 7 are presented for descriptive purposes, significance tests on these results are not conducted.

Table 6. Demographic Distribution of Sales and Payroll Data – Aggregated Groups

All Industries, 2007

	Total Number of Firms (All Firms)	Sales & Receipts (All Firms) ($1,000 or greater)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts Firms with Paid Employees (Employer Firms) ($1,000or greater)	Number of Paid Employees	Annual payroll ($1,000 or greater)
Black	9.6%	1.3%	1.7%	1.1%	1.8%	1.5%
Latino	5.2%	2.1%	3.4%	1.9%	3.1%	2.3%
Native American	0.3%	0.1%	0.2%	0.1%	0.2%	0.1%
Asian	5.3%	3.6%	7.0%	3.5%	4.0%	3.4%
Non-White	20.6%	6.5%	10.8%	6.0%	8.2%	6.8%
White Women	22.1%	9.2%	15.4%	8.7%	11.4%	9.7%
Not Non-White/Not White Women	57.3%	84.3%	73.8%	85.3%	80.4%	83.5%
All Firms	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

Table 7. Disparity Ratios of Firm Utilization Measures
All Industries, 2007

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	13.9%	62.7%	84.7%
Latino	39.6%	55.6%	66.4%
Native American	39.6%	59.9%	60.6%
Asian	68.2%	50.0%	48.5%
Panel B: Disparity Ratios for All Firms			
Non-Whites	11.2%	20.3%	28.0%
White Women	14.6%	20.5%	28.1%
Not Non-White/Not White Women	161.0%	124.3%	122.0%

All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

This same approach was used to examine the key sectors in which Pace purchases. The underlying data on the various industries of construction; professional, scientific and technical services; information technology; and services are presented in Appendix D to this Chapter. The following are summaries of the results of the disparity analyses.

2. Construction

Of the 18 disparity ratios for non-White firms and White women firms presented in Table 8, 14 fall under the 80% threshold.

Table 8. Disparity Ratios – Aggregated Groups
Construction, 2007

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	25.8%	100.1%	108.4%
Latino	29.7%	50.3%	66.6%
Native American	35.0%	63.2%	76.4%
Asian	56.0%	64.4%	79.0%
Panel B: Disparity Ratios for All Firms			
Non-White	29.3%	62.9%	78.4%
White Women	86.7%	70.4%	96.4%
Not Non-White/Not White Women	110.6%	105.1%	101.5%
All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

3. Professional, Scientific and Technical Services

Table 9 presents disparity ratios in this sector. Because of the dearth of Native American firms in this sector, no analysis is provided for this demographic group. All of the available disparity ratios for non-White firms and White women firms presented in Table 9 are under the 80% threshold.[161]

Table 9. Disparity Ratios – Aggregated Groups
Professional, Scientific, and Technical Services, 2007

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	17.2%	49.6%	53.1%
Latino	27.8%	44.6%	36.9%
Native American	S	S	S
Asian	47.8%	46.2%	46.4%
Panel B: Disparity Ratios for All Firms			
Non-White	30.1%	48.1%	47.2%
White Women	26.8%	30.9%	29.1%
Not Non-White/Not White Women	142.6%	120.3%	120.8%
All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

[161] The values of "S" in Tables 9 – 12 reflect that the SBO did not publish data in these instances because it was "withheld because estimate did not meet publication standards". See the Disclosure section under Methodology at http://www.census.gov/econ/sbo/methodology.html.

4. Information

Once again, the small number of Native American firms in this sector meant that no analysis is provided for this demographic group. In addition, the SBO was unable to provide reliable estimates for the firms in this sector that are equally owned by non-Whites and Whites. Thirteen of the available 15 disparity ratios for non-White firms and White women firms presented in Table 10 fall below the 80% threshold.

Table 10. Disparity Ratios – Aggregated Groups
Information, 2007

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	21.3%	145.9%	262.0%
Latino	5.4%	16.3%	17.4%
Native American	S	S	S
Asian	18.3%	21.3%	25.9%
Panel B: Disparity Ratios for All Firms			
Non-White	16.4%	48.5%	79.0%
White Women	6.0%	7.8%	10.2%
Not Non-White/Not White Women	150.4%	119.4%	117.1%
All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

5. Services

The SBO was unable to provide reliable estimates for the firms that are equally owned by non-Whites and Whites and Native American firms in this sector; consequently, no analysis is provided for these demographic groups. In addition, estimates could not be made for Asian-owned firms in four of the six categories and Latino-owned firms in two of the four categories. Of the available 12 disparity ratios for non-White firms and White women firms presented in Table 11, all fall below the 80% threshold.

Table 11. Disparity Ratios – Aggregated Groups
All Services, 2007

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	5.5%	19.9%	28.1%
Latino	18.2%	10.2%	S
Native American	S	S	S
Asian	28.2%	S	S
Panel B: Disparity Ratios for All Firms			
Non-White	12.7%	21.2%	27.6%
White Women	14.6%	18.6%	26.3%
Not Non-White/Not White Women	179.1%	128.9%	126.3%
All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

6. Goods

The SBO was unable to provide reliable estimates for the firms that are equally owned by non-Whites and Whites and Native American firms in this sector; consequently, no analysis is provided for these demographic groups. All of the disparity ratios for non-White firms and White women firms presented in Table 12 fall below the 80% threshold.

Table 12. Disparity Ratios – Aggregated Groups
Goods, 2007

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	5.3%	23.0%	30.4%
Latino	11.6%	20.0%	26.9%
Native American	S	S	S
Asian	18.5%	14.2%	14.7%
Panel B: Disparity Ratios for All Firms			
Non-White	11.9%	17.1%	19.5%
White Women	10.6%	20.5%	29.8%
Not Non-White/Not White Women	157.0%	122.9%	121.1%
All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

D. Disparate Treatment in the Marketplace: Evidence from the Census Bureau's 2007-2011 American Community Survey

As discussed in the beginning of this Chapter, the key question is whether firms owned by non-Whites and White women face disparate treatment in the marketplace without the intervention of Pace's DBE program.

In the previous section, we explored this question using SBO data. In this section, we use the Census Bureau's *American Community Survey* data to address other aspects of this question. One element asks if there exist demographic differences in the wage and salary income received by private sector workers. Beyond the issue of bias in the incomes generated in the private sector, this exploration is important for the issue of possible variations in the rate of business formation by different demographic groups. One of the determinants

of business formation is the pool of financial capital at the disposal of the prospective entrepreneur. The size of this pool is related to the income level of the individual either because the income level impacts the amount of personal savings that can be used for start-up capital or the income level affects one's ability to borrow funds. If particular demographic groups receive lower wages and salaries then they would have access to a smaller pool of financial capital, and thus reduce the likelihood of business formation.

The *American Community Survey* ("ACS") *Public Use Microdata Sample* ("PUMS") is useful in addressing these issues. The ACS is an annual survey of 1% of the population and the PUMS provides detailed information at the individual level. In order to obtain robust results from our analysis, we use the file that combines data for 2007 through 2011, the most recent available.[162] With this rich data set, our analysis can establish with greater certainty any causal links between race, gender and economic outcomes.

Often, the general public sees clear associations between race, gender, and economic outcomes and assumes this association reflects a tight causal connection. However, economic outcomes are determined by a broad set of factors, including, but extending beyond, race and gender. To provide a simple example, two people who differ by race or gender may receive different wages. This difference may simply reflect that the individuals work in different industries. If this underlying difference is not known, one might assert the wage differential is the result of the race or gender difference. To better understand the impact of race or gender on wages, it is important to compare individuals of different races or genders who work in the same industry. Of course, wages are determined by a broad set of factors beyond race, gender, and industry. With the ACS PUMS, we have the ability to include a wide range of additional variables such as age, education, occupation, and state of residence.

We employ a multiple regression statistical technique to process this data. This methodology allows us to perform two analyses: an estimation of how variations in certain characteristics (called independent variables) will impact the level of some particular outcome (called a dependent variable); and a determination of how confident we are that the estimated variation is statistically different from zero. We have provided more detail on this technique in Appendix A.

With respect to the first result of regression analysis, we will examine how variations in the race, gender, and industry of individuals impact the wages and other economic outcomes received by individuals. The technique allows us to determine the effect of changes in one variable, assuming that the other determining variables are the same. That is, we compare individuals of different races, but of the same gender and in the same industry; or we compare

[162] For more information about the ACS PUMS, please see http://www.census.gov/acs/.

individuals of different genders, but of the same race and the same industry; or we compare individuals in different industries, but of the same race and gender. We are determining the impact of changes in one variable (*e.g.*, race, gender or industry) on another variable (wages), "controlling for" the movement of any other independent variables.

With respect to the second result of regression analysis, this technique also allows us to determine the statistical significance of the relationship between the dependent variable and independent variable. For example, the relationship between gender and wages might exist but we find that it is not statistically different from zero. In this case, we are not confident that there is not any relationship between the two variables. If the relationship is not statistically different from zero, then a variation in the independent variable has no impact on the dependent variable. The regression analysis allows us to say with varying degrees of statistical confidence that a relationship is different from zero. If the estimated relationship is statistically significant at the 0.05 level, that indicates we are 95% confident that the relationship is different from zero; if the estimated relationship is statistically significant at the 0.01 level, that indicates we are 99% confident that the relationship is different from zero; if the estimated relationship is statistically significant at the 0.001 level, that indicates we are 99.9% confident that the relationship is different from zero.[163]

In the balance of this section, we report data on the following sectors:

- All Industries
- Construction
- Construction-related Services
- Information Technology
- Services
- Goods

Each sub-section first reports data on the share of a demographic group that forms a business (business formation rates); the probabilities that a demographic group will form a business relative to White men (business formation probabilities); the differences in wages received by a demographic group relative to White men (wage differentials); and the differences in business earnings received by a demographic group relative to White men (business earnings differentials).

[163] Most social scientists do not endorse utilizing a confidence level of less that 95%. Appendix C explains more about statistical significance.

1. All Industries in Illinois

a. Business Formation Rates

Table 13 presents business formation rates in the Illinois economy by demographic groups.

Table 13. Business Formation Rates, Illinois

All Industries, 2007-2011

Demographic Group	Business Formation Rates
Black	4.5%
Latino	4.7%
Native American	8.6%
Asian/Pacific Islander	8.4%
Other	5.9%
Non-White	5.2%
White Women	6.9%
Non-White Male	6.0%
White Male	11.2%

Source: CHA calculations from the American Community Survey

White males have a higher rate of business formation than Non-White males. However, as with the issue of income and earnings differences, the higher rates could be attributed to factors aside from race and/or gender. To explore this question further, a probit regression statistical technique was employed.[164] The basic question is: how does the probability of forming a business vary as factors such as race, gender, etc. vary?

Table 14 presents the results of the probit analysis for the Illinois economy.

[164] Probit is a special type of regression technique where the dependent variable only has two possible values: 0 or 1. For instance, the unit of observation is an individual and he/she forms a business or does not form a business. In the former case, the value of the dependent variable would be 1 while in the latter case, the value of the dependent variable would be 0. This is in contrast to the multiple regression technique discussed earlier where the dependent variable such as wages might have any non-negative value. For a more extensive discussion of probit regression analysis, see Appendix B.

Table 14. Business Formation Probability Differentials for Selected Groups Relative to White Men

All Industries, 2007-2011

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-4.9%***
Latino	-3.2%***
Native American	-3.0%***
Asian/Pacific Islander	-1.4%***
Other	-0.9%***
White Women	-2.6%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level

The analysis indicates that non-Whites and White women in Illinois are less likely than White men to form businesses even after controlling for key factors. The reduction in probability ranges from 0.9% to 4.9%. Once again, these estimates are statistically significant at the 99.1 level.

b. Differences in Wage and Salary Incomes

Table 15 presents the findings from the wage and salary income regression analysis examining the Illinois economy. This indicates the wage differential for selected demographic groups in Illinois relative to White men.

Table 15. Wage Differentials for Selected Groups Relative to White Men

All Industries, 2007-2011

Demographic Group	Wages Relative to White Men (% Change)
Black	-34.3%***
Latino	-12.1%***
Native American	-32.6%***
Asian/Pacific Islander	-30.5%**
Other	-23.4%***
White Women	-33.9%**

Source: CHA calculations from the American Community Survey
*** Indicates statistical significance at the 0.001 level
** Indicates statistical significance at the 0.01 level

Holding constant factors such as education, age, occupation, and industry, Blacks, Latinos, White women, Asian/Pacific Islanders and Others in Illinois earn less than White men in the overall economy. Estimates of the coefficients for Black, Latino, Native American, and Other are statistically significant at the 0.001 level. Estimates of the coefficients for Asian/Pacific Islander and White Women are statistically significant at the 0.01 level. For example, we are 99.9% confident that wages for Blacks in Illinois (after controlling for numerous other factors) are 34.3% less than those received by White men.

c. Differences in Business Earnings

The same approach was used to investigate if there were differences in business earnings received by Non-Whites and White women entrepreneurs and White male entrepreneurs. Using the PUMS, we limited the sample to the self-employed and examined how their business income varied in response to factors such as race, gender, age, education, and industry. Table 16 presents these findings.

Table 16. Business Earnings Differentials for Selected Groups Relative to White Men

All Industries, 2007-2011

Demographic Group	Earnings Relative to White Men (% Change)
Black	-44.4%***
Latino	-25.5%***
Native American	-49.3%***
Asian/Pacific Islander	-24.2%***
Other	-12.3%**
White Women	-53.2%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
** indicates statistical significance at the 0.01 level

Once again, the estimates of the coefficients for these variables were found to be statistically significant at the 0.001 and 0.01 levels. The differentials in business earnings received by Non-Whites and White women compared to White males ranged from -12% to -53%.

d. Conclusion

Using descriptive analysis, Table 13 shows that differentials exist between the business formation rates by Non-Whites and White women and White males across industry sectors. Table 14 presents the results of a further statistical analysis, which indicated that even after taking into account potential mitigating factors, the differential still exists. Tables 15 and 16 present data indicating differentials in wages and business earnings after controlling for possible explanatory factors. These analyses support the conclusion that barriers to business success do affect Non-Whites and White women entrepreneurs.

2. The Construction Industry in Illinois

a. Business Formation Rates

Table 17 presents business formation rates in the Illinois construction industry for selected demographic groups.

Table 17. Business Formation Rates, Illinois

Construction, 2007-2011

Demographic Group	Business Formation Rates
Black	19.0%
Latino	11.1%
Native American	22.3%
Asian/Pacific Islander	18.2%
Other	1.5%
Non-White	13.2%
White Women	6.9%
Non-White Male	13.7%
White Male	22.6%

Source: CHA calculations from the American Community Survey

White males have a higher rate of business formation than Non-White males. However, as with the issue of income and earnings differences, the higher rates could be attributed to factors aside from race and/or gender. To explore this question further, a probit regression statistical technique was employed. The basic question is: how does the probability of forming a business vary as factors such as race, gender, etc. vary?

Table 18 presents the results of the probit analysis for the construction industry in Illinois.

Table 18. Business Formation Probability Differentials for Selected Groups Relative to White Men

Construction, 2007-2011

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-8.0%
Latino	-7.7%
Native American	-8.5%
Asian/Pacific Islander	-0.8%
Other	-3.0%
White Women	-2.3%

Source: CHA calculations from the American Community Survey

The analysis indicates that Non-Whites and White women in Illinois are less likely to form construction businesses compared to White men even after controlling for key factors. The reduction in probability ranges from 0.8% to 8.5%. Once again, these estimates are statistically significant at the 99.1 level.

b. Differences in Wage and Salary Incomes

Table 19 presents the findings from the wage and salary income regression analysis examining the construction industry in Illinois. This indicates the wage differential for selected demographic groups in Illinois relative to White men.

