Washington State Airports Disparity Study 2019

Washington State Department of Transportation

COLETTE HOLT & ASSOCIATES

Washington State Airports Disparity Study

2019

Conducted for
The Washington State
Department of Transportation

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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; Ilene Grossman, B.S., CHA Chief Operating Officer; Glenn Sullivan, B.S., CHA Director of Technology; Victoria Farrell, MBA, CHA Assistant Principal Researcher; and Joanne Lubert, J.D., Special Counsel. CHA is certified as a Disadvantaged Business Enterprise, Minority-Owned Business Enterprise and a Woman-Owned Business Enterprise by numerous agencies.

Blackstar Services, Inc. Daucey Brewington, owner of Blackstar Services, Inc. is an enrolled member of the Lumbee Tribe of North Carolina. Founded in 1998, Blackstar works directly with Native individuals and tribally owned businesses. Mr. Brewington works with public and private organizations to create business pathways into Indian Country, particularly by leveraging federal programs that offer advantages for tribally owned concerns.

Pacific Communications Consultants, Inc. Regina Glenn, MBA, President. PCC is an award-winning M/W/DBE-certified management consulting firm, specializing in diversity and inclusion compliance. The firm provides diversity and management training; community relations; public involvement; and M/WBE development. PCC specializes in enabling its clients to communicate in an effective manner with diverse communities and neighborhoods. For over 20 years PCC has provided a full range of communication-related services.

Acknowledgements

We wish to express special appreciation to Earl Key, Jackie Bayne, Michael Carpenter, Larry Watkinson and Jennifer Kandel for their assistance in conducting this study.

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I. EXECUTIVE SUMMARY

A. Study Methodology and Data

Colette Holt & Associates (CHA) was retained by the State of Washington's Department of Transportation ("WSDOT")[1] to perform a study regarding the Washington State Airports' ("Airports") Disadvantaged Business Enterprise ("DBE") programs. The methodology for this study embodies the constitutional principles of *City of Richmond v. Croson*, *Adarand v. Pena*, Ninth Circuit Court of Appeals case law, U.S. Department of Transportation ("USDOT") guidance, and best practices for designing race- and gender-conscious and small business contracting programs. The CHA approach has been specifically upheld by the federal 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.[2]

We first examined the Airports' DBE programs, through review of their documents and interviews with Airport staff, stakeholders and business owners. We next determined the Airports' utilization of DBEs and the availability of DBEs in the Airports' geographic and industry market area during the period of 2012 through 2016. We then compared DBE utilization to DBE availability to calculate disparity ratios between those two measures. 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 obtaining contracts and associated subcontracts with the Airports. We examined race- and gender-based barriers throughout the economy through public meetings, focus groups with business owners and stakeholders, electronic surveys to business owners and Airport staff and interviews with Airport staff.

Based on the results of these extensive analyses, we have made recommendations for Washington State Airports' DBE programs.

1. This entire analysis is based upon spending of FAA dollars by Washington State Airports. To avoid the cumbersome repetition of this fact, it will not be repeated again except in the title of each table.
2. National Academies of Sciences, Engineering, and Medicine 2010, *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*. Washington, DC: The National Academies Press. https://doi.org/10.17226/14346. ("*National Disparity Study Guidelines*")

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B. Legal Standards

1. Summary of Constitutional Equal Protection Standards

To be effective, enforceable, and legally defensible, a race- and gender-based program for public sector contracts must meet the judicial test of constitutional "strict scrutiny". Strict scrutiny is the highest level of judicial review. The Airports must meet these tests to ensure any race- and gender-conscious program is in legal compliance.

Strict scrutiny analysis has two elements:

1. The government must establish its "compelling interest" in remediating 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.
2. Any remedies adopted must be "narrowly tailored" to that discrimination; the program must be directed at the types and depth of discrimination identified.[3]

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

1. Statistical evidence of the underutilization of minority or women 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 disparity indices, comparable to the type of "disparate impact" analysis used in employment discrimination cases.
2. Anecdotal evidence of race- or gender-based barriers to the full and fair participation of minority and women firms in the market area and 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, and other information.

The narrow tailoring prong has been met by satisfying five factors to ensure that the remedy "fits" the evidence:

1. The necessity of relief;
2. The efficacy of race-neutral remedies at overcoming identified discrimination;

3. *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469 (1989).
4. *Id*. at 509.

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3. The flexibility and duration of the relief, including the availability of waiver provisions;
4. The relationship of numerical goals to the relevant market; and
5. The impact of the relief on the rights of third parties.

Classifications not based upon a suspect class (race, ethnicity, religion, national origin or gender) are subject to the lesser standard of review called "rational basis" scrutiny.[5] The courts have held there are no equal protection implications under the Fourteenth Amendment of the United States Constitution for groups not subject to systemic discrimination.[6]

2. Narrowly Tailoring Washington State Airports' DBE Program

The Ninth Circuit has gone beyond the DBE regulatory and legal framework and added the requirement that a recipient must provide additional evidence beyond the record upon which Congress relied in enacting the DBE program in order to narrowly tailor the recipient's DBE program. In *Western States v. Washington State Department of Transportation*, the court was persuaded by USDOT's argument that race-conscious goals can only be applied by recipients in those localities where the effects of discrimination are present. "As the United States correctly observed in its brief and during oral argument, it cannot be said that TEA-21 is a narrowly tailored remedial measure unless its application is limited to those States in which the effects of discrimination are actually present." In addition, each group sought to be included in race-conscious relief must have suffered discrimination in the agency's market area.

In response to this interpretation of Part 26, the General Counsel of USDOT issued Guidance in the form of "Questions and Answers Concerning Response to Western States Paving Co. v. Washington State Department of Transportation. Recipients in the Ninth Circuit that lacked a study should conduct a "study or other appropriate evidence-gathering process to determine the existence of discrimination or its effects in the recipient's market." The Guidance specifically points to the studies in the Sherbrooke and Northern Contracting cases. Such research should include:

- Evidence for each racial and ethnic group and white women.
- An assessment of any anecdotal and complaint evidence of discrimination.
- Evidence of barriers in obtaining bonding and financing and disparities in business formation and earnings.

5. *See, generally, Coral Construction Co v. King County*, 941 F. 2d 910 (9th Cir. 1991).
6. *United States v. Carolene Products Co.*, 304 U.S. 144 (1938).

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- Disparity analyses between DBE utilization by the agency and the availability of DBEs to perform in its markets.
- Comparison of DBE utilization on contracts with goals to utilization on contracts without goals.

As set forth in the USDOT Guidance, a disparity study is the preferred method in the Ninth Circuit to determine the availability of DBEs to perform in the recipient's market. To meet strict scrutiny, studies have been conducted to gather the statistical and anecdotal evidence necessary to support the use of race- and gender-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. High quality studies also examine the elements of the agency's program to determine whether it is sufficiently narrowly tailored. This Report meets these tests.

C. Study Findings

1. Washington State Airports' Disadvantaged Business Enterprise Programs

a. Overview of the U.S. Department of Transportation DBE Program for FAA-Assisted Contracts

The DBE program is implemented by recipients of USDOT federal financial assistance. These recipients are subject to the DBE regulations set forth in Title 49 Code of Federal Regulations Part 26 ("Part 26") and include airports receiving federal grants through the Federal Aviation Administration ("FAA"). Under § 26.21(a)(3), all FAA recipients that receive grants for airport planning or development and which award prime contracts with the cumulative total value exceeding $250,000.00 in a federal fiscal year must submit a DBE Program Plan ("Plan") to the FAA for approval.

The Airports located in Washington State are potentially required to implement programs supporting and engaging disadvantaged, small, minority- and women-owned businesses. Recipients must follow the requirements of Part 26 and USDOT guidelines to promote competitive and fair contracting opportunities. The FAA posts a sample draft DBE Program Plan template on its website that recipients can use as a guide. However, the template is for informational purposes and recipients are free to devise their own format to fit their circumstances.

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All processes and prescribed procedures must be set forth in full in attachments to the Plan. The Plan may be amended as needed to comport with significant changes to Part 26. While the FAA recipient is not compelled to submit updates to its program unless requested by FAA, any significant changes must be submitted and approved by the FAA.

Section 26.23 requires that plans include a signed and dated DBE Program Policy Statement evincing the recipient's commitment to its DBE program, stating the program objectives, and outlining responsibilities for implementation. The Policy Statement must be disseminated throughout the organization and community and must clearly designate the name/or title of the DBE Liaison Officer ("DBELO").

Subpart A of the Plan must establish general Part 26 requirements that include objectives, definitions, non-discrimination and record-keeping requirements, bidders list and required verbatim contract assurances. Subpart B must subsequently establish the administrative requirements relating to DBE program updates and policy, the recipient's efforts to address overconcentration, business development efforts, and provide an organizational chart showing the position of the DBELO within the organization and their list of associated duties.

The Plan also requires recipients to incorporate in their efforts investigative services offered by bank and other financial institutions owned and controlled by socially and economically disadvantaged individuals in the community; make reasonable efforts to use these institutions; and encourage prime contractors to do so. All plans must also provide the content of a contract clause requiring prompt and full payment including retainage to subcontractors at all tiers for satisfactory performance of their contracts no later than 30 days from the date of the prime contractor's receipt of each payment from the recipient.

In addition to race-neutral prompt payment requirements, the Plan must address the critical concern of monitoring responsibilities. Section 26.37 requires appropriate mechanisms to ensure monitoring and compliance with Part 26 requirements by all program recipients. Section 26.39 requires the recipient's Plan to provide the parameters of an entirely race-neutral Small Business Element ("Element") to facilitate competition by small business concerns, not just DBEs. This includes the identification of alternative acquisition strategies structuring procurements to facilitate the ability of consortia or joint ventures consisting of small businesses to compete for and perform prime contracts.

Subpart C governs triennial goal-setting, contract compliance, counting, and good faith efforts requirements essential to ensuring the integrity of

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the recipient's DBE program. Section 26.51(d) and the remedial objective of the DBE program require a recipient to establish legally defensible DBE contract goals to meet any portion of its overall goal that it is unable to meet through its small business element or other race-neutral measures. Recipients are required to develop these goals based upon a two-step methodology outlined in § 26.45 and to submit them to the FAA in accordance with a published staggered FAA schedule. The Plan must also detail public consultation, notice, availability for inspection, and public comments received during a public participation process for triennial goal-setting.

Since the state of Washington is in the Ninth Federal Judicial Circuit, the Airports' goal-setting process must adhere to official DOT guidance that pertains only to recipients in the Ninth Circuit. As discussed in Chapter II, *Western States Paving Co. v. Washington State DOT*[7] requires recipients in the Ninth Circuit to conduct disparity studies to determine the presence of discrimination or its effects and to develop the information necessary to implement the DBE program.

Section 26.53 requires that contracts must be awarded to a bidder/offeror who documents that it has obtained adequate GFEs to meet the DBE contract goal or documents adequate GFEs to do so. GFEs are inherently fact-specific and are set forth in non-exclusive guidance in Exhibit A of Part 26. Recipients must indicate whether the requirement will be considered as a matter of contract responsiveness– documentation is due with the initial submissions– or as a matter of responsibility– documentation is due no later than five days after bid opening.

Section 26.55 governs the rules for counting participation toward overall and contract goals. To receive credit, the DBE must be performing a "commercially useful function" ("CUF").

The Plan is subject to a special provision for FAA recipients per Section 150 of the FAA Reauthorization Act of 2018. This provision states:

> Section 47113(a)(1) of title 49, United States Code, is amended to read as follows: "(1) 'small business concern'- (A) has the meaning given the term in section 3 of the Small Business Act (15 U.S.C. 632); but (B) in the case of a concern in the construction industry, a concern shall be considered a small business concern if the concern meets the size standard for the North American Industry Classification System Code 237310, as adjusted by the Small Business Administration;".

7. 407 F.3d 983 (9th Cir. 2005), *cert. denied*, 541 U.S. 1170 (2006).

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Certification standards and procedures are addressed in Subparts D and E addresses Certification Procedures. Certification is conducted by the state's approved Unified Certification Program ("UCP"), which provides "one stop shopping" services to program applicants and recipients. The standards impose a rigorous certification process. A DBE must be independent of other non-DBEs to be eligible for certification. The applicant must also be a small business concern under the SBA size standards at 13 C.F.R. Part 121. The applicant firm must be for-profit and must be at least 51 percent owned and controlled by one or more socially and economically disadvantaged individuals who are United States citizens or lawfully admitted permanent residents. The Airport must indicate in its Plan whether it is a certifying or non-certifying member of the UCP and affirm its intention to abide by all certification and non-discrimination provisions of Part 26. The Washington State Office of Minority and Women Business Enterprises ("OMWBE") certifies DBEs in Washington State. All the Airports use the OMWBE DBE Directory to identify certified firms to participate in the DBE process.

Compliance and Enforcement are outlined in Subpart F. If an Airport fails to comply with the requirements of Part 26, it may be subject to formal enforcement action under Section 26.103 or Section 26.105 of Part 26. These include appropriate program sanctions that may be enforced by the FAA, such as the suspension or termination of federal funds, refusal to approve projects, grants or contracts until such deficiencies are corrected. The recipient must also confirm that it will cooperate fully and promptly with the DOT relative to recipient compliance reviews, certification reviews, investigations made by the DOT's Office of Inspector General, and other requests for information.

b. Washington State Airports' Disadvantaged Business Enterprise Programs

As discussed above, all the Airports that participated in this Disparity Study have received sufficient FAA financial assistance so as to require they administer a DBE program in accordance with Part 26. The sixty-four Airports included in the study fall into seven airport categories, based on type of activities defined by the FAA: Large, Medium and Small Hubs, NonHub Primary, Nonprimary Commercial Service, Reliever, and General Aviation. One airport included in the Study is owned and managed by the Washington Department of Transportation ("WSDOT").[8] The other sixty-three airports are municipally or privately owned.

CHA reviewed the DBE Program Plans of the Airports included in the Study. All the DBE program plans follow the sample template, without much varia-

8. Methow Valley State Airport

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tion, and with all the required elements. The Washington state-owned airport complies with WSDOT's DBE Program Participation Plan.

c. Experiences with Obtaining Contracting Opportunities with Washington State Airports

As part of our review, we interviewed officials from a wide range of airports that included the Port of Seattle. Many reported that it is difficult to meet DBE goals. There were several reasons for these challenges:

- There are few DBEs outside the Puget Sound area, so overall availability is low.
- Some Airports reported that the few DBEs in their area are not interested in their work. To obtain participation from firms located farther away, the project must be large enough to make the work profitable.
- Many Airport projects are complicated, and few DBEs can perform to FAA standards. Small and inexperienced firms are understandably reluctant to take on that much risk without some support.

To address these issues, some airports conduct outreach to DBEs. The Port of Seattle holds vendor fairs, meet and greet sessions, workshops, and staff make regular presentations to trade associations and DBE groups. The medium Hub airports have conducted some outreach and meet with interested vendors. Many interviewees stated there needs to be more focus on regional events. The smaller airports in particular need help to reach out to DBEs. Partnering with other organizations was another one way to educate contractors, DBEs and airports about the program and meet with interested vendors.

Many people stressed that their agency supports the program and would like to increase participation. However, they need more assistance from FAA and WSDOT. Several recommendations emerged:

- DBEs need more access to information. A central WSDOT bid posting system to include Airport jobs and alerts to DBEs of upcoming projects would be helpful. Several Airport personnel suggested they would like access to the B2Gnow system that WSDOT uses for DBE program compliance.
- Airport projects could be included in events for other construction projects, such as highway projects.

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- WSDOT and FAA could host outreach events for smaller airports and by region. These could be in person and/or in a webinar format, so that firms in more remote locations do not have to travel.
- In view of the specialized nature of many Airport projects, FAA requirements should be part of the training provided through WSDOT's supportive services initiatives.

In addition, CHA conducted an electronic survey of the medium and small Hub, and NonHub primary airport staff about administration of their DBE programs. The results of these staff surveys indicate that the Airports are following their plans, but most use outside consultants to administer their programs and are meeting the plan requirements.

To explore the impacts of race- and gender-neutral contracting policies and procedures and the implementation of DBE programs by Washington State Airports, we interviewed 143 individuals about their experiences and solicited their suggestions for changes. The following are summaries of the topics discussed.

DBE Certification Policies: The work and time involved in seeking DBE certification was reported to be a disincentive to seek Airport work, especially since most of the Airports do not set contract goals. The lack of DBE goals on many Airports' contracts reduces owners' incentives to become DBE certified. The inability to add NAICS codes when a DBE expands its capabilities was another barrier to being utilized on Airport contracts.

Obtaining Work on Airport Projects: DBEs generally reported that it is difficult to obtain work on Airport projects. Prime contracts are especially hard to secure. Contract size is another impediment to the participation of DBEs and small firms. To address the difficulty of airfield side work, Airports might focus on segmenting projects that do not require such a high skill level.

Access to Networks and Information: Relationships were reported to be particularly important in accessing Airport contracts because of the highly specialized nature of the work. Many participants, DBEs, non-DBES and Airport personnel, stated that it can be difficult to access information about contracts other than those at the Port. Many firm representatives, both DBEs and non-DBEs, suggested a more centralized approach to accessing information about Airport work, especially for the smaller Airports.

More outreach to DBEs: DBEs, non-DBEs and Airport staff requested more outreach about Airport projects. Efforts need to include prime contractors as well as Airport officials. Several people mentioned the outreach activities held by the Port of Seattle as examples of the type of events other Air-

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ports would like to hold. Additional opportunities to network between DBEs and prime contractors that do Airport work was reported to be very important. Given the long lead time of any FAA funded projects, annual forecasts of Airport projects would help small firms to plan.

One idea was for WSDOT to develop a list of DBEs that have airport experience or have expressed specific interest in doing Airport projects. There was a general recognition that many Airports, especially those that are small or located in rural areas, lack the resources to enhance their DBE efforts. Some consultants requested more training for Airport staff about the elements and processes of the DBE program. Another approach would be to include information about the DBE program at conferences for airport officials.

Meeting Contract Goals: Although not always easy, many general contractors reported they have been able to meet DBE goals. Some prime firms found it easier to find DBE consultants to perform design work than construction firms. Another consultant disagreed. Airports Contractors outside the Puget Sound area were especially challenged to find DBEs. Outside consultants who assist Airports with triennial goal-setting echoed these issues. The Airports' goal-setting processes were often seen as lacking transparency. The specialized nature of many Airport projects exacerbates the overall and geographic challenges. Using DBEs was reported to sometimes increase costs. The cycle of FAA funded work makes it more difficult to develop relationships and teams. Prime contractors that failed to meet their contract goal but demonstrated their good faith efforts to do so reported that the Airports were reasonable about understanding their challenges.

Mentor-Protégé Programs: There was overall support for expanding mentor-protégé efforts to aviation contracts. WSDOT recently adopted a program for its non-federally assisted contracts, and several participants reported good initial experiences. Some prime contractors cautioned about the issues that may arise from the mentor-protégé relationship. Reluctance to grow one's possible competition is another concern. Some national prime contractors implement their own supportive services and mentoring programs.

d. Conclusion

Overall, the Airports DBE programs are in compliance with Part 26. They have all the required elements in their FAA-approved DBE Program Plans. More, however, could be done to level the playing field for DBEs. Ideas include: increased access to contracting information and outreach to DBEs; partnering with other organizations to provide outreach and networking

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opportunities for DBES, prime contractors and Airport staff; focus on leveling the playing field for prime contract participation, including through reducing contract size; providing annual forecast of projected contracts; and providing training to DBEs on how to perform on FAA-assisted work and Airport staff about the DBE program.

2. Utilization, Availability and Disparity Analyses for Washington State Airports

A central component of a legally defensible disparity study examines the contract data of an agency (its utilization) and compares that to the universe of firms that potentially could have received contracts (its availability). In effect, the study looks at what the agency *did* relative to what it *could have done*. To conduct this analysis, several steps must be undertaken:

- The determination of Washington State Airports' "unconstrained product market" for contracts funded with FAA dollars. This is defined by the set of North American Industry Classification Systems ("NAICS") codes representing industries or product markets where a significant portion of spending by the Airports occurs (*i.e.*, what goods and services do these Airports purchase).
- The determination of the Airports' "geographic market". This represents the territory that covers the area where most firms who win contracts from Washington State Airports are located (*i.e.*, the geographic area where the Airports spend most of their monies).
- The determination of the "constrained product market". While the unconstrained product market has no spatial boundaries, distance is a determinant of what firms the Airports utilize. Therefore, the third step constrains the unconstrained product market by the geographic boundaries, which results in the constrained product market. (Sometimes the imposition of this geographic constraint reduces the number of NAICS codes compared to the results in the first step).
- The contracts that exist after the determination of the constrained product market are analyzed to determine the Airports' utilization of businesses (*i.e.*, how they spend their monies across industries and the demographic profile of the ownership of firms that receive FAA funds.)
- The determination of the set of firms that were available to receive contracts from the Airports. This set of firms is defined by the set of NAICS codes in the constrained product market and the spatial boundaries set by the geographic market.

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- The resulting availability is weighted by how the Airports spend FAA money. This means the distribution of disadvantaged, minority- and female-owned firms (collectively, "DBEs") and non-DBEs across industries is tempered by how the Airports spend their monies (*i.e.*, without this weighting, the result might be a cluster of certain DBEs in industries where few funds are spent and consequently, present a picture of robust DBE opportunities while in reality those firms have limited opportunities to receive significant funds from the Airports).
- The ratio of the utilization of a particular demographic group over that group's weighted availability results in the disparity ratio.

We analyzed contract data for fifty-four Washington State Airports that received FAA grants for fiscal years 2012 through 2016. To conduct these analyses, we constructed all the fields necessary for our analysis where they were missing in the Airports' contract records (*e.g.*, industry type; zip codes; NAICS codes of prime contractors and subcontractors; DBE subcontractor information, including payments, race, gender; etc.). The resulting Final Contract Data File for analysis contained 1,375 contracts with a total paid amount of $376,545,924. Of these contracts, 287 were prime contracts and subcontractors received 1,088 contracts. Prime contractors received $230,910,051; subcontractors received $145,635,873. Prime contractors received 61.3 percent of all paid dollars; subcontractors received 38.7 percent of all paid dollars. The Final Contract Data File was used to determine the geographic and product markets for the analyses, and to estimate the utilization and availability of DBEs by funding source and contract type.

The following tables present the NAICS codes, the label for each NAICS code, and the industry percentage distribution of spending across NAICS codes, by type of contract. Chapter IV provides tables disaggregated by dollars paid to prime contractors as well as dollars paid to subcontractors on contracts with subcontracting opportunities.

Table 1-1: Industry Percentage Distribution of FAA Funded Contracts by Dollars

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	36.9%	36.9%
238910	Site Preparation Contractors	14.7%	51.6%
236220	Commercial and Institutional Building Construction	10.6%	62.1%
238210	Electrical Contractors and Other Wiring Installation Contractors	9.8%	72.0%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541330	Engineering Services	8.3%	80.3%
238220	Plumbing, Heating, and Air-Conditioning Contractors	2.8%	83.1%
541370	Surveying and Mapping (except Geophysical) Services	1.5%	84.6%
238310	Drywall and Insulation Contractors	1.2%	85.7%
541620	Environmental Consulting Services	1.2%	86.9%
238120	Structural Steel and Precast Concrete Contractors	1.1%	88.0%
238990	All Other Specialty Trade Contractors	1.1%	89.1%
TOTAL			**100.0%[a]**

a. An additional 79 NAICS codes contained the balance of spending by the Airports. The entire set of NAICS codes is presented in Appendix D.

Source: CHA analysis Washington Airports data

To determine the relevant geographic market area for each funding source, we applied the well accepted standard 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 and aggregated into counties as the geographic unit. The State of Washington captured 94.3 percent of the unconstrained product market dollars and, therefore, the state constituted the geographic market for the Airports.

When the unconstrained product market was limited to the state of Washington, the result was the *constrained product market*. The next step was to develop the Final Utilization Data File for the constrained product market which contains the dollar value of the Airports' utilization of DBEs as measured by payments to prime firms and subcontractors and disaggregated by race and gender.

Table 1-2 presents the utilization data by all industry sectors. Chapter IV provides detailed breakdowns of these results.

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Table 1-2: Distribution of Contract Dollars by Race and Gender (share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	1.3%	0.0%	0.0%	1.8%	7.7%	10.8%	89.2%	100.0%
237310	0.1%	0.3%	0.0%	0.7%	0.4%	1.5%	98.5%	100.0%
238110	0.0%	3.8%	0.0%	0.0%	1.4%	5.2%	94.8%	100.0%
238120	0.0%	0.0%	0.0%	0.0%	0.6%	0.6%	99.4%	100.0%
238150	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238160	0.0%	0.0%	0.0%	0.0%	2.6%	2.6%	97.4%	100.0%
238210	1.3%	44.6%	0.0%	0.0%	9.0%	55.0%	45.0%	100.0%
238220	0.0%	0.0%	0.0%	48.3%	0.1%	48.4%	51.6%	100.0%
238310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238350	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238910	0.0%	0.5%	0.0%	0.7%	0.3%	1.5%	98.5%	100.0%
326199	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
484220	14.4%	0.1%	0.0%	0.0%	10.7%	25.2%	74.8%	100.0%
541330	0.0%	0.4%	10.8%	7.7%	0.7%	19.7%	80.3%	100.0%
541370	0.0%	0.0%	1.5%	14.1%	3.6%	19.2%	80.8%	100.0%
541620	0.0%	0.0%	0.0%	68.3%	11.3%	79.7%	20.3%	100.0%
561730	0.0%	0.3%	2.7%	1.9%	38.3%	43.2%	56.8%	100.0%
Total	**0.4%**	**5.2%**	**0.9%**	**3.7%**	**3.3%**	**13.5%**	**86.5%**	**100.0%**

Source: CHA analysis of Washington Airports data

Using the "custom census" approach to estimating availability (described in detail in Chapter IV), and the further assignment of race and gender (using the Master Directory and other sources), we determined the aggregated availability of DBEs when weighted by the Airports' spending in their geographic and industry markets, to be 13.4 percent. Table 1-3 presents the weighted availability data for all product sectors combined for the racial and gender categories. Appendix D contains weighted availability estimates further broken down by region that can be used by the Airports to set DBE goals for their projects.

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Table 1-3: Aggregated Weighted Availability

Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
1.1%	2.1%	1.4%	2.6%	6.3%	13.4%	86.6%	100.0%

Source: CHA analysis of Washington Airports data; Hoovers; CHA Master Directory

To meet the *Western States* test that all groups must have suffered discrimination in the Airports' markets in order to be eligible for the benefits of the program, we next calculated disparity ratios comparing the Airports' utilization of DBEs as prime contractors and subcontractors measured in dollars paid to the availability of these firms in its market areas. The disparity ratio is calculated by dividing the weighted availability into the utilization rate. If the utilization rate (*i.e.*, the disparity ratio) for a group is less than the availability for that group, we would conclude that the group is underutilized. It is important to note that sometimes unique features of the data (e.g. an unusually high concentration of a group in a very narrow range of NAICS codes; particularly strong performance of one or two firms within a group which is at odds with the performance of most firms in that group; very limited number of observations) might generate disparity ratios which require closer examination. Table 1-4 presents these results.

The courts have held that disparity results must be analyzed to determine whether the results are "significant". There are two distinct methods to measure a result's significance. First, a "large" or "substantively significant" disparity is commonly defined by courts as utilization that is equal to or less than 80 percent of the availability measure. A substantively significant disparity supports the inference that the result may be caused by the disparate impacts of discrimination.[9] Second, a statistically significant disparity means that an outcome is unlikely to have occurred as the result of random chance alone. The greater the statistical significance, the smaller the probability that it resulted

9. *See* U.S. Equal Employment Opportunity Commission regulation, 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.").

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from random chance alone. A more in-depth discussion of statistical significance is provided in Appendix C.

Substantive and Statistical Significance

‡ Connotes these values are substantively significant. Courts have ruled the disparity ratio less or equal to 80 percent represent disparities that are substantively significant. (See Footnote 9 for more information.)

* Connotes these values are statistically significant at the 0.05 level. (See Appendix C for more information.)

** Connotes these values are statistically significant at the 0.01 level. (See Appendix C for more information.)

*** Connotes these values are statistically significant at the 0.001. level (See Appendix C for more information.)

Table 1-4: Disparity Ratios by Demographic Group, All Industries Combined

	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE
Disparity Ratio	38.8%‡	252.4%	68.1%‡	143.2%	52.3%‡	101.3%	99.8%

Source: CHA analysis of Washington Airports Data‡ Indicates substantive significance

Our previous experience suggests that unusually high disparity ratios for DBEs might be the result of a variety of factors unique to a set of firms in a particular group and a particular NAICS code. The result of this nexus of factors should not be taken to be representative of the experiences of most firms within that group nor necessarily lead to the conclusion that race-neutral measures alone will ensure opportunities for a broad group of firms. We therefore explored if some anomalies resulted in the Hispanic disparity ratio of 254.4 percent and the Native American disparity ration of 143.2 percent. We examined whether a certain group received a share of contract dollars in a NAICS code that contained a significant share (that is, weight) of total contract dollars. When we performed this exploration, the Hispanic disparity ratio fell to 31.1 percent and the Native American disparity ratio fell to 98.6 percent. It is very important to note that the new disparity ratios that are derived from each exploration should not be interpreted as presenting a new result for the other groups.

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3. Analysis of Economy-Wide Race and Gender Disparities in the Airports' Market

In addition to the analysis of the Airports' contracting activities, we explored the Census Bureau data and literature relevant to how discrimination in the Airports' industry market and throughout the wider economy affects the ability of minorities and women to fairly and fully engage in the Airports' prime contract and subcontract opportunities. These analyses shed light on the ability of DBEs to achieve parity in the wider economy, where remedial interventions are rarely implemented.

To undertake these explorations, we analyzed the following data and literature:

- Data from the Census Bureau's Survey of Business Owners indicate very large disparities between minority- and 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.
- Data from the Census Bureau's American Community Survey ("ACS") indicate that in most cases, Blacks, Latinos, Native Americans, Asian/Pacific Islanders, Others, and White women were underutilized relative to White men. Controlling for other factors relevant to business outcomes were lower for these groups compared to White men. Data from the ACS further indicate that Blacks, Latinos, Native Americans, Asian/Pacific Islanders are less likely to form businesses and receive lower wages compared to similarly situated White men at a statistically significant level.
- The literature on barriers to accessing commercial credit and/or 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.

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 intervention. Taken together with anecdotal data, this is the type of proof that addresses whether, in the absence of DBE contract goals, the Airports' will be a passive participant in the discriminatory systems found throughout their industry market. These economy-wide analyses are relevant and probative as to whether the Airports may employ narrowly tailored race- and gender-conscious measures that ensure equal opportunities in accessing its contracts and associated subcontracts.

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4. Qualitative Evidence of Race and Gender Barriers in WSDOT's Market

In addition to quantitative data, the courts and the DBE regulations look to qualitative 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 necessary to ensure a level playing field for all firms.

To explore this type of anecdotal evidence, we received input from 143 participants. Many minority and women owners reported that while they had received contracting opportunities through the DBE program, significant barriers remain to securing Airport work. The playing field is not yet level. Race- and gender-neutral approaches alone were described as unlikely to ensure a level playing field for contract opportunities with the Airports.

Summary of issues discussed:

- Many minority and female owners reported that they still suffer from biased perceptions and stereotypes about their competency and professionalism. While sometimes subtle, these biases about minorities' and women's lack of competence or ownership status infect all aspects of their attempts to obtain contracts and to be treated equally in performing Airport work.
- The highly male dominated nature of the construction industry provides fewer opportunities for women to be part of teams or take leadership roles.
- Some women reported that agency employees also were biased on the basis of gender.
- Several minority owners experienced a stigma in being labeled a "disadvantaged" firm. A few White women disagreed; they had not found sexism to be an issue.
- There is a further bias against small firms, which especially impacts DBEs. Most participants reported that becoming certified as a DBE helped to reduce these barriers.
- The experiences of White women DBEs in the wake of the WSDOT waiver has been devastating. They had received work as the result of the DBE program, and now that they are no longer eligible to be counted towards contract goals (WSDOT continues to count any utilization as race-neutral participation), many have been shut out of the market. Prime contractors who had used them for years no longer accept their bids.

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To supplement the in-person interviews, we also conducted an electronic survey of firms on our Master Business list. One-hundred and thirty-seven minority- and women-owned firms completed the survey. Only 5.8 percent of the firms had worked on projects with Washington State Airports just as a prime contractor/consultant; 20.4 percent had worked only as a subcontractor; 4.4 percent had worked as both a prime contractor/consultant and as a subcontractor/ subconsultant or supplier; and 69.3 percent had not done business on any contracts with the Airports.

The anecdotal data suggest that many minorities and women continue to suffer discriminatory barriers to full and fair access to Airport contracts. While not definitive proof that the Airports have a sufficient legal basis to implement race-conscious DBE contract goals, these results are the types of evidence that, especially when considered in conjunction with the statistical evidence, the courts have found to be highly probative of whether the Airports may use race-conscious remedies to address that discrimination.

D. Recommendations

1. Augment Race- and Gender-Neutral Measures

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

Increase Access to FAA Contracting Opportunities: The lack of access to information about Airport opportunities is perhaps the largest barrier to DBEs receiving this type of work. Other than contracts with the Port of Seattle, few DBEs were aware how to obtain information about contracts at the Airports, or in many cases, that the Airports even exist. This dearth of knowledge ranged from a lack of information about specific contracts, to penetrating the networks of Airport officials with contracting responsibilities, to making connections with prime contractors and consultants that regularly perform Airport work. We recommend the following steps to address these problems.:

Conduct Outreach Efforts with Other Agencies: Many of the Airports lack the staff resources needed to individually reach out to DBEs and small firms. We

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therefore suggest they work with other agencies that conduct outreach and provide contracting information on a regular basis. Possible partners include the Washington State Department of Transportation ("WSDOT"); the State of Washington Department of Enterprise Services ("DES"); the City of Seattle; the City of Tacoma; King County; and the Procurement Technical Assistance Centers. Airport staff could attend these entities' outreach meetings, or at a minimum, provide literature about how to do business with their Airport and upcoming contract opportunities.

The smaller Airports could further partner with each other to host regional events and vendor fairs. To address the challenges faces by small Airports in rural areas and in Eastern Washington, semi-annual forums could be held where all the Airports provide opportunities to network with staff and prime contractors and consultants, obtain information about how to do business with the Airport and explore forecasts of upcoming projects.

Airports could also attend professional aviation conferences and include information about their DBE program as part of the materials.

Provide Information About Contract Opportunities: The Airports could post their contract solicitations on WEBS, the online portal maintained by DES. Registering using the WEBS portal would permit firms to list their relevant commodity code(s) and certifications. Vendors can also indicate the geographic areas they are willing/able to provide goods and/or services in by selecting from a list of counties. Bid opportunities can be searched by active bids, current and future bid opportunities and WEBS defined work categories. There is also information on how to receive bid notifications or bid results. In addition to WEBS, FAA Matchmaker is available to airport sponsors free of charge and could be utilized to increase access to information for DBEs and small firms. This site searches for DBEs and bid opportunities, among other information.[10]

The Airports should utilize OMWBE's Directory and our Master D/M/WBE Directory to send eBlasts to firms about their contract solicitations and forecasts. This has become a very common and low-cost method for agencies to communicate with the disadvantaged business community.

Provide Information About How to Do Business with the Airports: It would be helpful for each Airport to place on its website information about how to do business with that entity. This information could include sample instructions, Frequently Asked Questions sheets, and individual contact persons for assistance. While the Airports' DBE Program Plans were quite similar, their general contracting functions will vary, and specific forms, documents and other items may not be the same from Airport to Airport.

10. https://faa.dbesystem.com.

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Conduct Training on FAA Specifications and Performance Standards: We suggest the Airports provide training to new or inexperienced entrants into the aviation market to address the gap between their knowledge and skills and the complexities of FAA contract specifications and standards. To reduce costs and increase participation, this training could be provided by webinar and/or videos. Firms located in more remote areas or in Eastern Washington would also have more options to participate.