Table 19. Wage Differentials for Selected Groups Relative to White Men

Construction, 2007-2011

Demographic Group	Wages Relative to White Men (% Change)
Black	-51.0%***
Latino	-13.3%***
Native American	-36.0%***
Asian/Pacific Islander	-51.5%***
Other	-13.3%***
White Women	-45.0%**

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
** indicates statistical significance at the 0.01 level

Holding constant factors such as education, age, occupation, and industry, Blacks, Latinos, White women, Asian/Pacific Islanders and Others in Illinois earn less than White men in the construction industry. The differential ranges between 13% less and 52% less. Estimates of the coefficients for Black, Latino, Native American, Asian/Pacific Islander, and Other are statistically significant at the 0.001 level. Estimates of the coefficients for White Women are statistically significant at the 0.01 level.

c. Differences in Business Earnings

The same approach was used to investigate if there were differences in business earnings received by Non-White male entrepreneurs and White male entrepreneurs. Using the PUMS, we limited the sample to the self-employed and examined how their business income varied in response to factors such as race, gender, age, education, and industry. Table 20 presents these findings.

Table 20. Business Earnings Differentials for Selected Groups Relative to White Men

Construction, 2007-2011

Demographic Group	Earnings Relative to White Men (% Change)
Black	-26.3%*
Latino	-6.1%***
Native American	-25.8%***
Asian/Pacific Islander	-10.0%**
Other	0.0%
White Women	-19.4%**

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
** indicates statistical significance at the 0.01 level
* indicates statistical significance at the 0.005 level

With the exception of the estimated coefficient for Other, the estimates of the coefficients for these variables were found to be statistically significant at the 0.001, 0.01, or 0.005 levels. The differentials in business earnings received by Non-Whites and White women compared to White males ranged from 6% less to 26% less. For the estimated coefficient for Other, the results were not found to be significantly statistically different from zero.

d. Conclusion

Using descriptive analysis, Table 17 shows that differentials exist between the business formation rates by Non-White males and White males. Table 18 presents the results of a further statistical analysis, which indicated that even after taking into account potential mitigating factors, the differential still exists. Tables 19 and 20 present data indicating differentials in wage and business earnings after controlling for possible explanatory factors. These analyses support the conclusion that barriers to business success do affect Non-Whites and White women entrepreneurs.

3. The Construction-Related Services Industry in Illinois

a. Business Formation Rates

Table 21 presents business formation rates in the construction-related services industry in Illinois for selected demographic groups.

Table 21. Business Formation Rates, Illinois

Construction-Related Services, 2007-2011

Demographic Group	Business Formation Rates
Black	4.6%
Latino	4.2%
Native American	0.0%
Asian/Pacific Islander	3.9%
Other	0.0%
Non-White	4.1%
White Women	8.3%
Non-White Male	6.3%
White Male	10.9%

Source: CHA calculations from the American Community Survey

White males have a higher rate of business formation than Non-White males. (There were zero reported Native American or Other entrepreneurs in the construction-related services industry.) However, as with the issue of income and earnings differences, the higher rates could be attributed to factors aside from race and/or gender. To explore this question further, a probit regression statistical technique was employed. The basic question is: how does the probability of forming a business vary as factors such as race, gender, etc. vary?

Table 22 presents the results of the probit analysis for the construction industry in Illinois.

Table 22. Business Formation Probability Differentials for Selected Groups Relative to White Men
Construction-related Services, 2007-2011

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-6.2%***
Latino	-1.3%***
Native American	---
Asian/Pacific Islander	-5.5%***
Other	---
White Women	-0.2%***

Source: CHA calculations from the American Community Survey

The analysis indicates that compared to White men, Non-Whites and White women in Illinois are less likely to form construction-related services businesses even after controlling for key factors. The reduction in probability ranges from 0.2% less to 6.2% less. Once again, these estimates are statistically significant at the 99.1 level.

b. Differences in Wage and Salary Incomes

Table 23 presents the findings from the wage and salary income regression analysis examining the construction-related services industry in Illinois. This indicates the wage differential for selected demographic groups in Illinois relative to White men.

Table 23. Wage Differentials for Selected Groups Relative to White Men

Construction-related Services, 2007-2011

Demographic Group	Wages Relative to White Men (% Change)
Black	-49.2%**
Latino	-20.2%***
Native American	-28.1%***
Asian/Pacific Islander	-19.0%***
Other	-13.0%*
White Women	-33.8%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
** indicates statistical significance at the 0.01 level
* indicates statistical significance at the 0.05 level

Holding constant factors such as education, age, occupation, and industry, Blacks, Latinos, White women, Asian/Pacific Islanders and Others in Illinois earn less than White men in the construction-related services industry. The differential ranges between 13% less and 49% less. Estimates of the coefficients for, Latino, Native American, Asian/Pacific Islander, and White Women are statistically significant at the 0.001 level. Estimates of the coefficients for Black are statistically significant at the 0.01 level. The estimated coefficient for Other is statistically significant at the 0.05 level.

c. Differences in Business Earnings

The same approach was used to investigate if there were differences in business earnings received by Non-White male entrepreneurs and White male entrepreneurs. Using the PUMS, we limited the sample to the self-employed and examined how their business income varied in response to factors such as race, gender, age, education, and industry. Table 24 presents these findings.

Table 24. Business Earnings Differentials for Selected Groups Relative to White Men

Construction-related Services, 2007-2011

Demographic Group	Earnings Relative to White Men (% Change)
Black	-57.7%***
Latino	0.0%
Native American	0.0%
Asian/Pacific Islander	-222.6%*
Other	0.0%
White Women	-60.8%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
* indicates statistical significance at the 0.005 level

The estimates of the coefficients for Black and White Women were found to be statistically significant at the 0.001 level. The estimated coefficient for Asian/Pacific Islander was statistically significant at the 0.05 level. The differentials in business earnings received by these three demographic groups were less than White males ranging from 57% to 222%. (The proper interpretation of the estimated coefficient for Asian/Pacific Islanders is that White men earn 222.6% greater than similarly situated Asian/Pacific Islanders.) The estimated coefficients for Latino, Native American, and Other were not found to be significantly statistically different from zero.

4. Conclusion

Using descriptive analysis, Table 21 shows that differentials exist between the business formation rates by Non-White males and White males. Table 22 presents the results of a further statistical analysis, which indicated that even after taking into account potential mitigating factors, the differential still exists. Tables 23 and 24 present data indicating differentials in wage and business earnings after controlling for possible explanatory factors. These analyses support the conclusion that barriers to business success do affect Non-Whites and White women entrepreneurs.

4. The Information Technology Industry in Illinois

a. Business Formation Rates

Table 25 presents business formation rates in the information technology industry in Illinois for selected demographic groups.

Table 25. Business Formation Rates, Illinois

Information Technology, 2007-2011

Demographic Group	Business Formation Rates
Black	2.2%
Latino	4.3%
Native American	0.0%
Asian/Pacific Islander	6.2%
Other	5.4%
Non-White	4.4%
White Women	6.7%
Non-White Male	5.3%
White Male	11.4%

Source: CHA calculations from the American Community Survey

White males have a higher rate of business formation than Non-Whites and White women. However, as with the issue of income and earnings differences, the higher rates could be attributed to factors aside from race and/or gender. To explore this question further, a probit regression statistical technique was employed. The basic question is: how does the probability of forming a business vary as factors such as race, gender, etc. vary?

Table 26 presents the results of the probit analysis for the information technology industry in Illinois.

Table 26. Business Formation Probability Differentials for Selected Groups Relative to White Men

Information Technology, 2007-2011

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-4.9%***
Latino	-2.1%***
Native American	-1.5%***
Asian/Pacific Islander	-4.7%***
Other	-0.9%***
White Women	-2.0%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level

The analysis indicates that Non-Whites and White women in Illinois are less likely to form information technology businesses compared to White men even after controlling for key factors. The reduction in probability ranges from 0.9% less to 4.9% less. Once again, these estimates are statistically significant at the 99.1 level.

b. Differences in Wage and Salary Incomes

Table 27 presents the findings from the wage and salary income regression analysis examining the information technology industry in Illinois. This indicates the wage differential for selected demographic groups in Illinois relative to White men.

Table 27. Wage Differentials for Selected Groups Relative to White Men

Information Technology, 2007-2011

Demographic Group	Wages Relative to White Men (% Change)
Black	-15.5%***
Latino	-8.1%***
Native American	-158.2%***
Asian/Pacific Islander	-18.4%***
Other	-25.5%***
White Women	-24.6%***

Source: CHA calculations from the American Community Survey

Holding constant factors such as education, age, occupation, and industry, Blacks, Latinos, Native American, Asian/Pacific Islanders, Others, and White women in Illinois earn less than White men in the information technology industry. The differential ranges between 8% less and 158% less. (The proper interpretation of the estimated coefficient for Native Americans is that White men earn 158.2% greater than similarly situated Native Americans.) The estimates of all coefficients are statistically significant at the 0.001 level.

c. Differences in Business Earnings

The same approach was used to investigate if there were differences in business earnings received by Non-White male entrepreneurs and White male entrepreneurs. Using the PUMS, we limited the sample to the self-employed and examined how their business income varied in response to factors such as race, gender, age, education, and industry. Table 28 presents these findings.

Table 28. Business Earnings Differentials for Selected Groups Relative to White Men

Information Technology, 2007-2011

Demographic Group	Earnings Relative to White Men (% Change)
Black	-42.0%***
Latino	-377.9%***
Native American	-
Asian/Pacific Islander	-17.6%*
Other	0.0%
White Women	-67.4%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
* indicates statistical significance at the 0.005 level

The estimated coefficients for Black Latino, and White Women were statistically significant at the 0.001 level. The estimated coefficient for Asian/Pacific Islander was statistically significant at the 0.005 level. The differentials in business earnings received by these three demographic groups were less than White males from between 17.6% to 377.9%. (The proper interpretation of the estimated coefficient for Latinos is that White men earn 377.9% greater than similarly situated Latinos.) For the estimated coefficient for Other, the results were not found to be significantly statistically different from zero. For Native Americans the sample size was too small to calculate an estimated coefficient.

d. Conclusion

Using descriptive analysis, Table 25 shows that differentials exist between the business formation rates and by Non-White males and White males. Table 26 presents the results of a further statistical analysis, which indicated that even after taking into account potential mitigating factors, the differential still exists. Tables 27 and 28 present data indicating differentials in wage and business earnings after controlling for possible explanatory factors. These analyses support the conclusion that barriers to business success do affect Non-Whites and White women entrepreneurs.

5. The Services Industry in Illinois

a. Business Formation Rates

Table 29 presents business formation rates in the services industry in Illinois for selected demographic groups.

Table 29. Business Formation Rates, Illinois

Services, 2007-2011

Demographic Group	Business Formation Rates
Black	4.0%
Latino	5.2%
Native American	16.1%
Asian/Pacific Islander	8.5%
Other	5.3%
Non-White	5.3%
White Women	7.7%
Non-White Male	6.6%
White Male	17.6%

Source: CHA calculations from the American Community Survey

White males have a higher rate of business formation than Non-White males. However, as with the issue of income and earnings differences, the higher rates could be attributed to factors aside from race and/or gender. To explore this question further, a probit regression statistical technique was employed. The basic question is: how does the probability of forming a business vary as factors such as race, gender, etc. vary?

Table 30 presents the results of the probit analysis for the services industry in Illinois.

Table 30. Business Formation Probability Differentials for Selected Groups Relative to White Men

Services, 2007-2011

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-7.2%***
Latino	-4.7%***
Native American	-5.7%***
Asian/Pacific Islander	-5.0%***
Other	-2.5%***
White Women	-4.2%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level

The analysis indicates that compared to White men, Non-Whites and White women in Illinois are less likely to form services businesses even after controlling for key factors. The reduction in probability ranges from 2.5% less to 7.2% less. Once again, these estimates are statistically significant at the 99.1 level.

b. Differences in Wage and Salary Incomes

Table 31 presents the findings from the wage and salary income regression analysis examining the services industry in Illinois. This indicates the wage differential for selected demographic groups in Illinois relative to White men.

Table 31. Wage Differentials for Selected Groups Relative to White Men

Services, 2007-2011

Demographic Group	Wages Relative to White Men (% Change)
Black	-44.5%***
Latino	-25.2%***
Native American	-71.3%*
Asian/Pacific Islander	-28.3%***
Other	-25.9%***
White Women	-40.0%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
* indicates statistical significance at the 0.05 level

Holding constant factors such as education, age, occupation, and industry, Blacks, Latinos, White women, Asian/Pacific Islanders and Others in Illinois earn less than White men in the services industry. The differential ranges between 25% less and 71% less. Estimates of the coefficients for Black, Latino, Asian/Pacific Islander, Other, and White Women are statistically significant at the 0.001 level. Estimates of the coefficients for Native American are statistically significant at the 0.05 level.

c. Differences in Business Earnings

The same approach was used to investigate if there were differences in business earnings received by Non-White male entrepreneurs and White male entrepreneurs. Using the PUMS, we limited the sample to the self-employed and examined how their business income varied in response to factors such as race, gender, age, education, and industry. Table 32 presents these findings.

Table 32. Business Earnings Differentials for Selected Groups Relative to White Men

Services, 2007-2011

Demographic Group	Earnings Relative to White Men (% Change)
Black	-53.1%***
Latino	-37.3%***
Native American	-77.1%***
Asian/Pacific Islander	-33.8%***
Other	-27.0%**
White Women	-72.6%*

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
** indicates statistical significance at the 0.01 level
* indicates statistical significance at the 0.005 level

The estimates of the coefficients for these variables were found to be statistically significant at the 0.001, 0.01, or 0.005 levels. The differentials in business earnings received by Non-Whites and White women compared to White males ranged from 27% less to 77% less.

d. Conclusion

Using descriptive analysis, Table 29 shows that differentials exist between the business formation rates by Non-White males and White males. Table 30 presents the results of a further statistical analysis, which indicated that even after taking into account potential mitigating factors, the differential still exists. Tables 31 and 32 present data indicating differentials in wage and business earnings after controlling for possible explanatory factors. These analyses support the conclusion that barriers to business success do affect Non-Whites and White women entrepreneurs.

6. The Goods Industry in Illinois

a. Business Formation Rates

Table 33 presents business formation rates in the goods industry in Illinois for selected demographic groups.

Table 33. Business Formation Rates, Illinois

Goods, 2007-2011

Demographic Group	Business Formation Rates
Black	2.1%
Latino	4.6%
Native American	4.0%‡
Asian/Pacific Islander	11.3%
Other	11.1%‡
Non-White	5.0%
White Women	5.5%
Non-White Male	5.2%
White Male	7.9%

Source: CHA calculations from the American Community Survey
‡ The observations in this demographic group was too small for a reliable statistical analysis

White males have a higher rate of business formation than Non-Whites and White women. Note: the observed number of Native American and Other was too small for any reliable statistical analysis. However, as with the issue of income and earnings differences, the higher rates could be attributed to factors aside from race and/or gender. To explore this question further, a probit regression statistical technique was employed. The basic question is: how does the probability of forming a business vary as factors such as race, gender, etc. vary?

Table 34 presents the results of the probit analysis for the construction industry in Illinois.

Table 34. Business Formation Probability Differentials for Selected Groups Relative to White Men

Goods, 2007-2011

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-4.0%***
Latino	-1.7%***
Native American	---
Asian/Pacific Islander	2.6%***
Other	---
White Women	-1.4%***

Source: CHA calculations from the American Community Survey

The analysis indicates that Blacks, Latinos, and White women in Illinois are less likely to form goods businesses compared to White men even after controlling for key factors. (Once again, this analysis does not include Native Americans and Others.) The reduction in probability ranges from 1.4% less to 4.0% less. However, Asian/Pacific Islanders were more likely to form businesses in this industry relative to White men by 2.6%. These estimates are statistically significant at the 99.1 level.

b. Differences in Wage and Salary Incomes

Table 35 presents the findings from the wage and salary income regression analysis examining the goods industry in Illinois. This indicates the wage differential for selected demographic groups in Illinois relative to White men.

Table 35. Wage Differentials for Selected Groups Relative to White Men

Goods, 2007-2011

Demographic Group	Wages Relative to White Men (% Change)
Black	-41.5%**
Latino	-11.6%***
Native American	-32.4%***
Asian/Pacific Islander	-32.0%***
Other	-97.8%***
White Women	-38.7%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level
** indicates statistical significance at the 0.01 level

Holding constant factors such as education, age, occupation, and industry, Blacks, Latinos, White women, Asian/Pacific Islanders and Others in Illinois earn less than White men in the goods industry. The differential ranges between 11% less and 97% less. Estimates of the coefficients for, Latino, Native American, Asian/Pacific Islander, Other, and White Women are statistically significant at the 0.001 level. The estimates of the coefficient for Black are statistically significant at the 0.01 level.

c. Differences in Business Earnings

The same approach was used to investigate if there were differences in business earnings received by Non-White male entrepreneurs and White male entrepreneurs. Using the PUMS, we limited the sample to the self-employed and examined how their business income varied in response to factors such as race, gender, age, education, and industry. Table 36 presents these findings.

Table 36. Business Earnings Differentials for Selected Groups Relative to White Men

Goods, 2007-2011

Demographic Group	Earnings Relative to White Men (% Change)
Black	-55.4%***
Latino	-28.8%***
Native American	0.0%
Asian/Pacific Islander	-26.1%***
Other	0.0%
White Women	-68.3%***

Source: CHA calculations from the American Community Survey
*** indicates statistical significance at the 0.001 level

With the exception of the estimated coefficient for Other and Native American, the estimates of the coefficients for these variables were found to be statistically significant at the 0.001 level. The differentials in business earnings received by Non-Whites and White women compared to White males ranged from 26% less to 68% less. For the estimated coefficient for Other and Native American, the results were not found to be significantly statistically different from zero.

d. Conclusion

Using descriptive analysis, Table 33 shows that differentials exist between the business formation rates by Non-Whites and White women and White males. Table 34 presents the results of a further statistical analysis, which indicated that even after taking into account potential mitigating factors, the differential still exists. Tables 35 and 36 present data indicating differentials in wage and business earnings after controlling for possible explanatory factors. These analyses support the conclusion that barriers to business success do affect Non-Whites and White women entrepreneurs.

VI. QUALITATIVE EVIDENCE OF RACE AND GENDER DISPARITIES IN PACE'S MARKET

In addition to quantitative data, a study should further explore anecdotal evidence of experiences with discrimination in contracting opportunities because it is relevant to the question of whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes. As observed by the Supreme Court, anecdotal evidence can be persuasive because it "brought the cold [statistics] convincingly to life."[165] Evidence about discriminatory practices engaged in by prime contractors, bonding companies, suppliers, lenders and other actors relevant to business opportunities has been found relevant regarding barriers both to minority firms' business formation and to their success on governmental projects.[166] 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 discriminatory market conditions are [sic] often particularly probative."[167] "[W]e do not set out a categorical rule that every case must rise or fall entirely on the sufficiency of the numbers. To the contrary, anecdotal evidence might make the pivotal difference in some cases; indeed, in an exceptional case, we do not rule out the possibility that evidence not reinforced by statistical evidence, as such, will be enough."[168]

There is no requirement that anecdotal testimony be "verified" or corroborated, as befits the role of evidence in legislative decision-making as opposed to judicial proceedings. "Plaintiff offers 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' perception."[169] 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."[170]

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[165] *International Brotherhood of Teamsters v. United States*, 431 U.S. 324, 399 (1977).

[166] *Adarand VII*, 228 F.3d at 1168-1172.

[167] *Concrete Works II*, 36 F.3d at 1520, 1530.

[168] *Engineering Contractors II*, 122 F.3d at 926.

[169] *Id.* at 249.

[170] *Concrete Works IV*, 321 F.3d at 989.

To explore this type of anecdotal evidence of possible discrimination against minorities and women in Pace's geographic and industry markets, we conducted four group interviews, totaling 54 participants, and one public meeting. We met with business owners from a broad cross section of the industries from which the State purchases. Firms ranged in size from large national businesses to decades-old family-owned firms 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 prime contracts and subcontracts, both with state agencies and in the private sector. We also elicited recommendations for improvements to the Disadvantaged Enterprise Program ("DBE") program, as discussed in Chapter III.

Many minority and women owners reported that while some progress has been made in integrating their firms into public and private sector contracting activities through race- and gender-conscious contracting programs, significant barriers remain.

As discussed in Chapter II, this type of anecdotal data has been held by the courts to be relevant and probative of whether Pace continues to have a need to use narrowly tailored DBE contract goals to remedy the effects of past and current discrimination, and create a level playing field for contract opportunities for all firms.

The following are summaries of the issues discussed. Quotations are indented, and have been edited for readability. They are representative of the views expressed by participants over the many sessions.

A. Discriminatory Attitudes and Negative Perceptions of Competence

Several participants reported that potential clients and customers display negative attitudes about the competency and professionalism of minorities and women. The assumption is that DBEs are less qualified.

> They think that because you're a minority or a woman business that you don't have your act together.
>
> [There were] two … senior guys on the job.… And the other guy jabs him and says, see, they showed up and they're a DBE company.… So they feel like, oh this is a necessary evil. You have to work with the minority companies.… Let's just give them some work and get through it.
>
> One of the biggest barriers to opportunities really is the DBE moniker itself.… The second that we became a DBE, then we got put into the DBE

> kind of box. So now I was no longer eligible [for larger contracts]. No one saw us as a guy that was on the prime list. They said we saw your name on the DBE list. So now, instead of going after the hundred percents, we were getting the twenty percents.

Bias against women in the construction industry and construction professional services remains a substantial obstacle to equal treatment and fair opportunities. Female owners reported the continuing effects of stereotypes about gender roles and sexist attitudes and behaviors from male colleagues and clients.

> It's a common occurrence for people [both general contractors and agency personnel] to assume that I'm an administrative person rather than the president.… They'll even go to the point of quizzing me about rudimentary questions about [trade].

> If I have a kind of a strong tough talking [male] talking to me I will match him with my tough talking [male] and I'll let them work it out. Because they're a better match to spar.… They won't argue with a man because they think he knows more than the woman. They will argue with the woman because they think we're just a little dumber than them. And they already know they don't know what they're doing. Whereas, they will believe a man.

> I have certain clients that I assign to certain [males] in my office because no matter how hard I lay down the line, I just don't get the respect or the pricing we need.… If a man in my office has the exact same conversation, and it just happened two weeks ago, not only are they willing to go up in their price to meet the price that we're bidding at, but there is resolution, whatever that conversation is. If it's me, they feel that they're not going to go up in price. They don't respect what I have to say or our expertise and it's very frustrating and we walk without a resolution because I'm not going to give in. And so it's just amazing and this happens often. And I think that I'm pretty straightforward. I do. I grew up only with men so I know how to deal with men and it's just there's some people in their mind that this is just not an even playing field and so no matter what you go in with it doesn't matter, unless it's a guy who is presenting.

> A lot of times, people think I'm a secretary, or even though I identify myself as [name] and [company name], they just don't make the connection. They want to speak to my boss. Could you have your boss call me back or is there somebody else there I could speak to, thinking that I don't know what I'm talking about.

> They call you sweetheart. Sweetheart, honey, just inappropriate comments.

I worked for a company probably five, six years post-college and still was treated like I was an intern. People would ask me, are you an intern? No, I'm the project manager…., I have the degree, I know what I'm doing.

B. Obtaining Public Sector Work on an Equal Basis

These types of barriers lead minorities and women to unanimous agreement that goals remain necessary to level the playing field and equalize opportunities. DBEs sought the right to compete on a fair and equal basis. Without goals, DBEs believed they would be shut out of the market.

When I do perform work as a sub for a prime contractor on projects that require goals they're satisfied with my work but they don't provide me an opportunity or solicit me for bids that don't have goal work.

I'm dealing in an industry now where, for example, GCs will say, well you had a competitive number but I don't need you.

The only advantage to having a DBE, WBE program for our company has been the opportunity. We have never gotten a job we weren't the low bidder on. We have never been invited to bid certain projects until they started that program. So as far as I'm concerned it's very important and the fact is you still have to be the low bidder. Nobody has come in and handed me a job because I'm a woman. And no one has paid me if it wasn't done properly. So it kind of is kind of a checks and balance thing as far as I'm concerned. I'm not looking for any gifts. I'm looking for just the right to work.

We've gotten opportunities because of the time we've been in business and people that we deal with. We deal with a lot of major general contractors. But as you had asked earlier, is it worth keeping the program? Absolutely. For nothing else, just the opportunities.

Do you need to have the program? Absolutely. Does it always work? No.

I have had some solicitation from prime contractors I give them pricing and they're like, oh well you're too high. We're sticking with our other folks that we usually use. And I said but don't you want DBE participation? And they said, well there's no requirement for it so why should we do business with you if you're priced too high? I said, well then give me a chance to respond to that. Tell me what you're looking for.… Never hear back from them. And I think it's because there is no particular set aside.… Give us a chance. Let us work with some of these primes by making it a requirement to have a DBE portion. And then that will flower into other opportunities for us.

If there is a goal of any kind of for “BE” or DBE at least we have a chance to get in and prove ourselves.

The minute there’s not a goal, those primes do walk away and they go back to the old boys’ network.

Without the goals, I think we’re all almost out of business or at least we would see our businesses shrink.

We’ve been in business for 23 years so if the program ended, we would retain customers because we’re at the point now where we’ve been able to grow and get good equipment and good employees. But I think for so many of the smaller companies that haven’t had the opportunity to grow, whether it’s just being in business a few years or just not having capacity, I think without the goals it would be drastic. It would probably put a lot of people out of business.

All I want is what anybody wants here and that’s an opportunity to create a relationship.

C. Conclusion

Consistent with other evidence reported in this Study, anecdotal interview information strongly suggests that minorities and women continue to suffer discriminatory barriers to full and fair access to Pace and private sector contracts and subcontracts. While not definitive proof that Pace may apply race- and gender-conscious measures to these impediments, the results of 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 Pace may use narrowly tailored DBE contract goals to address that discrimination.

VII. RECOMMENDATIONS FOR PACE'S DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

The quantitative and qualitative data in this study for Pace provide a thorough examination of the evidence regarding the experiences of minority- and women-owned firms in its geographic and industry markets. As required by strict scrutiny, we analyzed evidence of such firms' utilization by Pace as measured by dollars spent, as well as DBEs' experiences in obtaining contracts in the public and private sectors. We gathered statistical and anecdotal data to provide the agency with the evidence necessary to narrowly tailor its DBE program for federal-aid contracts, as required by 49 C.F.R. Part 26 and to narrowly tailor its DBE program for state-funded contracts, as required by state statute. Based upon the results, we make the following recommendations.

A. Augment Race- and Gender-Neutral Initiatives

The courts and the DBE Program regulations require that grantees use race-neutral[171] approaches to the maximum feasible extent to meet the annual DBE goal. This is a critical element of narrowly tailoring the program, so that the burden on non-DBEs is no more than necessary to achieve Pace's remedial purposes. Increased participation by DBEs through race-neutral measures will also reduce the need to set DBE contract goals. We therefore suggest the following enhancements of Pace's current efforts, based on the business owner interviews, the input of agency staff, and national best practices for DBE programs.

1. Implement an Electronic Contracting Data Collection and Monitoring System

A critical element of this Study and a major challenge was data collection of full and complete prime contract and associated subcontractor records. As is very common, Pace did not have all the information needed for the inclusion of subcontractor payments in the analysis. While the agency is now collecting some data using spreadsheets, we recommend Pace procure and implement an electronic data collection system for the DBE program. It should have at least the following functionality:

- Full contact information for all firms, including email addresses, NAICS codes, race and gender ownership, and small business certification status.
- Contract/project-specific goal setting, using the data from this study.
- Utilization plan capture for prime contractor's submission of subcontractor utilization plans, including real-time verification of DBE certification status and NAICS codes, and proposed utilization/goal validation.

[171] The term race-neutral as used here includes gender-neutral.

- Contract compliance for certified and non-certified prime contract and subcontract payments for all formally procured contracts for all tiers of all subcontractors; verification of prompt payments to subcontractors; and information sharing between Pace, prime vendors and subcontractors about the status of pay applications.

- Spend analysis of informal expenditures, such as those made with agency credit cards or on purchase orders, to determine the utilization of certified firms.

- Program report generation, including required FTA reports, that provide data on utilization by industries, race, gender, dollar amount, procurement method, agencies, etc.

- An integrated email and fax notification and reminder engine to notify users of required actions, including reporting mandates and dates.

- Outreach tools for eBlasts and related communications and event management for tracking registration and attendance.

- Import/export integration with existing systems to exchange contract, payment, and vendor data.

- Access by authorized Pace staff, prime contractors and subcontractors to perform all necessary activities.

2. Conduct DBE and Prime Contractor Networking Events on Pace Projects

Pace participates in outreach and networking events in conjunction with other transportation agencies. Targeted networking events for DBEs and prime contractors for Pace projects were urged as one approach to forging relationships.

3. Provide Training to Pace Staff

All Pace staff with procurement responsibilities should receive annual training on the DBE program's policies and procedures and discuss ways to increase opportunities. The regulations are complex and refresher presentations, as well as updates, would help to ensure program consistency and best practices.

4. Provide an Annual Contracting Forecasts

The ability to plan ahead is critical for small firms, which often lack the resources to respond quickly to new opportunities. Annual or semi-annual contracting forecasts, whereby Pace projects approximately what it will spend at the general industry level or on specific projects, is a usual tool to reduce barriers. This is a common practice; for

example, the City of Chicago and the Chicago Transit Authority provide information about what each government expects to spend in the upcoming year.[172]

5. Increase Contract "Unbundling"

"Unbundling" contracts into smaller segments was endorsed by several firm owners as one method to provide fair access to Pace's projects. In conjunction with reduced insurance and bonding requirements where possible, smaller contracts should permit smaller firms to move from quoting solely as subcontractors to bidding as prime contractors, as well as enhance their subcontracting opportunities. Unbundling must be conducted, however, within the constraints of the need to ensure efficiency and limit costs to taxpayers. Pace should consider adding unbundling as a component in the small business elements of its DBE Program Plan, as this approach is an approved element under 49 C.F.R. § 26.39.

6. Review Retainage Policies and Procedures

Pace was reported to make timely payments to prime contracts, and few DBEs reported they had payment issues on Pace projects. However, Pace's policy to retain 10 percent of the contract price until final completion is a substantial burden for all firms in general and DBEs and small businesses in particular. We urge the agency to consider releasing retainage on a rolling basis, so that subcontractors who have fully performed and whose work has been accepted can be paid the full amount of the invoice. The long performance time for some contracts means that small subcontractors can wait months for payment, which creates a serious and unnecessary barrier. We further recommend that Pace not hold retainage at all on professional services contracts. Such a practice is highly unusual, and as with construction contracts, needlessly impacts DBEs and small firms.

7. Assist with Access to Technical Assistance and Supportive Services Programs

Several DBEs requested help with navigating and accessing the various programs that are provided by agencies other than Pace to assist DBEs. One suggestion was for Pace to provide to DBEs information about how to secure technical assistance, supportive services and access financing and bonding programs. Many resources are available in the Chicago area and through the State of Illinois. While not administered by Pace, links on its website and materials at meetings would help disseminate critical information about resources for success.

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[172] http://www.cityofchicago.org/content/dam/city/depts/dps/Outreach/1Q2015BuyingPlan.pdf; http://www.transitchicago.com/assets/1/procurement/2015_CTA_Buying_Plan.pdf.

8. Ensure Bidder Non-Discrimination and Fairly Priced Subcontractor Quotations

Some DBEs voiced concerns that prime contractors may not be soliciting their subcontractor quotes in good faith on projects, and failed to solicit them at all on non-goals projects. Some prime contractors reported that using certified firms increases their costs and risks. To investigate these claims, Pace should require bidders to maintain all subcontractor quotes received on larger projects. The prices and scopes can then be compared to evaluate whether bidders are in fact soliciting and contracting with subcontractors on a non-discriminatory basis and if DBEs cost more than White-male owned firms.[173] The recent revisions to the DBE program regulations now mandate a similar approach.