It might be also possible to partner with WSDOT to conduct training through the Department's extensive supportive services program. WSDOT provides a wide array of supportive and technical assistance to DBEs, and some introductory information about aviation contracts could be included in appropriate programs. The firms that participate could then form the basis for a list of DBEs with an active interest in Airport work and some familiarity with the standards and processes that it will be necessary to meet. This would provide the Airports and prime vendors with a good start to utilizing DBEs as prime firms and as subcontractors and subconsultants.

Increase Contract "Unbundling": Smaller contracts can provide longer lead times and simplify requirements to assist DBE and small businesses to take on some Airport work. The size and complexity of Airport projects are disincentives to small firms, even at the subcontractor level. In conjunction with reduced insurance and bonding requirements where possible, unbundled 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 quality work, and limit costs to taxpayers.

Unbundling might be especially useful for on call contracts. This could be a useful step to support opportunities for DBEs to serve as prime vendors. Airports that have moved to very long term on call contracts should especially consider this option, as otherwise disadvantaged firms can be shut out of their work for many years.

Adopt an SBE Target Market Program: If permitted under state law and permissible under Airport Improvement Program (AIP) contracting requirements, Airports should consider adopting a race-neutral small business element to set aside some smaller or less complex contracts for bidding only by SBEs as prime contractors. This measure would be especially useful for those industries that do not operate on a prime vendor-subcontractor model, such as consulting services, or contracts with few opportunities for subcontracting. On call contracts can be an excellent vehicle for this target market approach. If implemented on a fully race- and gender-neutral basis, this is a constitutionally acceptable method to increase opportunities for all small firms. WSDOT has

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recently adopted an SBE program, and the Airports could use that certification, as well as the DBE certification, for this procurement method.

Consider Adopting a Mentor-Protégé Program for Aviation Contracts: While the resources necessary to administer such an initiative would be too burdensome for individual Airports, perhaps WSDOT could develop a Mentor-Protégé Program ("MPP"") for contractors performing FAA funded work that could be tapped by all the Washington State Airports. Several business owners, both DBEs and non-DBEs, reported good experiences with mentor-protégé type programs. Such a program should conform to 49 C.F.R. § 26.35 and the Guidelines of Appendix D to Part 26. In addition to the standards provided in Part 26, the General Counsel's Office at USDOT has provided some additional guidance, and USDOT's Office of Small Disadvantaged Business Utilization had adopted a pilot program and sample documents.

2. Implement Narrowly Tailored DBE Programs

The Study's results support the determination that the Airports has a strong basis in evidence to implement a fully race-conscious DBE program that includes all groups for race-conscious relief. The record– both quantitative and anecdotal– establishes that minorities and White women in the Washington aviation market continue to experience significant disparities in and barriers to their fair and equal access to FAA-funded contracts, and the overall aviation and construction industry in the State of Washington. While not all DBE groups experienced large disparities in their utilization, only a very small number of DBEs have been able to break into Airport work. That does not mean the playing field is level for all DBEs. When these "outliers" are removed, it is clear that DBEs are not being used in proportion to their availability. Coupled with the anecdotal and economy-wide results, we are confident that the Airports can support the use of race-conscious contract goals on their FAA-funded contracts.

Use the Study to Set Triennial DBE Goals: 49 C.F.R. Part 26 and Part 23 require that FAA recipients engage in a two-step process to set a triennial goal for DBE participation in its federally-funded projects. To determine the Step 1 base figure for the relative availability of DBEs required by § 26.45(c), we suggest the Airport's use the Study's DBE weighted availability findings. Our custom census is an alternative method permitted under § 26.45(c)(5) and is the only approach that has received repeated judicial approval. This is a much more targeted and accurate method than the most common approach employed by the Airports, namely, dividing the DBE Directory by the Census Bureau's County Business Pattern data. While permissible under § 26.45(c), this "apples to oranges" approach results in artificially low estimates. Coupled with unsupported guesses about the Airports' market areas, it has resulted in very little

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DBE utilization outside the Puget Sound area. We recognize that the concentration of minority-owned businesses in Western Washington presents challenges for other parts of the State, and we have provided information by region in Appendix E.

To perform the Step 2 analysis required by § 26.45(d) to adjust the Step 1 figure to reflect the level of DBE availability that would be expected in the absence of discrimination, the Airports can use the statistical disparities in Chapter V in the rates at which DBEs form businesses. This is the type of "demonstrable evidence that is logically and directly related to the effect for which the adjustment is sought."

Use the Study to Set DBE Contract Goals: The highly detailed unweighted availability estimates in Chapter IV, provided as an appendix to this Report, can serve as the starting point for narrowly tailored contract goal-setting that reflects the percentage of available DBEs as a percentage of the total pool of available firms. Airports should weigh the estimated scopes of the contract by the availability of DBEs in those scopes as provided in the Study at the 6-digit NAICS code level, and then adjust the result based on geography and current market conditions (for example, the volume of work currently underway in the market, the entrance of newly certified firms, specialized nature of the project, etc.).

Develop a Goal-Setting Module: Most Airports reported they lack the resources to engage in contract goal-setting. The lack of tools has led to the vast majority of Airports using only the most basic of race-neutral measures to provide opportunities for DBEs, with predictable results. The FAA has developed a DBE goal-setting tool for use by airport sponsors. The tool is free of charge and is contained within the FAA Civil Rights Connect System. That this tool is not being utilized by most Airports suggests they are unaware of this option or choose not to use it. In the alternative, the Airports could perhaps gain access to WSDOT's electronic data collection and monitoring system that includes a goal-setting module developed to utilize our disparity study unweighted availability data.[11] Written procedures detailing the implementation of contract goal-setting should be developed and disseminated so that all contracting actors understand the methodology.

3. Develop Performance Measures for Program Success

The Airports should develop quantitative performance measures for certified firms and the overall success of the Program to evaluate its effectiveness in reducing the systemic barriers identified by the study. In addition to meeting the triennial goal, possible benchmarks might include: the number of bids or

11. Diversity Management and Compliance System: https://wsdot.diversitycompliance.com.

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proposals and the dollar amount of the awards, 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; increased bidding by certified firms; increased prime contract awards to certified firms; expansion of the types of work performed by DBEs; and increased "capacity" of certified firms as measured by bonding limits, size of jobs, profitability, etc.

The Airports can use the Online Assessment Module of FAA Civil Rights Connect System to "self-assess" annually.

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II. Legal Standards for Washington State Airports' Disadvantaged Business Enterprise Programs

A. Summary of Constitutional Equal Protection Standards

To be effective, enforceable, and legally defensible, a race-based program for public sector contracts, must meet the judicial test of constitutional "strict scrutiny". Strict scrutiny is the highest level of judicial review. Strict scrutiny analysis is comprised of two prongs:

1. The government must establish its "compelling interest" in remediating 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.
2. Any remedies adopted must be "narrowly tailored" to that discrimination; the program must be directed at the types and depth of discrimination identified.[12]

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

1. Statistical evidence of the underutilization of minority- or women-owned 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 disparity indices, comparable to the type of "disparate impact" analysis used in employment discrimination cases.
2. Anecdotal evidence of race- or gender-based barriers to the full and fair participation of minority- and women-owned firms in the market area and seeking contracts with the agency, comparable to the "disparate treatment"

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

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analysis used in employment discrimination cases.[13] Anecdotal data can consist of interviews, surveys, public hearings, academic literature, judicial decisions, legislative reports, and other information.

The narrow tailoring prong has been met by satisfying five factors to ensure that the remedy "fits" the evidence:

1. The necessity of relief;
2. The efficacy of race-neutral remedies at overcoming identified discrimination;
3. The flexibility and duration of the relief, including the availability of waiver provisions;
4. The relationship of numerical goals to the relevant market; and
5. The impact of the relief on the rights of third parties.

In *Adarand v. Peña*,[14] the United States Supreme Court extended the analysis of strict scrutiny to race-based federal enactments such as the United States Department of Transportation ("USDOT") Disadvantaged Business Enterprise ("DBE") program for federally assisted transportation contracts, including Federal Aviation Administration ("FAA") assisted prime contracts and related subcontracts.[15] Just as in the local government context, the national legislature must have a compelling governmental interest for the use of race, and the remedies adopted must be narrowly tailored to that evidence.[16]

Most federal 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".[17] However, appellate courts have applied strict scrutiny to the gender-based presumption of social disadvantage in reviewing the constitutionality of the DBE program[18] or held that the results would be the same under strict scrutiny.[19]

Classifications not based upon a suspect class (race, ethnicity, religion, national origin or gender) are subject to the lesser standard of review called "rational basis"

13. *Id*. at 509.
14. *Adarand v. Peña*, 515 U.S. 200 ("*Adarand III*") (1995).
15. 49 C.F.R. Part 26
16. *See, for example, Croson*, 488 U.S. at 492-493; *Adarand III*, 515 U.S. 200, 227; *see generally Fisher v. University of Texas*, 133 S. Ct. 2411 (2013).
17. *Cf. United States v. Virginia*, 518 U.S. 515, 532 n.6 (1996).
18. *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715, 720 (7th Cir. 2007) ("*Northern Contracting III*").
19. *Western States Paving Co., Inc. v. Washington State Department of Transportation*, 2013 W.L.1607239 at *13 fn.6 (9th Cir. 2005).

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scrutiny.[20] The courts have held that there are no equal protection implications under the Fourteenth Amendment of the United States Constitution for groups not subject to systemic discrimination.[21] In contrast to strict scrutiny and to intermediate scrutiny, rational basis means the governmental action must be "rationally related" to a "legitimate" government interest.[22] Thus, preferences for persons with disabilities or veteran status may be enacted with vastly less evidence than that required for race- or gender-based measures to combat historic discrimination.

Unlike most legal challenges, the defendant bears the initial burden of producing "strong evidence" in support of its race-conscious program.[23] 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.[24] "[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."[25]

A plaintiff "cannot meet its burden of proof through conjecture and unsupported criticism of [the government's] evidence."[26] To successfully rebut the government's evidence, a plaintiff must introduce "credible, particularized evidence" that rebuts the government's showing of a strong basis in evidence.[27] 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 federally-assisted highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground."[28]

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20. *See, generally, Coral Construction Co v. King County*, 941 F. 2d 910 (9th Cir. 1991); *Equal. Found. v. City of Cincinnati*, 128 F. 3d 289 (6th Cir. 1997).
21. *United States v. Carolene Products Co.*, 304 U.S. 144 (1938).
22. *Heller v. Doe*, 509 U.S. 312, 320 (1993).
23. *Aiken v. City of Memphis*, 37 F.3d 1155, 1162 (6th Cir. 1994).
24. *W.H. Scott Construction Co., Inc. v. City of Jackson, Mississippi*, 199 F.3d 206, 219 (5th Cir. 1999); *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1166 (10th Cir. 2000), *cert. granted*, 532 U.S. 941, *then dismissed as improvidently granted*, 534 U.S. 103 (2001) ("*Adarand VII*").
25. *Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County*, 122 F.3d 895, 916 (11th Cir. 1997) ("*Engineering Contractors II*").
26. *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 IV*").
27. *H.B. Rowe v. North Carolina Department of Transportation*, 615 F.3d 233, 241-242 (4th Cir. 2010); *Midwest Fence Corp. v. US Department of Transportation, Illinois Department of Transportation, Illinois State Toll Highway Authority*, 840 F.3d 932 (7th Cir. 2016) ("*Midwest Fence II*").
28. *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964, 970 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004).

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When the statistical information is sufficient to support the inference of discrimination, the plaintiff must prove that the statistics are flawed.[29] A plaintiff cannot rest upon general criticisms of studies or other related evidence; it must meet its burden that the government's proof is inadequate to meet strict scrutiny, rendering the legislation or government program illegal.[30]

To meet strict scrutiny, studies have been conducted to gather the statistical and anecdotal evidence necessary to support the use of race- and gender-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 program to determine whether it is sufficiently narrowly tailored. The following is a detailed discussion of the parameters for conducting studies leading to a defensible program for recipients of FAA assisted contracts under the USDOT's DBE program.

B. Elements of Strict Scrutiny

In its decision in *City of Richmond v. J.A. Croson Co.*, the United States Supreme Court established the constitutional contours of permissible race-based public contracting programs. Reversing long established Equal Protection jurisprudence, 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 inures to the benefit of these victims of historic discrimination. Strict scrutiny requires that a government entity prove both its "compelling governmental interest" in remediating 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 because it failed to satisfy the strict scrutiny analysis applied to "race-based" government programs. The City's "set-aside" Plan 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 nation was eligible to participate so long as it was at least 51 percent

29. *Coral Construction*, 941 F. 2d at 921; *Engineering Contractors II*, 122 F.3d at 916
30. *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).

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owned and controlled by minority citizens or lawfully-admitted permanent residents.

The Plan was adopted following a public hearing during which no direct evidence was presented that the City had discriminated on the basis of race in 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) generalized 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 active participation in discrimination:

> [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."[31]

Strict scrutiny of race-based remedies is required to determine whether racial classifications are in fact motivated by notions of racial inferiority or blatant racial politics. This highest level of judicial review "smokes out" illegitimate uses of race by ensuring that the legislative body is pursuing an important enough goal to warrant use of a highly suspect tool.[32] It also ensures that the means chosen "fit" this compelling goal so closely that there is little or no likelihood that the motive for the classification was illegitimate racial prejudice or stereotype. The Court made clear that strict scrutiny is designed to expose racial stigma; racial classifications are said to create racial hostility if they are based on notions of racial inferiority.

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

31. 488 U.S. at 491-92.
32. *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 decisionmaker for the use of race in that particular context.").

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data were presented about the availability of MBEs in either the 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, the City 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. Local governments are 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."[33]

This analysis was applied only to Blacks. The Court emphasized that there was "absolutely no evidence" of discrimination 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."[34]

Having found that Richmond had not presented evidence in support of its compelling interest in remediating discrimination—the first prong of strict scrutiny—the Court made 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.[35] The Court noted that the City "does not even know how many MBEs in the relevant market are qualified to undertake prime or subcontracting work in public construction projects."[36]

33. *Croson*, 488 U.S. at 510.
34. *Id*.
35. *See Grutter*, 529 U.S. at 336-337 (quotas are not permitted; race must be used in a flexible, non-mechanical way).
36. *Croson*, 488 U.S. at 502.

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Apparently recognizing that her opinion might be misconstrued to 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.[37]

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.[38] 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.[39]

37. *Id*. at 509 (citations omitted).
38. *Id*. at 502.
39. *See, for example, Northern Contracting III*, 473 F.3d at 723.

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

> [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 the 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*.[40]

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 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 C.F.R. Part 26 "provides for a flexible system of contracting goals that contrasts sharply with the rigid quotas invalidated in *Croson*."

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".

40. *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").

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C. Strict Scrutiny as Applied to the Washington State Airports' DBE Programs

1. Elements of the DBE Program

In *Adarand v. Peña*,[41] the Supreme Court again overruled long settled law and extended the analysis of strict scrutiny under the Equal Protection Clause of the Fourteenth Amendment to federal enactments. To comply with *Adarand*, Congress reviewed and revised the DBE program statute[42] and implementing regulations[43] for federal-aid contracts in the transportation industry. The program governs the receipt of federal funds by Washington State Airports ("Airports") from the Federal Aviation Administration ("FAA").

To date, every court that has considered the issue has found the regulations to be constitutional on their face, including the Ninth Circuit Court of Appeals.[44] These cases provide important guidance to the Airports, which comprise this study, about how to narrowly tailor their DBE programs.

All courts have held that Congress had strong evidence of widespread racial discrimination in the construction industry. The Ninth Circuit held that "[i]n 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." Relevant evidence before Congress included:

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

41. *Adarand III*, 515 U.S. 200 (1995).
42. *See* the Transportation Equity Act for the 21st Century ("TEA-21"), Pub. L. No. 105-178 (b)(1), June 22, 1998, 112 Stat. 107, 113.
43. 49 C.F.R. Part 26.
44. *See, for example, Midwest Fence II*, 840 F.3d at 932; *Northern Contracting III*, 473 F.3d at 715; *Associated General Contractors of America, San Diego Chapter, Inc., v. California Department of Transportation*, 713 F. 3d 1187, 1198 (9th Cir. 2013); *Western States*, 407 F.3d at 983, 994; *Adarand VII*, 228 F.3d at 1147; *M.K. Weeden Construction v. State of Montana*, 2013 WL 4774517 (D. Mont.) (September 4, 2013).

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- Various types of overt and institutional discrimination by prime contractors, trade unions, business networks, suppliers, and sureties against minority contractors.[45]

Next, the regulations were facially narrowly tailored. Unlike the prior program, the new Part 26 provides that:

- The overall goal must be based upon demonst[46]rable 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.
- 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.
- Exemptions or waivers from program requirements are available.
- 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."[47]

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 that assist all small firms to achieve minority and women participation. Washington State Airports must also estimate the portion of the goal they predict will be met through race-neutral and race-conscious measures (contract goals).[48] This requirement has been central to the holdings that the DBE regulations meet narrow tailoring.[49] Further, a recipient may ter-

45. The DBE program regulation in effect prior to March of 1999 was set forth in 49 C.F.R. Part 23.
46. *Western States*, 407 F.3d at 992-93.
47. *Sherbrooke*, 345 F.3d. at 973.
48. 49 C.F.R. § 26.45(f)(3).

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minate race-conscious contract goals if it meets its annual overall goal through race-neutral means for two consecutive years. Finally, the authorizing legislation is subject to Congressional reauthorization that will ensure periodic public debate.

In 2015, Congress reauthorized the DBE program and again concluded that the evidence before it "provided a strong basis" to continue the program.[50]

2. Narrowly Tailoring Washington State Airports' DBE Program

Washington State Airports that receive FAA grants for airport planning or development and award prime contracts for projects that equal or exceed an accumulative amount of $250,000.00 in a fiscal year must have a DBE program and must meet related requirements as an expressed condition of receiving these funds. Therefore, Washington State Airports must establish DBE program plans in conformance with 49 C.F.R. Part 26.

The Airports must use a two-step goal-setting process to establish their overall triennial DBE goals for FAA funded contracts. The Airports' overall triennial goals 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.[51]

Under Step 1, the Airports must determine the base figure for the relative availability of DBEs, and one approved method is to use data from a disparity study.[52] Under Step 2, the Airports must examine all evidence available in their jurisdiction to determine whether to adjust the base figure. The Airports must consider the current capacity of DBEs as measured by the volume of work DBEs have performed in recent years.

In addition to the overall goal, the Airports must set narrowly tailored goals on specific FAA funded contracts where warranted. The Airports are required to set contract goals based upon the availability of DBEs to perform anticipated work scopes—including the work estimated to be performed by the prime contractor—of the individual contract.[53] This is a distinct inquiry from the Ninth Circuit's additional requirement that the recipient have evidence of the need to use narrowly tailored race-conscious contract goals to meet the overall, annual goal.

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49. *See, e.g., Sherbrooke*, 345 F.3d. at 973.
50. Fixing America's Surface Transportation Act (Fast Act), Pub. L. No. 114-94, Section 1101 (b), 129 Stat. 1323-1325 (23 U.S.C. 101 *et. seq.*) (2015).
51. 49 C.F.R. § 26.45(b).
52. 49 C.F.R. § 26.45(c)(3).
53. 49 C.F.R. § 26.51 (e)(2).

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The Ninth Circuit has gone beyond the DBE regulatory and legal framework and added the requirement that a recipient must provide additional evidence beyond the record upon which Congress relied in enacting the DBE program in order to narrowly tailor the recipient's DBE program. In *Western States*, the court was persuaded by the USDOT's argument that race-conscious goals can only be applied by recipients in those localities where the effects of discrimination are present. "As the United States correctly observed in its brief and during oral argument, it cannot be said that TEA-21 is a narrowly tailored remedial measure unless its application is limited to those States in which the effects of discrimination are actually present." In addition, each group sought to be included in race-conscious relief must have suffered discrimination in the agency's market area.

The State put on no evidence at the summary judgment stage to address the question of whether "the effects of discrimination [are] present in the Department's markets." The court was proffered no statistical or anecdotal data similar to that presented to the court in the Sherbrooke case. "The record is therefore devoid of any evidence suggesting that minorities currently suffer--or have ever suffered--discrimination in the Washington transportation contracting industry. We must therefore conclude that Washington's application of TEA-21 conflicts with the guarantees of equal protection because the State's DBE program is not narrowly tailored to further Congress's remedial objective."

In response to this interpretation of Part 26, the General Counsel of the USDOT issued Guidance in the form of "Questions and Answers Concerning Response to Western States Paving Co. v. Washington State Department of Transportation. Recipients in the Ninth Circuit that lacked a study should conduct a "study or other appropriate evidence-gathering process to determine the existence of discrimination or its effects in the recipient's market." The Guidance specifically points to the studies in the *Sherbrooke* and *Northern Contracting* cases. Such research should include:

- Evidence for each racial and ethnic group and white women.
- An assessment of any anecdotal and complaint evidence of discrimination.
- Evidence of barriers in obtaining bonding and financing and disparities in business formation and earnings.
- Disparity analyses between DBE utilization by the agency and the availability of DBEs to perform in its markets.
- Comparison of DBE utilization on contracts with goals to utilization on contracts without goals.

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As discussed in the USDOT Guidance, a disparity study is the preferred method in the Ninth Circuit to determine the availability of DBEs to perform in the recipient's market. 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. A commonly accepted definition, applied in this Report of geographic market area for disparity studies, and the methodology recommended in the Transportation Research Board's Disparity Study Guidelines[54] is the locations that account for at least 75 percent of the agency's contract and subcontract dollar payments. 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. Second, the study must calculate the availability of DBEs in the Airports' market areas.

In the Ninth Circuit, recipients must take the further step of ensuring that only those groups that have suffered discrimination in its marketplace are eligible for race-conscious relief. In practice, that means that a firm owned by a member of an otherwise presumptively socially disadvantaged group may not be credited toward meeting contract goals. Further, the availability of any group found not to have experienced discrimination and that now enjoys a level playing field for the Airports' prime contracts and subcontracts cannot be part of the analysis for the purpose of setting contract goals.

Guidance on the application of this test has been provided by courts in the Ninth Circuit in the wake of *Western States*. In *Associated General Contractors of America, San Diego Chapter, Inc. v. California Department of Transportation*, the Ninth Circuit affirmed the district court's judgment that Caltrans program was sufficiently narrowly tailored. Caltrans properly relied upon a disparity study to determine whether there was evidence of discrimination in California's contracting industry. For federal-aid contracts, the study provided estimates of DBE availability; examined DBE utilization over a four-year period; and calculated disparity ratios. It further compared similar data on state-funded contracts, which did not include DBE contracts goals. The study also gathered extensive anecdotal information through public meetings and comments, and stakeholder and business owner interviews.

Caltrans decided that the record failed to establish discrimination against Hispanic-owned firms. It therefore submitted a request to the USDOT for a waiver of the DBE program's regulatory requirement that all presumptively

54. National Academies of Sciences, Engineering, and Medicine 2010, *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*. Washington, DC: The National Academies Press. https://doi.org/10.17226/14346. ("*National Disparity Study Guidelines*")

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socially disadvantaged groups be included for goal credit. The request was granted.

The court held that the evidence presented in the study meets the criteria in *Western States*. "In contrast [to *Western States*], Caltrans' affirmative action program is supported by substantial statistical and anecdotal evidence of discrimination in the California transportation contracting industry. … Caltrans can meet the evidentiary standard required by Western States if, looking at the evidence in its entirety, the data show substantial disparities in utilization of minority firms suggesting that public dollars are being poured into "a system of racial exclusion practiced by elements of the local construction industry."

Most recently, the district court in *Mountain West Holding Co., Inc. v. Montana*, rejected the plaintiff's argument that the Montana Department of Transportation's DBE goal-setting program unlawfully required prime contractors to give preference to minority and female subcontractors competing to work for primes contracting with the State. Following the Ninth Circuit decision in the Caltrans case, the district court found that Montana established sufficient evidence to demonstrate discrimination in the Department's transportation contracting industry and granted summary judgment in favor of the State. Following Mountain West's appeal, the Ninth Circuit determined that the claims for injunctive and declaratory relief were moot, since Montana does not currently employ gender- or race-conscious goals, and the goals in issue were several years old.

As discussed in Chapter VI of this report, there is no requirement that anecdotal evidence be verified. The Caltrans case specifically rejects such a test. Further,

> AGC also discounts the anecdotal evidence because some accounts ascribe minority underutilization to factors other than overt discrimination, such as difficulties with obtaining bonding and breaking into the "good ole boy" network of contractors. However, federal courts and regulations have identified precisely these factors as barriers that disadvantage minority firms because of the lingering effects of discrimination. [citations omitted] Morever [sic], AGC ignores the many incidents of racial and gender discrimination presented in the anecdotal evidence. Caltrans does not claim, and the anecdotal evidence does not need to prove, that every minority-owned business is discriminated against. It is enough that the anecdotal evidence supports Caltrans' statistical data showing a pervasive pattern of discrimination.

Even where an agency has established its right to employ race-conscious contract goals on appropriate solicitations, the recipient must use race-neutral

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measures to the maximum feasible extent. There is no requirement that an agency must try all possible race-neutral approaches and prove they failed before it can implement contact goals.

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 the Airports without resorting to the use of race or gender in their 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. Further, governments have a duty to ferret out and punish discrimination against minorities and women by their contractors, staff, lenders, bonding companies or others. It was precisely these types of race-neutral remedies applied by Caltrans that the Ninth Circuit pointed to in holding its program to meet strict scrutiny.

Programs based upon studies similar to the "custom census" methodology employed for this Report have been deemed a rich and relevant source of data and have been upheld repeatedly. This includes 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. The Illinois Department of Transportation's (IDOT's) DBE program was upheld based on this approach combined with other economy-wide and anecdotal evidence. The USDOT's institutional guidance for Part 26 refers approvingly to this case. 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

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> 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.[55]

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.[56]

More recently, the Seventh Circuit affirmed the district court and upheld the Illinois Tollway's DBE program for non-federal-aid contracts based upon a Colette Holt & Associates disparity study utilizing this methodology. Plaintiff's main objection to the defendant's evidence was that it failed to account for "capacity" when measuring DBE availability and underutilization. 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 between DBE utilization and availability showing that the government's data is flawed, demonstrating that the observed disparities are statistically insignificant or presenting contrasting statistical data. [citation omitted]. Plaintiff "fail[ed] to provide any independent statistical analysis or make this showing here."[57] Midwest offered only mere conjecture about how the defendants' studies' supposed failure to account for capacity may or may not have impacted other evidence demonstrating actual bias.

Recently, another district court found the DBE program and its implementing regulations to be constitutional.[58] This criminal case originated from alleged fraud in the

55. *Northern Contracting II*, at *82 (internal citations omitted); *see Croson*, 488 U.S. at 492.
56. *Sherbrooke*, 3345 F.3d at 973.
57. *See Midwest Fence II*, 840 F.3d at 932.
58. *United States v. Taylor*, 232 F. Supp. 3d 741 (W.D. Penn. 2017).

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program. The court rejected defendant's challenge to the USDOT's authority to promulgate the federal regulations and determined that the regulatory legislative history and executive rulemaking were made under the broad grant of rights authorized by Congressional statutes.

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III. Disadvantaged Business Enterprise Program for Federal Aviation Administration Assisted Contracts

A. Overview of the U.S. Department of Transportation's DBE Program for Federal Aviation Administration Assisted Contracts

The United States Department of Transportation's ("USDOT") Disadvantaged Business Enterprise ("DBE") program is implemented by recipients of USDOT federal financial assistance. These recipients are subject to the DBE regulations set forth in Title 49 Code of Federal Regulations Part 26 ("Part 26")[59] and include airports receiving federal grants through the Federal Aviation Administration ("FAA"). Under § 26.21(a)(3), all FAA recipients that receive grants for airport planning or development and which award prime contracts with the cumulative total value exceeding $250,000.00 in a federal fiscal year must submit a DBE Program Plan ("Plan") to the FAA for approval.[60]

The Airports located in Washington State that receive FAA assistance are potentially required to implement programs supporting and engaging disadvantaged, small, minority- and women-owned businesses. Recipients must follow the requirements of Part 26 and USDOT guidelines to promote competitive and fair contracting opportunities.

This Chapter provides an overview of the required elements of the Program that conforms to Subparts A through F of Part 26. The FAA posts a sample draft DBE

59. Primarily, three operating administrations are involved in the DOT DBE program: The Federal Aviation Administration, the Federal Highway Administration, and the Federal Transit Administration. A similar program for airport concession DBEs ("ACDBEs") is mandated by the federal regulation set forth in Title 49 Code of Federal Regulations Part 23. The Airport's concession contracts are not part of this Study.

60. Under the Airport Improvement Act Program, established under the Airport and Airway Improvement Act of 1982 (Pub. L. 97-248-96 Stat.671, the FAA awards over $3 billion in federal assistance to airport sponsors annually.

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Program Plan template on its website that recipients can use as a guide. However, the template is for informational purposes and recipients are free to devise their own format to fit their circumstances.

All processes and prescribed procedures must be set forth in full in attachments to the Plan. The Plan may be amended from time to time to comport with significant changes to Part 26. While the FAA recipient is not compelled to submit updates to its program, any significant changes must be submitted and approved by the FAA.

1. Policy Statement and Objectives

An Airport must have a DBE Program Policy Statement. Section 26.23 requires that the Plan include a signed and dated statement evincing the recipient's commitment to its DBE program, stating the program objectives,[61] and outlining responsibilities for implementation. The Policy Statement must be disseminated throughout the organization, as well as to DBE and non-DBE communities that may perform work on FAA assisted contracts.

The Policy must designate the name and/or agency title of the person designated as the DBE Liaison Officer ("DBELO"). The DBELO is directly responsible for implementing all aspects of the recipient's DBE program. Section 26.25 requires that the DBELO report directly to the recipient's Chief Executive Officer and ensure that adequate staff are available to administer the program.

2. Subpart A - General Requirements

The Plan must next delineate general Part 26 requirements. These include the Part 26 objectives, definitions, non-discrimination requirements, record-keeping requirements (including record retention and reporting)[62], bidders list, and required verbatim contract assurances.[63] The Plan must contain a statement indicating that the recipient is the recipient of federal airport funds authorized by 49 U.S.C. 47101, *et. seq.*

61. Section 26.1 provides that the program's objectives are: (a) to ensure nondiscrimination in the award and administration of DOT-assisted contracts in the Department's highway, transit, and airport financial assistance programs; (b) to create a level playing field on which DBEs can compete fairly for DOT-assisted contracts; (c) to ensure that the Department's DBE program is narrowly-tailored in accordance with applicable law; (d) to ensure that only firms that fully meet this part's eligibility standards are permitted to participate as DBEs; (e) to help remove barriers to the participation of DBEs in DOT-assisted contracts; (f) to promote the use of DBEs in all types of federally-assisted contracts and procurement activities conducted by recipients; (g) to assist the development of firms that can compete successfully in the marketplace outside the DBE program; and (h) to provide appropriate flexibility to recipients of Federal financial assistance in establishing and providing opportunities for DBEs.
62. Records must be retained for a minimum of three years unless otherwise provided by applicable record retention requirements for the recipient's financial assistance agreement, whichever is longer.
63. The verbatim language set forth in § 26.13 must be used in these DOT-assisted contracts. This includes a list of remedies that may be used by the recipient along with other remedies the recipient deems appropriate.

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3. Subpart B - Administrative Requirements

The Plan must subsequently set forth administrative requirements contained in §§ 26.21 through 26.39. In addition to content relating to DBE program updates and policy, the Plan must discuss the recipient's efforts to address overconcentration;[64] business development efforts to assist DBEs in gaining the ability to compete successfully in the marketplace outside the program; an organizational chart depicting the position of the DBELO in the organization; and the list of duties actually performed by the DBELO.[65] The Plan must also reference the intended use of the statewide DBE Directory (listing all certified DBEs) and specify whether the recipient is a certifying or non-certifying member of the State's Unified Certification Program ("UCP"). Under § 26.81, each state is required to have a UCP to provide for "one stop shopping" by applicants for DBE certification. DBE applicants go through one application process and, once certified, can work for any recipient of USDOT funds in the State.

Under § 26.27, the recipient is required to set forth efforts made to identify DBE financial institutions and the frequency of these efforts. Recipients must investigate services offered by banks and other financial institutions owned and controlled by socially and economically disadvantaged individuals in the community; make reasonable efforts to use these institutions; and encourage prime contractors to do so.

In accordance with § 26.29, the Plan must provide the content of a contract clause requiring prompt and full payment including retainage[66] to subcontractors at all tiers for satisfactory performance of their contracts no later than 30 days from the date of the prime contractor's receipt of each payment from the recipient.[67] Recipients must revise the 30 day requirement to reflect state

64. If a recipient identifies an "overconcentration" of DBEs in certain types of work (*e.g.*, flagging, guardrail, landscaping), it must specify the area of overconcentration in writing to the FAA and indicate how it plans to address the overconcentration in the specific industry. FAA approval is required of both the determination and the proposed plan. Contractors argue that such concentration creates an undue burden for non-DBEs in obtaining work in the area.

65. FAA recipients are cautioned to avoid creating the appearance of diminishing or reducing the authority of the DBELO in the Plan. For example, the template suggests averting the use of phrases such as "assists with" or "together with."

66. If retainage (holding back a portion of the agreed upon contract price deliberately) is used by the recipient, it must use one of the following methods under § 26.29(b): ("1) You may decline to hold retainage from prime contractors and prohibit prime contractors from holding retainage from subcontractors; (2) You may decline to hold retainage from prime contractors and require a contract clause obligating prime contractors to make prompt and full payment of any retainage kept by prime contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed; (3) You may hold retainage from prime contractors and provide for prompt and regular incremental acceptances of portions of the prime contract, pay retainage to prime contractors based on these acceptances, and require a contract clause obligating the prime contractor to pay all retainage owed to the subcontractor for satisfactory completion of the accepted work within 30 days after your payment to the prime contractor."

67. In many instances, prime contractors hold back these funds until they receive final payment, even though the subcontractor's work was satisfactorily complete months or years earlier. The prompt payment requirement is intended to preclude this practice.

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and local prompt payment/return of retainage requirements if they are less than the 30 day maximum.

In addition to race-neutral prompt payment requirements, the Plan must address the critical concern of monitoring responsibilities. Section 26.37 requires appropriate mechanisms to ensure monitoring and compliance with Part 26 requirements by all program recipients. The recipient must actively monitor DBE participation by maintaining a running tally of actual DBE attainments or payments actually made to DBE firms, including a means of comparing attainments to commitments. The recipient must also undertake ongoing monitoring of contracts and work sites and detail the methods utilized.[68]

Section 26.39 requires the recipient's Plan to provide the parameters of an entirely race-neutral Small Business Element ("Element") to facilitate competition by small business concerns, not just DBEs.[69] This includes the identification of alternative acquisition strategies structuring procurements to facilitate the ability of consortia or joint ventures consisting of small businesses to compete for and perform prime contracts. Proactive assistance, outreach and training are required. Section 26.51 provides examples of race-neutral means and measures and includes providing assistance in overcoming limitations such as the inability to obtain bonding or financing; providing technical assistance or support; carrying out information on contracting and procurement procedures; and assisting DBEs and other small businesses to develop their capability to utilize emerging technology and conduct business through electronic media.[70] The inclusion of this Element in the recipient's Plan is not intended as a substitute for the DBE program; it constitutes a race- and gender-neutral tool that offers additional contracting opportunities to small businesses, including DBEs.[71]

4. Subpart C - Goals, Good Faith Efforts, and Counting

The Plan must also address the triennial goal-setting, contract compliance, counting, and good faith efforts requirements essential to ensuring the integ-

68. Some examples include posting prime contractor payments to a website or database or the use of a diversity management system requiring real-time entry of payments to, and receipts by, primes and subcontractors and regularly monitoring that system.
69. Section 26.5 defines a small business concern pursuant to section 3 of the Small Business Act and the Small Business Administration's implementing regulations. *See* 13 C.F.R. Part 121 *et. seq.*
70. In practice, these may include meet and greet events, seminars, targeted communications with the small business community, assistance with doing business with the airport, opportunities to meet recipient personnel, assistance with bonding or financing, ensuring dissemination of the statewide DBE directory to the widest feasible universe of potential prime contractors, and services to assist with immediate and long-term business management.
71. Under Part 26 and strict scrutiny as applied to the DBE program by the United States Supreme Court, recipients are required to meet the maximum feasible portion of their overall goal using race- and gender-neutral tools that offer additional contracting opportunities to DBEs and other small businesses.