Another approach would be to provide with the invitation for bid or request for proposal the scopes of work used by Pace to set the contract goal. This would provide guidance to prime firms on specialties on which to concentrate for making good faith efforts, as well as increase transparency about how the DBE program functions. It will be necessary to stress that firms may meet the goal using firms outside these industries and that only soliciting firm in these industries does not *per se* constitute making goof faith efforts to meet the goal.

9. Enhance the Small Business Enterprise Program

Pace has adopted a Small Business Enterprise ("SBE") program as an element to its DBE Program Plan to comply with the mandate of 49 C.F.R. § 26.39, which requires small business elements in the DBE program. This approach could be enhanced by the following changes:

- Clarify the size standard. The DBE program plan states the SBE program applies the SBA size standards, but there is an absolute cap in the DBE regulations that is below the SBA limit for construction firms that are not specialty trade contractors. The SBE application seems to refer to the DBE standard, so this needs to be clarified. USDOT's guidance states that the DBE size standards should apply.[174]

- The program does not impose a personal net worth test. We suggest that the playing field be level between DBEs, who must meet the test, and SBEs who

[173] A similar program element was part of the court-approved DBE plan for the Illinois Department of Transportation. *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868, at * 87 (Sept. 8, 2005) ("IDOT requires contractors seeking prequalification to maintain and produce solicitation records on all projects… Such evidence will assist IDOT in investigating and evaluating discrimination complaints.").

[174] 76 Fed. Reg. 5097 (January 28, 2011) ("Recipients should use the definition of small business concerns set out in 49 C.F.R. §26.5.).

are not DBEs. We therefore recommend that Pace require SBEs to meet the same personal net worth limit as imposed by the DBE program.

- Set guidelines for which contracts should be considered for this program. Contracts with smaller dollar values (*e.g.*, under $250,000) or fewer scopes (*e.g.*, those for maintenance or landscaping) or few subcontracting opportunities (*e.g.*, those for professional services) are good candidates. In any event, some criteria should be spelled out in the program document.

- Consider setting an overall, annual internal target for dollars spent with SBEs. While not binding in any way, it is useful to have an objective for managers to strive to meet. One measure might be past participation of SBEs coupled with forecasting about upcoming opportunities. This will also assist with unbundling, since an analysis of what could be segmented into smaller contracts is necessary to meet that element, too.

- Pace's project managers may not have complete knowledge of all the small firms that might work on a project, and so the current approach of having the manager submit a list to the DBELO may be limiting the reach of the program. The electronic system that will be accessible to all Pace staff should assist with this process.

B. Continue to Implement Narrowly Tailored DBE Goals

1. Use the Study to Set the Overall Annual DBE Goal

49 C.F.R. Part 26 requires that Pace adopt an annual overall goal for DBE participation in its federally-funded projects covering a three year period. This Study's availability estimates in Chapter IV should be consulted to determine the Step 1 base figure for the relative availability of DBEs required by § 26.45(c). It should also form the basis for the DBE goal for state-funded contracts. Our custom census is an alternative method permitted under § 26.45(c)(5), and is the only approach that has received repeated judicial approval.

The statistical disparities in Chapter V in the rates at which DBEs form businesses can serve as the basis for a Step 2 in § 26.45(d) adjustment to reflect the level of DBE availability that would be expected in the absence of discrimination. This is "demonstrable evidence that is logically and directly related to the effect for which the adjustment is sought."[175] However, we note that the case law in the Seventh Circuit Court of Appeals requires the goal for a race-based program to be the "plausible lower bound estimate," so any adjustment to the step 1 base figure must be very carefully considered.

[175] 49 CFR § 26.45(d)(3); *see also* §23.51.

2. Use the Study to Set DBE Contract Goals

As discussed in Chapter II of the Study, the Department's constitutional responsibility is to ensure that its implementation of 49 C.F.R. Part 26 and of its program for state-funded contracts is narrowly tailored to its geographic and procurement marketplace. The highly detailed availability estimates in the Study can serve as the starting point for contract goal setting. Pace should weigh the estimated scopes of the contract by the availability of DBEs in those scopes as estimated in the study, and then adjust the result based on current market conditions. The electronic system should have a goal setting module, and written procedures spelling out the steps are needed.

We urge Pace to bid some contracts that it determines have significant opportunities for DBE participation without goals. These "control contracts" can illuminate whether certified firms are used or even solicited in the absence of goals, as suggested by the study data. The development of some unremediated markets data will be probative of whether contract goals remain needed to level the playing field for minorities and women and was important to our successful defense of IDOT's DBE program.

C. Develop Performance Measures for Program Success

Pace should develop quantitative performance measures for certified firms and overall success of the program to evaluate its effectiveness in reducing the systemic barriers identified by the study. In addition to meeting the overall, annual goal, possible benchmarks might be:

- The number of bids or proposals and the dollar amount of the awards and the goal shortfall where the bidder submitted good faith efforts to meet the contract goal;
- The number and dollar amount of bids or proposals rejected as non-responsive for failure to make good faith efforts to meet the goal;
- The number, type and dollar amount of DBE substitutions during contract performance;
- Increased bidding by certified firms;
- Increased prime contract awards to certified firms; and
- Increased "capacity" of certified firms as measured by bonding limits, size of jobs, profitability, etc.
- .

APPENDIX A: MASTER D/M/W/BE DIRECTORY

To supplement race and sex information in Dun & Bradstreet/Hoovers used to estimate M/W/DBE availability in Pace's market area, we identified 119 organizations that might have lists of minority, women and disadvantaged firms. We included national entities and organizations from neighboring states because of the possibility that firms on these lists might be doing business with Pace. These lists were used to supplement data on the race and sex of firms' ownership to improve the accuracy and coverage of race and sex assignments to estimate M/WBE availability.

In addition to Pace's list, we obtained lists from the following entities:

Business Research Services
Chicago Chinatown Chamber of Commerce
Chicago Minority Suppliers Development Council
Chicago Rockford International Airport
Chicago United
Chicago Urban League
City of Chicago
City of Rockford
Cook County
Diversity Information Resources
DuPage County
Illinois Department of Central Management Services
Illinois State Black Chamber of Commerce
Illinois UCP
National Organization of Minority Architects
Small Business Administration/Central Contractor Registry
Suburban Minority Contractors Association
Black Contractors United
Federation of Women Contractors
Hispanic American Construction Industry
Women Construction Owners & Executives

The following entities had relevant lists of MWDBEs that were duplicates of the lists we obtained:

Abraham Lincoln Capital Airport
Central Illinois Regional Airport
Chicago Midway International Airport
Chicago O'Hare International Airport
Chicago Public Schools
Chicago Transit Authority
Greater Peoria Regional Airport
Illinois Department of Transportation
Illinois Tollway
METRA (Chicago Railway)
Metropolitan Pier and Exposition Authority
University of Illinois
University of Illinois Willard Airport

The following entities either did not have a list of MWDBEs or the list did not include race and gender information:

American Indian Development Association
Champaign County
Chicago Black Pages
Village of Arlington Heights
City of Cicero
City of Elgin
City of Evanston
City of Joliet
City of Naperville
Village of Schaumburg
City of Waukegan
Decatur Airport
Hispanic Lawyers Association of Illinois
Illinois Hispanic Chamber of Commerce
Joliet Region Chamber of Commerce
Kane County
Kankakee County
Kendall County
Lake County
Marshall County
McHenry County
McLean County
Menard County

National Center of American Indian Enterprise Development
Rock Island County
Society of Taiwanese Americans
Tazewell County
The John Marshall Law School
Vermillion County
Williamson County Regional Airport
Rogers Park Business Alliance
Association of Asian Construction Enterprises
Taiwanese American Professionals Chicago

We were unable to obtain lists from the following entities:

Alliance of Business Leaders & Entrepreneurs
Arab American Bar Association of Illinois
Arquitectos - The Society of Hispanic Professional Architects
Asian American Alliance
Asian American Bar Association of the Greater Chicago Area
Asian American Institute
Asian American Small Business Association
Black Chamber of Commerce of Lake County
Chatham Business Association, Small Business Development
Chicago State University
Chicago Women in Architecture
Aurora Regional Chamber of Commerce
City of Aurora
City of Springfield
Coalition of African American Leaders
Cosmopolitan Chamber of Commerce
Enterpriz Cook County
Hispanic SMB
Illinois Department of Commerce and Economic Opportunity
Indian American Bar Association
MidAmerica St. Louis Airport
National Association of Women Business Owners
National Society of Hispanic MBAs - Chicago Chapter
Puerto Rican Bar Association of Illinois
Puerto Rican Chamber of Commerce
Quad City International Airport
Rainbow Push Coalition International Trade Bureau
Rockford Black Pages
St. Clair County

Tribal Procurement Institute PTAC
Will County
Women's Bar Association
Business Partners - The Chamber for Uptown
Philippine American Chamber of Commerce of Greater Chicago
Korea Business Association
Korean American Association of Chicago
Chicago Korean American Chamber of Commerce
Taiwanese American Chamber of Commerce of Greater Chicago
Taiwanese Chambers of Commerce of North America
Vietnamese American National Chamber of Commerce
West Ridge Chamber of Commerce
Arab American Association for Engineers & Architects
Chicago Minority Business Association
Association of Subcontractors & Affiliates

The following entities declined to provide either their list or the race and gender information in their list:

Aurora Hispanic Chamber of Commerce
Austin Chamber of Commerce
Black Women Lawyers of Greater Chicago, Inc.
Latin American Chamber of Commerce
Women's Business Development Center
African American Contractors Association

APPENDIX B: FURTHER EXPLANATION OF THE MULTIPLE REGRESSION ANALYSIS

As explained in the Report, the multiple regression statistical techniques seek to explore the relationship between a set of independent variables and a dependent variable. The following equation is a way to visualize this relationship:

$$DV = f(D, I, O),$$

where DV is the dependent variable; D is a set of demographic variables; I is a set of industry & occupation variables; and O is a set of other independent variables.

The estimation process takes this equation and transforms it into:

$$DV = C + (\beta 1 * D) + (\beta 2 * I) + (\beta 3 * O) + \mu,$$

where C is the constant term; β1, β2 and β3 are coefficients, and μ is the random error term.

The statistical technique seeks to estimate the values of the constant term and the coefficients.

In order to complete the estimation, the set of independent variables must be operationalized. For demographic variables, the estimation used race, gender and age. For industry and occupation variables, the relevant industry and occupation were utilized. For the other variables, education and the state of residence were used.

A coefficient was estimated for each independent variable. The broad idea is that a person's wage or earnings is dependent upon the person's race, gender, age, industry, occupation, and education. An additional factor was included: because of our interest in the impact of race and gender on wages and earnings, we made the assumption that the impact of those variables might vary from state to state (*i.e.*, the impact of being Black on wages is different in Illinois than it is in Alabama). We therefore developed new variables that would show the interaction between race and gender and one particular state. Since this Report examined Illinois, that was the state employed. The coefficient for the new variable showed the impact of being a member of that race or gender in Illinois. Consequently, the impact of race or gender on wages or earnings had two components: the national coefficient and the state-specific impact.

APPENDIX C: FURTHER EXPLANATION OF THE PROBIT REGRESSION ANALYSIS

Probit regression is a special type of regression analysis. While here are many differences between the underlying estimation techniques used in the probit regression and the standard regression analysis, the main differences from the lay person's point of view lie in the nature of dependent variable and the interpretation of the coefficients associated with the independent variables.

The basic model looks the same:

$$DV = f(D, I, O),$$

where DV is the dependent variable; D is a set of demographic variables; I is a set of industry & occupation variables; and O is a set of other independent variables.

The estimation process takes this equation and transforms it into:

$$DV = C + (\beta 1 * D) + (\beta 2 * I) + (\beta 3 * O) + \mu,$$

where C is the constant term; β1, β2, and β3 are coefficients, and μ is the random error term.

In the standard regression model, the dependent variable is continuous and can take on many values, in the probit model, the dependent variable is dichotomous and can take on only two values: zero or one. For instance, in the standard regression analysis, we may be exploring the impact of a change in some independent variable on wages. In this case, the value of one's wage might be any non-negative number. In contrast, in the probit regression analysis, the exploration might be the impact of a change in some independent variable on the probability that some event occurs. For instance, the question might be how an individual's gender impacts the probability of that person forming a business. In this case, the dependent variable has two values: zero, if a business is not formed; one, if a business is formed.

The second significant difference– the interpretation of the independent variables' coefficients–is fairly straight-forward in the standard regression model: the unit change in the independent variable impacts the dependent variable by the amount of the coefficient.[176] However, in the probit model, the initial coefficients

[176] The exact interpretation depends upon the functional form of the model.

cannot be interpreted this way. One additional step --- which can be computed easily by most statistical packages --- must be undertaken in order to yield a result that indicates how the change in the independent variable affects the probability of an event (*e.g.* business formation) occurs. For instance, using our previous example of the impact on gender on business formation, if the independent variable was WOMAN (with a value of 0 if the individual was male and 1 if the individual was female) and the final transformation of the coefficient of WOMAN was -0.12, we would interpret this to mean that women have a 12% lower probability of forming a business compared to men.

APPENDIX D: SIGNIFICANCE LEVELS

Many tables in this report contain asterisks indicating a number has statistical significance at 0.001 or 0.01 levels and the body of the report repeats these descriptions. While the use of the term seems important, it is not self-evident what the term means. This appendix provides a general explanation of significance levels.

This report seeks to address the question whether non-Whites and White women received disparate treatment in the economy relative to White males. From a statistical viewpoint, this primary question has two sub-questions:

- What is the relationship between the independent variable and the dependent variable?
- What is the probability that the relationship between the independent variable and the dependent variable is equal to zero?

For example, an important question facing Pace as it explores the necessity of intervening in the marketplace through contract goals to ensure it is not a passive participant in the continuation of historic ad contemporary bias is do non-Whites and White women receive lower wages than White men? As discussed in Appendix A, one way to uncover the relationship between the dependent variable (*e.g.*, wages) and the independent variable (*e.g.*, non-whites) is through multiple regression analysis. And example helps to explain this concept.

Let's say this analysis determines that non-Whites receive wages that are 35% less than White men after controlling for other factors, such as education and industry, which might account for the differences in wages. However, this finding is only an estimate of the relationship between the independent variable (*e.g.*, non-Whites) and the dependent variable (*e.g.*, wages) – the first sub-question. It is still important to determine how accurate is that estimation, that is, what is the probability the estimated relationship is equal to zero – the second sub-question.

To resolve the second sub-question, statistical hypothesis tests are utilized. Hypothesis testing assumes that there is no relationship between belonging to a particular demographic group and the level of economic utilization relative to White men (*e.g.*, non-Whites earn identical wages compared to White men or non-Whites earn 0% less than White men). This sometimes called the null hypothesis. We then calculate a confidence interval to find explore the probability that the observed relationship (*e.g.*, - 35%) is between 0 and minus that

confidence interval.[177] The confidence interval will vary depending upon the level of confidence (statistical significance) we wish to have in our conclusion. Hence, a statistical significance of 99% would have a broader confidence interval than statistical significance of 95%. Once a confidence interval is established, if -35% lies outside of that interval, we can assert the observed relationship (*e.g.*, 35%) is accurate at the appropriate level of statistical significance.

[177] Because 0 can only be greater than -35%, we only speak of "minus the confidence level". This is a one-tailed hypothesis test. If, in another example, the observed relationship could be above or below the hypothesized value, then we would say "plus or minus the confidence level" and this would be a two-tailed test.