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rity of the recipient's DBE program. Section 26.51(d) and the remedial objective of the DBE program require a recipient to establish legally defensible DBE contract goals to meet any portion of its overall goal that it is unable to meet through its small business element or other race-neutral measures.[72] Recipients are required to develop these goals based upon a two-step methodology outlined in § 26.45 and to submit them to the FAA in accordance with a published staggered FAA schedule. Under Step One[73] of the goal-setting process, the recipient must determine the percentage of DBEs or firms that could be certified as DBEs that are ready, willing, and able to compete for FAA assisted contracts as a percentage of all firms. Under Step Two, recipients must determine whether an upward or downward adjustment should be made to the Step One base figure after considering all relevant evidence, to reflect the availability of DBEs that would be expected in the absence of discrimination, sometimes called a "but for" discrimination adjustment.[74] Section 26.51 requires recipients to include a breakout of the estimated race-neutral and race-conscious or contract goal participation and delineate the race-neutral means it will use to achieve the goal.

The Plan must also detail public consultation, notice, availability for inspection, and public comments received during a public participation process for triennial goal-setting. In a subsequent provision of the Plan, the recipient memorializes the § 26.47 requirement that it will not be penalized if it falls short of an overall goal unless it fails to administer the Plan in good faith.

Since the State of Washington is in the Ninth Federal Judicial Circuit, the Airports' goal-setting process must adhere to official DOT guidance that pertains only to recipients in the Ninth Circuit. As discussed in Chapter II, *Western States Paving Co. v. Washington State DOT*[75] requires recipients in the Ninth Circuit to conduct disparity studies to determine the presence of discrimination or its effects and to develop the information necessary to implement the DBE program.

One of the hallmarks of the DBE program that ensures its constitutionally required flexibility is the requirement that bidders who make good faith efforts ("GFEs") to meet a contract goal but fail to do so can be awarded the contract. Section 26.53 requires that contracts must be awarded to a bidder/offeror

72. If the recipient does not anticipate awarding prime contracts the cumulative value of which exceeds $250,000.00 in DOT-assisted funds during any of the years within the three-year reporting period, an overall goal is not required. However, the Plan will remain in effect, and the recipient will be expected to meet the DBE program objectives.
73. Under Step One, the recipient is permitted to use disparity studies as a method to determine the base figure percentage.
74. Recipients are required to consider an adjustment; however, if the evidence does not suggest that an adjustment is necessary, none should be made.
75. 407 F.3d 983 (9th Cir. 2005), *cert. denied*, 541 U.S. 1170 (2006).

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who documents that it has obtained adequate GFEs to meet the DBE contract goal or documents adequate GFEs to do so. GFEs are inherently fact-specific. Examples of GFEs are provided in this Section, as well as in non-exclusive guidance set forth in Exhibit A of Part 26. They include:

- Soliciting through all reasonable and available means the interest of all certified DBEs who have the capability to perform the work of the contract.
- Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved (breaking out contract items into economically feasible units).
- Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- Negotiating in good faith with interested DBEs.
- Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities.
- Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.
- Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

Recipients must indicate whether the requirement will be considered as a matter of contract responsiveness– documentation is due with the initial submissions– or as a matter of responsibility– documentation is due no later than five days after bid opening. This provision of the Plan must also detail an administrative reconsideration process before an individual or official who did not take part in the initial determination.[76] GFEs determinations apply throughout the life of the contract, and the Plan must include language to this effect, as well as the requirements that the prime contractor make GFEs to replace a DBE that is terminated or has otherwise failed to complete its work on a contract with another DBE.

76. As part of this administration, the Plan must state that the bidder or offeror will have the opportunity to provide written documentation or argument concerning the issue whether it met the goal or made adequate efforts to do so.

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Section 26.55 governs the rules for counting participation toward overall and contract goals. To receive credit, the DBE must be performing a "commercially useful function" ("CUF").[77] A DBE performs a CUF when it is responsible for execution of the contract work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. Only the value of actual work performed by the DBE may be counted towards the contractor's DBE goal. DBEs generally perform work either as a contractor, a trucker, a regular dealer[78], or a manufacturer, and the rules and amount of DBE participation credited vary for each type of participation.

The Plan is subject to a special provision for FAA recipients per Section 150 of the FAA Reauthorization Act of 2018. This provision states:

> Section 47113(a)(1) of title 49, United States Code, is amended to read as follows: ``(1) `small business concern'- (A) has the meaning given the term in section 3 of the Small Business Act (15 U.S.C. 632); but (B) in the case of a concern in the construction industry, a concern shall be considered a small business concern if the concern meets the size standard for the North American Industry Classification System Code 237310, as adjusted by the Small Business Administration;''.

5. Subpart D - Certification Standards

Certification is conducted by the State's approved Unified Certification Program ("UCP"), which provides "one stop shopping" services to program applicants and recipients. A prospective DBE applicant need apply only once for certification by a certifying member of the State's UCP.

Part 26 imposes a rigorous certification process. This includes review of a uniform certification application, by-laws, financial and equipment agreements, leases, trust agreements, a sworn statement of disadvantage, a personal net worth statement verifying that the owner's personal net worth does not exceed the Part 26 threshold of $1.32 million, an on-site review and other relevant documentation. A DBE must be independent of other non-DBEs to be eligible for certification. The applicant must also be a small business concern under the SBA size standards at 13 C.F.R. Part 121.[79] The applicant firm must

77. Although the sample template does not contain details, the Plan is required to memorialize adherence to Part 26 counting rules.
78. Under Part 26, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general nature described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.
79. A firm is not an eligible DBE in any Federal fiscal year if the firm (including its affiliates) has had average annual gross receipts, as defined by SBA regulations (13 C.F.R. 121.402), over the firm's previous three fiscal years, in excess of $23.98 million.

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be for-profit and must be at 51 percent owned and controlled by one or more socially and economically disadvantaged individuals who are United States citizens or lawfully admitted permanent residents. Certification is granted only for the types of work in which the socially and economically disadvantaged owner or owners can perform with their own forces.

Certification is recognized and honored by every DOT recipient in the State. The parameters of the State's UCP are set forth in a DOT-approved operating agreement. All airport entities that receive funds from the FAA must participate in the UCP.[80]

The UCP requirements must comply with the process set forth in § 26.81. The Airport must indicate in its Plan whether it is a certifying or non-certifying member of the UCP and affirm its intention to abide by all certification and non-discrimination provisions of Part 26.

6. Subpart E - Certification Procedures

Once a firm has been certified as a DBE by the UCP, it remains certified unless and until the certification has been removed in whole or in part through Part 26 procedures. The Washington State Office of Minority and Women Business Enterprises ("OMWBE") certifies DBEs in Washington State. All the Airports use the OMWBE DBE Directory to identify certified firms to participate in the DBE process.

7. Subpart F - Compliance and Enforcement

If an airport fails to comply with the requirements of Part 26, it may be subject to formal enforcement action under Section 26.103 or Section 26.105 of Part 26. These include appropriate program sanctions that may be enforced by the FAA, such as the suspension or termination of federal funds or the refusal to approve projects, grants or contracts until such deficiencies are corrected.

In the second component, the Plan must address information, confidentiality, cooperation and intimidation or retaliation as provided for in § 26.109. The Plan must summarize applicable state and local law, such as right to know or informational laws and how they apply. The recipient must also confirm that it will cooperate fully and promptly with the DOT relative to recipient compliance reviews, certification reviews, investigations made by the DOT's Office of Inspector General, and other requests for information. Additionally, the recipient must confirm that it will not intimidate, threaten, coerce, or discriminate

80. Part 26 does not require that FAA recipients certify applicants; the format for the UCP is not prescribed in Part 26, and states have used a number of different mechanisms to effectuate UCP certification.

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against any individual or firm for the purpose of interfering with any right or privilege secured by Part 26.

B. Washington State Airports' Disadvantaged Business Enterprise Programs

1. Overview

As discussed above, all the Airports that participated in this Disparity Study have received sufficient FAA assistance so as to require that they administer a DBE program in accordance with Part 26. The sixty-four Airports included in the study fall into seven airport categories, based on type of activities defined by the FAA: Large, Medium and Small Hubs, NonHub Primary, Nonprimary Commercial Service, Reliever, and General Aviation.[81] One airport included in the Study is owned and managed by the Washington Department of Transportation ("WSDOT"). The other sixty-three airports are municipally or privately owned.

CHA reviewed the DBE Program Plans of the Airports included in the Study. All the DBE program plans follow the sample template, without much variation. The Washington State-owned airport complies with WSDOT's DBE Program Participation Plan.

As discussed above and in Chapter II, the Airports set triennial DBE goals using the Part 26 two-step goal-setting process. With the exception of the Port of Seattle, all of the Airports use the Washington State Office of Minority and Women's Directory, Census Bureau Data and airport compiled bidders lists to set their triennial goals. The Port uses an earlier Disparity Study's data to determine the base figure. For the step 2 base adjustment, all the Airports primarily rely on past DBE participation.

81. These are defined as follows: Large, Medium, Small and NonHub airports each account for more than 10,000 passenger boardings each year. Further sizing is defined by the percentage of total passenger boardings within the U.S. in the most current fiscal year. Large airports represent one percent or more of total U.S. passenger boardings; Medium airports represent at least 0.25 percent; Small airports represent at least 0.05 percent; NonHub airports represents less than 0.05 percent. Nonprimary Commercial Service airports have a minimum of 2,500 and a maximum of 10,000 passenger boardings each year. Reliever airports relieve congestion at Commercial Service Airports. General Aviation Airports do not have scheduled service or have less than 2,500 passenger boardings per year.

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Overall goals and the years covered by the goal for all Washington State airports can be found in Appendix F. The goals for the Large and Medium Hub Airports are presented below.

Airport	FFYs	Goal
Port of Seattle	FFYs 2017-2019	9.96% overall goal; 100% is to be accomplished through race-conscious goals and 0% through race-neutral measures.
Spokane Airport Board	FFYs 2018-2020	2.5% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
Port of Pasco	FFYs 2019-2021	2.97% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
Port of Bellingham	FFYs 2018-2020	6.7% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.

In conformance with Part 26, prompt payment and release of retainage obligations are set forth in FAA assisted contracts. Other than the Port of Seattle, prime contractors must pay subcontractors within thirty days from receipt of each payment made to the prime contractor. Under the Port of Seattle's program, prime contractors must pay subcontractors within ten days from receipt of their progress payment.

With the exception of the Port, all airports follow the same Good Faith Efforts Procedures where a request for administrative reconsideration must be made within two to five business days. The Port's time frame for reconsideration is two days after bid opening, as a matter of responsibility. The Port also uses a two-step administrative protest appeal procedure, which includes both a written and in-person process. These protest procedures are slightly modified from those outlined in the sample DBE program but are consistent with the purpose and requirements of the program. Under the Port's program, a non-responsive bidder/offeror may request administrative reconsideration by writing to the Director of Central Procurement Office and Contract Administrator.[82] Within five business days, the bidder/offeror will be afforded an in-person appeal hearing before a two-person panel consisting of a representative of the Port's legal department and the Port's Director of Central Procurement Officer or designee, to present relevant testimony and evidence.

82. In conformance with Part 26, the reconsideration official will not have played any role in the original determination that the bidder/offeror did not document adequate GFEs.

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Only the Port of Seattle actively employs a variety of outreach, training opportunities, and financial/technical assistance for DBEs. It provides industry-specific outreach that includes referrals to capacity-building and training opportunities; pre-bid technical assistance and information sessions; and active participation in small business regional committees. The Port also offers workshops and event sessions that are marketed through community organizations with which it partners.

2. Airport Staff Interviews

As part of our review, we interviewed officials from a wide range of Airports. Many reported that it is difficult to meet DBE goals. There were several reasons for these challenges.

> There are few DBEs outside the Puget Sound area, so overall availability is low. This was especially true for airports located in rural areas and Eastern Washington.
>
> Some Airports reported that the few DBEs in their area are not interested in their work. To obtain participation from firms located farther away, the project must be large enough to make the work profitable. This can increase costs to the Airport, because travel time is paid with local, not federal, dollars.
>
> Many Airport projects are complicated, and few DBEs can perform to FAA standards. Small and inexperienced firms are understandably reluctant to take on that much risk without some support. Moreover, the paperwork and regulatory requirements burden small firms, which may find it easier to obtain work elsewhere.

To address these issues, some airports conduct outreach to DBEs. The Port of Seattle holds vendor fairs, meet and greet sessions, and workshops, and staff make regular presentations to trade associations and DBE groups. The Medium Hub airports have conducted some outreach and met with interested vendors.

Many interviewees stated that there needs to be more focus on regional events. The smaller airports in particular need help in reaching out to DBEs. Partnering with other organizations is another way to educate contractors, DBEs and airports about the program. For example, the Washington Procurement Technical Assistance Centers conduct Meet the Buyers Events in which the airports could participate. WSDOT, FAA and the Airports could Partner with the Centers, especially outside the Seattle area, to host an Aviation Day.

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Many people stressed that their agency supports the program and would like to increase participation. However, they need more assistance from the FAA and WSDOT. Several recommendations emerged.

- DBEs need more access to information. Currently, firms have to search each Airport's website or look for newspaper advertisements. A central WSDOT bid posting system to include Airport jobs and alerts to DBEs of upcoming projects would be helpful. Several Airport personnel suggested they would like access to the B2Gnow system that WSDOT uses for DBE program compliance. It would also be helpful if FAA would create a Frequently Asked Questions sheet for Airports to put on their websites about doing FAA work for airports.
- Airport projects could be included in events for other construction projects, such as highway projects.
- WSDOT and the FAA could host outreach events for smaller airports and by region. These could be in person and/or in a webinar format, so that more remote locations would not have to travel.
- In view of the specialized nature of many Airport projects, the FAA requirements should be part of the training provided through WSDOT's supportive services initiatives.

3. Airport Staff Survey

In addition to reviewing the submitted program plans and goal methodologies, CHA also conducted an electronic survey of the medium and small Hub, and NonHub primary airport staff about administration of their DBE programs. We conducted a separate interview with the Port of Seattle's staff. Fifty-two airports participated.[83] The results of these staff surveys indicate that the Airports are following their plans, but most use outside consultants to administer their programs and are meeting the plan requirements.

The survey findings are summarized below.[84]

- Over 80 percent of the Airports use an outside consultant to set their triennial DBE goal. Only 5 airports reported using Airport personnel to set their goals.

83. Of the 54 airports with Federal grants, a few did not participate in the staff survey. The Port of Seattle was also not part of the survey because their staff participated in a dedicated, in-person interview. The additional two survey responses are from airports which did not receive federal grants for the study period but have DBE program plans in place.
84. The number of responses per question does not always sum to 52. Some questions were not applicable or were open-ended and not included in the count.

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- Most of the Airports do not set DBE contract goals. Only a third (17) reported setting contract goals. The Airports that did set goals relied upon their consultants or used the DBE Directory and Census Bureau Data.
- The primary method of notifying DBEs of contract opportunities was through the Airport's Website (17), followed by other agencies' bidding sites (12), and newspaper advertisements (12). Additional methods used include email blasts (8), individual, in-person telephone calls or emails (6), community and DBE professional organizations (6) and airport-sponsored outreach events. Twenty-two of the Airports used one or more of these methods in combination and 15 of the Airports reported not doing any outreach at all.
- A majority reported having a monitoring system in place for prime contractor substitutions of DBEs on specific contracts (30); progress of prime contractors towards meeting the contract goal (31); and determinations of whether DBEs are performing a commercially useful function (29).
- Over 60 percent (32) said they have not observed any barriers to DBE participation. Those reporting barriers (20) cited the following: almost 15 percent cited a lack of bonding capacity (7), lack of access to capital (5), contract size (9) and contract specifications (7) as factors limiting DBE participation.
- Most Airports (37) used spreadsheets as their reporting mechanism. Only 6 used specialized electronic software.
- Only eleven airports offered any type of supportive services to help DBEs. None offered a Mentor-Protégé program and only (6) offered technical assistance.
- There was a range of methods for collecting and reporting DBE utilization. Many (13) reported using the FAA Civil Rights Connect website or had their consultant complete the reports (9). Others used data provided by their prime contractor reports and intents/affidavits (9).
- Few Airports provided comments on how to improve the program. Almost all of the comments were from small or very small airports suggesting simplification of the program so that it was less time consuming and complex for them to manage. Some even suggested exempting participation of some Airports altogether in the DBE program based on size.

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4. Experiences with Washington State Airports' DBE Programs

To explore the impacts of race- and gender-neutral contracting policies and procedures and the implementation of DBE programs by Washington State Airports, we interviewed 143 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 the group interviews.

a. DBE Certification Policies

The work and time involved in seeking DBE certification was reported to be a disincentive to obtain Airport work, especially since most of the Airports do not set contract goals.

> We have [minority- and women-owned firms] on our projects but it's really hard for them to get credit for the work that they're doing with us [because they are not DBE certified].

> I spend the majority of my time working with our subs to try to get them certified so we can use their numbers.... They do great work.

The lack of DBE goals on many Airports' contracts reduces owners' incentives to become DBE certified.

> They're not very motivated to be a DBE, that there's a certain amount of jumping through hoops and things, the usual government stuff that has to happen before you could get your certification and keep your certifications and it's not worth it because there's no guarantee of any work. It's not like everywhere else in the country, where you have to meet your goal, you have to have all that. So, it's not very motivating for them to actually get certified.... There's no advantage to it, so why bother?

The inability to add NAICS codes when a DBE expands its capabilities was another barrier to being utilized on Airport contracts.

> One of the things we run into is on the DBE, it's hard to get additional NAICS codes, and if you're not certified in a particular NAICS code, you can't be counted as a DBE for that particular project, even though you're working it.... OMWBE [should try] to make it a little bit easier to add NAICS codes, and to get them onto your official profile.

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b. Obtaining Work on Airport Projects

DBEs generally reported that it is difficult to obtain work on Airport projects. Prime contracts are especially hard to secure.

> And I talked to several people [at a Port of Seattle outreach event]. They said the same thing. They said we had to change our [business] model [and serve as subconsultants] in order to do business and they are not small companies, they are mid-size and larger than I am. And I said, I understand but I'm not willing to do that.... Having the opportunity to prime would it be really good for the growth of our firm.
>
> The jobs are simply structured in such a way that they cannot be approached by someone on my level. And I quickly found that out and gave up. So, if they really want to give out jobs and work to women and disadvantaged and minority-owned firms, then they have to figure out a way to cut up the conceptual part, the design work, the project management.
>
> What we want to do is prime jobs. We want to get out of the sub [role].
>
> Often, they see us as too small, we kind of do the work which other folks can, even though we've brought together enough subs and so on to demonstrate that [we can prime the project].
>
> The last [Indefinite Delivery/Indefinite Quantity contract] they had a few years ago, we decided to come in as a sub under a larger prime. And what happened there is we helped them win the work, basically. But then when it came down to it, we didn't see any of the work, because they took it all and we never saw any. So, we decided this time we're going to try to go as a prime. And we partnered with ACEC to help us have a voice.
>
> What we would like to see is more outreaching to technology firms like we have at the table. Engineers, project managers, program managers. Maybe a program to give them more opportunity to actually grow up, be a prime.
>
> Give me a portion so that I can continue building my team, continue building my company, and then at some point, be

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> an actual competitor to those other companies that come in and basically say, "We're so big that there's nothing we can't handle. Why wouldn't you use us?"
>
> Getting meaningful roles on projects versus token roles [is critical], which is a big difference in those, and then using those meaningful roles to move the company forward and eventually get the point where we can actually win a project as a prime, versus purely as subs.

Contract size is another impediment to the participation of DBEs and small firms.

> They don't have smaller projects for the smaller company.
>
> The contracts have bundles which are beyond the scope of smaller firms.
>
> We need work that's geared toward a smaller firm.
>
> What would make it more easy to succeed is if there were smaller pieces of work that could be given out to people that are qualified to do that work.

To address the difficulty of airfield side work, Airports might focus on segmenting projects that do not require such a high skill level.

> [Airports] have some non-movement areas that it's not the main taxiways. It's not the main runway but they've got parking facilities in different taxi lanes around the airport that aren't necessarily governed by FAA and they have a little more latitude on those types of areas. If they had, say, a small area they wanted repaired, maybe they could make it a setaside project for a small DBE firm. And then they could ask them to meet FAA specifications or requirements maybe as an incentive type deal where if they're able to achieve 100 percent compaction on their P209 rock and they're able to meet all the mix compliance requirements for the mixing and placing over the asphalt that they could get a small, incentive pay.
>
> They don't carry the risks, they'll still get paid for the work because it's not an FAA sponsored area of the airport. But that would [require] the county taking that on and saying, "Alright, we're going to help develop some businesses that aren't ready to jump into full on FAA spec work, but we will give him a shot here. Give it a try.

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> Nonmoving area, there's seems like there's a lot more opportunity to have FAA specifications requiring the [quality assurance/quality control] and all those stringent specifications while not being quite as impactful to airport operations.... [It] could be an access road around the Airport. There's a lot of perimeter roads and things like that, you could possibly have a setaside project for that or small business or DBE.

c. Access to Networks and Information

Relationships were reported to be particularly important in accessing Airport contracts because of the highly specialized nature of the work.

> The project managers are by default going to the relationships that they already have in place that are well-established.

Many participants, DBEs, non-DBEs and Airport personnel, stated that it can be difficult to access information about contracts other than those at the Port of Seattle.

> The one thing I'm curious about, is one thing we have not seen, is opportunities with these smaller airports that you're discussing. We are not working at SEATAC, and we worked at Renton and Spokane airports. But the other ones that are part of your study, we never see the RFPs. I don't know where they advertise them. Our searches are Biz Ops, and through the DJC, and those types of search engines. But we very seldom see a small airport advertised.

> How are contracts introduced into the community? How would they look for contracts? What's the process they would go through for the contracts? I'm not sure how lucrative it would be in Spokane, but I know they keep building things at the Airport. Our Airport's really grown.... [DBEs] might want to do it if they knew about how to get in.

> At the airport in Spokane, in the next five years, they're going to do $80 million worth of work, so this could potentially increase your business and your income substantially. So, this is why [DBEs] should look into it. Do you have questions? Contact either your person or your PTAC. But it just seems like it could be kind of a win-win for our program. So, just like a really simple, basic overview of

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> the program. A real clear explanation of why it's going to be.

Many firm representatives, both DBEs and non-DBEs, suggested a more centralized approach to accessing information about Airport work, especially for the smaller Airports.

> There's no required core place [to look for work].

> [The smaller airports are] going to have to band together and have [an information exchange].

> How do you get on those [smaller airports' vendor] lists?

> Having a central place to put that information, having a signup on that central place so that when these things come up, it's pushed to everybody and then each of these Airports [would be] doing like what the other public entities are doing, which is very effective.

> [DBEs] need to know how do I get contacted with the primes or the other subs for King County and other organizations? There needs to be a more robust collaboration in a working organization and Washington DOT could help put that together.

More outreach to DBEs specifically about Airport projects was requested by DBEs, non-DBEs and Airport staff. Efforts need to include prime contractors as well as Airport officials.

> [Other agencies] they have representatives that are going out to the meetings where small business collaborates.... The first DBE representative that I've actually seen in a public setting like this was this person that was sitting right here before she left. So, I think having that person going out to all of these public events where small business is, and just saying, I'm the DBE coordinator, whatever. And we have this website you can go to, that works. Getting out there.

> I've never seen the FAA at any of those providing the kind of briefing that would be helpful, particularly for these smaller airports that are not advertising on the major publications. I strongly suggest they seek attendance at some of these special events.

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> If I'm the [name] Airport and nobody is suggesting to me that I need to be paying attention to this, I'm not going there to look.
>
> When it's somebody's job to say, "Here's all the resources and here's all they need." Why isn't someone doing that matchmaking?
>
> Having that central person makes a lot of sense because that's the person actually has the time. It's their full-time job.
>
> FAA or the airports [should have] regional meetings … that might be a more optimal time where you've got quite a few airports in the same building.

Several people mentioned the outreach activities held by the Port of Seattle as good examples of the type of events other Airports should hold.

> The Port [of Seattle] puts on the last three years several events that were small business interpersonal programs. They did three-hour conferences. They hand out all the projects that we have [over] the next 18 months, get the small businesses, DBEs, diversity groups to understand what's coming down the pipe. That's great from an individual organization and PTAC has been involved in that as well, but you have to extend that out [to other regions].
>
> [The] Port of Seattle, they have that meeting every half a year … in two weeks or in a month or in two months, this project will come out. So, we can start calling the [prime contractors].

Additional opportunities to network between DBEs and prime contractors that do Airport work was reported to be very important.

> It really does help if you can say face to face, not in a confrontation, not of "you need to do something for me, because I'm DBE," but just go through and get relationships. And then get your bid in there, and then if you're low as a DBE, I think it helps.
>
> The relationship thing is very, very important. I do agree. And that's being involved in networking groups, like the AGC is extremely important to establish those relationships. That is definitely something that everybody should endeavor to do.

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Given the long lead time of any FAA funded projects, annual forecasts of Airport projects would help small firms to plan.

> It certainly could be advantageous for small businesses and WSDOT to know that they've got a job in July, in January from a planning perspective.
>
> We didn't have any idea [an Airport project was going to bid], so we didn't have any ability to plan for it and then they said when it came to the bid process, the project was supposed to start in like a couple of weeks. And we're like, obviously that doesn't buy us enough time to put together, you know, our own resources, labor wise, and everything.
>
> [The City of Seattle] puts out the snapshot [of anticipated contracts] and it is their whole year's [anticipated contracting opportunities].... It'd be great if [the airports] could organize a list like that.
>
> It's about leveling the playing field.
>
> [The] Port of Seattle, they have that meeting every half a year … in two weeks or in a month or in two months, this project will come out. So, we can start calling the [prime contractors].
>
> In an ideal world, I like that idea because I think you're right. I think that gives you some security knowing when the work's coming in and hopefully the first priority of work happening first thing on the books, but I think in reality that's difficult to make that happen consistently.

One idea was for WSDOT to develop a list of DBEs that have airport experience or have expressed specific interest in doing Airport projects.

> If DOT aviation had a list of certified DBEs that had airport experience, that would be a good resource.

There was a general recognition that many Airports, especially those that are small or located in rural areas, lack the resources to enhance their DBE efforts.

> It can be pretty time consuming so for them to try to build a database, keep a database and communicate with everybody and make sure that all the contractors, when they're coming to pre-bid meetings, that they have a list of all the WSDOT [DBEs] and just things like that that are really

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> great ideas but hard to implement just because they're time consuming.
>
> When you're that small, if you only have 10 staff, I can't tell somebody it's their full-time job to go do this. That's not going to happen.
>
> A lot of the small communities that we work with [the DBE Liaison Officer] ended up being the public works director or something, a similar position, that's managing [the DBE function]. And quite honestly… that's not their priority. That's going to be a difficult thing to have them maintain [more efforts] and I don't disagree with the idea. I think it's a good idea, but I think execution will be difficult particularly in the small cities.

Some consultants requested more training for Airport staff about the elements and processes of the DBE program.

> Having an information session would be great. I can't tell you how many of the airport managers, when we're working on the DBE plans, they don't have a clue. They completely rely on us to pull everything together and do it all for them because they just don't have the time and they don't have any experience with it.

Another approach would be to include information about the DBE program at conferences for airport officials.

Washington Airport Managers Association. All your airport sponsors are there from a lot of [general aviation] airports and you get some of the bigger airports there as well. You have all your consultants there too.... They have it every year, so, they could do a [DBE and prime contractor] speed dating or something. DOT Aviation's usually there, FAA's usually there.

[The] Washington Airport Management Association does have an annual conference [that would be beneficial for DBEs to attend].... You get to essentially spend the weekend with a bunch of airport [people].... I could go out there and explain who I am and what I do.... We sat in on all of the conference topics and then in the breaks people would come and talk to us. That was $200 well spent.

d. Meeting Contract Goals

Although not always easy, many general contractors reported they have been able to meet DBE goals.

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> We don't have any problem; they all perform really well. We have two that I've worked with that are one-person shops that we just need to help a little bit more, now he comes in and we help him process his billings, those type of things, but really not a big deal. So, really only two that just struggle a little bit with our billing paperwork, which, just the certification can be difficult. But, no, we find very qualified firms, very easy to work with.

Some prime firms found it easier to find DBE consultants to perform design work than construction firms.

> I've not had any difficulty engaging DBE participants in the design side and meeting the goals.... The challenge has been on the construction side more than on the design side.
>
> It's a little bit harder on the construction side. They might do the runway themselves then get quotes from DBEs for maybe the landscaping, hydrosealing, but then they can do that kind of work in-house. So, even though they get the quotes, a lot of times they just do it in-house because it's a goal and not a requirement.

Another consultant disagreed.

> It's not like we're going to bring on a DBE design consultant to take the task that we would already be doing in-house.
>
> Should we break the scope of a job up so that we don't do the entire job just to meet a DBE goal to hand it off to somebody else that has maybe a different design mentality? I don't think that's the best for the client or the overall project.

Contractors outside the Puget Sound area were especially challenged to find DBEs.

> One of the things we struggle with the most is we are east of the mountain, and we're very, very limited to our DBE contractors on this side of the mountain. With that being said, we are currently participating in [WSDOT's] Mentor-Protégé Program, in helping a DBE firm, but I think that the biggest struggle that we have is finding DBEs on this side of the mountain.... Now they've got to UDBE[85], which is even more difficult. We lost our DBE contractors when they changed to the UDBE.... When we do get a quote from a

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> firm from [Western Washington], it's generally double or it's considerably higher.
>
> The question is whether or not the DBE firm has a big enough presence and willing to travel back and forth to eastern Washington.
>
> If you're talking during construction, absolutely, [the firm has] to be within a reasonable proximity of the job.
>
> We occasionally get quotes and they are expensive, but a lot of that is dependent upon the volume of work on the coast. They don't have to leave and come all the way over here because the volume of work is so high. That's where part of our difficulty comes in, as you know, as a contractor why would you want to leave something close to home and take that risk to go way over to the east side when you don't have to?
>
> We do a lot of remote airports out of the peninsula or other places and there's just not the kind of construction-based companies out there in those more remote areas that are DBE.
>
> One of the issues we run into on this side of the State, especially in heavy civil work, is it is the same two or three players that are DBE's for just about everything and the heavy civil world around here, it ends up being a striping and traffic control. And that was the case on Sunny side Airport for granted, that, and then they were able to find an electrical firm that was maybe Moses Lake, so within a reasonable proximity to come down to do a little bit of work. But in general speaking for most of the jobs at the same thing we've done at Yakima, it's the same two or three DBE contractors that come in for everything.... That's been our experience, especially some of the more rural airports and general aviation [airports].

Outside consultants who assist Airports with triennial goal-setting echoed these issues.

85. "Underutilized DBE" refers to firms that are owned by racial and ethnic minorities and remain eligible for credit towards meeting DBE contracts goals on FHWA-funded contracts. See the discussion in Chapter VI regarding the effect of WSDOT's receiving a waiver from the USDOT to no longer count firms owned by White females towards contract goal credit.

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> I have very, very few airports that ever meet the goals. We're pretty much at zero percent participation with DBEs.... Our airports are on the east side, and many of them are very small airports in small communities that are in, for instance, North Central Washington. So, they number one don't have DBE firms in their community, and DBE firms that are even, say, in Spokane, are so far away that there would be no reason for them to pick up that kind of work. As was said earlier, the amount of work isn't usually very much, so they don't tend to travel that far to do that.... So, there's no repercussions necessarily for the projects if they're not finding DBEs to fill those roles.
>
> It would take [smaller Airports] a lot to get the information that they would need to set the goals, so that's why we're doing a lot of it for them.... I don't think any Airport that I've run across is opposed to ever using a DBE, but I think they tend to be a little frustrated to feel the pressure of having to use a DBE if there aren't any available in their area. So, I think there's that feeling that they're not doing a good enough job because there is a goal, even if it's a small goal, but if there's not anyone available then … it's a little bit hard for them.

The Airports' goal-setting processes were often seen as lacking transparency.

> The Tri-City Airport, was a big job, but they only have a two percent goal.... One of the big problems we have, is how they determine goals? What their methodology is, is they take what they consider all the disciplines that would work on a project, right? Then, they take the DBE list, in the local region, and they say, "Well there's only one engineering DBE, so they can get some percentage of that, but there's none of these other disciplines, so those are zeroes." Then they average it all up and then they get this percentage on the bottom, which becomes very small because no one's participating in these other categories. I think that needs examining heavily. Why aren't we getting participation? If you announce that the goal was 10 percent or something, maybe these other businesses would say, "Hey, I want to get involved."

The specialized nature of many Airport projects exacerbates the overall and geographic challenges.

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> [Airports require] greater level of security to get on site and with that comes some obstacles for some firms that would rather not be in that environment. The other is oftentimes at an airport, the scheduling is critical for every element because of ongoing operations at that facility. Sometimes subcontractors will understand that they may provide a quote for some of the work, but that the critical nature of when they're there and what they need to bring in the quality and the standards. So, I would say that oftentimes an airport can be a more challenging environment for subcontractors maybe than they're used to in other heavy civil projects.
>
> [There is a] barrier to entry because of the level of difficulty. The liquidated damages that are associated with not being able to deliver on time.... FAA specifications are extremely stringent compared to roadway construction. The [quality assurance/quality control] for asphalt production and placement, concrete production and placement, even compaction and placement of your crushed aggregate under your paved surfaces, are at a level that is extremely more stringent than what most contractors are used to, even if they're doing out there doing WSDOT, roadway work all the time. It's a whole step up in a difficulty to meet the FAA requirements. And so, it's not for the faint of heart.
>
> Security insurances, when you're on the airfield side, that's a huge challenge for a small business.
>
> There's a lot of private corporations, large ones, that are now putting goals on projects that are drawing from the same community that this conversation is about. When you have firms that have multiple certifications and you have a major corporation that's private sector, [it is] less paperwork. The private corporation more than likely pays faster.... That's a big challenge when you're trying to draw from an already small community of a DBE certified firms.

Using DBEs was reported to sometimes increase costs.

> The FAA has a completely different set of working rules, obviously, than WSDOT, that are far more stringent. So, it's more difficult to find a DBE on an airport job that understands FAA rules, and is able to do their work to those rules.... The DBEs that we get on highway projects, most of it's traffic control. When we do get to these airports,

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> obviously we don't have that anymore. Now our scope of work is far more limited to which DBE we can actually hire on an airport [job].... But if you work hard enough you can find it, it just [can] be very, very difficult. Sometimes it's hard to factor in the dollar value because of the prices. They don't want to take the risk on something, especially on an FAA airport, where a normal quote for somebody that's used to that kind of work just for a round number, it might be 100,000, a DBE might put 250,000 on it just because he's not really sure what he's getting into.

The cycle of FAA funded work makes it more difficult to develop relationships and teams.

> Most airports have gone to five year on call [contracts]. So, to win that you have to have a team that knows that Airport or has experience doing the things that that Airport's going to need. So, you don't want to necessarily go hire somebody that does transit projects and say, "Come help us win an airport five year on call".... So, we're looking for firms that have Airport experience, so it's harder to break in new firms.

> A lot of these old general aviation airport, these aren't significant projects every year either they are really depends on the funding cycle. So, you know, right now we just a reconstructed the taxiway and overlaid the runway. It's going to be awhile before there's another big project for [name].

Prime contractors that failed to meet their contract goal but demonstrated their good faith efforts to do so reported that the Airports were reasonable about understanding their challenges.

> We're off by one percent and we send some justification to the Port [of Seattle], why it wasn't achievable, and they seem to buy that just fine. So, it was a pretty straightforward process.

> Explain why [you did not meet the contract goal] and move on.

e. Mentor-Protégé Programs

There was overall support for expanding mentor-protégé efforts to aviation contracts. WSDOT recently adopted a program for its non-federally

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assisted contracts, and several participants reported good initial experiences.

> This is the WSDOT mentor-protégé program.... And we have a mentor who we have done work with in the past, everybody knows everybody here in the A&E community. And our owner, he's got very specific goals, what you want out of this. You want to drive your mentor. And so, we came up with an agreement. I think that's part of the program, you got to have a mentor-protégé agreement. And had very specific goals, like, we're gonna participate in three teaming agreements, three particular things. And we want to get set up for certain priming arrangements. Now, where we want to be the prime and you'll be our exclusive subprime. So, what I'm seeing is, it's how you work it.... We have a monthly meeting, it's over lunch. We're usually at their offices or something, and it's been pretty productive. Now, we'll see what happens with that. Again, I've only been to two of these things. In our world, things stretch out. We're talking about things that aren't, we don't think are coming to bid till like maybe sometime next year.
>
> My biggest thing is they have a lot to offer me [as the protégé] in the sense of negotiating with unions and it's just nice to have a big brother so to speak. So, it works great for both of us..... It leads to new relationships that you won't otherwise have, maybe. And it could lead to new work.... Just by you being associated with a mentor that may be well known in the region, that gives you instant credibility if you're talking to somebody else.
>
> I think that they're helpful. The Mentor-Protégé's super new so we're just kind of getting our feet wet right now, and same with our protégé as well. So, everybody's just getting to know each other and getting things set up for next year.
>
> The conversation is really the operational excellence and the business excellence in one room. We use that as that team.

Some prime contractors cautioned about the issues that may arise from the mentor-protégé relationship.

> Deep breath [about a mentor-protégé relationship]. When I hear that and I think of, again, that environment of an

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> ongoing operation in an Airport and bringing on a firm that needs to have a mentor, I'd want to be very thoughtful about the circumstances that I bring them into. It can be done, but then you're bumping up against maybe some commercial useful function [issues].... The whole capital and cashflow is a big, big deal and I've been learning that over the last year or two with a small business and WSDOT. I've gotten more involved with the mentoring process, mentor-protege, the need to be able make sure that a small business is able to pay their employees requires oftentimes a prime contractor to be treating them differently and in a better way maybe then they normally treat subcontractors. A lot of them don't have the resources there or relationships with the banks and I'm all ears to that. I think that's one of the biggest obstacles that I see for small businesses and WSDOT.

Reluctance to grow one's possible competition is another concern.

> There's three or four that I think are the big players [in aviation contracting] and in Washington. I think your problem will be getting those guys coming in and saying, "Yeah, I'd like to bring somebody else on who then [might become] more competition for me", so if you're gonna do that [you should] incentivize that somehow and I don't know what that would be, but just to have an outlook in general.

1. Some national prime contractors implement their own supportive services and mentoring programs.

> We have our [name] series, not specific to the Airport, but because we are on the Airport, we actually do have, at least in Portland, we do have elements related to the Airport regarding badging, insurance, security, things like that, to help bring clarity on what it takes. And so, they're not on the project, but there's a couple of them that are almost finished with the class series and they're like, okay, I actually think I'm ready to take that step.... It's a baby step, but it's a step and so breaking into that Airport contract, it could be damaging, or it can be a great success. But, so that's one of the things we do and we're also one of the mentors for the Portland mentoring program.... That's a three-year program and you have to attend at least half the program. We're teaming up. One of our project managers teamed up

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> with another, a general contractor, project manager and they're mentoring at one of the firms. And so that's good. There's more to do.... 2019 is where I'm going to start kick off the year with my own version of a mentoring program, being much more intimate.

C. Conclusion

Overall, the Airports DBE programs are in compliance with Part 26. They have all the required elements in their FAA-approved DBE Program Plans. More, however, could be done to level the playing field for DBEs. Ideas include: increased access to contracting information and outreach to DBEs; partnering with other organizations to provide outreach and networking opportunities for DBEs, prime contractors and Airport staff; focus on leveling the playing field for prime contract participation, including through reducing contract size; providing annual forecast of projected contracts; and providing training to DBEs on how to perform on FAA assisted work and Airport staff about the DBE program.

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IV. Utilization, Availability and Disparity Analyses for Washington State Federal Aviation Administration Funded Contracts

A. Introduction and Overview

A central component of a legally defensible disparity study examines the contract data of an agency (its utilization) and compares that to the universe of firms that potentially could have received contracts (its availability). In effect, the study looks at what the agency *did* relative to what it *could have done*. To conduct this analysis, several steps must be undertaken:

- The determination of Washington State Airports' ("Airports") "unconstrained product market" for contracts funded with Federal Aviation Administration (FAA) dollars.[86] This is defined by the set of North American Industry Classification Systems ("NAICS") codes representing industries or product markets where a significant portion of spending by the Airports occurs (*i.e.*, what goods and services do these Airports purchase).
- The determination of the Airport's "geographic market". This represents the territory that covers the area where most firms who win contracts from Washington State Airports are located (*i.e.*, the geographic area where the Airports spend most of their monies).
- The determination of the "constrained product market". While the unconstrained product market has no spatial boundaries, distance is a determinant of what firms the Airports utilize. Therefore, the third step constrains the unconstrained product market by the geographic boundaries, which results in the constrained product market. (Sometimes the imposition of this geographic constraint reduces the number of NAICS codes compared to the results in the first step).

86. This entire analysis is based upon the Airport's spending of FAA dollars. To avoid the cumbersome repetition of this fact, it will not be repeated again except in the title of each table.

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- The contracts that exist after the determination of the constrained product market are analyzed to determine the Airports' utilization of businesses (*i.e.*, how they spend their monies across industries and the demographic profile of the ownership of firms that receive FAA funds.)
- The determination the set of firms that were available to receive contracts from the Airports. This set of firms is defined by the set of NAICS codes in the constrained product market and the spatial boundaries set by the geographic market.
- The resulting availability is weighted by how the Airports spend FAA money. This means the distribution of disadvantaged, minority- and female-owned firms (collectively, "DBEs") and non-DBEs across industries is tempered by how the Airports spend their monies (i.e., without this weighting, the result might be a cluster of certain DBEs in industries where few funds are spent and consequently, present a picture of robust DBE opportunities while in reality those firms have limited opportunities to receive significant funds from the Airports).
- The ratio of the utilization of a particular demographic group over that group's weighted availability results in the disparity ratio.

The subsequent sections of this chapter present the empirical results of the CHA examination of the Airports' contracting activities.

B. Contract Data Overview

We analyzed the Airports' contract data for the 54 Washington State Airports that received FAA grants for fiscal years 2012 through 2016. To conduct these analyses, we constructed all the fields necessary for our analysis where they were missing in the Airports' contract records (*e.g.*, industry type; zip codes; NAICS codes of prime contractors and subcontractors; DBE subcontractor information, including payments, race, gender; etc.). The resulting Final Contract Data File for analysis contained 1,375 contracts with a total paid amount of $376,545,923.78. Of these contracts, 287 were prime contracts and subcontractors received 1,088 contracts. Prime contractors received $230,910,050.97; subcontractors received $145,635,872.81. Prime contractors received 61.3 percent of all paid dollars; subcontractors received 38.7 percent of all paid dollars. The Final Contract Data File was used to determine the geographic and product markets for the analyses, and to estimate the utilization and availability of DBEs by funding source and contract type.

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C. Washington State Airports' Product and Geographic Markets

Markets have two dimensions: geography and industry. As discussed in Chapter II, a defensible disparity study must determine empirically both the industries that comprise the Airports' product or industry markets and the spatial location of their vendors. This requirement ensures that the evidence focuses on the Airports' actual activities and that any remedies adopted are narrowly tailored.

The accepted approach is to analyze those detailed industries, as defined by 6-digit North American Industry Classification System ("NAICS") codes[87] that make up at least 75 percent of the prime contract and subcontract payments for the study period.[88] However, for this study, we went further, and applied a "one percent" rule, whereby we analyzed NAICS codes for the Airports' contracts where the share of the total contract dollars was at least one percent; where the share of the prime contract dollars was at least one percent; and where the share of subcontract dollars was at least one percent. We took this approach to assure a comprehensive analysis of the Airports' activities.

1. Washington State Airports' Unconstrained Product Markets

Tables 4-1 through 4-3 present the NAICS codes used to define the unconstrained product market for the Airports' contracts.

Table 4-1: Industry Percentage Distribution of FAA Funded Contracts by Dollars
All Contracts

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	36.9%	36.9%
238910	Site Preparation Contractors	14.7%	51.6%
236220	Commercial and Institutional Building Construction	10.6%	62.1%
238210	Electrical Contractors and Other Wiring Installation Contractors	9.8%	72.0%
541330	Engineering Services	8.3%	80.3%

87. www.census.gov/eos/www/naics.
88. National Academies of Sciences, Engineering, and Medicine 2010, *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*. Washington, DC: The National Academies Press. https://doi.org/10.17226/14346. ("*National Disparity Study Guidelines*").

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
238220	Plumbing, Heating, and Air-Conditioning Contractors	2.8%	83.1%
541370	Surveying and Mapping (except Geophysical) Services	1.5%	84.6%
238310	Drywall and Insulation Contractors	1.2%	85.7%
541620	Environmental Consulting Services	1.2%	86.9%
238120	Structural Steel and Precast Concrete Contractors	1.1%	88.0%
238990	All Other Specialty Trade Contractors	1.1%	89.1%
TOTAL			**100.0%[a]**

a. An additional 79 NAICS codes contained the balance of the Airports' spending. The entire set of NAICS codes is presented in Appendix D.

Source: CHA analysis of Washington Airports data

Table 4-2: Industry Percentage Distribution of FAA Funded Contracts
Prime Contracts

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	47.9%	47.9%
238910	Site Preparation Contractors	17.2%	65.1%
236220	Commercial and Institutional Building Construction	17.0%	82.1%
541330	Engineering Services	10.9%	92.9%
541620	Environmental Consulting Services	1.4%	94.4%
541370	Surveying and Mapping (except Geophysical) Services	1.0%	95.4%
TOTAL			**100.0%[a]**

a. An additional 22 NAICS codes contained the balance of Washington Airports' spending with prime contractors. The entire set of NAICS codes for prime contractors is presented in Appendix D.

Source: CHA analysis of Washington Airports data

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Table 4-3: Industry Percentage Distribution of FAA Funded Contracts by Dollars Paid

Subcontracts

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
238210	Electrical Contractors and Other Wiring Installation Contractors	25.0%	25.0%
237310	Highway, Street, and Bridge Construction	19.3%	44.2%
238910	Site Preparation Contractors	10.7%	54.9%
238220	Plumbing, Heating, and Air-Conditioning Contractors	7.2%	62.1%
541330	Engineering Services	4.2%	66.4%
238310	Drywall and Insulation Contractors	3.0%	69.4%
238120	Structural Steel and Precast Concrete Contractors	3.0%	72.3%
561730	Landscaping Services	2.4%	74.7%
238110	Poured Concrete Foundation and Structure Contractors	2.4%	77.1%
238990	All Other Specialty Trade Contractors	2.2%	79.3%
541370	Surveying and Mapping (except Geophysical) Services	2.2%	81.5%
238160	Roofing Contractors	2.0%	83.5%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.8%	85.4%
238350	Finish Carpentry Contractors	1.4%	86.8%
238150	Glass and Glazing Contractors	1.1%	87.9%
326199	All Other Plastics Product Manufacturing	1.0%	88.9%
TOTAL			**100.0%[a]**

a. An additional 65 NAICS codes contained the balance of Washington Airports' spending with subcontractors. The entire set of NAICS codes for subcontractors is presented in Appendix D.

Source: CHA analysis of Washington Airports data

2. Washington State Airports' Geographic Market

The State of Washington captured 94.3 percent of the unconstrained product market dollars. Therefore, the State of Washington constituted the geographic market for the Airports.

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D. Washington State Airports' Utilization of DBEs

Limiting the contracts in the unconstrained product market to those firms located within the geographic market results in the constrained product market. Table 4-4 presents these data, which form the basis for the subsequent utilization analysis. Tables 4-5 and 4-6 present data on the utilization of total contract dollars. It is important to note the contract dollar shares are equivalent to the weight of each NAICS code spending. These weights were used to transform data from unweighted availability to weighted availability, discussed below.

Table 4-4: NAICS Code Distribution of FAA Funded Contracts

NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	$134,657,361.41	40.9%
238910	Site Preparation Contractors	$54,665,252.41	16.6%
238210	Electrical Contractors and Other Wiring Installation Contractors	$36,431,490.90	11.1%
236220	Commercial and Institutional Building Construction	$36,401,708.74	11.0%
541330	Engineering Services	$26,620,921.75	8.1%
238220	Plumbing, Heating, and Air-Conditioning Contractors	$10,559,895.74	3.2%
541370	Surveying and Mapping (except Geophysical) Services	$5,028,918.68	1.5%
238310	Drywall and Insulation Contractors	$4,366,187.58	1.3%
561730	Landscaping Services	$3,595,313.03	1.1%
541620	Environmental Consulting Services	$3,332,622.82	1.0%
238110	Poured Concrete Foundation and Structure Contractors	$3,135,527.35	1.0%
238160	Roofing Contractors	$2,920,035.70	0.9%
484220	Specialized Freight (except Used Goods) Trucking, Local	$2,328,230.39	0.7%
238350	Finish Carpentry Contractors	$2,006,699.33	0.6%
238120	Structural Steel and Precast Concrete Contractors	$1,703,659.96	0.5%

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NAICS	NAICS Code Description	Total Contract Dollars	Pct Total Contract Dollars
326199	All Other Plastics Product Manufacturing	$1,496,866.00	0.5%
238150	Glass and Glazing Contractors	$239,710.47	0.1%
TOTAL		**$329,490,402.26**	**100.00%**

Source: CHA analysis of Washington Airports data

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Table 4-5: Distribution of FAA Funded Contract Dollars by Race and Gender (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	$478,950	$0	$6,065	$661,924	$2,797,273	$3,944,212	$32,457,497	$36,401,709
237310	$98,011	$420,628	$0	$905,789	$543,075	$1,967,502	$132,689,859	$134,657,361
238110	$0	$118,191	$0	$0	$43,975	$162,166	$2,973,361	$3,135,527
238120	$0	$0	$0	$0	$10,426	$10,426	$1,693,234	$1,703,660
238150	$0	$0	$0	$0	$0	$0	$239,710	$239,710
238160	$0	$0	$0	$0	$77,226	$77,226	$2,842,809	$2,920,036
238210	$480,065	$16,265,500	$0	$0	$3,289,178	$20,034,743	$16,396,748	$36,431,491
238220	$0	$0	$0	$5,100,500	$11,700	$5,112,200	$5,447,696	$10,559,896
238310	$0	$0	$0	$0	$0	$0	$4,366,188	$4,366,188
238350	$0	$0	$0	$0	$0	$0	$2,006,699	$2,006,699
238910	$0	$258,245	$0	$390,153	$184,175	$832,573	$53,832,679	$54,665,252
326199	$0	$0	$0	$0	$1,496,866	$1,496,866	$0	$1,496,866
484220	$336,346	$2,860	$0	$0	$248,196	$587,402	$1,740,828	$2,328,230
541330	$0	$115,056	$2,868,499	$2,051,258	$198,974	$5,233,788	$21,387,134	$26,620,922
541370	$0	$0	$77,459	$708,847	$179,176	$965,483	$4,063,436	$5,028,919
541620	$0	$0	$0	$2,276,329	$378,233	$2,654,562	$678,061	$3,332,623
561730	$0	$12,000	$96,646	$68,505	$1,377,279	$1,554,430	$2,040,883	$3,595,313
Total	**$1,393,372**	**$17,192,480**	**$3,048,669**	**$12,163,305**	**$10,835,754**	**$44,633,579**	**$284,856,823**	**$329,490,402**

Source: CHA analysis of Washington Airports data

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Table 4-6: Distribution of FAA Funded Contract Dollars by Race and Gender (share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	1.3%	0.0%	0.0%	1.8%	7.7%	10.8%	89.2%	100.0%
237310	0.1%	0.3%	0.0%	0.7%	0.4%	1.5%	98.5%	100.0%
238110	0.0%	3.8%	0.0%	0.0%	1.4%	5.2%	94.8%	100.0%
238120	0.0%	0.0%	0.0%	0.0%	0.6%	0.6%	99.4%	100.0%
238150	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238160	0.0%	0.0%	0.0%	0.0%	2.6%	2.6%	97.4%	100.0%
238210	1.3%	44.6%	0.0%	0.0%	9.0%	55.0%	45.0%	100.0%
238220	0.0%	0.0%	0.0%	48.3%	0.1%	48.4%	51.6%	100.0%
238310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238350	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238910	0.0%	0.5%	0.0%	0.7%	0.3%	1.5%	98.5%	100.0%
326199	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
484220	14.4%	0.1%	0.0%	0.0%	10.7%	25.2%	74.8%	100.0%
541330	0.0%	0.4%	10.8%	7.7%	0.7%	19.7%	80.3%	100.0%
541370	0.0%	0.0%	1.5%	14.1%	3.6%	19.2%	80.8%	100.0%
541620	0.0%	0.0%	0.0%	68.3%	11.3%	79.7%	20.3%	100.0%
561730	0.0%	0.3%	2.7%	1.9%	38.3%	43.2%	56.8%	100.0%
Total	**0.4%**	**5.2%**	**0.9%**	**3.7%**	**3.3%**	**13.5%**	**86.5%**	**100.0%**

Source: CHA analysis of Washington Airports data

E. Availability of DBEs in Washington State Airports' Contracting Markets

1. Methodological Framework

Estimates of the availability of DBEs in the Airports' market area are a critical component of the analysis of possible barriers to equal opportunities to participate in the Airports' contracting activities. These availability estimates are compared to the utilization percentage of dollars received by DBEs to examine whether minority- and women-owned firms receive parity.[89] Availability esti-

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mates are also crucial for the Airports' to set narrowly tailored triennial and contract goals.

We applied the "custom census" approach with refinements to estimating availability. As recognized by the courts and the National Model Disparity Study Guidelines,[90] this methodology in general is superior to the other methods for at least four reasons:

- 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 or firms that respond to a survey) and the denominator (*e.g.*, registered vendors or the Census Bureaus' County Business Patterns data).
- Second, by examining a comprehensive group of firms, it "casts a broader net" beyond those known to the agency. As recognized by the courts, 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 bidder's lists, because it seeks out firms in the Airports' market area that have not been able to access 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.[91]

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89. For our analysis, the term "DBE" includes firms that are certified by government agencies and minority- and women-owned 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 and recommended by USDOT that supports the remedial nature of the programs. *See Northern Contracting, Inc. v. Illinois 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."). *See also* https://www.transportation.gov/sites/dot.gov/files/docs/Tips_for_Goal-Setting_in_DBE_Program_20141106.pdf.
90. *National Disparity Study Guidelines*, pp.57-58.

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- Fourth, it has been upheld by every court that has reviewed it, including most recently in the successful defense of the Illinois State Toll Highway's DBE program, for which we served as testifying experts.[92]

Using this framework, CHA utilized three databases to estimate availability:

- The Final Contract Data File (described in Section A of this Chapter).
- A Master D/M/WBE Directory compiled by CHA.
- Dun & Bradstreet/Hoovers Database downloaded from the companies' website.

The Master D/M/WBE Directory combined the results of an exhaustive search for directories and other lists containing information about minority- and women-owned businesses. The resulting list of minority and women businesses is comprehensive. After compiling the Master D/M/WBE Directory, we limited the firms we used in our analysis to those operating within the Airports' constrained product market.

We next developed a custom database from Hoovers, a Dun & Bradstreet company. Hoovers 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. We purchased the information from Hoovers for the firms in the NAICS codes located in the Airports' market area in order to form our custom Dun & Bradstreet/ Hoovers Database. In the initial download, the data from Hoovers simply identify a firm as being minority-owned. However, the company does keep detailed information on ethnicity (*i.e.*, is the minority firm owner Black, Hispanic, Asian, or Native American). We obtained this additional information from Hoovers by special request.

2. Analysis of DBE Availability in Washington State Airports' Market

We merged these three databases to form an accurate estimate of disadvantaged, minority- and women-owned firms (collectively, "DBEs") availability as a percentage of all firms to the Airports. Tables 4-7 through 4-10 present data on:

- The unweighted availability percentages by race and gender and by NAICS codes for contracts in the Airports' constrained product markets;

91. For a detailed discussion of the role of capacity in disparity studies, see the National Disparity Study Guidelines, Appendix B, "Understanding Capacity."
92. *Midwest Fence, Corp. v. U.S. Department of Transportation et al*, 840 F.3d 932 (2016); *see also Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 (7th Cir. 2007), cert. denied, 137 S.Ct. 2292 (2017).

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- The weights used to adjust the unweighted numbers;[93] and
- The final estimates of the weighted averages of the individual 6-digit level availability estimates in
- the Airports' market area. Appendix D contains weighted availability estimates further broken down by region that can be used by the Airports to set DBE goals for their projects.

Table 4-7: Unweighted Availability

NAICS	Black	Latino	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	1.4%	1.8%	1.7%	3.0%	6.4%	14.2%	85.8%	100.0%
237310	1.5%	3.3%	1.7%	4.2%	7.1%	17.7%	82.3%	100.0%
238110	0.1%	1.9%	0.4%	0.8%	4.0%	7.1%	92.9%	100.0%
238120	3.8%	4.8%	3.8%	2.9%	10.5%	25.7%	74.3%	100.0%
238150	0.6%	1.1%	0.0%	0.0%	9.6%	11.3%	88.7%	100.0%
238160	0.0%	0.5%	0.4%	0.0%	3.3%	4.2%	95.8%	100.0%
238210	0.4%	0.5%	0.3%	0.5%	4.1%	5.8%	94.2%	100.0%
238220	0.3%	0.4%	0.2%	0.5%	3.0%	4.3%	95.7%	100.0%
238310	0.3%	0.9%	0.0%	0.4%	2.5%	4.1%	95.9%	100.0%
238350	0.8%	1.1%	0.5%	0.3%	3.6%	6.3%	93.7%	100.0%
238910	0.8%	1.6%	0.6%	1.7%	6.0%	10.8%	89.2%	100.0%
326199	0.5%	0.5%	0.5%	0.0%	8.4%	9.9%	90.1%	100.0%
484220	4.7%	2.7%	1.6%	3.1%	12.5%	24.6%	75.4%	100.0%
541330	0.5%	0.8%	3.0%	0.8%	5.6%	10.7%	89.3%	100.0%
541370	1.1%	1.4%	1.6%	3.4%	7.3%	14.9%	85.1%	100.0%
541620	0.8%	1.4%	2.1%	0.8%	21.3%	26.5%	73.5%	100.0%
561730	0.2%	0.7%	0.6%	0.2%	5.4%	7.0%	93.0%	100.0%
TOTAL	**0.6%**	**1.0%**	**1.0%**	**1.0%**	**5.6%**	**9.2%**	**90.8%**	**100.0%**

Source: CHA analysis of Washington Airports data; Hoovers; CHA Master Directory.

93. These weights are equivalent to the share of contract dollars presented in the previous section.

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Table 4-8: Share of Washington State Airports FAA Funded Spending by NAICS Code

NAICS	NAICS Code Description	WEIGHT (Pct Share of Total Sector Dollars)
236220	Commercial and Institutional Building Construction	11.05%
237310	Highway, Street, and Bridge Construction	40.87%
238110	Poured Concrete Foundation and Structure Contractors	0.95%
238120	Structural Steel and Precast Concrete Contractors	0.52%
238150	Glass and Glazing Contractors	0.07%
238160	Roofing Contractors	0.89%
238210	Electrical Contractors and Other Wiring Installation Contractors	11.06%
238220	Plumbing, Heating, and Air-Conditioning Contractors	3.20%
238310	Drywall and Insulation Contractors	1.33%
238350	Finish Carpentry Contractors	0.61%
238910	Site Preparation Contractors	16.59%
326199	All Other Plastics Product Manufacturing	0.45%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.71%
541330	Engineering Services	8.08%
541370	Surveying and Mapping (except Geophysical) Services	1.53%
541620	Environmental Consulting Services	1.01%
561730	Landscaping Services	1.09%
Total		**100.0%**

Source: CHA analysis of Washington Airports data

Table 4-9: Aggregated Weighted Availability

Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
1.1%	2.1%	1.4%	2.6%	6.3%	13.4%	86.6%	100.0%

Source: CHA analysis of Washington Airports data; Hoovers; CHA Master Directory

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3. Analysis of Disparity Ratios Between DBE Utilization and Availability on Washington State Airports' Contracts

To meet the strict scrutiny requirement that a state government must establish that discrimination operates in its market area, we next calculated disparity ratios for total DBE utilization compared to the total weighted availability of DBEs, measured in dollars paid, on FAA funded contracts. The disparity ratio is calculated by dividing the weighted availability into the utilization rate. If the utilization rate (*i.e.*, the disparity ratio) for a group is less than the availability for that group, we would conclude that the group is underutilized. It is important to note that sometimes unique features of the data (*e.g.*, an unusually high concentration of a group in a very narrow range of NAICS codes; particularly strong performance of one or two firms within a group which is at odds with the performance of most firms in that group; very limited number of observations) might generate disparity ratios which require closer examination.

The courts have held that disparity results must be analyzed to determine whether the results are "significant". There are two distinct methods to measure a result's significance. First, a "large" or "substantively significant" disparity is commonly defined by courts as utilization that is equal to or less than 80 percent of the availability measure. A substantively significant disparity supports the inference that the result may be caused by the disparate impacts of discrimination.[94] Second, statistically significant disparity means that an outcome is unlikely to have occurred as the result of random chance alone. The greater the statistical significance, the smaller the probability that it resulted

94. *See* U.S. Equal Employment Opportunity Commission regulation, 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.").

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from random chance alone[95]. A more in-depth discussion of statistical significance is provided in Appendix C.

Substantive and Statistical Significance

‡ Connotes these values are substantively significant. Courts have ruled the disparity ratio less or equal to 80 percent represent disparities that are substantively significant. (See Footnote 94 for more information.)

* Connotes these values are statistically significant at the 0.05 level. (See Appendix C for more information.)

** Connotes these values are statistically significant at the 0.01 level. (See Appendix C for more information.)

*** Connotes these values are statistically significant at the 0.001. level (See Appendix C for more information.)

Table 4-10 presents the calculated disparity ratios.

Table 4-10: Disparity Ratios by Demographic Group

	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE
Disparity Ratio	38.8%‡	252.4%	68.1%‡	143.2%	52.3%‡	101.3%	99.8%

Source: CHA analysis of Washington Airports data
‡ Indicates substantive significance

Our previous experience suggests that unusually high disparity ratios might be the result of a variety of factors unique to a set of firms in a particular group and a particular NAICS code. The result of this nexus of factors should not be taken to be representative of the experiences of most firms within that group. We therefore explored if some anomalies did exist. We examined whether a certain group received a share of contract dollars in a NAICS code that contained a significant share (that is, weight) of total contract dollars. Below are the results of this exploration. It is very important to note that the new disparity ratios that are derived from each exploration should not be interpreted as presenting a new result for the other groups.

Table 4-10 displays a disparity ratio for Hispanics of 252.4 percent. Examining the contract dollars received by Hispanic-owned firms, Table 4-6 indicates Hispanic firms received 44.6 percent of the contract dollars spent in NAICS code 238210. In addition, as seen in Tables 4-4 and 4-5, that NAICS code contained

95. A chi-square test – examining if the utilization rate was different from the weighted availability - was used to determine the statistical significance of the disparity ratio.

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11.1 percent of all contract dollars and 94.6 percent of all Hispanic contract dollars. When we further explored the Contract Data File for that NAICS code we found that one firm (across 20 contracts) captured 99.6 percent of these Hispanic dollars.

To see if this rare occurrence resulted in the high disparity ratio, we re-ran the analysis omitting the contracts associated with that firm. Tables 4-11 through 4-16 present the results of this new analysis. As shown in Table 4-16, the disparity for Hispanics falls to 31.1 percent. This reduction in the disparity ratio confirms our original hypothesis that a set of unique factors resulted in the original disparity ratio for Hispanics.

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Table 4-11: Distribution of FAA Funded Contract Dollars by Race and Gender (without the 20 contracts awarded to one Hispanic firm) (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	$478,950	$0	$6,065	$661,924	$2,797,273	$3,944,212	$31,279,819	$35,224,031
237310	$0	$375,987	$0	$905,789	$382,158	$1,663,934	$43,756,884	$45,420,818
238110	$0	$118,191	$0	$0	$43,975	$162,166	$2,901,681	$3,063,847
238120	$0	$0	$0	$0	$10,426	$10,426	$1,667,343	$1,677,769
238150	$0	$0	$0	$0	$0	$0	$239,710	$239,710
238160	$0	$0	$0	$0	$77,226	$77,226	$2,842,809	$2,920,036
238210	$480,065	$67,095	$0	$0	$3,289,178	$3,836,338	$15,176,813	$19,013,151
238220	$0	$0	$0	$5,100,500	$11,700	$5,112,200	$5,444,120	$10,556,320
238310	$0	$0	$0	$0	$0	$0	$4,366,188	$4,366,188
238350	$0	$0	$0	$0	$0	$0	$2,006,699	$2,006,699
238910	$0	$258,245	$0	$159,409	$169,540	$587,195	$13,296,047	$13,883,242
326199	$0	$0	$0	$0	$1,496,866	$1,496,866	$0	$1,496,866
484220	$22,617	$2,860	$0	$0	$219,919	$245,396	$1,001,349	$1,246,745
541330	$0	$115,056	$2,868,499	$2,051,258	$91,881	$5,126,694	$21,366,122	$26,492,817
541370	$0	$0	$77,459	$708,847	$124,896	$911,203	$3,591,983	$4,503,185
541620	$0	$0	$0	$2,276,329	$378,233	$2,654,562	$678,061	$3,332,623
561730	$0	$12,000	$28,575	$68,505	$129,352	$238,432	$1,158,624	$1,397,057
Total	**$981,633**	**$949,435**	**$2,980,598**	**$11,932,561**	**$9,222,624**	**$26,066,851**	**$150,774,252**	**$176,841,104**

Source: CHA analysis of Washington Airports data

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Table 4-12: Distribution of FAA Funded Contract Dollars by Race and Gender (without the 20 contracts awarded to one Hispanic firm) (share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	1.4%	0.0%	0.0%	1.9%	7.9%	11.2%	88.8%	100.0%
237310	0.0%	0.8%	0.0%	2.0%	0.8%	3.7%	96.3%	100.0%
238110	0.0%	3.9%	0.0%	0.0%	1.4%	5.3%	94.7%	100.0%
238120	0.0%	0.0%	0.0%	0.0%	0.6%	0.6%	99.4%	100.0%
238150	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238160	0.0%	0.0%	0.0%	0.0%	2.6%	2.6%	97.4%	100.0%
238210	2.5%	0.4%	0.0%	0.0%	17.3%	20.2%	79.8%	100.0%
238220	0.0%	0.0%	0.0%	48.3%	0.1%	48.4%	51.6%	100.0%
238310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238350	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238910	0.0%	1.9%	0.0%	1.1%	1.2%	4.2%	95.8%	100.0%
326199	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
484220	1.8%	0.2%	0.0%	0.0%	17.6%	19.7%	80.3%	100.0%
541330	0.0%	0.4%	10.8%	7.7%	0.3%	19.4%	80.6%	100.0%
541370	0.0%	0.0%	1.7%	15.7%	2.8%	20.2%	79.8%	100.0%
541620	0.0%	0.0%	0.0%	68.3%	11.3%	79.7%	20.3%	100.0%
561730	0.0%	0.9%	2.0%	4.9%	9.3%	17.1%	82.9%	100.0%
Total	**0.6%**	**0.5%**	**1.7%**	**6.7%**	**5.2%**	**14.7%**	**85.3%**	**100.0%**

Source: CHA analysis of Washington Airports data

Table 4-13: Unweighted Availability (without the 20 contracts awarded to one Hispanic firm)

NAICS	Black	Latino	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	1.4%	1.8%	1.7%	3.0%	6.4%	14.2%	85.8%	100.0%
237310	1.5%	3.3%	1.7%	4.2%	7.1%	17.7%	82.3%	100.0%
238110	0.1%	1.9%	0.4%	0.8%	4.0%	7.1%	92.9%	100.0%
238120	3.8%	4.8%	3.8%	2.9%	10.5%	25.7%	74.3%	100.0%
238150	0.6%	1.1%	0.0%	0.0%	9.6%	11.3%	88.7%	100.0%

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NAICS	Black	Latino	Asian	Native American	White Women	DBE	Non-DBE	Total
238160	0.0%	0.5%	0.4%	0.0%	3.3%	4.2%	95.8%	100.0%
238210	0.4%	0.5%	0.3%	0.5%	4.1%	5.8%	94.2%	100.0%
238220	0.3%	0.4%	0.2%	0.5%	3.0%	4.3%	95.7%	100.0%
238310	0.3%	0.9%	0.0%	0.4%	2.5%	4.1%	95.9%	100.0%
238350	0.8%	1.1%	0.5%	0.3%	3.6%	6.3%	93.7%	100.0%
238910	0.8%	1.6%	0.6%	1.7%	6.0%	10.8%	89.2%	100.0%
326199	0.5%	0.5%	0.5%	0.0%	8.4%	9.9%	90.1%	100.0%
484220	4.7%	2.7%	1.6%	3.1%	12.5%	24.6%	75.4%	100.0%
541330	0.5%	0.8%	3.0%	0.8%	5.6%	10.7%	89.3%	100.0%
541370	1.1%	1.4%	1.6%	3.4%	7.3%	14.9%	85.1%	100.0%
541620	0.8%	1.4%	2.1%	0.8%	21.3%	26.5%	73.5%	100.0%
561730	0.2%	0.7%	0.6%	0.2%	5.4%	7.0%	93.0%	100.0%
TOTAL	**0.6%**	**1.0%**	**1.0%**	**1.0%**	**5.6%**	**9.2%**	**90.8%**	**100.0%**

Source: CHA analysis of Washington Airports; Hoovers; CHA Master Directory.

Table 4-14: Share of Washington State Airports Spending by NAICS Code (without the 20 contracts awarded to one Hispanic firm)

NAICS	NAICS Code Description	WEIGHT (Pct Share of Total Sector Dollars)
236220	Commercial and Institutional Building Construction	19.9%
237310	Highway, Street, and Bridge Construction	25.7%
238110	Poured Concrete Foundation and Structure Contractors	1.7%
238120	Structural Steel and Precast Concrete Contractors	0.9%
238150	Glass and Glazing Contractors	0.1%
238160	Roofing Contractors	1.7%
238210	Electrical Contractors and Other Wiring Installation Contractors	10.8%
238220	Plumbing, Heating, and Air-Conditioning Contractors	6.0%
238310	Drywall and Insulation Contractors	2.5%
238350	Finish Carpentry Contractors	1.1%
238910	Site Preparation Contractors	7.9%
326199	All Other Plastics Product Manufacturing	0.8%

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NAICS	NAICS Code Description	WEIGHT (Pct Share of Total Sector Dollars)
484220	Specialized Freight (except Used Goods) Trucking, Local	0.7%
541330	Engineering Services	15.0%
541370	Surveying and Mapping (except Geophysical) Services	2.5%
541620	Environmental Consulting Services	1.9%
561730	Landscaping Services	0.8%
Total		**100.0%**

Source: CHA analysis of Washington Airports data

Table 4-15: Aggregated Weighted Availability (without the 20 contracts awarded to one Hispanic firm)

Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
1.0%	1.7%	1.5%	2.2%	6.1%	12.5%	87.5%	100.0%

Source: CHA analysis of Washington Airports data; Hoovers; CHA Master Directory

Table 4-16: Disparity Ratios by Demographic Group (without the 20 contracts awarded to one Hispanic firm)

	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE
Disparity Ratio	55.5%	31.1%	114.9%	308.4%	85.0%	117.7%	97.5%

Source: CHA analysis of Washington Airports data

Table 4-10 displays a disparity ratio for Native Americans of 143.2. Examining the contract dollars received by Native American-owned firms, Table 4-6 indicates Native American firms received 48.3 percent of the contract dollars spent in NAICS code 238220. In addition, as seen in Tables 4-4 and 4-5, that NAICS code contained 3.2 percent of all contract dollars and 41.9 percent of all Native American contract dollars. When we further explored the Contract Data File for that NAICS code we found that one firm (across two contracts) captured all of these Native American dollars.