APPENDIX E: ADDITIONAL DATA FROM THE ANALYSIS OF THE SURVEY OF BUSINESS OWNERS[178]

Table E1. Demographic Distribution of Sales and Payroll Data
Construction, 2007

	Total Number of Firms (All Firms)	Sales & Receipts (All Firms) ($1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts Firms with Paid Employees (Employer Firms) ($1,000)	Number of Paid Employees	Annual payroll ($1,000)
Panel A: Distribution of Non-White Firms						
Black	3.5%	0.9%	0.8%	0.8%	1.0%	0.9%
Latino	6.0%	1.8%	3.2%	1.6%	2.6%	2.1%
Native American	0.4%	0.1%	0.2%	0.1%	0.1%	0.1%
Asian	1.0%	0.5%	0.8%	0.5%	0.6%	0.6%
Panel B: Distribution of All Firms						
Non-White	10.9%	3.2%	4.6%	2.9%	4.0%	3.6%
White Women	7.5%	6.5%	9.2%	6.5%	9.3%	8.8%
White Men	66.0%	65.5%	62.8%	65.5%	63.5%	64.6%
Equally Non-white & White	S	S	S	S	S	S
Equally Women & Men	13.0%	7.9%	17.5%	7.0%	9.9%	7.8%
Firms Not Classifiable	2.1%	16.8%	5.8%	18.0%	13.1%	15.0%
All Firms	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

[178] See Footnote 15 for an explanation of the reported value of "S".

Table E2. Demographic Distribution of Sales and Payroll Data – Aggregated Groups
Professional, Scientific, and Technical Services, 2007

	Total Number of Firms (All Firms)	Sales & Receipts (All Firms) ($1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts Firms with Paid Employees (Employer Firms) ($1,000)	Number of Paid Employees	Annual payroll ($1,000)
Panel A: Distribution of Non-White Firms						
Black	4.9%	0.8%	1.3%	0.7%	0.9%	0.7%
Latino	3.2%	0.9%	1.7%	0.8%	1.0%	0.6%
Native American	S	S	S	S	S	S
Asian	5.5%	2.6%	5.1%	2.4%	2.4%	2.4%
Panel B: Distribution of All Firms						
Non-White	14.2%	4.3%	7.8%	3.7%	4.2%	3.7%
White Women	23.0%	6.2%	16.4%	5.1%	6.6%	4.8%
White Men	48.3%	37.3%	57.5%	36.0%	37.8%	36.2%
Equally Non-white & White	1.3%	0.2%	0.4%	0.2%	0.2%	0.1%
Equally Women & Men	10.7%	3.8%	9.7%	3.1%	3.8%	2.4%
Firms Not Classifiable	2.5%	48.3%	8.2%	51.9%	47.4%	52.8%
All Firms	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

Table E3. Demographic Distribution of Sales and Payroll Data – Aggregated Groups
Information, 2007

	Total Number of Firms (All Firms)	Sales & Receipts (All Firms) ($1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts Firms with Paid Employees (Employer Firms) ($1,000)	Number of Paid Employees	Annual payroll ($1,000)
Panel A: Distribution of Non-White Firms						
Black	8.0%	1.7%	1.2%	1.7%	0.9%	3.0%
Latino	3.0%	0.2%	0.8%	0.1%	0.2%	0.1%
Native American	S	S	S	S	S	S
Asian	3.8%	0.7%	3.0%	0.6%	0.7%	0.8%
Panel B: Distribution of All Firms						
Non-White	15.1%	2.5%	4.9%	2.4%	1.7%	3.9%
White Women	20.9%	1.2%	14.2%	1.1%	2.5%	1.5%
White Men	46.1%	13.9%	46.0%	13.5%	18.4%	17.4%
Equally Non-white & White	S	S	S	S	S	S
Equally Women & Men	10.5%	0.8%	11.2%	0.7%	1.8%	0.9%
Firms Not Classifiable	6.1%	81.4%	23.1%	82.2%	75.5%	76.2%
All Firms	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

Table E4. Demographic Distribution of Sales and Payroll Data – Aggregated Groups

Services, 2007

	Total Number of Firms (All Firms)	Sales & Receipts (All Firms) ($1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts Firms with Paid Employees (Employer Firms) ($1,000)	Number of Paid Employees	Annual payroll ($1,000)
Panel A: Distribution of Non-White Firms						
Black	12.9%	0.7%	2.1%	0.4%	1.2%	0.6%
Latino	5.6%	1.0%	8.4%	0.8%	S	S
Native American	S	S	S	S	S	S
Asian	5.9%	1.7%	S	S	S	S
Panel B: Distribution of All Firms						
Non-White	24.7%	3.1%	11.8%	2.5%	5.1%	3.3%
White Women	23.1%	3.4%	14.7%	2.7%	6.0%	3.9%
White Men	36.4%	20.9%	44.9%	19.4%	28.9%	24.7%
Equally Non-white & White	S	S	S	S	S	S
Equally Women & Men	10.9%	3.3%	14.6%	2.7%	5.9%	3.8%
Firms Not Classifiable	3.8%	69.0%	13.5%	72.5%	53.8%	64.1%
All Firms	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

Table E5. Demographic Distribution of Sales and Payroll Data – Aggregated Groups

Goods, 2007

	Total Number of Firms (All Firms)	Sales & Receipts (All Firms) ($1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts Firms with Paid Employees (Employer Firms) ($1,000)	Number of Paid Employees	Annual payroll ($1,000)
Panel A: Distribution of Non-White Firms						
Black	4.1%	0.2%	0.9%	0.2%	0.3%	0.3%
Latino	4.2%	0.5%	2.4%	0.5%	0.8%	0.6%
Native American	S	S	S	S	S	S
Asian	5.8%	1.1%	7.3%	1.0%	1.5%	1.1%
Panel B: Distribution of All Firms						
Non-White	14.3%	1.7%	9.7%	1.7%	2.5%	1.9%
White Women	24.7%	2.6%	12.4%	2.5%	4.2%	3.7%
White Men	38.5%	24.4%	50.1%	24.3%	34.9%	34.2%
Equally Non-white & White	S	S	S	S	S	S
Equally Women & Men	16.6%	2.8%	16.6%	2.6%	5.3%	3.9%
Firms Not Classifiable	4.8%	68.6%	11.4%	68.9%	53.0%	56.3%
All Firms	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

APPENDIX F: ADDITIONAL DATA FROM THE ANALYSIS OF AMERICAN COMMUNITY SURVEY

Table F1. Partial Results from Log-linear Regression Analysis

All Industries, 2007-2011

Dependent Variable: Logarithm of Wages	
Independent Variable	**Coefficient**
Black	-.296***
Latino	-.186***
Native American	-.326***
Asian/Pacific Islander	-.277***
Other	-.234***
White Women	-.324***
IL_Black	-.0473***
IL_Latino	.0648***
IL_Native American	-0.072
IL_Asian/Pacific Islander	-.0275**
IL_ Other	-0.048
IL_White Women	-.0145**
Adjusted R-Squared	0.486
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F2. Partial Results from Log-linear Regression Analysis

All Industries, 2007-2011

Dependent Variable: Logarithm of Business Earnings	
Independent Variable	**Coefficient**
Black	-.444***
Latino	-.255***
Native American	-.493***
Asian/Pacific Islander	-.242***
Other	-.123**
White Women	-.532***
IL_Black	0.034
IL_Latino	0.026
IL_Native American	-0.248
IL_Asian/Pacific Islander	0.034
IL_ Other	0.118
IL_White Women	-0.035
Adjusted R-Squared	0.197
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F3. Partial Results from Probit Regression Analysis

All Industries, 2007-2011

Dependent Variable: Probability of Forming a Business	
Independent Variable	**Coefficient**
Black	-0.383
Latino	-0.256
Native American	-0.235
Asian/Pacific Islander	-0.109
Other	-0.067
White Women	-0.202
IL_Black	0.037
IL_Latino	-0.066
IL_Native American	0.168
IL_Asian/Pacific Islander	0.059
IL_ Other	-0.122
IL_White Women	0.015
Pseudo R-Square	0.242

Source: CHA calculations from the American Community Survey

Table F4. Partial Results from Log-linear Regression Analysis

Construction, 2007-2011

Dependent Variable: Logarithm of Wages	
Independent Variable	**Coefficient**
Black	-.387***
Latino	-.133***
Native American	-.36***
Asian/Pacific Islander	-.25***
Other	-.133***
White Women	-.38***
IL_Black	-.123***
IL_Latino	0.0214
IL_Native American	0.18
IL_Asian/Pacific Islander	-.265***
IL_ Other	0.127
IL_White Women	-.0696**
Adjusted R-Squared	0.302
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F5. Partial Results from Log-linear Regression Analysis

Construction, 2007-2011

Dependent Variable: Logarithm of Business Earnings	
Independent Variable	**Coefficient**
Black	-.492***
Latino	-.0612***
Native American	-.258***
Asian/Pacific Islander	-.1**
Other	0.0441
White Women	-.515***
IL_Black	.229*
IL_Latino	0.138
IL_Native American	0.0293
IL_Asian/Pacific Islander	-0.00983
IL_ Other	0.976
IL_White Women	.321**
Adjusted R-Squared	0.158
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F6. Partial Results from Probit Regression Analysis

Construction, 2007-2011

Dependent Variable: Probability of Forming a Business	
Independent Variable	**Coefficient**
Black	-0.299
Latino	-0.287
Native American	-0.316
Asian/Pacific Islander	-0.032
Other	-0.113
White Women	-0.085
IL_Black	0.172
IL_Latino	-0.122
IL_Native American	0.213
IL_Asian/Pacific Islander	0.000
IL_ Other	-1.128
IL_White Women	0.010
Pseudo R-Square	0.11

Source: CHA calculations from the American Community Survey

Table F7. Partial Results from Log-linear Regression Analysis

Services, 2007-2011

Dependent Variable: Logarithm of Wages	
Independent Variable	**Coefficient**
Black	-.367***
Latino	-.252***
Native American	-.412***
Asian/Pacific Islander	-.283***
Other	-.259***
White Women	-.342***
IL_Black	-.0777***
IL_Latino	0.00162
IL_Native American	-.301*
IL_Asian/Pacific Islander	-0.03
IL_ Other	-0.2
IL_White Women	-.0578***
Adjusted R-Squared	0.395
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F8. Partial Results from Log-linear Regression Analysis

Services, 2007-2011

Dependent Variable: Logarithm of Business Earnings	
Independent Variable	**Coefficient**
Black	-.531***
Latino	-.373***
Native American	-.771***
Asian/Pacific Islander	-.338***
Other	-.27**
White Women	-.616***
IL_Black	-0.101
IL_Latino	-0.0557
IL_Native American	-0.218
IL_Asian/Pacific Islander	0.0659
IL_ Other	-1.62
IL_White Women	-.11*
Adjusted R-Squared	.179
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F9. Partial Results from Probit Regression Analysis

Services, 2007-2011

Dependent Variable: Probability of Forming a Business	
Independent Variable	**Coefficient**
Black	-0.477
Latino	-0.310
Native American	-0.377
Asian/Pacific Islander	-0.334
Other	-0.167
White Women	-0.283
IL_Black	-0.018
IL_Latino	-0.022
IL_Native American	0.442
IL_Asian/Pacific Islander	0.092
IL_ Other	-0.391
IL_White Women	0.010
Pseudo R-Square	0.193

Source: CHA calculations from the American Community Survey

Table F10. Partial Results from Log-linear Regression Analysis

Goods, 2007-2011

Dependent Variable: Logarithm of Wages	
Independent Variable	**Coefficient**
Black	-.317***
Latino	-.235***
Native American	-.324***
Asian/Pacific Islander	-.32***
Other	-.24***
White Women	-.387***
IL_Black	-.0977**
IL_Latino	.119***
IL_Native American	0.0578
IL_Asian/Pacific Islander	-0.00309
IL_ Other	-.738***
IL_White Women	0.00589
Adjusted R-Squared	0.391
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F11. Partial Results from Log-linear Regression Analysis

Goods, 2007-2011

Dependent Variable: Logarithm of Business Earnings	
Independent Variable	**Coefficient**
Black	-.554***
Latino	-.288***
Native American	-0.213
Asian/Pacific Islander	-.261***
Other	0.326
White Women	-.683***
IL_Black	-0.0222
IL_Latino	0.341
IL_Native American	(omitted)
IL_Asian/Pacific Islander	-0.00143
IL_ Other	-1.05
IL_White Women	-0.185
Adjusted R-Squared	0.094
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F12. Partial Results from Probit Regression Analysis

Goods, 2007-2011

Dependent Variable: Probability of Forming a Business	
Independent Variable	**Coefficient**
Black	-0.300
Latino	-0.127
Native American	-0.031
Asian/Pacific Islander	0.196
Other	-0.001
White Women	-0.105
IL_Black	-0.163
IL_Latino	0.182
IL_Native American	-0.217
IL_Asian/Pacific Islander	0.083
IL_ Other	0.368
IL_White Women	-0.015
Pseudo R-Square	0.120

Source: CHA calculations from the American Community Survey

Table F13. Partial Results from Log-linear Regression Analysis

Information Technology, 2007-2011

Dependent Variable: Logarithm of Wages	
Independent Variable	**Coefficient**
Black	-.267***
Latino	-.197***
Native American	-.292***
Asian/Pacific Islander	-.184***
Other	-.255***
White Women	-.246***
IL_Black	.112***
IL_Latino	.116**
IL_Native American	-1.29***
IL_Asian/Pacific Islander	0.0357
IL_ Other	0.208
IL_White Women	-0.0277
Adjusted R-Squared	0.386
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F14. Partial Results from Log-linear Regression Analysis

Information Technology, 2007-2011

Dependent Variable: Logarithm of Business Earnings	
Independent Variable	**Coefficient**
Black	-.42***
Latino	-.339***
Native American	-0.572
Asian/Pacific Islander	-.176*
Other	0.0975
White Women	-.674***
IL_Black	-0.106
IL_Latino	-3.44***
IL_Native American	(omitted)
IL_Asian/Pacific Islander	-0.366
IL_ Other	-0.123
IL_White Women	0.147
Adjusted R-Squared	.112
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F15. Partial Results from Probit Regression Analysis

Information Technology, 2007-2011

Dependent Variable: Probability of Forming a Business	
Independent Variable	**Coefficient**
Black	-0.371
Latino	-0.162
Native American	-0.111
Asian/Pacific Islander	-0.353
Other	-0.070
White Women	-0.148
IL_Black	-0.318
IL_Latino	-0.166
IL_Native American	(omitted)
IL_Asian/Pacific Islander	-0.005
IL_ Other	-0.195
IL_White Women	-0.034
Pseudo R-Square	0.087

Table F16. Partial Results from Log-linear Regression Analysis

Construction-related Services , 2007-2011

Dependent Variable: Logarithm of Wages	
Independent Variable	**Coefficient**
Black	-.248***
Latino	-.202***
Native American	-.281***
Asian/Pacific Islander	-.19***
Other	-.13*
White Women	-.338***
IL_Black	-.244**
IL_Latino	-0.0366
IL_Native American	-0.504
IL_Asian/Pacific Islander	0.0984
IL_ Other	0.212
IL_White Women	-0.0293
Adjusted R-Squared	0.424
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F17. Partial Results from Log-linear Regression Analysis

Construction-related Services , 2007-2011

Dependent Variable: Logarithm of Business Earnings	
Independent Variable	**Coefficient**
Black	-.577***
Latino	-0.0634
Native American	-0.386
Asian/Pacific Islander	-.206*
Other	-1.03
White Women	-.608***
IL_Black	0.558
IL_Latino	0.529
IL_Native American	(omitted)
IL_Asian/Pacific Islander	-2.02**
IL_ Other	(omitted)
IL_White Women	-0.612
Adjusted R-Squared	0.094
legend: * p<0.05; ** p<0.01; ***p<0.001	

Source: CHA calculations from the American Community Survey

Table F18. Partial Results from Probit Regression Analysis

Construction-related Services , 2007-2011

Dependent Variable: Probability of Forming a Business	
Independent Variable	**Coefficient**
Black	-0.375
Latino	-0.079
Native American	-0.048
Asian/Pacific Islander	-0.334
Other	-0.342
White Women	-0.009
IL_Black	-0.003
IL_Latino	-0.133
IL_Native American	(omitted)
IL_Asian/Pacific Islander	-0.124
IL_ Other	(omitted)
IL_White Women	0.129
Pseudo R-Square	0.131

Source: CHA calculations from the American Community Survey

APPENDIX G UTILIZATION AND AVAILABILITY DATA BY INDUSTRY SECTOR

Table G1: NAICS Code Distribution of Contract Dollars – Federal Funds, All Sectors

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
423830	Industrial Machinery and Equipment Merchant Wholesalers	14,377,811	64.1%
532112	Passenger Car Leasing	3,594,962	16.0%
326211	Tire Manufacturing (except Retreading)	2,260,000	10.1%
541330	Engineering Services	525,893	2.3%
237310	Highway, Street, and Bridge Construction	506,846	2.3%
561730	Landscaping Services	395,908	1.8%
238910	Site Preparation Contractors	311,081	1.4%
237130	Power and Communication Line and Related Structures Construction	160,562	0.7%
238990	All Other Specialty Trade Contractors	121,548	0.5%
238210	Electrical Contractors and Other Wiring Installation Contractors	93,565	0.4%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	56,417	0.3%
541820	Public Relations Agencies	8,605	0.0%
TOTAL		**22,413,198**	**100.0%**

Source: CHA analysis of Pace data.