To see if this rare occurrence resulted in the high disparity ratio, we re-ran the analysis omitting two contracts associated with that firm. (This process eliminated all spending in another NAICS code: 326199.) Tables 4-17 through 4-22 present the results of this new analysis. As shown in Table 4-22, the disparity

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for Native Americans falls to 98.6 percent. This reduction in the disparity ratio confirms our original hypothesis that a set of unique factors resulted in the original disparity ratio for Native Americans.

Table 4-17: Distribution of FAA Funded Contract Dollars by Race and Gender (without the 2 contracts awarded to one Native American firm) (total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	$478,949.8	$0.0	$6,065.0	$661,924.0	$2,797,272.9	$3,944,211.7	$22,584,153.6	$26,528,365.2
237310	$98,010.6	$420,627.7	$0.0	$905,788.8	$421,444.9	$1,845,872.0	$132,301,681.4	$134,147,553.4
238110	$0.0	$118,191.0	$0.0	$0.0	$43,975.1	$162,166.1	$1,196,010.2	$1,358,176.3
238120	$0.0	$0.0	$0.0	$0.0	$10,426.2	$10,426.2	$1,530,234.7	$1,540,661.0
238150	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$239,710.5	$239,710.5
238160	$0.0	$0.0	$0.0	$0.0	$77,226.5	$77,226.5	$1,112,828.8	$1,190,055.2
238210	$480,065.4	$16,265,500.2	$0.0	$0.0	$3,289,177.5	$20,034,743.2	$10,346,965.7	$30,381,708.9
238220	$0.0	$0.0	$0.0	$0.0	$11,700.0	$11,700.0	$4,245,708.7	$4,257,408.7
238310	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$1,434,165.1	$1,434,165.1
238350	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$641,327.2	$641,327.2
238910	$0.0	$258,245.3	$0.0	$390,152.6	$184,175.1	$832,573.1	$50,927,709.4	$51,760,282.5
484220	$336,345.8	$2,860.0	$0.0	$0.0	$248,196.4	$587,402.2	$1,740,828.2	$2,328,230.4
541330	$0.0	$115,056.1	$2,868,499.2	$2,051,257.9	$198,974.5	$5,233,787.7	$21,387,134.1	$26,620,921.8
541370	$0.0	$0.0	$77,459.0	$708,847.4	$166,317.4	$952,623.8	$4,063,435.9	$5,016,059.7
541620	$0.0	$0.0	$0.0	$2,276,329.0	$378,233.2	$2,654,562.2	$678,060.6	$3,332,622.8
561730	$0.0	$12,000.0	$96,646.0	$68,505.0	$1,377,278.9	$1,554,429.9	$1,985,906.2	$3,540,336.0
TOTAL	**$1,393,371.6**	**$17,192,480.3**	**$3,048,669.2**	**$7,062,804.8**	**$9,204,398.5**	**$37,901,724.4**	**$256,415,860.2**	**$294,317,584.6**

Source: CHA analysis of Washington Airports data

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Table 4-18: Distribution of FAA Funded Contract Dollars by Race and Gender (without the 2 contracts awarded to one Native American firm) (share of total dollars)

NAICS	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	1.8%	0.0%	0.0%	2.5%	10.5%	14.9%	85.1%	100.0%
237310	0.1%	0.3%	0.0%	0.7%	0.3%	1.4%	98.6%	100.0%
238110	0.0%	8.7%	0.0%	0.0%	3.2%	11.9%	88.1%	100.0%
238120	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%	99.3%	100.0%
238150	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238160	0.0%	0.0%	0.0%	0.0%	6.5%	6.5%	93.5%	100.0%
238210	1.6%	53.5%	0.0%	0.0%	10.8%	65.9%	34.1%	100.0%
238220	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	99.7%	100.0%
238310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238350	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238910	0.0%	0.5%	0.0%	0.8%	0.4%	1.6%	98.4%	100.0%
484220	14.4%	0.1%	0.0%	0.0%	10.7%	25.2%	74.8%	100.0%
541330	0.0%	0.4%	10.8%	7.7%	0.7%	19.7%	80.3%	100.0%
541370	0.0%	0.0%	1.5%	14.1%	3.3%	19.0%	81.0%	100.0%
541620	0.0%	0.0%	0.0%	68.3%	11.3%	79.7%	20.3%	100.0%
561730	0.0%	0.3%	2.7%	1.9%	38.9%	43.9%	56.1%	100.0%
TOTAL	**0.5%**	**5.8%**	**1.0%**	**2.4%**	**3.1%**	**12.9%**	**87.1%**	**100.0%**

Source: CHA analysis of Washington Airports data

Table 4-19: Unweighted Availability (without the 2 contracts awarded to one Native American firm)

NAICS	Black	Latino	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	1.4%	1.8%	1.7%	3.0%	6.4%	14.2%	85.8%	100.0%
237310	1.5%	3.3%	1.7%	4.2%	7.1%	17.7%	82.3%	100.0%
238110	0.1%	1.9%	0.4%	0.8%	4.0%	7.1%	92.9%	100.0%
238120	3.8%	4.8%	3.8%	2.9%	10.5%	25.7%	74.3%	100.0%
238150	0.6%	1.1%	0.0%	0.0%	9.6%	11.3%	88.7%	100.0%
238160	0.0%	0.5%	0.4%	0.0%	3.3%	4.2%	95.8%	100.0%

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NAICS	Black	Latino	Asian	Native American	White Women	DBE	Non-DBE	Total
238210	0.4%	0.5%	0.3%	0.5%	4.1%	5.8%	94.2%	100.0%
238220	0.3%	0.4%	0.2%	0.5%	3.0%	4.3%	95.7%	100.0%
238310	0.3%	0.9%	0.0%	0.4%	2.5%	4.1%	95.9%	100.0%
238350	0.8%	1.1%	0.5%	0.3%	3.6%	6.3%	93.7%	100.0%
238910	0.8%	1.6%	0.6%	1.7%	6.0%	10.8%	89.2%	100.0%
326199	0.5%	0.5%	0.5%	0.0%	8.4%	9.9%	90.1%	100.0%
484220	4.7%	2.7%	1.6%	3.1%	12.5%	24.6%	75.4%	100.0%
541330	0.5%	0.8%	3.0%	0.8%	5.6%	10.7%	89.3%	100.0%
541370	1.1%	1.4%	1.6%	3.4%	7.3%	14.9%	85.1%	100.0%
541620	0.8%	1.4%	2.1%	0.8%	21.3%	26.5%	73.5%	100.0%
561730	0.2%	0.7%	0.6%	0.2%	5.4%	7.0%	93.0%	100.0%
TOTAL	**0.6%**	**1.0%**	**1.0%**	**1.0%**	**5.6%**	**9.2%**	**90.8%**	**100.0%**

Source: CHA analysis of Washington Airports; Hoovers; CHA Master Directory.

Table 4-20: Share of Washington State Airports FAA Funded Spending by NAICS Code
(without the 2 contracts awarded to one Native American firm)

NAICS	NAICS Code Description	WEIGHT (Pct Share of Total Sector Dollars)
236220	Commercial and Institutional Building Construction	9.0%
237310	Highway, Street, and Bridge Construction	45.6%
238110	Poured Concrete Foundation and Structure Contractors	0.5%
238120	Structural Steel and Precast Concrete Contractors	0.5%
238150	Glass and Glazing Contractors	0.1%
238160	Roofing Contractors	0.4%
238210	Electrical Contractors and Other Wiring Installation Contractors	10.3%
238220	Plumbing, Heating, and Air-Conditioning Contractors	1.4%
238310	Drywall and Insulation Contractors	0.5%
238350	Finish Carpentry Contractors	0.2%
238910	Site Preparation Contractors	17.6%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.8%

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NAICS	NAICS Code Description	WEIGHT (Pct Share of Total Sector Dollars)
541330	Engineering Services	9.0%
541370	Surveying and Mapping (except Geophysical) Services	1.7%
541620	Environmental Consulting Services	1.1%
561730	Landscaping Services	1.2%
Total		**100.0%**

Source: CHA analysis of Washington Airports data

Table 4-21: Aggregated Weighted Availability (without the 2 contracts awarded to one Native American firm)

Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
1.1%	2.0%	1.4%	2.4%	6.9%	13.8%	86.2%	100.0%

Source: CHA analysis of Washington Airports data; Hoovers; CHA Master Directory

Table 4-22: Disparity Ratios by Demographic Group (without the 2 contracts awarded to one Native American firm)

	Black	Hispanic	Asian	Native American	White Women	DBE	Non-MWBE
Disparity Ratio	44.0%	292.0%	73.4%	98.6%	45.4%	93.3%	101.1%

Source: CHA analysis of Washington Airports data

F. Conclusion

We determined that the Airports geographic market is the boundaries of Washington State; that their product market consist of many industries; and that there are disparities of various magnitudes in opportunities for FAA funded contracts and subcontracts. Outside the industries with high concentrations of DBEs, minority and women entrepreneurs still face challenges in contracting opportunities. That a few firms have overcome systemic barriers to achieve contracts from the Airports does not mean that the playing field is level for all firms.

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V. Analysis of Disparities in the Washington Economy

A. Introduction

The late Nobel Prize Laureate Kenneth Arrow, in his seminal paper on the economic analysis of discrimination, observed:

> Racial discrimination pervades every aspect of a society in which it is found. It is found above all in attitudes of both races, but also in social relations, in intermarriage, in residential location, and frequently in legal barriers. It is also found in levels of economic accomplishment; this is income, wages, prices paid, and credit extended.[96]

This Chapter explores the data and literature relevant to how discrimination in the State of Washington's market and throughout the wider economy affects the ability of minorities and women to fairly and fully engage in the Airports' contract opportunities. First, we examined the distribution of firms, their sales and their employees across different demographic groups. Next, we analyzed the rates at which DBEs in the State of Washington form firms and their earnings from those firms. Next, we summarize the literature on barriers to equal access to commercial credit. Finally, we summarize 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 discrimination without some type of affirmative interventions.

A key element to determine the need for government intervention through contract goals in the sectors of the economy where the Airports procure goods and services is an analysis of the extent of disparities in those sectors independent of the Airports' intervention through their contracting affirmative action programs.

The courts have repeatedly held that analysis of disparities in the rates at which minorities and women in the government's markets form businesses compared to similar White males, their earnings from such businesses, and their access to capital markets are highly relevant to the determination of whether the market functions properly for all firms regardless of the race or gender of their ownership.[97] These analyses contributed most recently to the successful defense of the Illinois

96. Arrow, Kenneth J., "What Has Economics to say about racial discrimination?" *Journal of Economic Perspectives*, (1998), 12(2), pp. 91-100.
97. See the discussion in Chapter II of the legal standards applicable to contracting affirmative action programs.

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Tollway's Disadvantaged Business Enterprise (DBE) Progra[98]m. As explained by the Tenth Circuit in upholding the U.S. Department of Transportation's DBE program, 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-based denial of access to capital, without which the formation of minority subcontracting enterprises is stymied.[99]

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."[100] 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."

---

98. *Midwest Fence Corp. v. Illinois Department of Transportation, Illinois State Toll Highway Authority et al*, 840 F.3d 942 (7th Cir. 2016) (upholding the Illinois Tollway's program for state funded contracts modeled after Part 26 and based on CHA's expert testimony, including about disparities in the overall Illinois construction industry); *see also 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).
99. *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1168-1169 (10th Cir. 2000), *cert. granted*, 532 U.S. 941, *then dismissed as improvidently granted*, 534 U.S. 103 (2001) ("*Adarand VII*").
100. *Id*.

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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.[101] 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.[102]

Likewise, in holding that the DBE program regulations meet strict scrutiny, the court in the *Western States* opinion relied on the "substantial body of statistical and anecdotal materials" considered by Congress, including studies based on Census data that provide "ample" evidence of barriers to the formation of minority-owned firms in the transportation contracting industry.[103]

B. Disparate Treatment in the Marketplace: Evidence from the Census Bureau's 2012 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.[104] The 2012 SBO was released in December 2015, so our analysis reflects the most current data avail-

101. *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868, at *64 (Sept. 8, 2005).
102. *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964, 970 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004); *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.").
103. *Western States Paving Co., Inc. v. Washington State Department of Transportation*, 407 F.3d 983, 993 (9th Cir. 2005), *cert. denied,* 546 U.S. 1170 (2006).
104. *See* http://www.census.gov/econ/sbo/about.html for more information on the Survey.

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able. The SBO collects demographic data on business owners disaggregated into the following groups:[105,106]

- 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 and White Women-owned firms, the last five groups were aggregated to form one category. To ensure this aggregated group is described accurately, we labeled this group "not Non-White/Non-White Women". While this label is cumbersome, it is important to be clear that 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.

In this section, we examined all industries in the State of Washington. Table 5-1 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

105. Race and gender labels reflect the categories used by the Census Bureau.
106. 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.

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- The annual payroll of employer firms

Panel A of Table 5-1 presents data for the four basic Non-White racial groups:

- Black
- Latino
- Native American
- Asian

Panel B of Table 5-1 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.[107]

Table 5-1: Percentage Demographic Distribution of Sales and Payroll Data
All Industries, 2012

	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	2.62%	0.18%	0.88%	0.13%	0.40%	0.21%
Latino	4.51%	4.91%	2.85%	--- [a]	---	---

107. 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

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	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)
Native American	1.21%	0.16%	0.62%	0.14%	0.26%	0.20%
Asian	8.41%	2.43%	10.04%	2.23%	3.42%	2.12%
Panel B: Distribution of All Firms						
Non-White	17.14%	7.78%	14.80%	7.56%	5.69%	4.53%
White Women	27.29%	3.28%	15.00%	2.83%	5.69%	3.87%
White Men	39.94%	22.73%	43.95%	22.02%	35.57%	25.21%
Equally Non-White & White	1.59%	0.40%	1.95%	0.36%	0.71%	0.48%
Equally Women & Men	11.56%	4.65%	17.00%	4.37%	7.02%	6.02%
Firms Not Classifiable	2.43%	61.13%	7.20%	62.82%	45.25%	59.85%
All Firms	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

a. There were many cases when the Census Bureau did not report information because the data was not up to the Bureau's reporting standard or the Bureau reported a range of numbers instead of one value. As a consequence, a percentage could not be calculated and, in these cases, the value will be entered into the table as "---"

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 5-2 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.[108] 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 5-2:

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

108. 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.

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- 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 6.79 percent (as shown in Table 5-3). This is derived by taking the Black share of sales and receipts for all firms (0.18 percent) and dividing it by the Black share of total number of all firms (2.62 percent) that are presented in Table 5-2.[109] If Black-owned firms earned a share of sales equal to their share of total firms, the disparity would have been 100 percent. 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.[110] All disparity ratios for Non-White firms and White Women firms are below this threshold.[111]

Table 5-2: Demographic Distribution of Sales and Payroll Data – Aggregated Groups

All Industries, 2012

	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	2.62%	0.18%	0.88%	0.13%	0.40%	0.21%
Latino	4.52%	4.91%	2.86%	---	---	---
Native American	1.21%	0.16%	0.62%	0.14%	0.26%	0.20%
Asian	8.41%	2.43%	10.05%	2.23%	3.42%	2.12%

109. Please note: while the tables present values that are rounded to the two-digit level, the actual values are not. Hence, using the example presented above, 0.18 divided by 2.62 equals 6.87; however, with the unrounded versions of the data, the result is 6.79.

110. 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.").

111. Because the data in the subsequent tables are presented for descriptive purposes, significance tests on these results are not conducted.

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	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 B: Distribution of All Firms						
Non-White	17.15%	7.78%	14.81%	7.57%	5.69%	4.53%
White Women	27.30%	3.28%	15.02%	2.83%	5.70%	3.87%
Not Non-White/Not White Women	55.55%	88.94%	70.17%	89.60%	88.61%	91.60%
All Firms	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: CHA calculations from Survey of Business Owners

Table 5-3: Disparity Ratios of Firm Utilization Measures
All Industries, 2012

	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	6.79%	15.09%	52.40%
Latino	108.73%	---	---
Native American	12.83%	22.28%	76.14%
Asian	28.84%	22.20%	61.98%
Panel B: Disparity Ratios for All Firms			
Non-Whites	45.39%	51.07%	79.65%
White Women	12.02%	18.85%	67.95%
Not Non-White/Not White Women	160.09%	127.70%	103.37%
All Firms	**100.0%**	**100.0%**	**100.0%**

Source: CHA calculations from Survey of Business Owners

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C. Disparate Treatment in the Marketplace: Evidence from the Census Bureau's 2013 - 2017 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. In this section, we explore this question using the Census Bureau's *American Community Survey* data to address other aspects of this question. One element asks if demographic differences exist 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. Consequently, 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 one percent of the population and the PUMS provides detailed information at the individual level. In order to obtain robust results from our analysis, we used the file that combines the most recent data available for years 2012 through 2016.[112] 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 and 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 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 in the analysis.

112. For more information about the ACS PUMS, *see* http://www.census.gov/acs/.

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We employed 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 examined 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 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 percent 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 percent 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.[113]

In the following presentation of results, each sub-section first reports data on the share of a demographic group that forms a business (business formation rates)[114]; 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

113. Most social scientists do not endorse utilizing a confidence level of less than 95 percent. (Another way of stating a confidence level of 95 percent is to state the results are statistically significance at the 0.05 level.) Appendix C explains more about statistical significance.

114. In order to operationalize the concept of business formation, we identified those individuals who are self-employed and then determined what share of a particular group (e.g., Blacks; Hispanics in construction) are self-employed.

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in business earnings received by a demographic group relative to White men (business earnings differentials).

1. All Industries Combined in the State of Washington

One 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 5-4 presents these results. The Table indicates that White men have higher business formation rates compared to Non-Whites and White Women. Table 5-5 utilizes probit regression analysis to examine the probability of forming a business after controlling for important factors beyond race and gender.[115] This Table indicates that Non-Whites and White Women are less likely to form businesses compared to similarly situated White men. The reduced probabilities of business formation ranged from 2.8 percent for Blacks to 1.4 percent for Asians. These results were statistically significant at the 0.001 level for each variable except for Other[116].

Another way to measure equity is to examine how the wage and salary incomes and business earnings of particular demographic groups compare 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.[117] Tables 5-6 and 5-7 present these data on wage and salary incomes and business earnings, respectively. Table 5-6 indicates that Non-whites and White women earn less than White men. The reduction in earnings ranges from 42.1 percent to 13.2 percent and all of the results are statistically significant at the 0.001 level. Table 5-7 indicates that Asians, White women, and Others receive business earnings less than White men. However, only the result for Other is statistically significant.

Table 5-4: Business Formation Rates
All Industries, 2013 - 2017

Demographic Group	Business Formation Rates
Black	2.1%
Latino	2.4%
Native American	2.6%

115. Appendix B provides a "Further Explanation of Probit Regression Analysis."
116. A t-test was performed on the regression coefficients to examine the probability the coefficients were not equal to zero.
117. See Appendix A for more information on multiple regression statistical analysis.

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Demographic Group	Business Formation Rates
Asian/Pacific Islander	3.8%
Other	2.8%
White Women	3.9%
Non-White Male	3.4%
White Male	5.8%

Source: CHA calculations from the American Community Survey

Table 5-5: Business Formation Probabilities Relative to White Males All Industries, 2013 - 2017

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-2.8%***
Latino	-2.5%***
Native American	-2.0%**
Asian/Pacific Islander	-1.4%***
Other	-2.0%*
White Women	-1.5%***

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*

Table 5-6: Wage Differentials for Selected Groups Relative to White Men All Industries, 2013 - 2017

Demographic Group	Wages Relative to White Men (% Change)
Black	-29.2%***
Latino	-13.2%***
Native American	-43.1%***

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Demographic Group	Wages Relative to White Men (% Change)
Asian/Pacific Islander	-20.0%***
Other	-23.6%***
White Women	-30.9%***

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

Table 5-7: Business Earnings Differentials for Selected Groups Relative to White Men, All Industries

Demographic Group	Earnings Relative to White Men (% Change)
Black	4.7%
Latino	9.1%
Native American	16.3%
Asian/Pacific Islander	-4.8%
Other	-23.3%
White Women	-24.0%*

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

2. The Construction Industry in the State of Washington

Table 5-8 indicates that White men have higher business formation rates compared to Non-Whites and White Women. Table 5-9 indicates that Non-Whites and White Women are less likely to form businesses compared to similarly situated White men. The reduced probabilities of business formation ranged from 9.4 percent to 2.4 percent. These results were statistically significant for Latinos, Blacks, and Native Americans. Table 5-10 indicates that wage and salary income for Non-whites and White women earn less than White men. The reduction in earnings range from 57.4 percent to 7.5 percent and all of the results are statistically significant. Table 5-11 indicates that Latinos, Asians and White women receive business earnings less than White men. Results could not be estimated for Blacks, Native Americans, and Others. However, only the result for White women was statistically significant.

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Table 5-8: Business Formation Rates
Construction, 2013 - 2017

Demographic Group	Business Formation Rates
Black	3.1%
Latino	4.5%
Native American	4.2%
Asian/Pacific Islander	8.8%
Other	4.3%
White Women	10.2%
Non-White Male	6.5%
White Male	12.2%

Source: CHA calculations from the American Community Survey

Table 5-9: Business Formation Probability Differentials for Selected Groups Relative to White Men, Construction, 2013 - 2017

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-9.4%**
Latino	-6.7%***
Native American	-6.7%*
Asian/Pacific Islander	-2.9%
Other	-5.3%
White Women	-2.4%

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 0.05 level*

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Table 5-10: Wage Differentials for Selected Groups Relative to White Men Construction, 2013 - 2017

Demographic Group	Wages Relative to White Men (% Change)
Black	-43.9%***
Latino	-7.5%*
Native American	-57.4%***
Asian/Pacific Islander	-15.0%*
Other	-40.2%*
White Women	-44.2%***

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

Table 5-11: Business Earnings Differentials for Selected Groups Relative to White Men, Construction, 2013 - 2017

Demographic Group	Earnings Relative to White Men (% Change)
Black	Z[a]
Latino	-0.1%
Native American	Z
Asian/Pacific Islander	-120.0%*
Other	Z
White Women	-32.4%

a. Z indicates that the firms reported zero business income and, therefore, we could not make a statistical estimate.

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

3. The Construction-Related Services Industry in the State of Washington

It was difficult to make reliable estimates of business outcomes in this sector because the sample of Blacks, Latinos, Native Americans, and Others was very small and/or reported incomes were zero. In some cases, the econometric analysis would not produce any estimates; in other cases, the results were not

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statistically significant, but the result could be attributed to the sample size and not because the underlying hypothesis could not be upheld. Table 5-12 indicates that White men have higher business formation rates compared to Non-Whites and White Women, except for Native Americans. Table 5-13 indicates that Blacks, Asians, and White women are less likely to form businesses compared to similarly situated White men. Table 5-14 indicates that wage and salary income for Non-whites and White women earn less than White men. Table 5-15 indicates that Asians and White women receive business earnings less than White men.

Table 5-12: Business Formation Rates
Construction-Related Services, 2013 - 2017

Demographic Group	Business Formation Rates
Black	0.9%
Latino	5.0%
Native American	0.0%
Asian/Pacific Islander	3.3%
Other	0.0%
White Women	5.3%
Non-White Male	4.5%
White Male	8.9%

Source: CHA calculations from the American Community Survey

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Table 5-13: Business Formation Probability Differentials for Selected Groups Relative to White Men, Construction-related Services, 2010 - 2014

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-7.5%
Latino	2.1%
Native American	N[a]
Asian/Pacific Islander	-5.4%
Other	N
White Women	-1.1%

a. N indicates this group did not have any firms in the sample.

Source: CHA calculations from the American Community Survey

Table 5-14: Wage Differentials for Selected Groups Relative to White Men Construction-Related Services, 2013 - 2017

Demographic Group	Wages Relative to White Men (% Change)
Black	-10.5%
Latino	-9.5%
Native American	-16.5%
Asian/Pacific Islander	-16.7%*
Other	-57.7%
White Women	-36.7%***

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

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Table 5-15: Business Earnings Differentials for Selected Groups Relative to White Men

Construction-related Services, 2013 - 2017

Demographic Group	Earnings Relative to White Men (% Change)
Black	Z
Latino	Z
Native American	Z
Asian/Pacific Islander	-13.0%
Other	Z
White Women	-180.0%*

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

4. Goods in the State of Washington

It was difficult to make reliable estimates of business outcomes in this sector because the sample of Blacks, Native Americans, and Others was very small and/or reported incomes were zero. In some cases, the econometric analysis would not produce any estimates; in other cases, the results were not statistically significant, but the result could be attributed to the sample size and not because the underlying hypothesis could not be upheld. Table 5-16 indicates that White men have higher business formation rates compared to Non-Whites and White Women except for Native Americans. Table 5-17 indicates that, except for Asians, Non-Whites and White women are less likely to form businesses compared to similarly situated White men. Table 5-18 indicates wage and salary income for Non-whites and White women earn less than White men. Table 5-19 indicates that Latinos and White women receive less business earnings than White men.

Table 5-16: Business Formation Rates

Goods, 2013 - 2017

Demographic Group	Business Formation Rates
Black	0.3%
Latino	1.2%
Native American	6.3%
Asian/Pacific Islander	7.1%
Other	0.5%

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Demographic Group	Business Formation Rates
White Women	3.4%
Non-White Male	3.2%
White Male	3.8%

Source: CHA calculations from the American Community Survey

Table 5-17: Business Formation Probabilities Relative to White Males Goods, 2013 - 2017

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-6.5%*
Latino	-1.7%
Native American	-0.6%
Asian/Pacific Islander	3.0%***
Other	-0.5%
White Women	-0.6%

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

Table 5-18: Wage Differentials for Selected Groups Relative to White Men Goods, 2013 - 2017

Demographic Group	Wages Relative to White Men (% Change)
Black	-34.4%***
Latino	-22.3%***
Native American	-35.1%**
Asian/Pacific Islander	-30.0%***
Other	-21.9%
White Women	-38.2%***

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

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Table 5-19: Business Earnings Differentials for Selected Groups Relative to White Men

Goods, 2013 - 2017

Demographic Group	Earnings Relative to White Men (% Change)
Black	40.0%
Latino	-160.0%
Native American	Z
Asian/Pacific Islander	16.2%
Other	Z
White Women	-48.8%

Source: CHA calculations from the American Community Survey

5. The Services Industry in State of Washington

Table 5-20 indicates that White men have higher business formation rates compared to Non-Whites and White Women. Table 5-21 indicates that Non-Whites and White Women are less likely to form businesses compared to similarly situated White men. Table 5-22 indicates that wage and salary income for Non-whites and White women earn less than White men. Table 5-23 indicates that, except for Blacks, Latinos and Native Americans, Non-whites and White women receive business earnings less than White men.

Table 5-20: Business Formation Rates,

Services, 2013 - 2017

Demographic Group	Business Formation Rates
Black	2.1%
Latino	3.2%
Native American	2.9%
Asian/Pacific Islander	4.1%
Other	2.9%
White Women	4.8%
Non-White Male	4.2%
White Male	7.3%

Source: CHA calculations from the American Community Survey

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Table 5-21: Business Formation Probability Differentials for Selected Groups Relative to White Men

Services, 2013 - 2017

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-3.3%***
Latino	-1.4%***
Native American	-3.3%**
Asian/Pacific Islander	-2.1%***
Other	-3.1%*
White Women	-1.5%***

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*

Table 5-22: Wage Differentials for Selected Groups Relative to White Men

Services, 2013 - 2017

Demographic Group	Wages Relative to White Men (% Change)
Black	-25.7%***
Latino	-12.1%***
Native American	-30.4%***
Asian/Pacific Islander	-17.1%***
Other	-24.4%***
White Women	-27.2%***

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

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Table 5-23: Business Earnings Differentials for Selected Groups Relative to White Men

Services, 2013 - 2017

Demographic Group	Earnings Relative to White Men (% Change)
Black	13.5%
Latino	22.7%
Native American	57.7%
Asian/Pacific Islander	-34.2%
Other	-15.0%
White Women	-16.8%

Source: CHA calculations from the American Community Survey

6. The Information Technology Industry in State of Washington

It was difficult to make reliable estimates of business outcomes in this sector because the sample of Blacks, Latinos, and Others was very small and/or reported incomes were zero. In some cases, the econometric analysis would not produce any estimates; in other cases, the results were not statistically significant, but the result could be attributed to the sample size and not because the underlying hypothesis could not be upheld. Table 5-24 indicates that White men have higher business formation rates compared to Non-Whites and White Women, except for Native Americans. Table 5-25 indicates that, except for Native Americans, Non-Whites and White women are less likely to form businesses compared to similarly situated White men. Table 5-26 indicates, except for Native Americans, wage and salary income for Non-whites and White women earn less than White men. Table 5-27 indicates that Latinos, Native Americans, Asians, White women receive more business earnings than White men.

Table 5-24: Business Formation Rates

Information Technology, 2013 - 2017

Demographic Group	Business Formation Rates
Black	0.0%
Latino	2.8%
Native American	14.7%
Asian/Pacific Islander	1.5%
Other	0.0%

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Demographic Group	Business Formation Rates
White Women	3.5%
Non-White Male	2.3%
White Male	4.7%

Source: CHA calculations from the American Community Survey

Table 5-25: Business Formation Probability Differentials for Selected Groups Relative to White Men, Information Technology, 2013 - 2017

Demographic Group	Probability of Forming a Business Relative to White Men
Black	N
Latino	-1.0%
Native American	3.6%
Asian/Pacific Islander	-2.2%**
Other	N
White Women	-0.6%

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

Table 5-26: Wage Differentials for Selected Groups Relative to White Men Information Technology, 2013 - 2017

Demographic Group	Wages Relative to White Men (% Change)
Black	-18.1%**
Latino	-17.5%***
Native American	1.8%
Asian/Pacific Islander	-5.5%*
Other	-73.5%***
White Women	-29.1%***

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*

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Table 5-27: Business Earnings Differentials for Selected Groups Relative to White Men

Information Technology, 2013 - 2017

Demographic Group	Earnings Relative to White Men (% Change)
Black	Z
Latino	114.0%
Native American	121.0%
Asian/Pacific Islander	100.0%
Other	Z
White Women	31.0%

Source: CHA calculations from the American Community Survey

D. Evidence of Disparities in Access to Business Capital

Capital is the lifeblood of any business. Participants in the anecdotal data collection universally agreed to this fundamental fact. The interviews with business owners conducted as part of this Study confirmed that small firms, especially minority- and women-owned firms, had difficulties obtaining needed working capital to perform on state contracts and subcontracts, as well as expand the capacities of their firms. As discussed above, discrimination may even prevent firms from forming in the first place.

There is an extensive body of scholarly work on the relationship between personal wealth and successful entrepreneurship. There is a general consensus that disparities in personal wealth translate into disparities in business creation and ownership.[118]

The Federal Reserve Board and the U.S. Small Business Administration have conducted surveys of discrimination in the small business credit market for 1993, 1998 and 2003. These Surveys of Small Business Finances ("SSBF") are based on a large representative sample of firms with fewer than 500 employees. The main finding from these Surveys is that MBEs experience higher loan denial probabilities and pay higher interest rates than white-owned businesses, even after controlling for differences in credit worthiness and other factors. Blacks, Hispanics and Asians were more likely to be denied credit than Whites, even after controlling for firm

118. *See*, *e.g.*, Evans, David S. and Jovanovic, Boyan, "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints," *Journal of Political Economy*, (1989); Evans, David S. and Leighton, Linda "Some empirical aspects of entrepreneurship," *American Economic Review*, (1989).

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characteristics like credit history, credit score and wealth. Blacks and Hispanics were also more likely to pay higher interest rates on the loans they did receive.[119]

A recent report to the U.S. Department of Commerce summarizes these Surveys, results from the Kauffman Firm Survey,[120] data from the U.S. Small Business Administration's Certified Development Company/504 Guaranteed Loan Program[121] and additional extensive research on the effects of discrimination on opportunities for MBEs. The most comprehensive report of its kind, "Disparities in Capital Access Between Minority and Non-Minority-Owned Businesses: The Troubling Reality of Capital Limitations Faced by MBEs," found that

> Low levels of wealth and liquidity constraints create a substantial barrier to entry for minority entrepreneurs because the owner's wealth can be invested directly in the business, used as collateral to obtain business loans or use to acquire other businesses.... [T]he largest single actor explaining racial disparities in business creation rates are differences in asset levels."[122]

Some of the key findings of the Report include:

- Minority-owned firms are less likely to receive loans than non-minority-owned firms regardless of firm size. According to an analysis of data from the Survey of Small Business Finances, for firms with gross receipts over $500,000, 52 percent of non-minority-owned firms received loans compared to 41 percent of minority-owned firms.
- When minority-owned firms do receive financing, it is for less money and at a higher interest rate than non-minority-owned firms regardless of the size of the firm. Minority-owned firms paid an average of 7.8 percent in interest rates for loans compared to 6.4 percent for non-minority-owned firms. Among firms with gross receipts under $500,000, minority-owned firms paid an average of 9.1 percent in interest rates compared to 6.9 percent for non-minority-owned firms.
- Minority-owned firms are more likely to be denied loans. Among firms with gross receipts under $500,000, loan denial rates for minority firms were about three times higher, at 42 percent, compared to those of non-minority-

119. *See* Blanchflower, D. G., Levine. P. and Zimmerman, D., "Discrimination In The Small Business Credit Market," *Review of Economics and Statistics*, (2003); Cavalluzzo, K. S. and Cavalluzzo, L. C. ("Market structure and discrimination, the case of small businesses," *Journal of Money, Credit, and Banking*, (1998)
120. http://www.kauffman.org/~/media/kauffman_org/research%20reports%20and%20covers/2013/06/kauffmanfirmsurvey2013.pdf.
121. http://www.sba.gov/category/navigation-structure/loans-grants/small-business-loans/sba-loan-programs/real-estate-and-eq.
122. Fairlie, R. W. and Robb, A., "Disparities in Capital Access Between Minority and Non-Minority-Owned Businesses: The Troubling Reality of Capital Limitations Faced by MBEs," U.S. Department of Commerce, Minority Business Development Agency, 2010, pp. 22-23.

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owned firm, at 16 percent. For high sales firms, the rates of loan denial were almost twice as high for MBEs as for non-MBEs.

- MBEs pay higher interest rates for business loans. For all firms, MBEs paid 7.8 percent on average for loans compared with 6.4 percent for non-MBEs. The difference was smaller, but still high, between MBEs and non-MBEs with high sales.
- Minority-owned firms receive smaller equity investments than non-minority-owned firms even when controlling for detailed business and owner characteristics. The differences are large and statistically significant. The average amount of new equity investments in minority-owned firms receiving equity is 43 percent of the average of new equity investments in non-minority-owned firms. The differences were even larger for loans received by high sales firms. Yet, venture capital funds focusing on investing in minority firms provide returns that are comparable to mainstream venture capital firms.[123]
- Disparities in total investments in minority-owned firms compared to those in non-minority-owned firms grew after the first year of business operations. According to the analysis of the data from the Kauffman Firm Survey, minority-owned firms' investments into their firms were about 18 percent lower in the first year of operations compared to those of non-minority-owned firms. This disparity grew in the subsequent three years of operations, where minorities' investments into their firms were about 36 percent lower compared to those of non-minority-owned firms.

Minority entrepreneurs face challenges (including lower family wealth and difficulty penetrating financial markets and networks) directly related to race that limit their ability to secure financing for their businesses.[124]

These findings are consistent with those of the 2012 study. The Survey of Small Business Finances ("SSBF"), conducted by the Federal Reserve Board and the U.S. Small Business Administration from 1999-2003, found that MBEs experience significant barriers compared to similar non-M/WBEs. When minority-owned firms did apply for a loan, their loan requests were substantially more likely to be denied than non-minorities, even after accounting for differences like firm size and credit history. Loan denial rate ranged from 8 to 24 percentage points higher than for non-minority male-owned small businesses. When minority-owned firms did receive a loan, they were obligated to pay higher interest rates on the loans than comparable non-minority-owned firms. These results strongly suggest that MBEs

123. *See* Bradford, W., and Bates, T., "Venture Capital Investment in Minority Business," *Journal of Money Credit and Banking* 40, 2-3 (2008).
124. Fairlie, R.W. and Robb, A., Race and Entrepreneurial Success: Black-, Asian- and White-Owned Businesses in the United States, (Cambridge: MIT Press, 2008).