Table G2: NAICS Code Distribution of Contract Dollars – Federal Funds, Construction

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	506,846	31.9%
561730	Landscaping Services	395,908	24.9%
238910	Site Preparation Contractors	311,081	19.6%
237130	Power and Communication Line and Related Structures Construction	160,562	10.1%
238990	All Other Specialty Trade Contractors	121,548	7.6%
238210	Electrical Contractors and Other Wiring	93,565	5.9%

	Installation Contractors		
TOTAL		**1,589,510**	**100.0%**

Source: CHA analysis of Pace data.

Table G3: NAICS Code Distribution of Contract Dollars – Federal Funds, Construction Related Services

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
541330	Engineering Services	525,892	100.0%
TOTAL		**525,892**	**100.0%**

Source: CHA analysis of Pace data.

Table G4: NAICS Code Distribution of Contract Dollars – Federal Funds, Goods

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
423830	Industrial Machinery and Equipment Merchant Wholesalers	14,377,811	86.1%
336211	Tire Manufacturing (except Retreading)	2,260,000	13.5%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	56,417	0.3%
TOTAL		**16,694,228**	**100.0%**

Source: CHA analysis of Pace data.

Table G5: NAICS Code Distribution of Contract Dollars – Federal Funds, Other Services

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
532112	Passenger Car Leasing	3,594,962	99.8%
541820	Public Relations Agencies	8,605	0.2%
TOTAL		**3,603,567**	**100.0%**

Source: CHA analysis of Pace data.

Table G6: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE

237130	0	0	0	0	0	160,562
237310	0	145,196	0	0	22,799	338,851
238210	0	0	0	0	60,648	32,917
238910	0	0	0	0	0	311,081
238990	0	0	0	0	0	121,548
336211	0	0	0	0	0	2,260,000
423120	0	0	0	0	0	56,417
423830	0	0	0	0	0	14,377,811
532112	0	0	0	0	0	3,594,962
541330	0	0	0	0	22,572	503,320
541820	0	0	0	0	8,605	0
561730	0	0	0	0	0	395,908
TOTAL	**0**	**145,196**	**0**	**0**	**114,624**	**22,153,377**

Source: CHA analysis of Pace data.

Table G7: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
237130	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
237310	0.0%	28.6%	0.0%	0.0%	4.5%	66.9%
238210	0.0%	0.0%	0.0%	0.0%	64.8%	35.2%
238910	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
238990	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
336211	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
423120	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
423830	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
532112	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
541330	0.0%	0.0%	0.0%	0.0%	4.3%	95.7%
541820	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
561730	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
TOTAL	**0.0%**	**0.6%**	**0.0%**	**0.0%**	**0.5%**	**98.8%**

Source: CHA analysis of Pace data.

Table G8: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE	Total
237130	0	0	160,562	160,562

237310	145,196	167,995	338,851	506,846
238210	0	60,648	32,917	93,565
238910	0	0	311,081	311,081
238990	0	0	121,548	121,548
336211	0	0	2,260,000	2,260,000
423120	0	0	56,417	56,417
423830	0	0	14,377,811	14,377,811
532112	0	0	3,594,962	3,594,962
541330	0	22,572	503,320	525,893
541820	0	8,605	0	8,605
561730	0	0	395,908	395,908
TOTAL	**145,196**	**259,820**	**22,153,377**	**22,413,198**

Source: CHA analysis of Pace data.

Table G9: Distribution of Contract Dollars by Race and Gender – Federal Funds, All Sectors
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
237130	0.0%	0.0%	100.0%	100.0%
237310	28.6%	33.1%	66.9%	100.0%
238210	0.0%	64.8%	35.2%	100.0%
238910	0.0%	0.0%	100.0%	100.0%
238990	0.0%	0.0%	100.0%	100.0%
336211	0.0%	0.0%	100.0%	100.0%
423120	0.0%	0.0%	100.0%	100.0%
423830	0.0%	0.0%	100.0%	100.0%
532112	0.0%	0.0%	100.0%	100.0%
541330	0.0%	4.3%	95.7%	100.0%
541820	0.0%	100.0%	0.0%	100.0%
561730	0.0%	0.0%	100.0%	100.0%
TOTAL	**0.6%**	**1.2%**	**98.8%**	**100.0%**

Source: CHA analysis of Pace data.

G10: Distribution of Contract Dollars by Race and Gender- Federal Funds, Construction
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
237130	0	0	0	0	0	160,562
237310	0	145,196	0	0	22,799	338,851
238210	0	0	0	0	60,648	32,917

238910	0	0	0	0	0	311,081
238990	0	0	0	0	0	121,548
561730	0	0	0	0	0	395,908
TOTAL	**0**	**145,196**	**0**	**0**	**83,447**	**1,360,867**

Source: CHA analysis of Pace data.

Table G11: Distribution of Contract Dollars by Race and Gender - Federal Funds, Construction
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
237130	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
237310	0.0%	28.6%	0.0%	0.0%	4.5%	66.9%
238210	0.0%	0.0%	0.0%	0.0%	64.8%	35.2%
238910	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
238990	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
561730	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
TOTAL	**0.0%**	**9.1%**	**0.0%**	**0.0%**	**5.2%**	**85.6%**

Source: CHA analysis of Pace data.

Table G12: Distribution of Contract Dollars by Race and Gender – Federal Funds, Construction
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE	Total
237130	0	0	160,562	160,562
237310	145,196	167,995	338,851	506,846
238210	0	60,648	32,917	93,565
238910	0	0	311,081	311,081
238990	0	0	121,548	121,548
561730	0	0	395,908	395,908
TOTAL	**145,196**	**228,643**	**1,360,867**	**1,589,510**

Source: CHA analysis of Pace data.

Table G13: Distribution of Contract Dollars by Race and Gender – Federal Funds, Construction
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
237130	0.0%	0.0%	100.0%	100.0%
237310	28.6%	33.1%	66.9%	100.0%
238210	0.0%	64.8%	35.2%	100.0%
238910	0.0%	0.0%	100.0%	100.0%
238990	0.0%	0.0%	100.0%	100.0%

561730	0.0%	0.0%	100.0%	100.0%
TOTAL	**9.1%**	**14.4%**	**85.6%**	**100.0%**

Source: CHA analysis of Pace data.

Table G14: Distribution of Contract Dollars by Race and Gender – Federal Funds, Construction Related Services (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
541330	0	0	0	0	22,572	503,320
TOTAL	**0**	**0**	**0**	**0**	**22,572**	**503,320**

Source: CHA analysis of Pace data.

Table G15: Distribution of Contract Dollars by Race and Gender- Federal Funds, Construction Related Services (share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
541330	0.0%	0.0%	0.0%	0.0%	4.3%	95.7%
TOTAL	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.3%**	**95.7%**

Source: CHA analysis of Pace data.

Table G16: Distribution of Contract Dollars by Race and Gender – Federal Funds, Construction Related Services (MBE, White Female, Non-DBE) (total dollars)

NAICS	MBE	DBE	Non-DBE	Total
541330	0	22,572	503,320	525,893
TOTAL	**0**	**22,572**	**503,320**	**525,893**

Source: CHA analysis of Pace data.

Table G17: Distribution of Contract Dollars by Race and Gender – Federal Funds, Construction Related Services (MBE, White Female, Non-DBE) (share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
541330	0.0%	4.3%	95.7%	100.0%
TOTAL	**0.0%**	**4.3%**	**95.7%**	**100.0%**

Source: CHA analysis of Pace data.

Table G18: Distribution of Contract Dollars by Race and Gender – Federal Funds, Goods (total dollars)

NAICS	Black	Hispanic	Asian	Native	White	Non-DBE

				American	Women	
336211	0	0	0	0	0	2,260,000
423120	0	0	0	0	0	56,417
423830	0	0	0	0	0	14,377,811
TOTAL	**0**	**0**	**0**	**0**	**0**	**16,694,228**

Source: CHA analysis of Pace data.

Table G19: Distribution of Contract Dollars by Race and Gender – Federal Funds, Goods
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
336211	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
423120	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
423830	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
TOTAL	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**

Source: CHA analysis of Pace data.

Table G20: Distribution of Contract Dollars by Race and Gender – Federal Funds, Goods
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE
336211	0	0	2,260,000
423120	0	0	56,417
423830	0	0	14,377,811
TOTAL	**0**	**0**	**16,694,228**

Source: CHA analysis of Pace data.

Table G21: Distribution of Contract Dollars by Race and Gender - Federal Funds, Goods
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
336211	0.0%	0.0%	100.0%	100.0%
423120	0.0%	0.0%	100.0%	100.0%
423830	0.0%	0.0%	100.0%	100.0%
TOTAL	**0.0%**	**0.0%**	**100.0%**	**100.0%**

Source: CHA analysis of Pace data.

Table G22: Distribution of Contract Dollars by Race and Gender – Federal Funds, Other Services
(total dollars)

NAICS	Black	Hispanic	Asian	Native	White	Non-DBE

				American	Women	
532112	0	0	0	0	0	3,594,962
541820	0	0	0	0	8,605	0
TOTAL	**0**	**0**	**0**	**0**	**8,605**	**3,594,962**

Source: CHA analysis of Pace data.

Table G23: Distribution of Contract Dollars by Race and Gender – Federal Funds, Other Services
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	Non-DBE
532112	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
541820	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
TOTAL	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	**99.8%**

Source: CHA analysis of Pace data.

Table G24: Distribution of Contract Dollars by Race and Gender – Federal Funds, Other Services
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE	Total
532112	0	0	3,594,962	3,594,962
541820	0	8,605	0	8,605
TOTAL	**0**	**8,605**	**3,594,962**	**3,603,567**

Source: CHA analysis of Pace data.

Table G25: Distribution of Contract Dollars by Race and Gender – Federal Funds, Other Services
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
532112	0.0%	0.0%	100.0%	100.0%
541820	0.0%	100.0%	0.0%	100.0%
TOTAL	**0.0%**	**0.2%**	**99.8%**	**100.0%**

Source: CHA analysis of Pace data.

Table G26: Share of Pace Spending by NAICS Code – No Federal Funds, All Sectors

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
561110	Office Administrative Services	67,307,279	26.30%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	50,824,196	19.80%
485113	Bus and Other Motor Vehicle Transit Systems	21,019,854	8.20%
485410	School and Employee Bus Transportation	19,839,822	7.70%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	14,891,476	5.80%
423830	Industrial Machinery and Equipment Merchant Wholesalers	13,004,071	5.10%
334290	Other Communications Equipment Manufacturing	11,242,928	4.40%
485510	Charter Bus Industry	10,270,269	4.00%
325110	Petrochemical Manufacturing	8,242,335	3.20%
326211	Tire Manufacturing (except Retreading)	8,179,848	3.20%
541110	Offices of Lawyers	6,838,862	2.70%
524210	Insurance Agencies and Brokerages	6,706,505	2.60%
238210	Electrical Contractors and Other Wiring Installation Contractors	5,012,096	2.00%
541810	Advertising Agencies	5,248,542	2.00%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	3,270,536	1.30%
541330	Engineering Services	1,851,039	0.70%
541820	Public Relations Agencies	1,181,575	0.50%
237130	Power and Communication Line and Related Structures Construction	434,478	0.20%
541850	Outdoor Advertising	169,811	0.10%
561720	Janitorial Services	328,576	0.10%
237310	Highway, Street, and Bridge Construction	3,290	0.00%
238990	All Other Specialty Trade Contractors	1,251	0.00%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	102,846	0.00%
441320	Tire Dealers	117,793	0.00%
541511	Custom Computer Programming Services	33,500	0.00%

561730	Landscaping Services	102,580	0.00%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	106,976	0.00%
TOTAL		**256,332,335**	**100.00%**

Source: CHA analysis of Pace data.

Table G27: Share of Pace Spending by NAICS Code – No Federal Funds, Construction

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
238210	Electrical Contractors and Other Wiring Installation Contractors	5,012,096	90.20%
237130	Power and Communication Line and Related Structures Construction	434,478	7.80%
561730	Landscaping Services	102,580	1.80%
237310	Highway, Street, and Bridge Construction	3,290	0.10%
238990	All Other Specialty Trade Contractors	1,251	0.00%
TOTAL		**5,553,695**	**100.00%**

Source: CHA analysis of Pace data.

Table G28: Share of Pace Spending by NAICS Code – No Federal Funds, Construction Related Services

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
541330	Engineering Services	1,851,039	100.00%
TOTAL		**1,851,039**	**100.00%**

Source: CHA analysis of Pace data.

Table G29: Share of Pace Spending by NAICS Code – No Federal Funds, Goods

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	50,824,196	38.80%
485113	Bus and Other Motor Vehicle Transit Systems	21,019,854	16.10%
441228	Motorcycle, ATV, and All Other Motor	14,891,476	11.40%

	Vehicle Dealers		
423830	Industrial Machinery and Equipment Merchant Wholesalers	13,004,071	9.90%
334290	Other Communications Equipment Manufacturing	11,242,928	8.60%
325110	Petrochemical Manufacturing	8,242,335	6.30%
326211	Tire Manufacturing (except Retreading)	8,179,848	6.20%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	3,270,536	2.50%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	102,846	0.10%
441320	Tire Dealers	117,793	0.10%
TOTAL		**130,895,883**	**100.00%**

Source: CHA analysis of Pace data.

Table G30: Share of Pace Spending by NAICS Code – No Federal Funds, Other Services

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
561110	Office Administrative Services	67,307,279	57.00%
485410	School and Employee Bus Transportation	19,839,822	16.80%
485510	Charter Bus Industry	10,270,269	8.70%
541110	Offices of Lawyers	6,838,862	5.80%
524210	Insurance Agencies and Brokerages	6,706,505	5.70%
541810	Advertising Agencies	5,248,542	4.40%
541820	Public Relations Agencies	1,181,575	1.00%
561720	Janitorial Services	328,576	0.30%
541850	Outdoor Advertising	169,811	0.10%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	106,976	0.10%
541511	Custom Computer Programming Services	33,500	0.00%
TOTAL		**118,031,717**	**100.00%**

Source: CHA analysis of Pace data.

Table G31: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
All Sectors
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
237130	0	434,478	0	0	0	434,478
237310	0	0	0	0	0	0
238210	22,050	402,060	0	0	36,178	460,288
238990	0	0	0	0	1,251	1,251
325110	0	0	0	0	0	0
326211	0	0	0	0	0	0
334290	0	0	0	0	0	0
334512	0	0	0	0	0	0
423120	0	0	42,662	0	160,883	203,546
423830	0	0	0	0	0	0
424720	536,140	239,074	0	0	0	775,214
441228	0	0	0	0	0	0
441320	117,793	0	0	0	0	117,793
485113	0	0	0	0	0	0
485410	0	0	0	0	0	0
485510	0	0	0	0	0	0
524210	0	0	0	0	0	0
541110	0	0	0	0	475,261	475,261
541330	0	0	0	0	0	0
541511	0	0	0	0	0	0
541810	0	0	0	0	0	0
541820	0	0	0	0	208,500	208,500
541850	0	0	0	0	169,811	169,811
561110	0	0	0	0	0	0
561720	288,206	0	0	0	0	288,206
561730	35,920	0	0	0	29,315	65,235
811121	0	0	0	0	106,976	106,976
Total	**1,000,109**	**1,075,612**	**42,662**	**0**	**1,188,175**	**3,306,558**

Source: CHA analysis of Pace data.

Table G32: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
All Sectors
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
237130	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
237310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
238210	0.4%	8.0%	0.0%	0.0%	0.7%	9.2%
238990	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
325110	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
326211	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
334290	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
334512	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
423120	0.0%	0.0%	1.3%	0.0%	4.9%	6.2%
423830	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
424720	1.1%	0.5%	0.0%	0.0%	0.0%	1.5%
441228	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
441320	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
485113	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
485410	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
485510	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
524210	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541110	0.0%	0.0%	0.0%	0.0%	6.9%	6.9%
541330	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541511	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541810	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
541820	0.0%	0.0%	0.0%	0.0%	17.6%	17.6%
541850	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
561110	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
561720	87.7%	0.0%	0.0%	0.0%	0.0%	87.7%
561730	35.0%	0.0%	0.0%	0.0%	28.6%	63.6%
811121	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Total	**0.4%**	**0.4%**	**0.0%**	**0.0%**	**0.5%**	**1.3%**

Source: CHA analysis of Pace data.

Table G33: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
All Sectors
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE	Total
237130	434,478	434,478	0	434,478

237310	0	0	3,290	3,290
238210	424,110	460,288	4,551,808	5,012,096
238990	0	1,251	0	1,251
325110	0	0	8,242,335	8,242,335
326211	0	0	8,179,848	8,179,848
334290	0	0	11,242,928	11,242,928
334512	0	0	102,846	102,846
423120	42,662	203,546	3,066,991	3,270,536
423830	0	0	13,004,071	13,004,071
424720	775,214	775,214	50,048,982	50,824,196
441228	0	0	14,891,476	14,891,476
441320	117,793	117,793	0	117,793
485113	0	0	21,019,854	21,019,854
485410	0	0	19,839,822	19,839,822
485510	0	0	10,270,269	10,270,269
524210	0	0	6,706,505	6,706,505
541110	0	475,261	6,363,601	6,838,862
541330	0	0	1,851,039	1,851,039
541511	0	0	33,500	33,500
541810	0	0	5,248,542	5,248,542
541820	0	208,500	973,075	1,181,575
541850	0	169,811	0	169,811
561110	0	0	67,307,279	67,307,279
561720	288,206	288,206	40,370	328,576
561730	35,920	65,235	37,345	102,580
811121	0	106,976	0	106,976
Total	**2,118,383**	**3,306,558**	**253,025,777**	**256,332,335**

Source: CHA analysis of Pace data.

Table G34: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
All Sectors
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
237130	100.0%	100.0%	0.0%	100.0%
237310	0.0%	0.0%	100.0%	100.0%
238210	8.5%	9.2%	90.8%	100.0%
238990	0.0%	100.0%	0.0%	100.0%
325110	0.0%	0.0%	100.0%	100.0%
326211	0.0%	0.0%	100.0%	100.0%
334290	0.0%	0.0%	100.0%	100.0%

334512	0.0%	0.0%	100.0%	100.0%
423120	1.3%	6.2%	93.8%	100.0%
423830	0.0%	0.0%	100.0%	100.0%
424720	1.5%	1.5%	98.5%	100.0%
441228	0.0%	0.0%	100.0%	100.0%
441320	100.0%	100.0%	0.0%	100.0%
485113	0.0%	0.0%	100.0%	100.0%
485410	0.0%	0.0%	100.0%	100.0%
485510	0.0%	0.0%	100.0%	100.0%
524210	0.0%	0.0%	100.0%	100.0%
541110	0.0%	6.9%	93.1%	100.0%
541330	0.0%	0.0%	100.0%	100.0%
541511	0.0%	0.0%	100.0%	100.0%
541810	0.0%	0.0%	100.0%	100.0%
541820	0.0%	17.6%	82.4%	100.0%
541850	0.0%	100.0%	0.0%	100.0%
561110	0.0%	0.0%	100.0%	100.0%
561720	87.7%	87.7%	12.3%	100.0%
561730	35.0%	63.6%	36.4%	100.0%
811121	0.0%	100.0%	0.0%	100.0%
Total	**0.8%**	**1.3%**	**98.7%**	**100.0%**

Source: CHA analysis of Pace data.

Table G35: Distribution of Contract Dollars by Race and Gender- No Federal Funds,
Construction
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
237130	0	434,478	0	0	0	434,478
237310	0	0	0	0	0	0
238210	22,050	402,060	0	0	36,178	460,288
238990	0	0	0	0	1,251	1,251
561730	35,920	0	0	0	29,315	65,235
TOTAL	**57,970**	**836,538**	**0**	**0**	**66,744**	**961,252**

Source: CHA analysis of Pace data.

Table G36: Distribution of Contract Dollars by Race and Gender - No Federal Funds,
Construction
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
237130	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%
237310	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
238210	0.40%	8.00%	0.00%	0.00%	0.70%	9.20%
238990	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
561730	35.00%	0.00%	0.00%	0.00%	28.60%	63.60%
TOTAL	**1.00%**	**15.10%**	**0.00%**	**0.00%**	**1.20%**	**17.30%**

Source: CHA analysis of Pace data.

Table G37: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Construction
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE	Total
237130	434,478	434,478	0	434,478
237310	0	0	3,290	3,290
238210	424,110	460,288	4,551,808	5,012,096
238990	0	1,251	0	1,251
561730	35,920	65,235	37,345	102,580
TOTAL	**894,508**	**961,252**	**4,592,443**	**5,553,695**

Source: CHA analysis of Pace data.

Table G38: Distribution of Contract Dollars by Race and Gender,
Construction – No Federal Funds
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
237130	100.00%	100.00%	0.00%	100.00%
237310	0.00%	0.00%	100.00%	100.00%
238210	8.50%	9.20%	90.80%	100.00%
238990	0.00%	100.00%	0.00%	100.00%
561730	35.00%	63.60%	36.40%	100.00%
TOTAL	**16.10%**	**17.30%**	**82.70%**	**100.00%**

Source: CHA analysis of Pace data.

Table G39: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Construction Related Services
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
541330	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**

Source: CHA analysis of Pace data.

Table G40: Distribution of Contract Dollars by Race and Gender- No Federal Funds,
Construction Related Services
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
541330	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
TOTAL	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**

Source: CHA analysis of Pace data.

Table F40: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Construction Related Services
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE	Total
541330	0	0	1,851,039	1,851,039
TOTAL	**0**	**0**	**1,851,039**	**1,851,039**

Source: CHA analysis of Pace data.

Table G41: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Construction Related Services
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
541330	0.0%	0.0%	100.0%	100.0%
TOTAL	**0.0%**	**0.0%**	**100.0%**	**100.0%**

Source: CHA analysis of Pace data.

Table G42: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Goods
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
325110	0	0	0	0	0	0
326211	0	0	0	0	0	0
334290	0	0	0	0	0	0
334512	0	0	0	0	0	0
423120	0	0	42,662	0	160,883	203,546
423830	0	0	0	0	0	0
424720	536,140	239,074	0	0	0	775,214
441228	0	0	0	0	0	0
441320	117,793	0	0	0	0	117,793
485113	0	0	0	0	0	0
TOTAL	**653,933**	**239,074**	**42,662**	**0**	**160,883**	**1,096,553**

Source: CHA analysis of Pace data.

Table G43: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Goods
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
325110	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
326211	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
334290	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
334512	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
423120	0.00%	0.00%	1.30%	0.00%	4.90%	6.20%
423830	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
424720	1.10%	0.50%	0.00%	0.00%	0.00%	1.50%
441228	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
441320	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%
485113	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
TOTAL	**0.50%**	**0.20%**	**0.00%**	**0.00%**	**0.10%**	**0.80%**

Source: CHA analysis of Pace data.

Table G44: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Goods
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE	Total
325110	0	0	8,242,335	8,242,335
326211	0	0	8,179,848	8,179,848
334290	0	0	11,242,928	11,242,928
334512	0	0	102,846	102,846
423120	42,662	203,546	3,066,991	3,270,536
423830	0	0	13,004,071	13,004,071
424720	775,214	775,214	50,048,982	50,824,196
441228	0	0	14,891,476	14,891,476
441320	117,793	117,793	0	117,793
485113	0	0	21,019,854	21,019,854
TOTAL	**935,669**	**1,096,553**	**129,799,331**	**130,895,883**

Source: CHA analysis of Pace data.

Table G45: Distribution of Contract Dollars by Race and Gender - No Federal Funds,
Goods
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
325110	0.00%	0.00%	100.00%	100.00%
326211	0.00%	0.00%	100.00%	100.00%
334290	0.00%	0.00%	100.00%	100.00%
334512	0.00%	0.00%	100.00%	100.00%
423120	1.30%	6.20%	93.80%	100.00%
423830	0.00%	0.00%	100.00%	100.00%
424720	1.50%	1.50%	98.50%	100.00%
441228	0.00%	0.00%	100.00%	100.00%
441320	100.00%	100.00%	0.00%	100.00%
485113	0.00%	0.00%	100.00%	100.00%
TOTAL	**0.70%**	**0.80%**	**99.20%**	**100.00%**

Source: CHA analysis of Pace data.

Table G46: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Other Services
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
485410	0	0	0	0	0	0
485510	0	0	0	0	0	0
524210	0	0	0	0	0	0
541110	0	0	0	0	475,261	475,261
541511	0	0	0	0	0	0
541810	0	0	0	0	0	0
541820	0	0	0	0	208,500	208,500
541850	0	0	0	0	169,811	169,811
561110	0	0	0	0	0	0
561720	288,206	0	0	0	0	288,206
811121	0	0	0	0	106,976	106,976
TOTAL	**288,206**	**0**	**0**	**0**	**960,548**	**1,248,754**

Source: CHA analysis of Pace data.

Table G47: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Other Services
(share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE
485410	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
485510	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
524210	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
541110	0.00%	0.00%	0.00%	0.00%	6.90%	6.90%
541511	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
541810	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
541820	0.00%	0.00%	0.00%	0.00%	17.60%	17.60%
541850	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
561110	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
561720	87.70%	0.00%	0.00%	0.00%	0.00%	87.70%
811121	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
TOTAL	**0.20%**	**0.00%**	**0.00%**	**0.00%**	**0.80%**	**1.10%**

Source: CHA analysis of Pace data.

Table G48: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Other Services
(MBE, White Female, Non-DBE)
(total dollars)

NAICS	MBE	DBE	Non-DBE	Total
485410	0	0	19,839,822	19,839,822
485510	0	0	10,270,269	10,270,269
524210	0	0	6,706,505	6,706,505
541110	0	475,261	6,363,601	6,838,862
541511	0	0	33,500	33,500
541810	0	0	5,248,542	5,248,542
541820	0	208,500	973,075	1,181,575
541850	0	169,811	0	169,811
561110	0	0	67,307,279	67,307,279
561720	288,206	288,206	40,370	328,576
811121	0	106,976	0	106,976
TOTAL	**288,206**	**1,248,754**	**116,782,963**	**118,031,717**

Source: CHA analysis of Pace data.

Table G49: Distribution of Contract Dollars by Race and Gender – No Federal Funds,
Other Services
(MBE, White Female, Non-DBE)
(share of total dollars)

NAICS	MBE	DBE	Non-DBE	Total
485410	0.00%	0.00%	100.00%	100.00%
485510	0.00%	0.00%	100.00%	100.00%
524210	0.00%	0.00%	100.00%	100.00%
541110	0.00%	6.90%	93.10%	100.00%
541511	0.00%	0.00%	100.00%	100.00%
541810	0.00%	0.00%	100.00%	100.00%
541820	0.00%	17.60%	82.40%	100.00%
541850	0.00%	100.00%	0.00%	100.00%
561110	0.00%	0.00%	100.00%	100.00%
561720	87.70%	87.70%	12.30%	100.00%
811121	0.00%	100.00%	0.00%	100.00%
TOTAL	**0.20%**	**1.10%**	**98.90%**	**100.00%**

Source: CHA analysis of Pace data.

Table G50: Unweighted Availability – Federal Funds,
All Sectors
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
237130	16.25%	10.72%	8.93%	0.10%	7.00%	43.00%	57.00%	100.00%
237310	6.64%	4.71%	2.19%	0.07%	7.96%	21.58%	78.42%	100.00%
238210	3.09%	1.33%	1.34%	0.05%	7.84%	13.65%	86.35%	100.00%
238910	3.15%	2.25%	1.21%	0.04%	7.38%	14.03%	85.97%	100.00%
238990	1.53%	0.93%	0.76%	0.03%	5.62%	8.87%	91.13%	100.00%
326211	0.00%	0.00%	0.00%	0.00%	10.00%	10.00%	90.00%	100.00%
336211	1.72%	0.91%	1.02%	0.06%	14.81%	18.52%	81.48%	100.00%
423120	2.38%	1.32%	1.72%	0.06%	4.11%	9.59%	90.41%	100.00%
423830	1.54%	0.87%	0.91%	0.05%	5.80%	9.16%	90.84%	100.00%
532112	0.00%	0.00%	0.00%	0.00%	2.22%	2.22%	97.78%	100.00%
541330	4.99%	2.85%	5.04%	0.12%	5.64%	18.63%	81.37%	100.00%
541820	3.20%	1.72%	1.30%	0.06%	17.22%	23.50%	76.50%	100.00%
561730	1.54%	1.18%	0.73%	0.04%	5.22%	8.70%	91.30%	100.00%
TOTAL	**2.89%**	**1.72%**	**1.68%**	**0.05%**	**6.65%**	**13.00%**	**87.00%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

Table G51: Unweighted Availability – Federal Funds,
Construction
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
237130	16.25%	10.72%	8.93%	0.10%	7.00%	43.00%	57.00%	100.00%
237310	6.64%	4.71%	2.19%	0.07%	7.96%	21.58%	78.42%	100.00%
238210	3.09%	1.33%	1.34%	0.05%	7.84%	13.65%	86.35%	100.00%
238910	3.15%	2.25%	1.21%	0.04%	7.38%	14.03%	85.97%	100.00%
238990	1.53%	0.93%	0.76%	0.03%	5.62%	8.87%	91.13%	100.00%
561730	1.54%	1.18%	0.73%	0.04%	5.22%	8.70%	91.30%	100.00%
TOTAL	**2.68%**	**1.65%**	**1.14%**	**0.04%**	**6.52%**	**12.04%**	**87.96%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

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Table G52: Unweighted Availability - Federal Funds,
Construction Related Services
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
541330	4.99%	2.85%	5.04%	0.12%	5.64%	18.63%	81.37%	100.00%
TOTAL	**4.99%**	**2.85%**	**5.04%**	**0.12%**	**5.64%**	**18.63%**	**81.37%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

Table G53: Unweighted Availability – Federal Funds,
Goods
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
326211	0.00%	0.00%	0.00%	0.00%	10.00%	10.00%	90.00%	100.00%
336211	1.72%	0.91%	1.02%	0.06%	14.81%	18.52%	81.48%	100.00%
423120	2.38%	1.32%	1.72%	0.06%	4.11%	9.59%	90.41%	100.00%
423830	1.54%	0.87%	0.91%	0.05%	5.80%	9.16%	90.84%	100.00%
TOTAL	**1.76%**	**0.98%**	**1.12%**	**0.05%**	**5.46%**	**9.38%**	**90.62%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