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do not enjoy full and air access to the credit necessary to perform on state prime contracts and associated subcontractors.

E. Evidence of Disparities in Access to Human Capital

There is a strong intergenerational correlation with business ownership. The probability of self-employment is significantly higher among the children of the self-employed. This was evident in the large number of non-DBEs in our interview groups who were second or even higher generation firms doing business for the market area. This disadvantages minorities, whose earlier generations were denied business ownership through either *de jure* segregation or *de facto* exclusion.

There is evidence that current racial patterns of self-employment are in part determined by racial patterns of self-employment in the previous generation.[125] Black men have been found to face a "triple disadvantage": they are less likely than White men to: 1. Have self-employed fathers; 2. Become self-employed if their fathers were not self-employed; and 3. To follow their fathers into self-employment.[126]

Intergenerational links are also critical to the success of the businesses that do form.[127] Working in a family business leads to more successful firms by new owners. One study found that only 12.6 percent of Black business owners had prior work experiences in a family business as compared to 23.3 percent of White business owners.[128] This creates a cycle of low rates of minority ownership and worse outcomes being passed from one generation to the next, with the corresponding perpetuation of advantages to White-owned firms.

Similarly, unequal access to business networks reinforces exclusionary patterns. The composition and size of business networks are associated with self-employment rates.[129] The U.S. Department of Commerce has reported that the ability to form strategic alliances with other firms is important for success.[130] MBEs in our interviews reported that they felt excluded from the networks that help to create success in the highway construction industry.

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125. Fairlie, R W., "The Absence of the African American Owned Business, An Analysis of the Dynamics of Self-Employment," *Journal of Labor Economics*, (1999).
126. Hout, M. and Rosen, H. S., "Self-employment, Family Background, and Race," *Journal of Human Resources* 35, no.4 (2000).
127. Fairlie, R.W. and Robb, A., "Why are black-owned businesses less successful than White-owned businesses? The role of families, inheritances, and business human capital," *Journal of Labor Economics*, (2007).
128. *Id*.
129. Allen, W. D., "Social Networks and Self-Employment," *Journal of Socio-Economics* 29, no.5 (2000).
130. Increasing MBE Competitiveness through strategic Alliances (Minority Business Development Agency, 2008).

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F. Conclusion

The economy-wide data, taken as a whole, paint a picture of systemic and endemic inequalities in the ability of firms owned by minorities or women to have full and fair access to state contracts and associated subcontracts. This evidence supports the conclusion that absent some affirmative State measures, these inequities create disparate impacts on disadvantaged minority- and women-owned enterprises and may render the State a passive participant in overall market-wide discrimination.

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VI. Qualitative Evidence of Race and Gender Barriers in the Washington State Airports' Market

In addition to quantitative data, a disparity study should further explore anecdotal evidence of experiences with discrimination in contracting opportunities and State of Washington's Airports' ("Airports") Disadvantaged Business Enterprise programs. This evidence is relevant to the question of whether observed statistical disparities in their FAA assisted contracts are due to discrimination and not to some other non-discriminatory cause or causes, as well as the likely efficacy of any race- and gender-neutral remedies employed by the Airports for contracting opportunities. As discussed in Chapter II, this type of anecdotal data has been held by the courts to be relevant and probative of whether the Washington State Airports continue 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 Supreme Court has held that anecdotal evidence can be persuasive because it "brought the cold [statistics] convincingly to life."[131] Evidence about discriminatory practices engaged in by prime contractors, agency personnel, 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.[132] 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."[133] "[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."[134]

131. *International Brotherhood of Teamsters v. United States*, 431 U.S. 324, 399 (1977).
132. *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1169-1172 (10th Cir. 2000), *cert. granted*, 532 U.S. 941, *then dismissed as improvidently granted*, 534 U.S. 103 (2001) ("*Adarand VII*").
133. *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, 1120, 1530 (10th Cir. 1994) ("*Concrete Works II*").

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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."[135] 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."[136]

To explore this type of anecdotal evidence of possible discrimination against minorities and women in the Airports' geographic and industry markets and the effectiveness of their current race-conscious and race-neutral measures, we conducted public business owner and stakeholder interviews, totaling 143 participants. We also collected information from another 180 business owners across the State in an electronic survey.

In our interviews, we met with a broad cross section of business owners from the Airports' geographic and industry markets. Firms ranged in size from large national businesses to established family-owned firms to new start-ups. We sought to explore their experiences in seeking and performing public and private sector prime contracts and subcontracts and contracts with the Airports, other government agencies, and in the private sector. We also elicited recommendations for improvements to the Airports' Disadvantaged Business Enterprise ("DBE") Programs, as described in Chapter II.

Many minority and women owners reported that while they had received contracting opportunities through the DBE program, significant barriers remain to securing Airport work. The playing field is not yet level. Race- and gender-neutral approaches alone were described as unlikely to ensure a level playing field for contract opportunities with the Airports.

The electronic survey further captured information from business owners about their experiences in obtaining work, marketplace conditions and the Airports' DBE programs. The results were similar to those of the interviews. Almost 40 percent reported that they still experience barriers to equal contracting opportunities; almost 30 percent said their competency was questioned because of their race or gender; over a quarter said they experienced on-the-job racial or sexual harassment or stereo-

134. *Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County*, 122 F.3d 895, 926 (11th Cir. 1997).

135. *H.B. Rowe Co., Inc. v. Tippett*, 615 F.3d 233, 249 (4th Circ. 2010).

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

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typing; and over a third indicated less access to business networks and information than non-certified firms.

A. Business Owner Interviews

The following are summaries of the issues discussed. Quotations are indented and may have been shorted for readability. The statements are representative of the views expressed over the many sessions by numerous participants.

Many minority and female owners reported that they still suffer from biased perceptions and stereotypes about their competency and professionalism. While sometimes subtle,[137] these biases about minorities' and women's lack of competence or ownership status infect all aspects of their attempts to obtain contracts and to be treated equally in performing Airport work.

> They're talking about the project and he's talking the whole time to my husband, even though it's my business. He doesn't run it with me. It's me and my business. And he even said to the guy, "This is my wife's business." And he continued to talk to my husband, even when he called me back, my number, he said, "I'd like to talk to Steve about that project that was on." So, even though my husband redirected him, even though my name is on everything, even though I was the one talking about the trees and the condition of these trees, yeah, my husband got the job.

> In my long career, what I found earlier is that I spent a lot of time making White men look good and that was my career path.... The project manager from [firm] said the project manager from this project is going to be her because she knows the most about it. That's the first time in my entire career that someone said, "She's the most capable because she knows what she's talking about." Even today, I'm a sub on these other firms, [name], other firms, and I'm like, here, here's everything to get organized. And I will even facilitate meetings and run everything, and the project manager's a guy named, whoever. So, it's frustrating. And I don't know that it's the clients who drive that either, cause I think right now this project where the guys said, no, no, she's the PM, and I had this guy next to me going, "I'm the PM, get out of my way!" He said, "No, no, she obviously knows everything about this." So, I just think it's been frustrating competing against the people that hire me, right? I'm doing this project for [firm] right now and I have to be the DPM and guess what I did all weekend? All the work, you know, to move it along. And this guy's going to waltz in and go, "Oh!"

137. *See, e.g.*, http://www.sciencedirect.com/science/article/pii/S0191308509000239.

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> I'm used to it now, and now I just have to laugh. The guys go down like this, because I'm 5 feet tall. They go down like this to talk to me. You own a concrete company, ha ha. And it's like, really bro? And I kind of go up like this and I'll go up on my toes and say, dude, I've scraped more concrete off my boots than you've ever seen in your life. And I have to get super aggressive with them to gain their respect. And to me, no guy would have to do that. It was, oh, you're a man, of course you own a concrete company. But I don't make a big deal out of it, I just kind of come at them but for me, my experience not with FAA, because like I said, I'm new to that. But in construction in general, I get the project, I get a signed contract and I could be wrong, I don't want to cry woman about it, but I've had where one company stole my patch foreman, hired him from underneath me, and then sent me reductive change orders.
>
> I hope my granddaughter sees the day when, you know, discrimination isn't real and alive and thriving, but … [we] ain't there yet.

The highly male dominated nature of the construction industry provides fewer opportunities for women to be part of teams or take leadership roles.

> Women don't even work for them, so they've never had an opportunity to interact with them not on a personal level or on a work or professional level.
>
> [The] majority a time, [people] will hire people who are like themselves. You put a job out for RFQ, right? And you look for the qualifications and you say, "Oh! That person looks like me, or I relate to that person."

Some women reported that agency employees also were biased on the basis of gender.

> Where I have sometimes the most gender [issues] is with WSDOT employees.... if you can get your foot in the door and then keep working with [the general contractors] and showing them that you can do a good job. I think they get beyond that gender.
>
> When I went into the WSDOT and I walked around, they were all White males. They did have two token females who were the ones who got up and kind of did the H[uman] R[elations] thing.... Every engineer, every decision-maker, was a White male and it was from project to project through the whole thing. And even though I'm a White female, but if I was a woman of color, a man of color, and that's all I saw was the representation, there is a psychological, this whole kind of, you don't really think about, you don't feel like they're going to be receptive

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> to you. Or that they're there to do business with you, because it's that old, White boys club. And it was obvious. And they all knew it was going on and it was one White man to another White man and there was never anybody of color or other gender. And I felt like, how do I work this White guy or how do I work this so that I can be able to get this information, and maybe because I was a White girl that I got that, but maybe you wouldn't have. I don't know that, and I can't think about it, but when I see the representation of what is put in front of me and the wall, the wall is White men.

Several minority owners experienced a stigma in being labeled a "disadvantaged" firm.

> It's just this stigma [to being a DBE].... It's a double edge sword. There's, the chip on the shoulder of the people you're interfacing with, whether it's a project manager, estimator, typically some white guy that feels like the DBE program shouldn't be in existence.

A few White women disagreed; they had not found sexism to be an issue.

> Personally, I've not experienced [gender barriers] in my case. Is it out there? Probably, but I've not. You know if I lose something, it's because I look at it as I didn't compete successfully on either money or best value or something. So, I've not personally experienced it.

> I've never seen any sort of treating people differently, gender, race, anything like that. If you're competent, you're respected.

There is a further bias against small firms, which especially impacts DBEs.

> We're every bit as good as these [large majority-owned firms]. We're smarter, we're more agile, we have less red tape.... We can bring in big firms, we've done that [on a City of Seattle project]. Not necessarily had very good experience.... We're the prime and we brought in a very big A&E firm as our sub. That presents problems also for people like us because when you bring in a big A&E firm, you've got to deal with all of their red tape. But we made it work. And I think we're starting to see some of that going on now, where they're okay with a small, the tail-wagging the dog so to speak, out here. There's nothing wrong with that. We need like a backbencher resource pool from let's say, a [name] or [name]. We're starting to get to that point where all they need to do is get in their head that they can trust a small firm of 60 people to run a $30 million project. And yeah, we're gonna have the big guys behind us, because obviously we don't have that depth, okay. We don't have a lot of those things that they have. And at the airport, I

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> don't think they've even gotten to that point they ask you those questions.
>
> The barrier here is the contracting in culture [with] some of the smaller airports. The agency staff just wants you to do what they're comfortable with.... They hang out with [these consultants] at golf courses, in bars. There's nothing small business can do to break [that].
>
> Often, [agencies] see us as too small, [but] we can do the work which other folks can.... We've brought together enough subs and so on to demonstrate that.

Most participants reported that becoming certified as a DBE helped to reduce these barriers.

> These programs are very valuable in order to move forward. I mean, without them, we would still be a company of seven.
>
> Sometimes I feel these people are forced to talk to me even if they don't want to. And it's nice because then it gives you that opportunity to create a relationship and introduce yourself and your services.
>
> It's kind of like a license to hunt. I might not catch anything, but it gave me that license and I get to get out there and go do it.
>
> [The agency] brought in a bunch of DBEs and they were like, "Concrete perfect. We need some numbers from you." And bam, I got the airport job.... And many of the primes do that, and that's a great way to establish relationships.
>
> The program definitely helps you get in the door.
>
> The program's done well, I think it helps people grow, it helps people get in and the reason I haven't gotten huge, we do probably two to four million dollars' worth of work. Eighteen employees, but it's my choice.
>
> I'd be back at a larger firm [without the DBE program] and subordinate to White men who always want to be "the man".

Losing program eligibility can be devastating. Based on a 2012 Disparity Study,[138] WSDOT has sought a waiver from the USDOT to no longer count DBEs owned by White females for credit towards meeting DBE contract goals on contracts funded by the Federal Highway Administration. The Department's 2017 Disparity Study[139] found ample evidence of discriminatory barriers faced by White women in the Washington construction industry, the USDOT has not yet responded to the

138. https://www.wsdot.wa.gov/sites/default/files/2017/06/02/OEO2012DBEDisparityStudy.pdf.
139. https://wsdot.com/sites/default/files/2017/09/11/OEO-DisparityStudy-2017.pdf.

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request to rescind the waiver. The experiences of White women DBEs in the wake of the waiver has been devastating. They had received work as the result of the DBE program, and now that they are no longer eligible to be counted towards contract goals (WSDOT continues to count any utilization as race-neutral participation), many have been shut out of the market. Prime contractors who had used them for years no longer accept their bids.

> I couldn't win one job, not one job after June 1st of 2017.... I [have done] $90 million of business and bonded since 2009 and yet in 2017 came along and the waiver was effected, I couldn't get one job.... It still is a good old boys network. You know, discrimination definitely still exists in construction.... The other White women DBEs they're down. I mean like flagging companies, trucking companies.... We couldn't get it if we were low, we wouldn't get it if we're high, and nobody's going to overtly say, I'm sorry we can't use you because you're no longer a DBE. … So, then I started to lose my labor [and] they knew that I wasn't gonna make it. So, then it just again becomes a self-fulfilling prophecy.... Every day you just see this thing that you built up from nothing, die by a thousand cuts. It's really been emotionally and physically [draining]. I don't know how you measure that or put that in the report, the impact of that. My daughter worked for me and I hoped to pass on the company to her and I had to lay her off and my son in law works for me and my nephew … to see family members and, and longtime employee leave [is very hard].
>
> The primes have been the main beneficiary of the White women waiver, because they're self-performing work that they used to sub out.
>
> Our firm has picked up no work, not one job, since we were waived out.... We keep bidding, bidding, bidding, not to even get one job. You would think somebody would just pencil you in erroneously, but we have not picked up one.
>
> We're looking to do some other things, or we're going to go belly up this year. There's no doubt about it… We had up to 80 employees in a season. We're down to five.
>
> This is real people. Real job, real lives, real futures, real hopes and dreams.

B. Anecdotal Survey

To supplement the in-person interviews, we also conducted an electronic survey of firms on our availability list. One-hundred and thirty-seven minority- and

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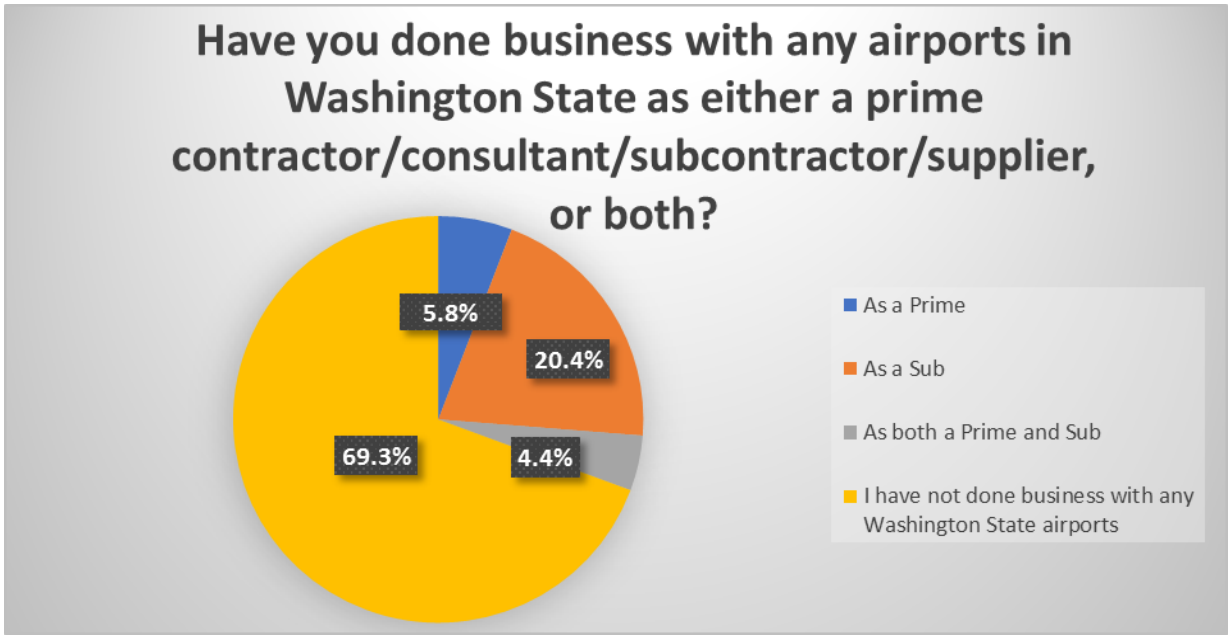
women-owned firms completed the survey. Only 5.8 percent of the firms had worked on projects with Washington State Airports just as a prime contractor/consultant; 20.4 percent had worked only as a subcontractor; 4.4 percent had worked as both a prime contractor/consultant and as a subcontractor/subconsultant or supplier; and 69.3 percent had not done business on any contracts with the Airports.



These respondents reported the following experiences.

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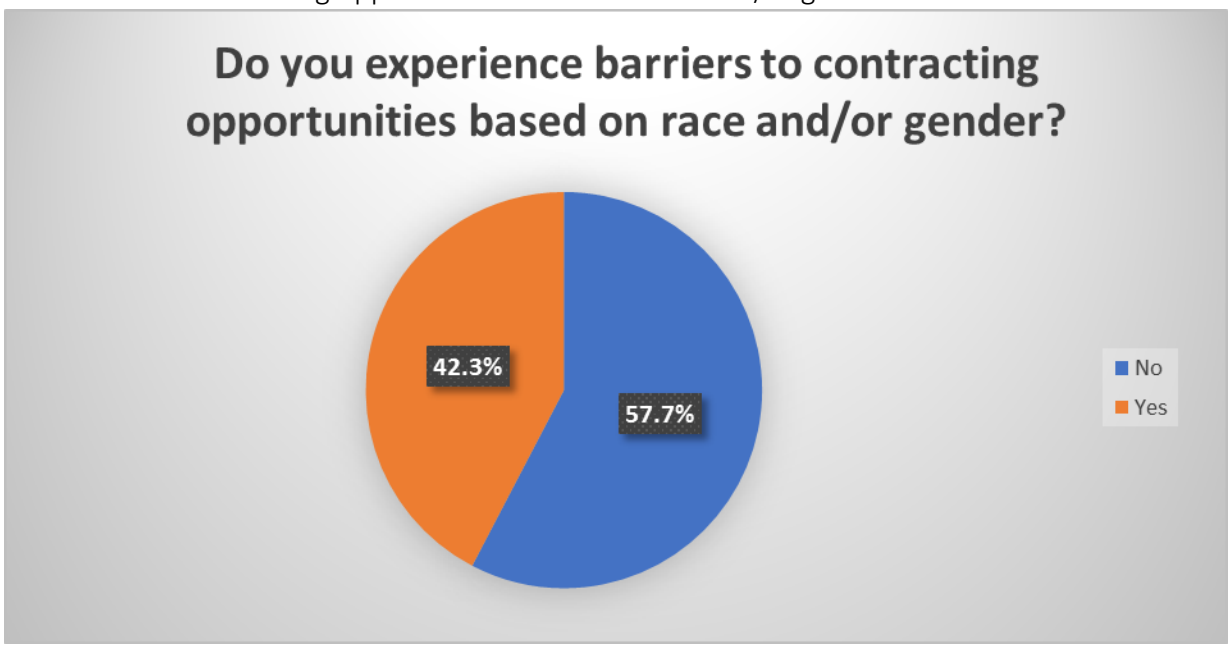
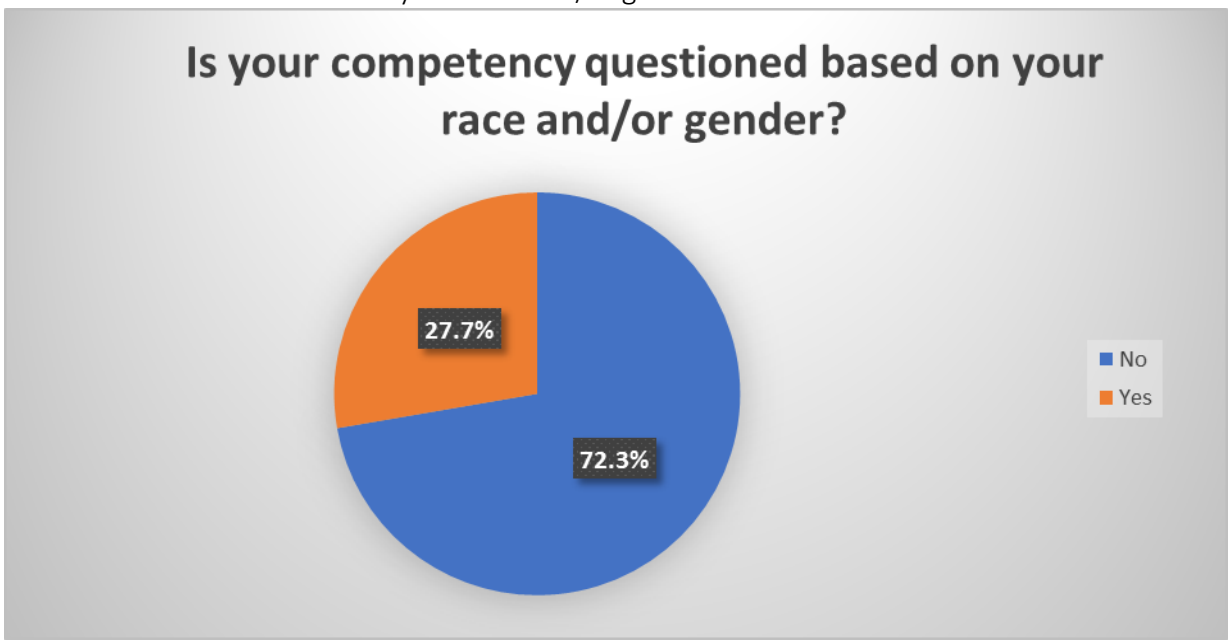
Over 40 percent answered yes to the question, "Do you experience barriers to contracting opportunities based on race and/or gender?



More than a quarter answered yes to the question, "Is your competency questioned based on your race and/or gender?



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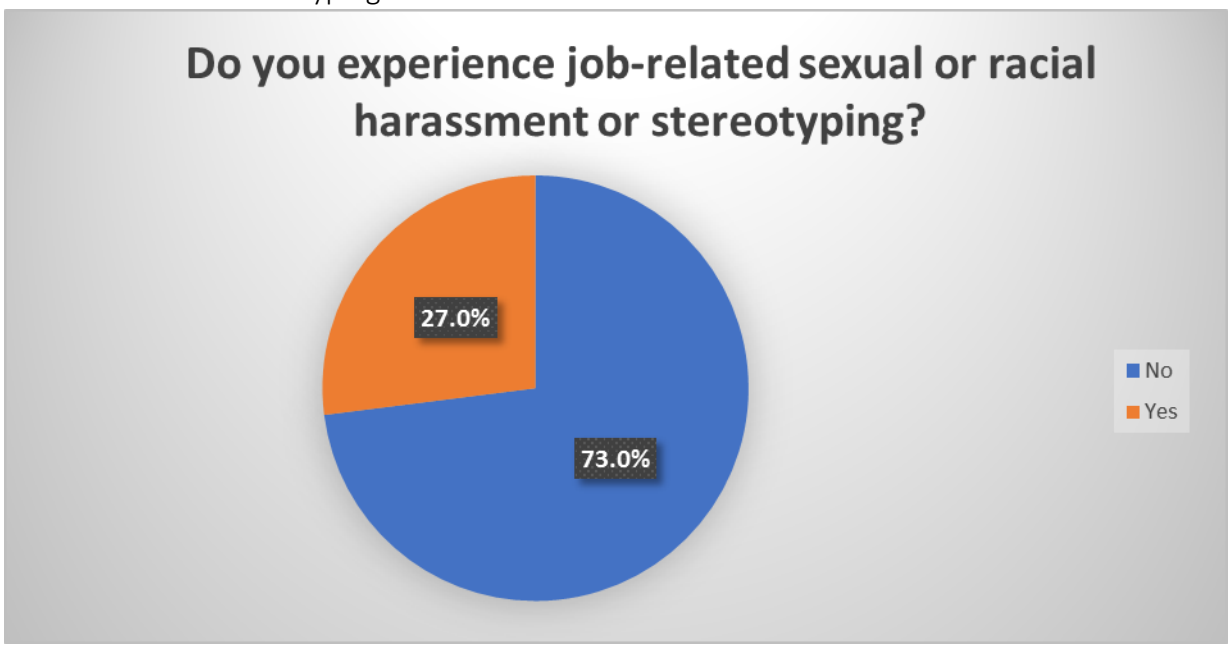
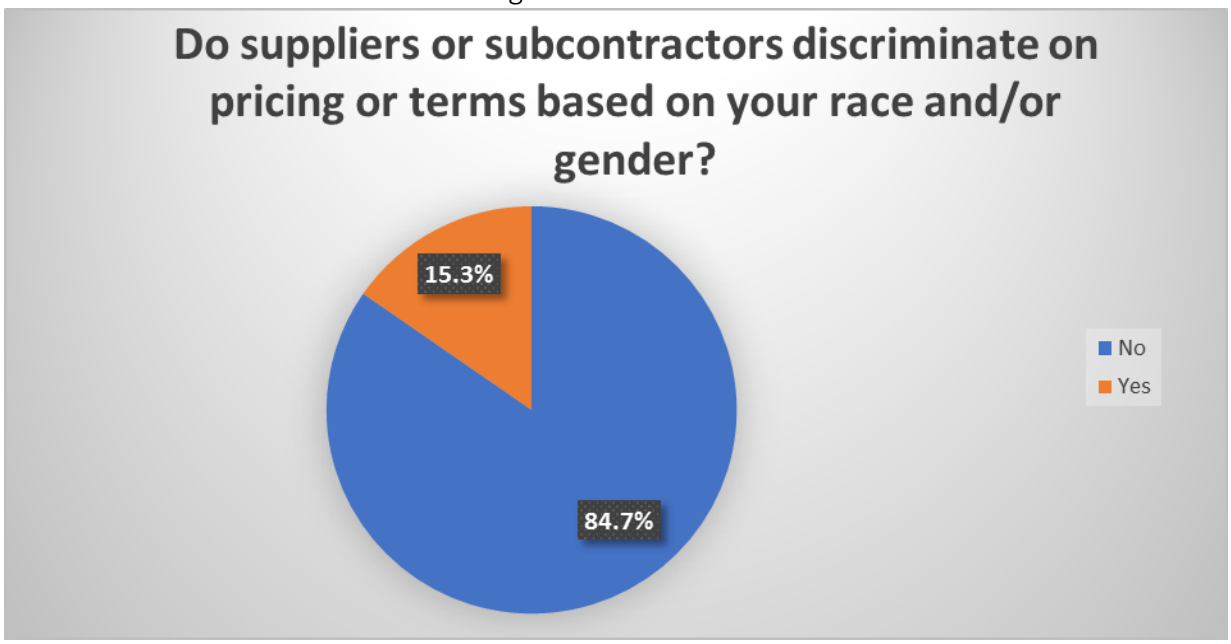
Almost 30 percent said they experienced job-related sexual or racial harassment or stereotyping.



Fifteen percent said that suppliers or subcontractors discriminate on pricing or terms based on race and gender.



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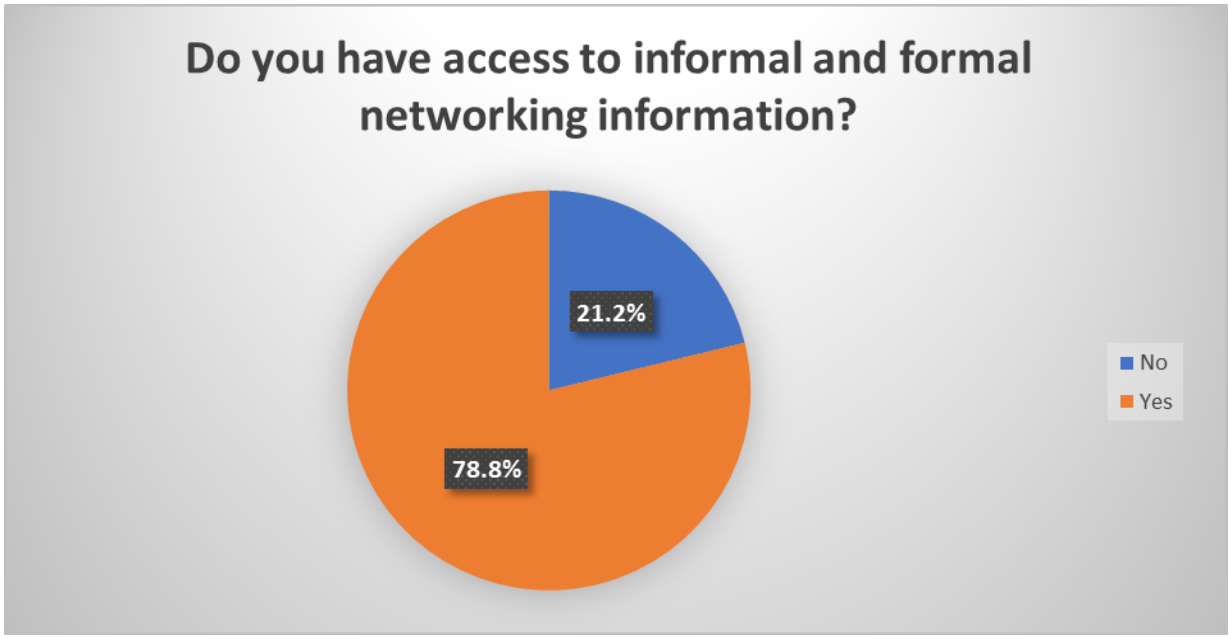
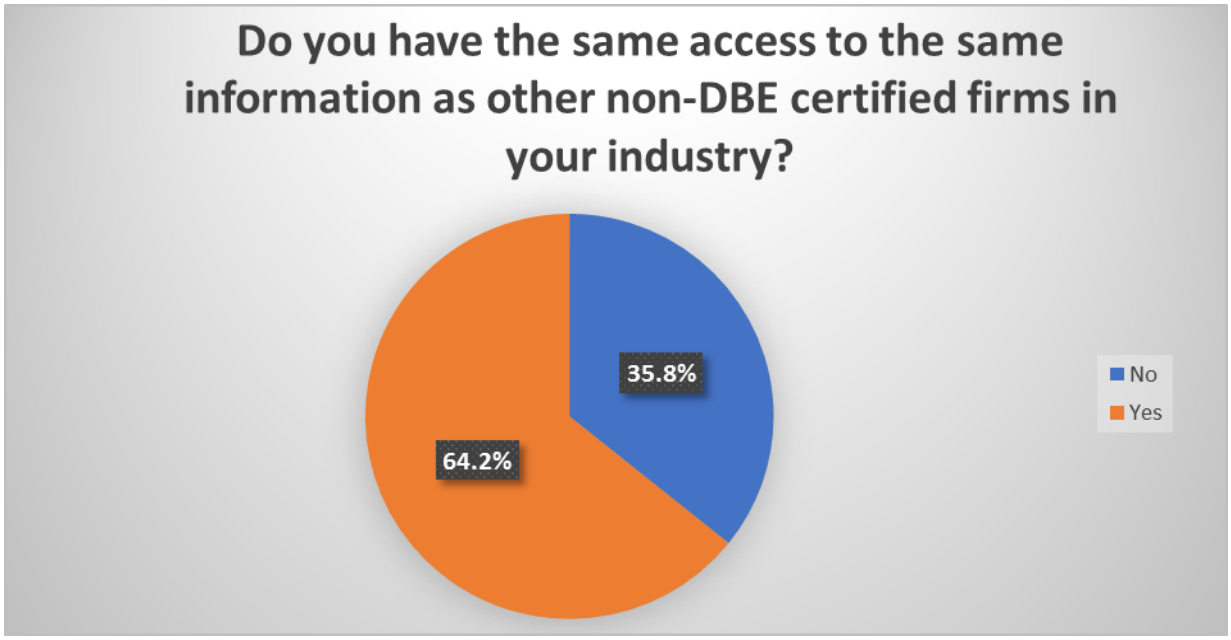
Over 20 percent, answered no to the question, "Do you have access to informal and formal networking information". Over a third said they did not have the same access to the same information as other non-DBE firms in their industry.





Almost 20 percent reported that they have unequal access to financing and to business networks; a little over 10 percent reported that they have unequal access

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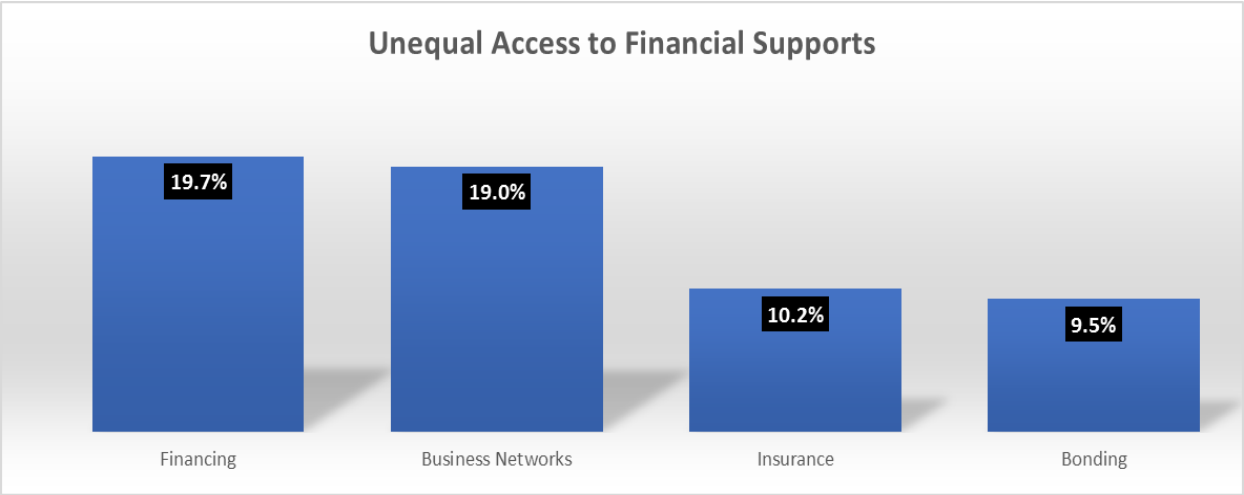
to insurance; and almost 10 percent reported that they have unequal access to surety bonding services.



Almost 75 percent (74.45 percent) responding said they were DBE certified, but only a third reported they are solicited for Airport projects with DBE goals.