Table G54: Unweighted Availability - Federal Funds,
Other Services
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
532112	0.00%	0.00%	0.00%	0.00%	2.22%	2.22%	97.78%	100.00%
541820	3.20%	1.72%	1.30%	0.06%	17.22%	23.50%	76.50%	100.00%
TOTAL	**3.02%**	**1.62%**	**1.23%**	**0.05%**	**16.37%**	**22.29%**	**77.71%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

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Table G55: Unweighted Availability – No Federal Funds,
All Sectors
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
237130	16.25%	10.72%	8.93%	0.10%	7.00%	43.00%	57.00%	100.00%
237310	6.64%	4.71%	2.19%	0.07%	7.96%	21.58%	78.42%	100.00%
238210	3.09%	1.33%	1.34%	0.05%	7.84%	13.65%	86.35%	100.00%

238990	1.53%	0.93%	0.76%	0.03%	5.62%	8.87%	91.13%	100.00%
325110	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
326211	0.00%	0.00%	0.00%	0.00%	10.00%	10.00%	90.00%	100.00%
334290	2.32%	2.90%	6.38%	0.07%	5.00%	16.67%	83.33%	100.00%
334512	3.86%	0.98%	1.10%	0.06%	8.00%	14.00%	86.00%	100.00%
423120	2.38%	1.32%	1.72%	0.06%	4.11%	9.59%	90.41%	100.00%
423830	1.54%	0.87%	0.91%	0.05%	5.80%	9.16%	90.84%	100.00%
424720	1.90%	0.73%	1.08%	0.04%	3.22%	6.97%	93.03%	100.00%
441228	0.13%	0.07%	0.08%	0.00%	2.60%	2.89%	97.11%	100.00%
441320	1.21%	0.83%	0.72%	0.04%	3.35%	6.14%	93.86%	100.00%
485113	14.11%	3.60%	6.48%	0.22%	4.88%	29.28%	70.72%	100.00%
485410	13.99%	3.04%	3.41%	0.19%	9.28%	29.91%	70.09%	100.00%
485510	6.63%	4.07%	3.25%	0.18%	7.06%	21.19%	78.81%	100.00%
524210	0.92%	0.42%	0.47%	0.03%	7.11%	8.95%	91.05%	100.00%
541110	0.67%	0.36%	0.35%	0.02%	5.16%	6.56%	93.44%	100.00%
541330	4.99%	2.85%	5.04%	0.12%	5.64%	18.63%	81.37%	100.00%
541511	5.24%	2.30%	5.14%	0.12%	5.51%	18.30%	81.70%	100.00%
541810	2.34%	1.22%	1.14%	0.06%	13.49%	18.26%	81.74%	100.00%
541820	3.20%	1.72%	1.30%	0.06%	17.22%	23.50%	76.50%	100.00%
541850	3.60%	1.86%	1.15%	0.06%	8.33%	15.00%	85.00%	100.00%
561110	1.51%	0.70%	0.78%	0.04%	3.85%	6.89%	93.11%	100.00%
561720	4.71%	1.88%	1.88%	0.10%	12.09%	20.66%	79.34%	100.00%
561730	1.54%	1.18%	0.73%	0.04%	5.22%	8.70%	91.30%	100.00%
811121	1.05%	0.60%	0.72%	0.03%	3.66%	6.06%	93.94%	100.00%
TOTAL	**2.05%**	**1.06%**	**1.23%**	**0.04%**	**6.26%**	**10.65%**	**89.35%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

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Table G56: Unweighted Availability – No Federal Funds, Construction (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
237130	16.25%	10.72%	8.93%	0.10%	7.00%	43.00%	57.00%	100.00%
237310	6.64%	4.71%	2.19%	0.07%	7.96%	21.58%	78.42%	100.00%
238210	3.09%	1.33%	1.34%	0.05%	7.84%	13.65%	86.35%	100.00%
238990	1.53%	0.93%	0.76%	0.03%	5.62%	8.87%	91.13%	100.00%
561730	1.54%	1.18%	0.73%	0.04%	5.22%	8.70%	91.30%	100.00%
TOTAL	**2.63%**	**1.57%**	**1.14%**	**0.04%**	**6.42%**	**11.80%**	**88.20%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

Table G57: Unweighted Availability – No Federal Funds,
Construction Related Services
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
541330	4.99%	2.85%	5.04%	0.12%	5.64%	18.63%	81.37%	100.00%
TOTAL	**4.99%**	**2.85%**	**5.04%**	**0.12%**	**5.64%**	**18.63%**	**81.37%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

Table G58: Unweighted Availability – No Federal Funds,
Goods
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
325110	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
326211	0.00%	0.00%	0.00%	0.00%	10.00%	10.00%	90.00%	100.00%
334290	2.32%	2.90%	6.38%	0.07%	5.00%	16.67%	83.33%	100.00%
334512	3.86%	0.98%	1.10%	0.06%	8.00%	14.00%	86.00%	100.00%
423120	2.38%	1.32%	1.72%	0.06%	4.11%	9.59%	90.41%	100.00%
423830	1.54%	0.87%	0.91%	0.05%	5.80%	9.16%	90.84%	100.00%
424720	1.90%	0.73%	1.08%	0.04%	3.22%	6.97%	93.03%	100.00%
441228	0.13%	0.07%	0.08%	0.00%	2.60%	2.89%	97.11%	100.00%
441320	1.21%	0.83%	0.72%	0.04%	3.35%	6.14%	93.86%	100.00%
485113	14.11%	3.60%	6.48%	0.22%	4.88%	29.28%	70.72%	100.00%
TOTAL	**1.58%**	**0.84%**	**1.02%**	**0.04%**	**4.46%**	**7.93%**	**92.07%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

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Table G59: Unweighted Availability - No Federal Funds,
Other Services
(total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
485410	13.99%	3.04%	3.41%	0.19%	9.28%	29.91%	70.09%	100.00%
485510	6.63%	4.07%	3.25%	0.18%	7.06%	21.19%	78.81%	100.00%
524210	0.92%	0.42%	0.47%	0.03%	7.11%	8.95%	91.05%	100.00%
541110	0.67%	0.36%	0.35%	0.02%	5.16%	6.56%	93.44%	100.00%
541511	5.24%	2.30%	5.14%	0.12%	5.51%	18.30%	81.70%	100.00%
541810	2.34%	1.22%	1.14%	0.06%	13.49%	18.26%	81.74%	100.00%
541820	3.20%	1.72%	1.30%	0.06%	17.22%	23.50%	76.50%	100.00%

541850	3.60%	1.86%	1.15%	0.06%	8.33%	15.00%	85.00%	100.00%
561110	1.51%	0.70%	0.78%	0.04%	3.85%	6.89%	93.11%	100.00%
561720	4.71%	1.88%	1.88%	0.10%	12.09%	20.66%	79.34%	100.00%
811121	1.05%	0.60%	0.72%	0.03%	3.66%	6.06%	93.94%	100.00%
TOTAL	**1.70%**	**0.78%**	**1.00%**	**0.04%**	**6.48%**	**9.99%**	**90.01%**	**100.00%**

Source: CHA analysis of Pace and Hoovers data.

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Table G60: Share of Pace Spending by NAICS Code – Federal Funds, All Sectors

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
423830	Industrial Machinery and Equipment Merchant Wholesalers	64.1%
532112	Passenger Car Leasing	16.0%
326211	Tire Manufacturing (except Retreading)	10.1%
541330	Engineering Services	2.3%
237310	Highway, Street, and Bridge Construction	2.3%
561730	Landscaping Services	1.8%
238910	Site Preparation Contractors	1.4%
237130	Power and Communication Line and Related Structures Construction	0.7%
238990	All Other Specialty Trade Contractors	0.5%
238210	Electrical Contractors and Other Wiring Installation Contractors	0.4%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.3%
541820	Public Relations Agencies	0.0%
TOTAL		**100.0%**

Source: CHA analysis of Pace data.

Table G61: Share of Pace Spending by NAICS Code – Federal Funds, Construction

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
237310	Highway, Street, and Bridge Construction	31.9%
561730	Landscaping Services	24.9%
238910	Site Preparation Contractors	19.6%
237130	Power and Communication Line and Related Structures Construction	10.1%
238990	All Other Specialty Trade Contractors	7.6%
238210	Electrical Contractors and Other Wiring Installation Contractors	5.9%
TOTAL		**100.0%**

Source: CHA analysis of Pace data.

Table G62: Share of Pace Spending by NAICS Code – Federal Funds, Construction Related Services

NAICS	NAICS Code Description	Pct Total Contract Dollars
541330	Engineering Services	100.00%
TOTAL		**100.00%**

Source: CHA analysis of Pace data.

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
561110	Office Administrative Services	26.30%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	19.80%
485113	Bus and Other Motor Vehicle Transit Systems	8.20%
485410	School and Employee Bus Transportation	7.70%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	5.80%
423830	Industrial Machinery and Equipment Merchant Wholesalers	5.10%
334290	Other Communications Equipment Manufacturing	4.40%
485510	Charter Bus Industry	4.00%
325110	Petrochemical Manufacturing	3.20%
326211	Tire Manufacturing (except Retreading)	3.20%
541110	Offices of Lawyers	2.70%
524210	Insurance Agencies and Brokerages	2.60%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.00%
541810	Advertising Agencies	2.00%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	1.30%
541330	Engineering Services	0.70%
541820	Public Relations Agencies	0.50%
237130	Power and Communication Line and Related Structures Construction	0.20%
541850	Outdoor Advertising	0.10%
561720	Janitorial Services	0.10%
237310	Highway, Street, and Bridge Construction	0.00%
238990	All Other Specialty Trade Contractors	0.00%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	0.00%
441320	Tire Dealers	0.00%

541511	Custom Computer Programming Services	0.00%
561730	Landscaping Services	0.00%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	0.00%
TOTAL		**100.00%**

Table G63: Share of Pace Spending by NAICS Code – Federal Funds, Goods

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
423830	Industrial Machinery and Equipment Merchant Wholesalers	86.1%
336211	Tire Manufacturing (except Retreading)	13.5%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.3%
TOTAL		**100.0%**

Source: CHA analysis of Pace data.

Table G64: Share of Pace Spending by NAICS Code – Federal Funds, Other Services

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
532112	Passenger Car Leasing	99.8%
541820	Public Relations Agencies	0.2%
TOTAL		**100.0%**

Source: CHA analysis of Pace data.

Table G65: Share of Pace Spending by NAICS Code – No Federal Funds, All Sectors

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of

		TOTAL SECTOR DOLLARS)
561110	Office Administrative Services	26.30%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	19.80%
485113	Bus and Other Motor Vehicle Transit Systems	8.20%
485410	School and Employee Bus Transportation	7.70%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	5.80%
423830	Industrial Machinery and Equipment Merchant Wholesalers	5.10%
334290	Other Communications Equipment Manufacturing	4.40%
485510	Charter Bus Industry	4.00%
325110	Petrochemical Manufacturing	3.20%
326211	Tire Manufacturing (except Retreading)	3.20%
541110	Offices of Lawyers	2.70%
524210	Insurance Agencies and Brokerages	2.60%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.00%
541810	Advertising Agencies	2.00%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	1.30%
541330	Engineering Services	0.70%
541820	Public Relations Agencies	0.50%
237130	Power and Communication Line and Related Structures Construction	0.20%
541850	Outdoor Advertising	0.10%
561720	Janitorial Services	0.10%
237310	Highway, Street, and Bridge Construction	0.00%
238990	All Other Specialty Trade Contractors	0.00%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	0.00%
441320	Tire Dealers	0.00%
541511	Custom Computer Programming Services	0.00%
561730	Landscaping Services	0.00%

811121	Automotive Body, Paint, and Interior Repair and Maintenance	0.00%
TOTAL		**100.00%**

Source: CHA analysis of Pace data.

Table G66: Share of Pace Spending by NAICS Code – No Federal Funds, Construction

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
238210	Electrical Contractors and Other Wiring Installation Contractors	90.20%
237130	Power and Communication Line and Related Structures Construction	7.80%
561730	Landscaping Services	1.80%
237310	Highway, Street, and Bridge Construction	0.10%
238990	All Other Specialty Trade Contractors	0.00%
TOTAL		**100.00%**

Source: CHA analysis of Pace data.

Table G67: Share of Pace Spending by NAICS Code – No Federal Funds, Construction Related Services

NAICS	NAICS Code Description	Pct Total Contract Dollars
541330	Engineering Services	100.00%
TOTAL		**100.00%**

Source: CHA analysis of Pace data.

Table G68: Share of Pace Spending by NAICS Code – No Federal Funds, Goods

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
424720	Petroleum and Petroleum Products	38.80%

	Merchant Wholesalers (except Bulk Stations and Terminals)	
485113	Bus and Other Motor Vehicle Transit Systems	16.10%
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	11.40%
423830	Industrial Machinery and Equipment Merchant Wholesalers	9.90%
334290	Other Communications Equipment Manufacturing	8.60%
325110	Petrochemical Manufacturing	6.30%
326211	Tire Manufacturing (except Retreading)	6.20%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	2.50%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	0.10%
441320	Tire Dealers	0.10%
TOTAL		**100.00%**

Source: CHA analysis of Pace data.

Table G69: Share of Pace Spending by NAICS Code – No Federal Funds, Other Services

NAICS	NAICS Code Description	WEIGHT (PCT SHARE of TOTAL SECTOR DOLLARS)
561110	Office Administrative Services	57.00%
485410	School and Employee Bus Transportation	16.80%
485510	Charter Bus Industry	8.70%
541110	Offices of Lawyers	5.80%
524210	Insurance Agencies and Brokerages	5.70%
541810	Advertising Agencies	4.40%
541820	Public Relations Agencies	1.00%
561720	Janitorial Services	0.30%
541850	Outdoor Advertising	0.10%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	0.10%
541511	Custom Computer Programming	0.00%

	Services	
TOTAL		**100.00%**

Source: CHA analysis of Pace data.

Table G70: Aggregated Weighted Availability – No Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**3.74%**	**1.34%**	**1.83%**	**0.07%**	**5.00%**	**12.07%**	**87.93%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

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Table G71: Aggregated Weighted Availability – No Federal Funds, Construction (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**4.09%**	**2.06%**	**1.93%**	**0.05%**	**7.72%**	**15.95%**	**84.05%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

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Table G72: Aggregated Weighted Availability – No Federal Funds, Construction Related Services (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**4.99%**	**2.85%**	**5.04%**	**0.12%**	**5.64%**	**18.63%**	**81.37%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

Table G73: Aggregated Weighted Availability – No Federal Funds, Goods (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**3.44%**	**1.24%**	**2.15%**	**0.07%**	**4.07%**	**10.97%**	**89.03%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

Table G74: Aggregated Weighted Availability – No Federal Funds, Other Services (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**4.04%**	**1.39%**	**1.42%**	**0.08%**	**5.88%**	**12.90%**	**87.10%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

Table G75: Aggregated Weighted Availability – Federal Funds, All Sectors (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**1.64%**	**0.96%**	**0.96%**	**0.04%**	**6.21%**	**9.82%**	**90.18%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

Table G76: Aggregated Weighted Availability - Federal Funds, Construction (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**5.06%**	**3.47%**	**2.16%**	**0.06%**	**6.88%**	**17.62%**	**82.38%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

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Table G77: Aggregated Weighted Availability – Federal Funds, Construction Related Services (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**4.99%**	**2.85%**	**5.04%**	**0.12%**	**5.64%**	**18.63%**	**81.37%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

Table G78: Aggregated Weighted Availability – Federal Funds, Goods (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**1.57%**	**0.87%**	**0.92%**	**0.05%**	**7.02%**	**10.43%**	**89.57%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

Table G79: Aggregated Weighted Availability – Federal Funds, Other Services (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
TOTAL	**0.01%**	**0.00%**	**0.00%**	**0.00%**	**2.26%**	**2.27%**	**97.73%**	**100.0%**

Source: CHA analysis of Pace and Hoovers data.

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