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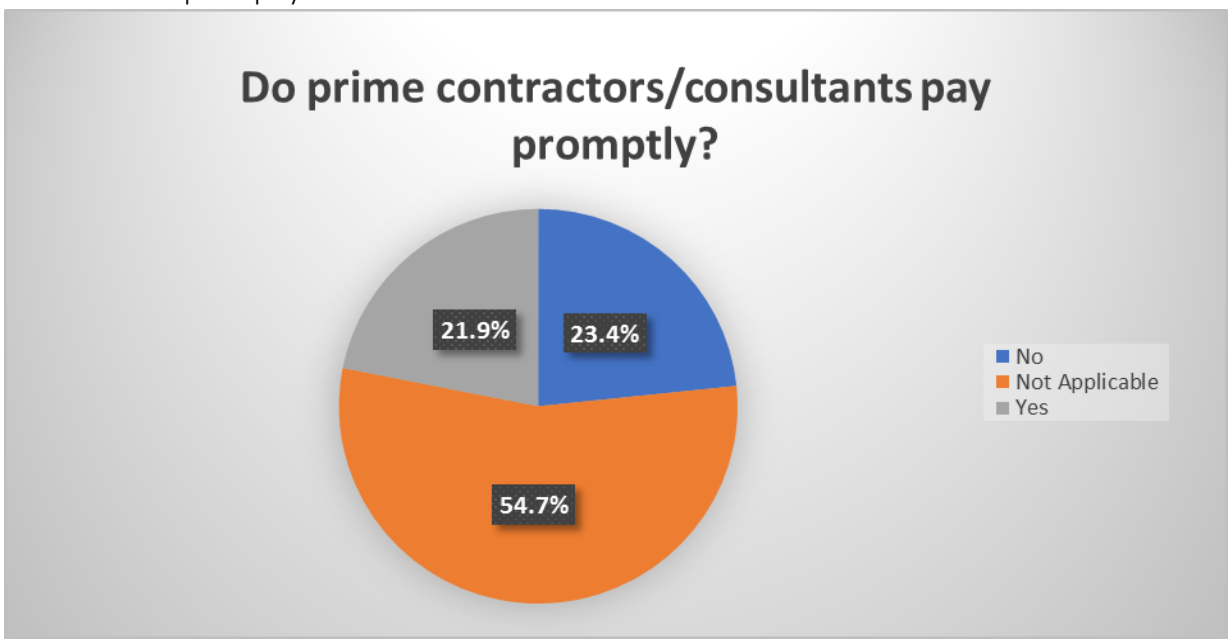
A little over 50 percent reported that they are solicited for private projects and projects without DBE goals.

Only 2.9 percent of those with airport work stated that the airports do not pay promptly.[140]

140. "Not Applicable" includes subcontractors that would not have been paid by the airport and firms that had not received Airport prime contracts.

However, almost a quarter said that prime contractors/consultants do not pay promptly.



Respondents reported participating in DBE business support or development activities: 68.6 percent indicated they had not participated in any of these programs.

- 5.8 percent had participated in financing or loan programs.
- 4.3 percent had accessed bonding support programs.
- 13.1 percent had participated in a mentor-protégé program or relationship.
- 9.4 percent had received support services such as assistance with marketing, estimating, information technology.
- 10.9 percent had joint ventured with another firm.

Open-ended comments from respondents were consistent with information provided in the business owner interviews. Most responses centered on barriers to bidding on and successfully getting work with the Airports. These barriers included competing with big firms and entrenched suppliers and businesses, difficulties in obtaining the necessary financial supports, lack of outreach and being part of a network where information about opportunities is disseminated and outright racial and gender discrimination.

Suggestions for overcoming these barriers and creating more opportunities included:

- Partnering with larger firms and access to Mentor-protégé programs.

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- Having access to more business supports, including planning and guidance, bonding and financing programs.
- Adding white women back into the program to qualify for DBE contracts.
- Better and more focused networking, along with better communication about bid and contracting opportunities.
- A centralized system of DBE opportunities that can be easily accessed.

C. Conclusion

Consistent with other evidence reported in this Study, the anecdotal interviews and the survey results suggest that many minorities and women continue to suffer discriminatory barriers to full and fair access to contracts and associated subcontracts in the Airports' market area. While not definitive proof that the Airports have a sufficient legal basis to implement race-conscious remedies for these impediments, the results of the qualitative data are the types of evidence that, especially when considered in conjunction with the numerous pieces of statistical evidence assembled, the courts have found to be highly probative of whether the Airports would be passive participants in a discriminatory market area without affirmative interventions and whether race-conscious remedies are necessary to address that discrimination.

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VII. Recommendations for the Washington State Airports' Development Programs

The quantitative and qualitative data in this study provide a thorough examination of the evidence of the experiences of minority- and women-owned firms in the Washington States' geographic and industry markets for Federal Aviation Administration ("FAA") assisted contracts. As required by strict constitutional scrutiny, the Disadvantaged Business Enterprise ("DBE") program for FAA contracts[141] and the Ninth Circuit Court of Appeals' jurisprudence for the DBE program, we analyzed evidence of DBEs'[142], utilization by the Airports as measured by dollars spent. We next estimated the availability of DBEs in the Airports' markets in the aggregate and by detailed industry code. We then compared the Airports' utilization of DBEs to the availability of all ready, willing and able firms in its markets to calculate whether there are disparities between utilization and availability for FAA-funded contracts. We also solicited anecdotal or qualitative evidence of DBEs' experiences in obtaining contracts and in the public and private sectors. These results provide the Airports with the evidence necessary to narrowly tailor their DBE program for FAA-funded contracts, as required by the Ninth Circuit. Based upon these findings, we make the following recommendations.

A. Augment Race- and Gender-Neutral Measures

The courts and the DBE program regulations require that recipients use race-neutral[143] approaches to the maximum feasible extent to meet the DBE triennial and contract goals. This is a critical element of narrowly tailoring the programs, so that the burden on non-DBEs is no more than necessary to achieve the program's remedial purposes. Increased participation by DBEs on contracts through race-neutral measures will also reduce the need to set DBE contract goals. We, therefore, suggest the following enhancements of the Airports' current efforts on FAA-

141. 49 C.F.R. Part 26.
142. We use the term "DBEs" to refer collectively to DBEs and SBEs for simplicity and ease of usage.
143. The term race-neutral as used here includes gender-neutrality.

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assisted projects, based on the business owner and stakeholder interviews, the input of agency staff, and national best practices for DBE programs.

1. Increase Access to FAA Funded Contracting Opportunities

The lack of access to information about Airport opportunities is perhaps the largest barrier to DBEs receiving this type of work. Other than contracts with the Port of Seattle, few DBEs were aware how to obtain information about contracts at the Airports, or in many cases, that the Airports even exist. This dearth of knowledge ranged from a lack of information about specific contracts, to penetrating the networks of Airport officials with contracting responsibilities, to making connections with prime contractors and consultants that regularly perform Airport work. We recommend the following steps to address these problems.

a. Conduct Outreach Efforts with Other Agencies

Many of the Airports lack the staff resources needed to individually reach out to DBEs and small firms. We therefore suggest partnering with other agencies that conduct outreach and provide contracting information on a regular basis. Airport staff could attend these meetings, or at a minimum, provide literature about how to do business with their Airport and upcoming contract opportunities. Possible partners include the Washington State Department of Transportation ("WSDOT"); the State of Washington Department of Enterprise Services ("DES"); the City of Seattle; the City of Tacoma; King County; and the Procurement Technical Assistance Centers.

The smaller Airports could further partner with each other to host regional events and vendor fairs. To address the challenges faced by small Airports in rural areas and in Eastern Washington, semi-annual forums could be held where all the Airports provide opportunities to network with staff and prime contractors and consultants, obtain information about how to do business with the Airport and explore forecasts of upcoming projects. The Directory maintained by the State's Office of Minority and Women's Business Enterprise ("OMWBE"), in conjunction with the Master D/M/WBE Directory developed for this study, can serve as the invitation list, along with an Airport's own vendor listings.

One recommendation from the staff and business owner/stakeholder interviews is for the Airports that attend professional aviation conferences to include information about their DBE program as part of the materials.

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b. Provide Information About Contract Opportunities

It may also be possible for the Airports to post their contract solicitations on WEBS, the online portal maintained by DES. WEBS has several useful functions for the Airports:

- It permits firms to register, including the ability to list their relevant commodity code(s). Construction firms are specifically directed to include certain codes. Firms can provide an ownership profile and list their D/M/WBE and other certifications. Vendors can also indicate the geographic areas they are willing/able to provide goods and/or services in by selecting from a list of counties.
- Bid opportunities can also be searched. Information is delineated by active bids, and current and future bid opportunities. Active bids are further subdivided into facility consultants, construction contractors, and solicitations for leased space. Future bid opportunities are described by goods and services, IT forecast, and construction and facility consultants.
- There is also information on how to receive bid notifications or bid results.

The Airports should work with DES to determine how best to include their information.

In addition to utilizing existing communication channels, the Airports should utilize OMWBE's Directory and our Master D/M/WBE Directory to send eBlasts to firms about their contract solicitations and forecasts. This has become a very common and low-cost method for agencies to communicate with the disadvantaged business community.

Another channel of communication should be the FAA Matchmaker site. This is available to the Airports free of charge and should be utilized to increase access to information for DBEs and small firms. That so few firms and Airport staff know about this tool suggests that a plan to educate potential users needs to be developed.

c. Provide Information About How to Do Business with the Airports

Every government agency has different policies and processes for business with that particular entity. While the Airports' DBE Program Plans were quite similar, exactly how their contracting activities function will vary. For example, specific forms, documents and other items may not be the same from Airport to Airport. It would therefore be helpful for each Airport to place on its website information about how to do business with that entity. Samples instructions, Frequently Asked Questions sheets, and individual

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contact persons for assistance will reduce barriers and increase access for DBEs and small firms.

2. Conduct Training on FAA Specifications and Performance Standards

Many interviewees reported that DBEs and small firms are not versed in the complex requirements of FAA specifications and standards. This discourages such firms from participating on Airport jobs. Should they win a subcontract or prime contract, the requirements for specific outcomes and compressed schedules can lead to failure.

To address this knowledge and skills gap, we suggest the FAA and the Airports provide training to new or inexperienced entrants into the aviation market. To reduce costs and increase participation, this training could be provided by webinar and/or videos. Firms located in more remote areas or in Eastern Washington would then have more options to participate.

It might be further possible to partner with WSDOT to conduct training through the Department's extensive supportive services program. WSDOT provides a wide array of supportive and technical assistance to DBEs, and at least some introductory information about aviation contracts could be included in appropriate programs. The firms that participate could then form the basis for a list of DBEs with an active interest in Airport work and some familiarity with the standards and processes that it will be necessary to meet. This would provide the Airports and prime vendors with a good start to utilizing DBEs as prime firms and as subcontractors and subconsultants.

3. Increase Contract "Unbundling"

Airport projects are often very large and complex. Not surprisingly, this was reported to be a disincentive to small firms to seek FAA funded contracts, even at the subcontractor level. Unbundling projects, providing longer lead times and simplifying requirements would assist these businesses to take on some Airport work. In conjunction with reduced insurance and bonding requirements where possible, unbundled 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.

Unbundling might be especially useful for on call contracts. This could be a useful step to support opportunities for DBEs to serve as prime vendors. Airports that have moved to very long term on call contracts should especially

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consider this option, as otherwise disadvantaged firms can be shut out of their work for many years.

4. Adopt an SBE Target Market Program

There was significant support for a race- and gender-neutral small business setaside to assist DBEs and small business enterprises ("SBEs") to work as prime contractors and consultants. We note that small business elements are a required component of every Airport's DBE Program Plan. If permitted under state law and permissible under AIP contracting requirements, this program would set aside some smaller or less complex contracts for bidding only by SBEs as prime contractors. For example, maintenance contracts and small consulting contracts might be successfully procured using this method. This measure would be especially useful for those industries that do not operate on a prime vendor-subcontractor model, such as consulting services, or contracts with few opportunities for subcontracting. On call contracts can be an excellent vehicle for this target market approach. If implemented on a fully race- and gender-neutral basis, this is a constitutionally acceptable method to increase opportunities for all small firms. WSDOT has recently adopted an SBE program, and the Airports could use that certification, as well as the DBE certification, for this procurement method.

5. Consider Adopting a Mentor-Protégé Program for Aviation Contracts

Several business owners, both DBEs and non-DBEs, reported good experience's with mentor-protégé type programs. While the resources necessary to administer such an initiative would be too burdensome for individual Airports, perhaps the Airports or WSDOT could develop a Mentor-Protégé Program ("MPP"") for contractors performing FAA funded work that could be tapped by all the Washington State Airports. Such a program could conform to 49 C.F.R. § 26.35 and the Guidelines of Appendix D to Part 26. In addition to the standards provided in Part 26, the General Counsel's Office at USDOT has provided some additional guidance[144], and USDOT's Office of Small Disadvantaged Business Utilization had adopted a pilot program[145] and sample documents.[146]

The following elements reflect these regulatory requirements, USDOT guidelines and best practices:

144. https://www.transportation.gov/civil-rights/disadvantaged-business-enterprise/official-questions-and-answers-qas-disadvantaged.
145. https://www.transportation.gov/osdbu/procurement-assistance/mentor-protege-pilot-program.
146. https://www.transportation.gov/small-business/procurement-assistance/mentor-protege-program-sample-agreement-1.

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- A description of the qualifications of the mentor, including the firm's number of years of experience as a highway construction contractor or consultant; the agreement to devote a specified number of hours per month to working with the protégé; and the qualifications of the lead individual responsible for implementing the development plan.
- A description of the qualifications of the protégé, including the firm's number of years of experience as a highway construction contractor or consultant; the agreement to devote a specified number of hours per month to working with the mentor; and the qualifications of the DBE owner(s).
- An FAA-approved written development plan, which clearly sets forth the objectives of the parties and their respective roles, the duration of the arrangement, a schedule for meetings and development of action plans, and the services and resources to be provided by the mentor to the protégé. The assistance provided by the mentor must be detailed and directly relevant to FAA work. The development targets should be quantifiable and verifiable– such as increased bonding capacity, increased sales, increased areas of work specialty or prequalification, etc.– and reflect objectives that increase the protégé's capacities and expand its business areas and expertise for aviation contracts.
- A long term and specific commitment between the parties, *e.g.*, 12 to 36 months.
- The use of any equipment or equipment rental must be detailed in the plan, and should be further covered by bills of sale, lease agreements, etc., and require prior written approval by FAA.
- Extra credit for the mentor's use of the protégé to meet a contract goal (*e.g.*, 1.25 percent for each dollar spent), with a limit on the total percentage that could be credited on a specific contract and on total credits available under the MPP.
- Any financial assistance by the mentor to the protégé must be subject to prior written approval by FAA and must not permit the mentor to assume control of the protégé.
- A fee schedule to cover the direct and indirect cost for services provided by the mentor for specific training and assistance to the protégé.
- The development plan must contain a provision that it may be terminated by mutual consent or by the FAA if the protégé no longer meets the eligibility standards for DBE certification; either party desires to be removed from the relationship; either party has failed or is unable to meet its obligations under the plan; the protégé is not progressing or is

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not likely to progress in accordance with the plan; the protégé has reached a satisfactory level of self-sufficiency to compete without resort to the plan; or the plan or its provisions are contrary to legal requirements.

- Submission of quarterly reports by the parties indicating their progress toward each of the plan's goals.
- Regular review by the FAA of compliance with the plan and progress towards meeting its objectives. Failure to adhere to the terms of the plan or to make satisfactory progress would be grounds for termination from the Program.

We recognize that this level of direction and oversight will require additional resources. Close monitoring of the program will be critical, but agencies such as the Missouri Department of Transportation[147] and the Ohio Department of Transportation[148] as well as USDOT[149] have reported success with such a USDOT-approved approach. Given the complexities of aviation work, intensive training and assistance will be necessary to develop DBEs that can perform on FAA-assisted projects.

B. Implement Narrowly Tailored DBE Programs

The Study's results support the determination that the Airports have a strong basis in evidence to implement fully race-conscious DBE programs that include all groups for race-conscious relief for its FAA-funded contracts. The record– both quantitative and anecdotal– establishes that minorities and White women in the Washington aviation market continue to experience significant disparities in and barriers to their fair and equal access to FAA-funded contracts, and the aviation and construction industry in the State of Washington area. While not all DBE groups experienced large disparities in their utilization, that a small number of DBES have been able to break into Airport work does not mean the playing field is level for all DBEs. When these "outliers" are removed, it is clear that DBEs are not being used in proportion to their availability. Coupled with the anecdotal and economy-wide results, we are confident that the Airports can support the use of race-conscious contract goals on their FAA-funded contracts.

147. www.modot.org/ecr.
148. http://www.fhwa.dot.gov/resourcecenter/teams/civilrights.
149. http://www.dot.gov/osdbu/news/us-dots-first-mentor-protege-participants-reach-six-month-mark.

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1. Use the Study to Set Triennial DBE Goals

As discussed in Chapter II, the Airports' constitutional responsibility is to ensure that its implementation of 49 C.F.R. Part 26 is narrowly tailored to its geographic and procurement marketplace. In the Ninth Circuit, this means examining whether each racial and ethnic group and white women have suffered discrimination in the Airports' market.[150]

The study found that spending on FAA-funded jobs for all groups, other than Hispanics and Native Americans, did not reach parity with non-DBEs. However, as discussed at length in Chapter IV, the results for these two groups were anomalous given that a handful of firms in one or two NAICS codes received a large share of the dollars for highly specialized work.

In our judgment, these results fit squarely within the framework of the *Western States* opinion by providing the type of quantitative and qualitative data that were totally lacking in that case.[151] This report presents statistical evidence of the Airports' utilization of available DBEs in its market, as well as the economy-wide and unremediated markets data approved by the Ninth Circuit.[152] Business owners provided strong anecdotal evidence of the continuing existence of race- and gender-based barriers, including bias, stereotyping, harassment, exclusion from networks and unfair performance standards. The picture drawn by these results is of a playing field for FAA funded work that is still not level. These findings suggest that the Airports may infer that the cause is the continued effects of discrimination on the basis of race and gender. Therefore, to ensure they are not a passive participant in this discriminatory market, we recommend that they consider utilizing race-conscious contract goals and include all groups for credit towards meeting contract goals.

49 C.F.R. Part 26 and Part 23 require that FAA recipients engage in a two-step process to set a triennial goal for DBE participation in its federally-funded projects. To determine the Step 1 base figure for the relative availability of DBEs required by § 26.45(c), we suggest the Airport's use the DBE weighted availability findings. Our custom census is an alternative method permitted under § 26.45(c)(5) and is the only approach that has received repeated judicial approval. This is a much more targeted and accurate method than the most common approach employed by the Airports, namely, dividing the DBE Directory by the Census Bureau's County Business Pattern data.[153] While permissi-

150. 407 F.3d at 997-998 ("Whether Washington's DBE program is narrowly tailored to further Congress's remedial objective depends upon the presence or absence of discrimination in the State's transportation contracting industry. … Moreover, even when discrimination is present within a State, a remedial program is only narrowly tailored if its application is limited to those minority groups that have actually suffered discrimination.").
151. 407 F.3d at 991-992.
152. *See* Chapter II.
153. A listing of the goals for each Airport is provided in Appendix F.

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ble under § 26.45(c), this "apples to oranges" approach results in artificially low estimates. Coupled with unsupported guesses about the Airports' market areas, it has resulted in very little DBE utilization outside the Puget Sound area. We recognize that the concentration of minority-owned businesses in Western Washington presents challenges for other parts of the State, and we so have provided information by region in Appendix E.

To perform the Step 2 analysis required by § 26.45(d) to adjust the step 1 figure to reflect the level of DBE availability that would be expected in the absence of discrimination, the Airports can use the statistical disparities in Chapter V in the rates at which DBEs form businesses. This is the type of "demonstrable evidence that is logically and directly related to the effect for which the adjustment is sought."[154]

2. Use the Study to Set DBE Contract Goals

The highly detailed unweighted availability estimates in Chapter IV, provided as an appendix to this Report, can serve as the starting point for narrowly tailored contract goal-setting that reflects the percentage of available DBEs as a percentage of the total pool of available firms. Airports should weigh the estimated scopes of the contract by the availability of DBEs in those scopes, and then adjust the result based on geography and current market conditions (for example, the volume of work currently underway in the market, the entrance of newly certified firms, specialized nature of the project, etc.).

The FAA has developed a DBE goal-setting tool for use by airport sponsors. The tool is free of charge and is contained within the FAA Civil Rights Connect System. WSDOT has also developed an electronic data collection and monitoring system that includes a contract goal-setting module developed to utilize our disparity study unweighted availability data as the starting point.[155] The Airports could employ the FAA's System, or perhaps gain access to WSDOT's system. Written procedures detailing the implementation of contract goal-setting should be developed and disseminated so that all contracting actors understand the methodology.

This will help to address the lack of resources reported by most Airports to engage in contract goal-setting. The lack of tools has led to the vast majority of Airports using only the most basic of race-neutral measures to provide opportunities for DBEs, with predictable results. Without the additional resources and support described above, it is unlikely that most Airports will set DBE contract goals.

154. 49 C.F.R. § 26.45(d)(3); *see also* § 23.51.
155. Diversity Management and Compliance System: https://wsdot.diversitycompliance.com.

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C. Develop Performance Measures for Program Success

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

- The number of bids or proposals and the dollar amount of the awards to DBEs, 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;
- Increased bidding by certified firms;
- Increased prime contract awards to certified firms;
- Expansion of the types of work performed by DBEs; and
- Increased "capacity" of certified firms as measured by bonding limits, size of jobs, profitability, etc.

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Appendix A: 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 and 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, age and education 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. Since this Report examined the State of Washington, the analysis was limited to data from the State. The coefficient for the new variable showed the impact of being a member of that race or gender in the State of Washington.

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Appendix B: Further Explanation of the Probit Regression Analysis

Probit regression is a special type of regression analysis. While there are many differences between the underlying estimation techniques used in the probit regression and the standard regression analysis, the main differences from the layperson's point of view lie in the nature of the 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 and 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

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by the amount of the coefficient.[156] However, in the probit model, the initial coefficients 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 percent lower probability of forming a business compared to men.

156. The exact interpretation depends upon the functional form of the model.

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Appendix C: 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 the Washington State Airports as they explore whether each racial and ethnic group and White women continues to experience discrimination in its markets 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. An example helps to explain this concept.

Let us say this analysis determines that non-Whites receive wages that are 35 percent 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 percent less than White men). This is sometimes called the null hypothesis. We then calculate a confidence interval to explore the

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probability that the observed relationship (*e.g.*, - 35 percent) is between 0 and minus that confidence interval.[157] 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 percent would have a broader confidence interval than statistical significance of 95 percent. Once a confidence interval is established, if -35 percent lies outside of that interval, we can assert that the observed relationship (*e.g.*, 35 percent) is accurate at the appropriate level of statistical significance.

157. Because 0 can only be greater than -35 percent, 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.

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Appendix D: Additional Data from the Utilization Analyses for Washington State Airports

Table D-1: Industry Percentage Distribution of FAA Funded Contracts by Dollars Paid, All Contracts

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	36.88689%	36.88689%
238910	Site Preparation Contractors	14.69771%	51.58461%
236220	Commercial and Institutional Building Construction	10.55531%	62.13991%
238210	Electrical Contractors and Other Wiring Installation Contractors	9.81712%	71.95704%
541330	Engineering Services	8.31747%	80.27450%
238220	Plumbing, Heating, and Air-Conditioning Contractors	2.80745%	83.08195%
541370	Surveying and Mapping (except Geophysical) Services	1.47030%	84.55224%
238310	Drywall and Insulation Contractors	1.15954%	85.71178%
541620	Environmental Consulting Services	1.15576%	86.86754%
238120	Structural Steel and Precast Concrete Contractors	1.14012%	88.00766%
238990	All Other Specialty Trade Contractors	1.09205%	89.09971%
561730	Landscaping Services	0.96900%	90.06871%
238110	Poured Concrete Foundation and Structure Contractors	0.92432%	90.99303%
238160	Roofing Contractors	0.77548%	91.76851%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.70770%	92.47622%
238350	Finish Carpentry Contractors	0.57634%	93.05256%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
236210	Industrial Building Construction	0.49400%	93.54656%
336211	Motor Vehicle Body Manufacturing	0.41887%	93.96544%
238150	Glass and Glazing Contractors	0.41321%	94.37864%
326199	All Other Plastics Product Manufacturing	0.39753%	94.77617%
541310	Architectural Services	0.36011%	95.13628%
488119	Other Airport Operations	0.33780%	95.47408%
327331	Concrete Block and Brick Manufacturing	0.30431%	95.77840%
238170	Siding Contractors	0.30186%	96.08026%
541380	Testing Laboratories	0.27011%	96.35037%
236118	Residential Remodelers	0.22822%	96.57859%
324122	Asphalt Shingle and Coating Materials Manufacturing	0.22680%	96.80539%
238290	Other Building Equipment Contractors	0.20329%	97.00868%
238140	Masonry Contractors	0.20257%	97.21125%
336120	Heavy Duty Truck Manufacturing	0.19554%	97.40679%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.16648%	97.57326%
541320	Landscape Architectural Services	0.14717%	97.72044%
541922	Commercial Photography	0.13981%	97.86024%
561790	Other Services to Buildings and Dwellings	0.13973%	97.99997%
562910	Remediation Services	0.13179%	98.13176%
424910	Farm Supplies Merchant Wholesalers	0.12787%	98.25963%
238320	Painting and Wall Covering Contractors	0.12660%	98.38623%
238330	Flooring Contractors	0.11692%	98.50315%
238130	Framing Contractors	0.11028%	98.61343%
238390	Other Building Finishing Contractors	0.09528%	98.70870%
237120	Oil and Gas Pipeline and Related Structures Construction	0.08892%	98.79763%
238340	Tile and Terrazzo Contractors	0.08481%	98.88244%
562119	Other Waste Collection	0.08418%	98.96662%
333120	Construction Machinery Manufacturing	0.08378%	99.05040%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541360	Geophysical Surveying and Mapping Services	0.07833%	99.12873%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.07035%	99.19909%
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.06976%	99.26884%
327320	Ready-Mix Concrete Manufacturing	0.06311%	99.33195%
541611	Administrative Management and General Management Consulting Services	0.05671%	99.38866%
332312	Fabricated Structural Metal Manufacturing	0.05644%	99.44510%
561990	All Other Support Services	0.04869%	99.49379%
484110	General Freight Trucking, Local	0.04449%	99.53828%
237990	Other Heavy and Civil Engineering Construction	0.04230%	99.58058%
336360	Motor Vehicle Seating and Interior Trim Manufacturing	0.03563%	99.61622%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.03346%	99.64967%
221310	Water Supply and Irrigation Systems	0.02973%	99.67941%
324121	Asphalt Paving Mixture and Block Manufacturing	0.02957%	99.70898%
212321	Construction Sand and Gravel Mining	0.02647%	99.73545%
541350	Building Inspection Services	0.02402%	99.75946%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.02325%	99.78271%
561320	Temporary Help Services	0.02101%	99.80373%
332311	Prefabricated Metal Building and Component Manufacturing	0.02037%	99.82409%
237130	Power and Communication Line and Related Structures Construction	0.01990%	99.84399%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.01982%	99.86381%
541613	Marketing Consulting Services	0.01617%	99.87998%
115310	Support Activities for Forestry	0.01485%	99.89483%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
332710	Machine Shops	0.01385%	99.90869%
321918	Other Millwork (including Flooring)	0.01247%	99.92116%
541690	Other Scientific and Technical Consulting Services	0.01074%	99.93190%
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	0.01031%	99.94221%
111421	Nursery and Tree Production	0.00954%	99.95175%
541720	Research and Development in the Social Sciences and Humanities	0.00848%	99.96023%
213112	Support Activities for Oil and Gas Operations	0.00699%	99.96722%
531312	Nonresidential Property Managers	0.00693%	99.97415%
562998	All Other Miscellaneous Waste Management Services	0.00371%	99.97786%
237110	Water and Sewer Line and Related Structures Construction	0.00354%	99.98140%
488111	Air Traffic Control	0.00337%	99.98477%
213111	Drilling Oil and Gas Wells	0.00316%	99.98793%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.00276%	99.99068%
531320	Offices of Real Estate Appraisers	0.00246%	99.99314%
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers	0.00164%	99.99478%
313310	Textile and Fabric Finishing Mills	0.00134%	99.99612%
332322	Sheet Metal Work Manufacturing	0.00133%	99.99745%
115112	Soil Preparation, Planting, and Cultivating	0.00115%	99.99860%
541511	Custom Computer Programming Services	0.00065%	99.99925%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.00029%	99.99954%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.00021%	99.99975%
423710	Hardware Merchant Wholesalers	0.00017%	99.99992%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.00006%	99.99998%
813920	Professional Organizations	0.00002%	100.00000%
TOTAL			**100.0%**

Source: CHA analysis of Washington Airports data

Table D-2: Industry Percentage Distribution of Contracts by Dollars Paid
Prime Contracts

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	47.906%	47.906%
238910	Site Preparation Contractors	17.202%	65.108%
236220	Commercial and Institutional Building Construction	16.952%	82.060%
541330	Engineering Services	10.882%	92.942%
541620	Environmental Consulting Services	1.436%	94.378%
541370	Surveying and Mapping (except Geophysical) Services	1.020%	95.398%
236210	Industrial Building Construction	0.803%	96.201%
336211	Motor Vehicle Body Manufacturing	0.681%	96.882%
541310	Architectural Services	0.485%	97.366%
238990	All Other Specialty Trade Contractors	0.401%	97.767%
236118	Residential Remodelers	0.371%	98.138%
238210	Electrical Contractors and Other Wiring Installation Contractors	0.336%	98.474%
336120	Heavy Duty Truck Manufacturing	0.318%	98.792%
561790	Other Services to Buildings and Dwellings	0.220%	99.012%
541320	Landscape Architectural Services	0.195%	99.207%
333120	Construction Machinery Manufacturing	0.136%	99.343%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.114%	99.457%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541611	Administrative Management and General Management Consulting Services	0.092%	99.549%
561730	Landscaping Services	0.072%	99.621%
238350	Finish Carpentry Contractors	0.067%	99.688%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.057%	99.745%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.054%	99.799%
541380	Testing Laboratories	0.050%	99.849%
212321	Construction Sand and Gravel Mining	0.043%	99.892%
324121	Asphalt Paving Mixture and Block Manufacturing	0.042%	99.934%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.033%	99.968%
238390	Other Building Finishing Contractors	0.028%	99.995%
237130	Power and Communication Line and Related Structures Construction	0.005%	100.000%
TOTAL			**100.0%**

Source: CHA analysis of Washington Airports data

Table D-3: Industry Percentage Distribution of Contracts by Dollars Paid, Subcontracts

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
238210	Electrical Contractors and Other Wiring Installation Contractors	24.98904%	24.98904%
237310	Highway, Street, and Bridge Construction	19.25370%	44.24274%
238910	Site Preparation Contractors	10.69010%	54.93283%
238220	Plumbing, Heating, and Air-Conditioning Contractors	7.20932%	62.14215%
541330	Engineering Services	4.21406%	66.35621%
238310	Drywall and Insulation Contractors	3.01507%	69.37128%
238120	Structural Steel and Precast Concrete Contractors	2.96459%	72.33588%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
561730	Landscaping Services	2.40434%	74.74021%
238110	Poured Concrete Foundation and Structure Contractors	2.40347%	77.14368%
238990	All Other Specialty Trade Contractors	2.19849%	79.34217%
541370	Surveying and Mapping (except Geophysical) Services	2.19060%	81.53278%
238160	Roofing Contractors	2.01643%	83.54921%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.84019%	85.38940%
238350	Finish Carpentry Contractors	1.39165%	86.78105%
238150	Glass and Glazing Contractors	1.07444%	87.85549%
326199	All Other Plastics Product Manufacturing	1.03366%	88.88916%
488119	Other Airport Operations	0.87836%	89.76752%
327331	Concrete Block and Brick Manufacturing	0.79128%	90.55880%
238170	Siding Contractors	0.78491%	91.34371%
541620	Environmental Consulting Services	0.70685%	92.05057%
541380	Testing Laboratories	0.62282%	92.67338%
324122	Asphalt Shingle and Coating Materials Manufacturing	0.58974%	93.26312%
238290	Other Building Equipment Contractors	0.52861%	93.79173%
238140	Masonry Contractors	0.52672%	94.31845%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.43289%	94.75134%
541922	Commercial Photography	0.36353%	95.11486%
562910	Remediation Services	0.34268%	95.45754%
424910	Farm Supplies Merchant Wholesalers	0.33250%	95.79004%
238320	Painting and Wall Covering Contractors	0.32918%	96.11922%
236220	Commercial and Institutional Building Construction	0.31916%	96.43838%
238330	Flooring Contractors	0.30403%	96.74240%
238130	Framing Contractors	0.28675%	97.02915%
237120	Oil and Gas Pipeline and Related Structures Construction	0.23123%	97.26038%
238340	Tile and Terrazzo Contractors	0.22053%	97.48091%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
562119	Other Waste Collection	0.21890%	97.69981%
541360	Geophysical Surveying and Mapping Services	0.20368%	97.90349%
238390	Other Building Finishing Contractors	0.20359%	98.10708%
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.18139%	98.28846%
327320	Ready-Mix Concrete Manufacturing	0.16409%	98.45255%
541310	Architectural Services	0.16039%	98.61294%
332312	Fabricated Structural Metal Manufacturing	0.14677%	98.75971%
561990	All Other Support Services	0.12660%	98.88631%
484110	General Freight Trucking, Local	0.11569%	99.00200%
237990	Other Heavy and Civil Engineering Construction	0.10998%	99.11199%
336360	Motor Vehicle Seating and Interior Trim Manufacturing	0.09265%	99.20464%
221310	Water Supply and Irrigation Systems	0.07732%	99.28196%
541320	Landscape Architectural Services	0.07062%	99.35258%
541350	Building Inspection Services	0.06245%	99.41503%
561320	Temporary Help Services	0.05464%	99.46967%
332311	Prefabricated Metal Building and Component Manufacturing	0.05295%	99.52262%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.05153%	99.57415%
237130	Power and Communication Line and Related Structures Construction	0.04402%	99.61818%
541613	Marketing Consulting Services	0.04204%	99.66022%
115310	Support Activities for Forestry	0.03862%	99.69884%
332710	Machine Shops	0.03602%	99.73487%
321918	Other Millwork (including Flooring)	0.03243%	99.76729%
541690	Other Scientific and Technical Consulting Services	0.02793%	99.79522%
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	0.02681%	99.82203%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
111421	Nursery and Tree Production	0.02481%	99.84684%
541720	Research and Development in the Social Sciences and Humanities	0.02204%	99.86889%
213112	Support Activities for Oil and Gas Operations	0.01819%	99.88707%
531312	Nonresidential Property Managers	0.01802%	99.90509%
561790	Other Services to Buildings and Dwellings	0.01136%	99.91645%
562998	All Other Miscellaneous Waste Management Services	0.00964%	99.92609%
324121	Asphalt Paving Mixture and Block Manufacturing	0.00940%	99.93549%
237110	Water and Sewer Line and Related Structures Construction	0.00921%	99.94470%
488111	Air Traffic Control	0.00876%	99.95346%
213111	Drilling Oil and Gas Wells	0.00821%	99.96167%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.00717%	99.96884%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.00694%	99.97578%
531320	Offices of Real Estate Appraisers	0.00639%	99.98216%
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers	0.00425%	99.98642%
313310	Textile and Fabric Finishing Mills	0.00350%	99.98991%
332322	Sheet Metal Work Manufacturing	0.00347%	99.99338%
115112	Soil Preparation, Planting, and Cultivating	0.00298%	99.99636%
541511	Custom Computer Programming Services	0.00168%	99.99805%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.00076%	99.99881%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.00054%	99.99934%
423710	Hardware Merchant Wholesalers	0.00044%	99.99978%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.00017%	99.99995%
813920	Professional Organizations	0.00005%	100.00000%
TOTAL			**100.0%**

Source: CHA analysis of Washington Airports data

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Appendix E: Unweighted Availability by Region for NAICS Codes in the Washington State Airports' Final Contract Data File

Regional unweighted availability data is provided in the tables listed below for all NAICS codes that were included in the Washington State Airports Final Contract Data File.

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Table E-1: Entire State

NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
111421	Nursery and Tree Production	0.0%	0.0%	0.6%	0.0%	9.4%	10.0%	90.0%	100.0%
115112	Soil Preparation, Planting, and Cultivating	0.0%	0.0%	0.5%	0.0%	5.9%	6.4%	93.6%	100.0%
115310	Support Activities for Forestry	0.0%	3.5%	0.0%	1.9%	11.3%	16.7%	83.3%	100.0%
212321	Construction Sand and Gravel Mining	0.0%	0.0%	0.0%	0.0%	4.5%	4.5%	95.5%	100.0%
213111	Drilling Oil and Gas Wells	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
213112	Support Activities for Oil and Gas Operations	0.0%	0.0%	0.0%	0.0%	5.3%	5.3%	94.7%	100.0%
221310	Water Supply and Irrigation Systems	0.0%	0.2%	0.0%	0.0%	2.7%	2.9%	97.1%	100.0%
236118	Residential Remodelers	0.1%	0.2%	0.1%	0.0%	2.3%	2.8%	97.2%	100.0%
236210	Industrial Building Construction	0.4%	0.4%	0.0%	5.0%	7.1%	13.0%	87.0%	100.0%
236220	Commercial and Institutional Building Construction	1.0%	1.2%	1.2%	2.7%	5.9%	11.9%	88.1%	100.0%
237110	Water and Sewer Line and Related Structures Construction	0.2%	0.4%	1.0%	1.7%	5.6%	8.9%	91.1%	100.0%
237120	Oil and Gas Pipeline and Related Structures Construction	0.0%	4.8%	0.0%	0.0%	4.8%	9.5%	90.5%	100.0%
237130	Power and Communication Line and Related Structures Construction	0.0%	0.0%	1.3%	1.3%	8.0%	10.7%	89.3%	100.0%
237310	Highway, Street, and Bridge Construction	0.1%	0.7%	0.7%	2.1%	6.4%	10.0%	90.0%	100.0%
237990	Other Heavy and Civil Engineering Construction	0.0%	1.1%	1.8%	1.8%	8.0%	12.7%	87.3%	100.0%
238110	Poured Concrete Foundation and Structure Contractors	0.2%	0.8%	0.3%	0.2%	3.8%	5.1%	94.9%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
238120	Structural Steel and Precast Concrete Contractors	0.0%	0.0%	0.0%	0.0%	11.5%	11.5%	88.5%	100.0%
238130	Framing Contractors	0.1%	0.0%	0.0%	0.0%	1.7%	1.8%	98.2%	100.0%
238140	Masonry Contractors	0.0%	0.3%	0.2%	0.0%	2.1%	2.6%	97.4%	100.0%
238150	Glass and Glazing Contractors	0.0%	1.1%	0.6%	0.0%	9.2%	10.9%	89.1%	100.0%
238160	Roofing Contractors	0.0%	0.2%	0.2%	0.1%	3.1%	3.7%	96.3%	100.0%
238170	Siding Contractors	0.0%	0.6%	0.0%	0.0%	1.9%	2.6%	97.4%	100.0%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.0%	0.0%	0.0%	1.3%	5.1%	6.4%	93.6%	100.0%
238210	Electrical Contractors and Other Wiring Installation Contractors	0.3%	0.3%	0.2%	0.3%	3.8%	4.9%	95.1%	100.0%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.1%	0.2%	0.2%	0.3%	2.7%	3.5%	96.5%	100.0%
238290	Other Building Equipment Contractors	0.0%	0.0%	2.4%	2.4%	4.8%	9.5%	90.5%	100.0%
238310	Drywall and Insulation Contractors	0.2%	0.3%	0.0%	0.1%	2.7%	3.3%	96.7%	100.0%
238320	Painting and Wall Covering Contractors	0.2%	0.3%	0.1%	0.2%	2.9%	3.6%	96.4%	100.0%
238330	Flooring Contractors	0.4%	0.2%	0.5%	0.2%	2.5%	3.8%	96.2%	100.0%
238340	Tile and Terrazzo Contractors	0.0%	0.0%	0.0%	0.1%	3.0%	3.2%	96.8%	100.0%
238350	Finish Carpentry Contractors	0.0%	0.3%	0.0%	0.3%	2.6%	3.2%	96.8%	100.0%
238390	Other Building Finishing Contractors	0.0%	0.0%	0.0%	0.5%	4.1%	4.6%	95.4%	100.0%
238910	Site Preparation Contractors	0.1%	0.4%	0.2%	0.7%	5.0%	6.4%	93.6%	100.0%
238990	All Other Specialty Trade Contractors	0.3%	0.3%	0.1%	0.3%	2.8%	3.8%	96.2%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
313310	Textile and Fabric Finishing Mills	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
321918	Other Millwork (including Flooring)	0.0%	0.0%	0.2%	0.0%	2.1%	2.3%	97.7%	100.0%
324121	Asphalt Paving Mixture and Block Manufacturing	0.0%	0.0%	0.0%	0.0%	10.0%	10.0%	90.0%	100.0%
324122	Asphalt Shingle and Coating Materials Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
326199	All Other Plastics Product Manufacturing	0.5%	0.5%	0.0%	0.0%	7.5%	8.5%	91.5%	100.0%
327320	Ready-Mix Concrete Manufacturing	0.0%	1.0%	0.0%	0.0%	4.1%	5.1%	94.9%	100.0%
327331	Concrete Block and Brick Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.0%	0.0%	0.0%	0.0%	14.3%	14.3%	85.7%	100.0%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.0%	0.0%	0.0%	2.1%	4.2%	6.3%	93.8%	100.0%
332311	Prefabricated Metal Building and Component Manufacturing	0.0%	0.0%	0.0%	0.0%	6.3%	6.3%	93.8%	100.0%
332312	Fabricated Structural Metal Manufacturing	0.4%	0.4%	1.2%	0.4%	8.0%	10.4%	89.6%	100.0%
332322	Sheet Metal Work Manufacturing	0.0%	0.0%	0.6%	0.6%	7.9%	9.0%	91.0%	100.0%
332710	Machine Shops	0.0%	0.2%	1.5%	0.2%	6.9%	8.9%	91.1%	100.0%
333120	Construction Machinery Manufacturing	0.0%	0.9%	0.0%	0.0%	4.4%	5.3%	94.7%	100.0%
336120	Heavy Duty Truck Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
336211	Motor Vehicle Body Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
336360	Motor Vehicle Seating and Interior Trim Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.5%	0.0%	0.9%	0.0%	5.5%	6.8%	93.2%	100.0%
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.4%	0.0%	1.4%	0.6%	5.4%	7.8%	92.2%	100.0%
423710	Hardware Merchant Wholesalers	0.5%	0.5%	0.5%	0.0%	4.7%	6.1%	93.9%	100.0%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.0%	0.0%	1.6%	1.2%	3.2%	6.0%	94.0%	100.0%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.0%	0.5%	0.6%	0.3%	4.2%	5.7%	94.3%	100.0%
424910	Farm Supplies Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	3.9%	3.9%	96.1%	100.0%
484110	General Freight Trucking, Local	0.2%	0.3%	0.1%	0.1%	2.6%	3.3%	96.7%	100.0%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.2%	0.6%	0.3%	0.3%	10.6%	12.9%	87.1%	100.0%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.0%	1.0%	0.0%	2.0%	8.2%	11.2%	88.8%	100.0%
488111	Air Traffic Control	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
488119	Other Airport Operations	0.0%	0.2%	0.0%	0.0%	1.5%	1.7%	98.3%	100.0%
531312	Nonresidential Property Managers	0.0%	0.0%	0.1%	0.0%	1.1%	1.2%	98.8%	100.0%
531320	Offices of Real Estate Appraisers	0.0%	0.2%	0.3%	0.0%	7.7%	8.2%	91.8%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.1%	0.0%	0.1%	0.1%	2.2%	2.4%	97.6%	100.0%
541310	Architectural Services	0.3%	0.6%	1.4%	0.1%	6.7%	9.0%	91.0%	100.0%
541320	Landscape Architectural Services	0.0%	0.0%	0.2%	0.0%	5.0%	5.3%	94.7%	100.0%
541330	Engineering Services	0.3%	0.5%	1.7%	0.6%	4.6%	7.7%	92.3%	100.0%
541350	Building Inspection Services	0.0%	0.0%	0.0%	0.0%	4.1%	4.1%	95.9%	100.0%
541370	Surveying and Mapping (except Geophysical) Services	0.5%	0.3%	0.5%	1.6%	5.5%	8.4%	91.6%	100.0%
541380	Testing Laboratories	0.7%	0.7%	2.3%	0.2%	7.4%	11.4%	88.6%	100.0%
541511	Custom Computer Programming Services	0.5%	0.2%	1.5%	0.1%	4.3%	6.6%	93.4%	100.0%
541611	Administrative Management and General Management Consulting Services	0.8%	0.3%	0.8%	0.2%	10.0%	12.1%	87.9%	100.0%
541613	Marketing Consulting Services	0.1%	0.3%	0.4%	0.1%	9.2%	10.1%	89.9%	100.0%
541620	Environmental Consulting Services	0.3%	0.7%	1.2%	0.7%	16.2%	19.1%	80.9%	100.0%
541690	Other Scientific and Technical Consulting Services	0.7%	0.6%	1.4%	0.5%	13.0%	16.2%	83.8%	100.0%
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	0.1%	0.4%	1.4%	0.3%	7.9%	10.1%	89.9%	100.0%
541720	Research and Development in the Social Sciences and Humanities	0.0%	0.4%	0.2%	0.2%	9.6%	10.3%	89.7%	100.0%
541922	Commercial Photography	0.4%	0.0%	0.0%	0.0%	8.3%	8.7%	91.3%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
561320	Temporary Help Services	0.4%	0.6%	0.2%	0.0%	10.1%	11.4%	88.6%	100.0%
561730	Landscaping Services	0.2%	0.2%	0.3%	0.1%	4.9%	5.7%	94.3%	100.0%
561790	Other Services to Buildings and Dwellings	0.1%	0.0%	0.1%	0.0%	5.7%	5.9%	94.1%	100.0%
561990	All Other Support Services	0.3%	0.2%	0.3%	0.1%	2.8%	3.7%	96.3%	100.0%
562119	Other Waste Collection	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
562910	Remediation Services	0.9%	3.6%	0.9%	2.7%	4.5%	12.6%	87.4%	100.0%
562998	All Other Miscellaneous Waste Management Services	0.0%	0.0%	0.0%	4.5%	9.1%	13.6%	86.4%	100.0%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.1%	0.3%	0.5%	0.1%	4.0%	5.0%	95.0%	100.0%
813920	Professional Organizations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
TOTAL		**0.3%**	**0.3%**	**0.4%**	**0.3%**	**4.3%**	**5.5%**	**94.5%**	**100.0%**

Source: CHA analysis of Washington Airports data

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Table E-2: West Region
(Containing the following counties: Clallam, Grays Harbor, Jefferson, Lewis, Mason, Pacific, and San Juan)

NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/ WBE	TOTAL
111421	Nursery and Tree Production	0.0%	0.0%	0.0%	0.0%	7.0%	7.0%	93.0%	100.0%
115112	Soil Preparation, Planting, and Cultivating	0.0%	0.0%	0.0%	0.0%	9.1%	9.1%	90.9%	100.0%
115310	Support Activities for Forestry	0.0%	7.7%	0.0%	0.0%	6.2%	13.8%	86.2%	100.0%
212321	Construction Sand and Gravel Mining	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	80.0%	100.0%
213111	Drilling Oil and Gas Wells	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
213112	Support Activities for Oil and Gas Operations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
221310	Water Supply and Irrigation Systems	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%	98.0%	100.0%
236118	Residential Remodelers	0.0%	0.0%	0.0%	0.0%	3.2%	3.2%	96.8%	100.0%
236210	Industrial Building Construction	0.0%	0.0%	0.0%	6.9%	3.4%	10.3%	89.7%	100.0%
236220	Commercial and Institutional Building Construction	0.0%	0.0%	0.0%	2.9%	8.7%	11.6%	88.4%	100.0%
237110	Water and Sewer Line and Related Structures Construction	0.0%	0.0%	0.0%	2.6%	5.1%	7.7%	92.3%	100.0%
237120	Oil and Gas Pipeline and Related Structures Construction	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
237130	Power and Communication Line and Related Structures Construction	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
237310	Highway, Street, and Bridge Construction	0.0%	1.7%	0.0%	0.0%	5.0%	6.7%	93.3%	100.0%
237990	Other Heavy and Civil Engineering Construction	0.0%	0.0%	0.0%	5.0%	10.0%	15.0%	85.0%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/ WBE	TOTAL
238110	Poured Concrete Foundation and Structure Contractors	0.0%	2.0%	0.0%	0.0%	2.0%	4.0%	96.0%	100.0%
238120	Structural Steel and Precast Concrete Contractors	0.0%	0.0%	0.0%	0.0%	14.3%	14.3%	85.7%	100.0%
238130	Framing Contractors	0.0%	0.0%	0.0%	0.0%	1.1%	1.1%	98.9%	100.0%
238140	Masonry Contractors	0.0%	0.0%	0.0%	0.0%	4.9%	4.9%	95.1%	100.0%
238150	Glass and Glazing Contractors	0.0%	0.0%	0.0%	0.0%	33.3%	33.3%	66.7%	100.0%
238160	Roofing Contractors	0.0%	0.0%	0.0%	1.4%	8.2%	9.6%	90.4%	100.0%
238170	Siding Contractors	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238210	Electrical Contractors and Other Wiring Installation Contractors	0.0%	0.0%	0.0%	0.6%	7.9%	8.4%	91.6%	100.0%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.0%	0.0%	0.0%	0.5%	3.6%	4.1%	95.9%	100.0%
238310	Drywall and Insulation Contractors	0.0%	0.0%	0.0%	0.0%	5.8%	5.8%	94.2%	100.0%
238320	Painting and Wall Covering Contractors	0.0%	0.0%	0.0%	0.0%	3.4%	3.4%	96.6%	100.0%
238330	Flooring Contractors	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238340	Tile and Terrazzo Contractors	0.0%	0.0%	0.0%	0.0%	3.2%	3.2%	96.8%	100.0%
238350	Finish Carpentry Contractors	0.0%	0.0%	0.0%	0.0%	8.3%	8.3%	91.7%	100.0%
238390	Other Building Finishing Contractors	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
238910	Site Preparation Contractors	0.0%	0.0%	0.0%	1.1%	5.4%	6.5%	93.5%	100.0%
238990	All Other Specialty Trade Contractors	0.6%	0.6%	0.0%	1.3%	1.3%	3.8%	96.3%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/ WBE	TOTAL
313310	Textile and Fabric Finishing Mills	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
321918	Other Millwork (including Flooring)	0.0%	0.0%	0.0%	0.0%	2.1%	2.1%	97.9%	100.0%
324121	Asphalt Paving Mixture and Block Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
326199	All Other Plastics Product Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
327320	Ready-Mix Concrete Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
327331	Concrete Block and Brick Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
332311	Prefabricated Metal Building and Component Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
332312	Fabricated Structural Metal Manufacturing	0.0%	0.0%	0.0%	0.0%	12.5%	12.5%	87.5%	100.0%
332322	Sheet Metal Work Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
332710	Machine Shops	0.0%	0.0%	0.0%	0.0%	18.2%	18.2%	81.8%	100.0%
333120	Construction Machinery Manufacturing	0.0%	7.7%	0.0%	0.0%	0.0%	7.7%	92.3%	100.0%
336120	Heavy Duty Truck Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
336211	Motor Vehicle Body Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	11.1%	11.1%	88.9%	100.0%
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/ WBE	TOTAL
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	7.1%	7.1%	92.9%	100.0%
423710	Hardware Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	25.0%	25.0%	75.0%	100.0%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	12.5%	12.5%	87.5%	100.0%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	9.7%	9.7%	90.3%	100.0%
424910	Farm Supplies Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	9.5%	9.5%	90.5%	100.0%
484110	General Freight Trucking, Local	0.0%	0.0%	0.0%	0.4%	3.6%	4.0%	96.0%	100.0%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.0%	0.0%	0.0%	0.0%	13.0%	13.0%	87.0%	100.0%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
488119	Other Airport Operations	0.0%	0.0%	0.0%	0.0%	8.8%	8.8%	91.2%	100.0%
531312	Nonresidential Property Managers	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%	99.5%	100.0%
531320	Offices of Real Estate Appraisers	0.0%	0.0%	0.0%	0.0%	24.0%	24.0%	76.0%	100.0%
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.0%	0.0%	0.0%	0.0%	1.5%	1.5%	98.5%	100.0%
541310	Architectural Services	0.0%	0.0%	0.0%	0.0%	4.4%	4.4%	95.6%	100.0%
541320	Landscape Architectural Services	0.0%	0.0%	0.0%	0.0%	9.6%	9.6%	90.4%	100.0%
541330	Engineering Services	0.0%	0.0%	0.0%	0.8%	4.8%	5.6%	94.4%	100.0%
541350	Building Inspection Services	0.0%	0.0%	0.0%	0.0%	10.0%	10.0%	90.0%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/ WBE	TOTAL
541370	Surveying and Mapping (except Geophysical) Services	0.0%	0.0%	0.0%	2.3%	0.0%	2.3%	97.7%	100.0%
541380	Testing Laboratories	0.0%	9.1%	0.0%	0.0%	18.2%	27.3%	72.7%	100.0%
541511	Custom Computer Programming Services	0.0%	0.0%	0.0%	0.0%	7.7%	7.7%	92.3%	100.0%
541611	Administrative Management and General Management Consulting Services	0.0%	0.0%	0.6%	1.2%	9.9%	11.6%	88.4%	100.0%
541613	Marketing Consulting Services	0.0%	0.0%	0.0%	0.0%	8.8%	8.8%	91.2%	100.0%
541620	Environmental Consulting Services	0.0%	0.0%	2.0%	0.0%	14.0%	16.0%	84.0%	100.0%
541690	Other Scientific and Technical Consulting Services	0.0%	0.0%	0.0%	1.6%	6.3%	7.8%	92.2%	100.0%
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	0.0%	6.5%	0.0%	3.2%	0.0%	9.7%	90.3%	100.0%
541720	Research and Development in the Social Sciences and Humanities	0.0%	0.0%	0.0%	0.0%	7.4%	7.4%	92.6%	100.0%
541922	Commercial Photography	0.0%	0.0%	0.0%	0.0%	4.5%	4.5%	95.5%	100.0%
561320	Temporary Help Services	0.0%	0.0%	0.0%	0.0%	8.3%	8.3%	91.7%	100.0%
561730	Landscaping Services	0.0%	0.0%	0.0%	0.0%	6.3%	6.3%	93.7%	100.0%
561790	Other Services to Buildings and Dwellings	0.0%	0.0%	0.0%	0.0%	3.9%	3.9%	96.1%	100.0%
561990	All Other Support Services	0.2%	0.0%	0.2%	0.3%	4.3%	5.1%	94.9%	100.0%
562910	Remediation Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/ WBE	TOTAL
562998	All Other Miscellaneous Waste Management Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.0%	0.0%	0.0%	0.0%	1.1%	1.1%	98.9%	100.0%
813920	Professional Organizations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
TOTAL		**0.1%**	**0.2%**	**0.1%**	**0.5%**	**5.2%**	**6.0%**	**94.0%**	**100.0%**

Source: CHA analysis of Washington Airports data

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Table E-3: Central Region

(Containing the following counties: Clark, Columbia, Cowlitz, Ferry, Garfield, Island, King, Kitsap, Pierce, Skagit, Skamania, Snohomish, Thurston, Wahkiakum, and Whatcom)

NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
111421	Nursery and Tree Production	0.0%	0.0%	0.9%	0.0%	9.3%	10.1%	89.9%	100.0%
115112	Soil Preparation, Planting, and Cultivating	0.0%	0.0%	0.0%	0.0%	13.0%	13.0%	87.0%	100.0%
115310	Support Activities for Forestry	0.0%	2.9%	0.0%	2.2%	6.6%	11.7%	88.3%	100.0%
212321	Construction Sand and Gravel Mining	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
213111	Drilling Oil and Gas Wells	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
213112	Support Activities for Oil and Gas Operations	0.0%	0.0%	0.0%	0.0%	6.8%	6.8%	93.2%	100.0%
221310	Water Supply and Irrigation Systems	0.0%	0.0%	0.0%	0.0%	2.9%	2.9%	97.1%	100.0%
236118	Residential Remodelers	0.1%	0.2%	0.1%	0.0%	2.2%	2.7%	97.3%	100.0%
236210	Industrial Building Construction	0.6%	0.0%	0.0%	4.4%	8.1%	13.1%	86.9%	100.0%
236220	Commercial and Institutional Building Construction	1.2%	1.2%	1.2%	3.0%	6.1%	12.7%	87.3%	100.0%
237110	Water and Sewer Line and Related Structures Construction	0.3%	0.3%	1.2%	1.6%	5.0%	8.4%	91.6%	100.0%
237120	Oil and Gas Pipeline and Related Structures Construction	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
237130	Power and Communication Line and Related Structures Construction	0.0%	0.0%	0.0%	2.0%	7.8%	9.8%	90.2%	100.0%
237310	Highway, Street, and Bridge Construction	0.2%	0.8%	0.8%	2.0%	5.8%	9.7%	90.3%	100.0%
237990	Other Heavy and Civil Engineering Construction	0.0%	0.9%	1.8%	0.9%	7.8%	11.4%	88.6%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
238110	Poured Concrete Foundation and Structure Contractors	0.1%	0.7%	0.4%	0.1%	3.9%	5.2%	94.8%	100.0%
238120	Structural Steel and Precast Concrete Contractors	0.0%	0.0%	0.0%	0.0%	10.7%	10.7%	89.3%	100.0%
238130	Framing Contractors	0.1%	0.0%	0.0%	0.0%	1.7%	1.8%	98.2%	100.0%
238140	Masonry Contractors	0.0%	0.2%	0.2%	0.0%	2.4%	2.9%	97.1%	100.0%
238150	Glass and Glazing Contractors	0.0%	0.7%	0.7%	0.0%	6.7%	8.1%	91.9%	100.0%
238160	Roofing Contractors	0.0%	0.3%	0.3%	0.0%	3.0%	3.6%	96.4%	100.0%
238170	Siding Contractors	0.0%	0.0%	0.0%	0.0%	1.6%	1.6%	98.4%	100.0%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.0%	0.0%	0.0%	1.9%	3.7%	5.6%	94.4%	100.0%
238210	Electrical Contractors and Other Wiring Installation Contractors	0.3%	0.2%	0.3%	0.2%	3.2%	4.2%	95.8%	100.0%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.1%	0.2%	0.2%	0.1%	2.3%	3.0%	97.0%	100.0%
238290	Other Building Equipment Contractors	0.0%	0.0%	2.8%	5.6%	2.8%	11.1%	88.9%	100.0%
238310	Drywall and Insulation Contractors	0.3%	0.1%	0.0%	0.1%	2.4%	3.0%	97.0%	100.0%
238320	Painting and Wall Covering Contractors	0.2%	0.3%	0.1%	0.2%	2.8%	3.6%	96.4%	100.0%
238330	Flooring Contractors	0.5%	0.2%	0.5%	0.2%	2.7%	4.1%	95.9%	100.0%
238340	Tile and Terrazzo Contractors	0.0%	0.0%	0.0%	0.2%	2.5%	2.7%	97.3%	100.0%
238350	Finish Carpentry Contractors	0.0%	0.4%	0.0%	0.0%	2.4%	2.8%	97.2%	100.0%
238390	Other Building Finishing Contractors	0.0%	0.0%	0.0%	0.0%	4.3%	4.3%	95.7%	100.0%
238910	Site Preparation Contractors	0.2%	0.6%	0.1%	0.5%	4.0%	5.4%	94.6%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
238990	All Other Specialty Trade Contractors	0.3%	0.3%	0.2%	0.4%	2.3%	3.4%	96.6%	100.0%
313310	Textile and Fabric Finishing Mills	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
321918	Other Millwork (including Flooring)	0.0%	0.0%	0.3%	0.0%	2.3%	2.5%	97.5%	100.0%
324121	Asphalt Paving Mixture and Block Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
324122	Asphalt Shingle and Coating Materials Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
326199	All Other Plastics Product Manufacturing	0.6%	0.6%	0.0%	0.0%	7.4%	8.6%	91.4%	100.0%
327320	Ready-Mix Concrete Manufacturing	0.0%	1.7%	0.0%	0.0%	3.4%	5.1%	94.9%	100.0%
327331	Concrete Block and Brick Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	80.0%	100.0%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.0%	0.0%	0.0%	2.7%	0.0%	2.7%	97.3%	100.0%
332311	Prefabricated Metal Building and Component Manufacturing	0.0%	0.0%	0.0%	0.0%	9.1%	9.1%	90.9%	100.0%
332312	Fabricated Structural Metal Manufacturing	0.6%	0.6%	1.7%	0.6%	8.4%	11.7%	88.3%	100.0%
332322	Sheet Metal Work Manufacturing	0.0%	0.0%	0.8%	0.8%	8.4%	9.9%	90.1%	100.0%
332710	Machine Shops	0.0%	0.0%	1.6%	0.3%	5.9%	7.8%	92.2%	100.0%
333120	Construction Machinery Manufacturing	0.0%	0.0%	0.0%	0.0%	2.6%	2.6%	97.4%	100.0%
336120	Heavy Duty Truck Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
336211	Motor Vehicle Body Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
336360	Motor Vehicle Seating and Interior Trim Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.0%	0.0%	0.6%	0.0%	5.0%	5.6%	94.4%	100.0%
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.5%	0.0%	1.8%	0.3%	5.5%	8.0%	92.0%	100.0%
423710	Hardware Merchant Wholesalers	0.6%	0.6%	0.6%	0.0%	5.2%	7.0%	93.0%	100.0%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.0%	0.0%	2.7%	1.1%	3.7%	7.5%	92.5%	100.0%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.0%	0.6%	0.8%	0.3%	3.5%	5.2%	94.8%	100.0%
424910	Farm Supplies Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	5.6%	5.6%	94.4%	100.0%
484110	General Freight Trucking, Local	0.2%	0.2%	0.1%	0.1%	2.3%	3.0%	97.0%	100.0%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.7%	0.0%	0.6%	0.6%	9.9%	12.7%	87.3%	100.0%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.0%	1.6%	0.0%	1.6%	11.1%	14.3%	85.7%	100.0%
488111	Air Traffic Control	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
488119	Other Airport Operations	0.0%	0.0%	0.0%	0.0%	1.2%	1.2%	98.8%	100.0%
531312	Nonresidential Property Managers	0.0%	0.0%	0.0%	0.0%	1.3%	1.4%	98.6%	100.0%
531320	Offices of Real Estate Appraisers	0.0%	0.2%	0.2%	0.0%	6.4%	6.8%	93.2%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.1%	0.0%	0.1%	0.1%	1.6%	1.9%	98.1%	100.0%
541310	Architectural Services	0.2%	0.7%	1.6%	0.1%	6.8%	9.4%	90.6%	100.0%
541320	Landscape Architectural Services	0.0%	0.0%	0.2%	0.0%	5.2%	5.5%	94.5%	100.0%
541330	Engineering Services	0.4%	0.4%	2.0%	0.5%	4.3%	7.7%	92.3%	100.0%
541350	Building Inspection Services	0.0%	0.0%	0.0%	0.0%	3.2%	3.2%	96.8%	100.0%
541370	Surveying and Mapping (except Geophysical) Services	0.8%	0.0%	0.8%	1.1%	7.3%	10.0%	90.0%	100.0%
541380	Testing Laboratories	0.6%	0.6%	2.0%	0.0%	5.6%	8.8%	91.2%	100.0%
541511	Custom Computer Programming Services	0.5%	0.1%	1.6%	0.1%	4.3%	6.7%	93.3%	100.0%
541611	Administrative Management and General Management Consulting Services	0.9%	0.3%	0.8%	0.2%	10.0%	12.3%	87.7%	100.0%
541613	Marketing Consulting Services	0.1%	0.3%	0.4%	0.1%	9.2%	10.1%	89.9%	100.0%
541620	Environmental Consulting Services	0.4%	0.4%	1.3%	0.4%	17.3%	19.9%	80.1%	100.0%
541690	Other Scientific and Technical Consulting Services	0.9%	0.6%	1.7%	0.4%	13.7%	17.3%	82.7%	100.0%
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	0.0%	0.0%	1.3%	0.0%	7.9%	9.2%	90.8%	100.0%
541720	Research and Development in the Social Sciences and Humanities	0.0%	0.4%	0.2%	0.0%	10.0%	10.7%	89.3%	100.0%
541922	Commercial Photography	0.4%	0.0%	0.0%	0.0%	8.8%	9.2%	90.8%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
561320	Temporary Help Services	0.5%	0.5%	0.3%	0.0%	9.8%	11.1%	88.9%	100.0%
561730	Landscaping Services	0.2%	0.2%	0.5%	0.1%	4.8%	5.8%	94.2%	100.0%
561790	Other Services to Buildings and Dwellings	0.1%	0.1%	0.1%	0.0%	5.9%	6.2%	93.8%	100.0%
561990	All Other Support Services	0.3%	0.2%	0.4%	0.1%	2.5%	3.5%	96.5%	100.0%
562119	Other Waste Collection	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
562910	Remediation Services	1.4%	5.6%	1.4%	2.8%	4.2%	15.5%	84.5%	100.0%
562998	All Other Miscellaneous Waste Management Services	0.0%	0.0%	0.0%	6.7%	13.3%	20.0%	80.0%	100.0%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.1%	0.4%	0.8%	0.1%	4.4%	5.8%	94.2%	100.0%
813920	Professional Organizations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
TOTAL		**0.3%**	**0.2%**	**0.5%**	**0.2%**	**4.2%**	**5.4%**	**94.6%**	**100.0%**

Source: CHA analysis of Washington Airports data

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Table E-4: East Region

(Containing the following counties: Adams, Asotin, Benton, Chelan, Douglas, Franklin, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman, and Yakima)

NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
111421	Nursery and Tree Production	0.0%	0.0%	0.0%	0.0%	13.0%	13.0%	87.0%	100.0%
115112	Soil Preparation, Planting, and Cultivating	0.0%	0.0%	0.7%	0.0%	2.9%	3.6%	96.4%	100.0%
115310	Support Activities for Forestry	0.0%	2.4%	0.0%	2.4%	17.1%	21.8%	78.2%	100.0%
212321	Construction Sand and Gravel Mining	0.0%	0.0%	0.0%	0.0%	4.5%	4.5%	95.5%	100.0%
213111	Drilling Oil and Gas Wells	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
213112	Support Activities for Oil and Gas Operations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
221310	Water Supply and Irrigation Systems	0.0%	0.5%	0.0%	0.0%	2.6%	3.1%	96.9%	100.0%
236118	Residential Remodelers	0.2%	0.2%	0.0%	0.0%	2.5%	3.0%	97.0%	100.0%
236210	Industrial Building Construction	0.0%	2.1%	0.0%	4.2%	6.3%	12.5%	87.5%	100.0%
236220	Commercial and Institutional Building Construction	0.6%	1.5%	0.9%	1.2%	4.8%	9.0%	91.0%	100.0%
237110	Water and Sewer Line and Related Structures Construction	0.0%	0.8%	0.8%	1.6%	7.4%	10.7%	89.3%	100.0%
237120	Oil and Gas Pipeline and Related Structures Construction	0.0%	25.0%	0.0%	0.0%	25.0%	50.0%	50.0%	100.0%
237130	Power and Communication Line and Related Structures Construction	0.0%	0.0%	4.3%	0.0%	8.7%	13.0%	87.0%	100.0%
237310	Highway, Street, and Bridge Construction	0.0%	0.0%	0.6%	2.9%	8.6%	12.1%	87.9%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
237990	Other Heavy and Civil Engineering Construction	0.0%	2.7%	2.7%	5.4%	8.1%	18.9%	81.1%	100.0%
238110	Poured Concrete Foundation and Structure Contractors	0.3%	1.0%	0.0%	0.3%	3.8%	5.4%	94.6%	100.0%
238120	Structural Steel and Precast Concrete Contractors	0.0%	0.0%	0.0%	0.0%	13.3%	13.3%	86.7%	100.0%
238130	Framing Contractors	0.0%	0.0%	0.0%	0.0%	2.1%	2.1%	97.9%	100.0%
238140	Masonry Contractors	0.0%	0.9%	0.0%	0.0%	0.0%	0.9%	99.1%	100.0%
238150	Glass and Glazing Contractors	0.0%	3.0%	0.0%	0.0%	15.2%	18.2%	81.8%	100.0%
238160	Roofing Contractors	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	98.1%	100.0%
238170	Siding Contractors	0.0%	4.3%	0.0%	0.0%	4.3%	8.7%	91.3%	100.0%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.0%	0.0%	0.0%	0.0%	10.0%	10.0%	90.0%	100.0%
238210	Electrical Contractors and Other Wiring Installation Contractors	0.2%	1.0%	0.2%	0.8%	5.1%	7.2%	92.8%	100.0%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.1%	0.3%	0.1%	0.8%	3.7%	5.0%	95.0%	100.0%
238290	Other Building Equipment Contractors	0.0%	0.0%	0.0%	12.5%	12.5%	25.0%	75.0%	100.0%
238310	Drywall and Insulation Contractors	0.0%	0.9%	0.0%	0.0%	2.7%	3.6%	96.4%	100.0%
238320	Painting and Wall Covering Contractors	0.0%	0.2%	0.0%	0.2%	3.2%	3.6%	96.4%	100.0%
238330	Flooring Contractors	0.0%	0.0%	1.1%	0.0%	2.2%	3.3%	96.7%	100.0%
238340	Tile and Terrazzo Contractors	0.0%	0.0%	0.0%	0.0%	5.9%	5.9%	94.1%	100.0%
238350	Finish Carpentry Contractors	0.0%	0.0%	0.0%	1.3%	2.7%	4.0%	96.0%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
238390	Other Building Finishing Contractors	0.0%	0.0%	0.0%	0.0%	4.7%	4.7%	95.3%	100.0%
238910	Site Preparation Contractors	0.0%	0.0%	0.2%	1.1%	7.0%	8.3%	91.7%	100.0%
238990	All Other Specialty Trade Contractors	0.1%	0.1%	0.0%	0.0%	5.0%	5.3%	94.7%	100.0%
313310	Textile and Fabric Finishing Mills	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
321918	Other Millwork (including Flooring)	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%	98.6%	100.0%
324121	Asphalt Paving Mixture and Block Manufacturing	0.0%	0.0%	0.0%	0.0%	25.0%	25.0%	75.0%	100.0%
324122	Asphalt Shingle and Coating Materials Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
326199	All Other Plastics Product Manufacturing	0.0%	0.0%	0.0%	0.0%	9.1%	9.1%	90.9%	100.0%
327320	Ready-Mix Concrete Manufacturing	0.0%	0.0%	0.0%	0.0%	6.7%	6.7%	93.3%	100.0%
327331	Concrete Block and Brick Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.0%	0.0%	0.0%	0.0%	18.2%	18.2%	81.8%	100.0%
332311	Prefabricated Metal Building and Component Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
332312	Fabricated Structural Metal Manufacturing	0.0%	0.0%	0.0%	0.0%	5.5%	5.5%	94.5%	100.0%
332322	Sheet Metal Work Manufacturing	0.0%	0.0%	0.0%	0.0%	6.8%	6.8%	93.2%	100.0%
332710	Machine Shops	0.0%	1.3%	1.3%	0.0%	7.8%	10.4%	89.6%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
333120	Construction Machinery Manufacturing	0.0%	0.0%	0.0%	0.0%	13.0%	13.0%	87.0%	100.0%
336120	Heavy Duty Truck Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
336211	Motor Vehicle Body Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
336360	Motor Vehicle Seating and Interior Trim Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	2.0%	0.0%	2.0%	0.0%	6.0%	10.0%	90.0%	100.0%
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.0%	0.0%	0.0%	1.9%	4.9%	6.8%	93.2%	100.0%
423710	Hardware Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.0%	0.0%	0.0%	3.4%	0.0%	3.4%	96.6%	100.0%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.0%	0.5%	0.0%	0.5%	5.8%	6.8%	93.2%	100.0%
424910	Farm Supplies Merchant Wholesalers	0.0%	0.0%	0.0%	0.0%	2.2%	2.2%	97.8%	100.0%
484110	General Freight Trucking, Local	0.0%	0.6%	0.1%	0.1%	3.0%	3.7%	96.3%	100.0%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.0%	2.2%	0.0%	0.0%	10.1%	12.4%	87.6%	100.0%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.0%	0.0%	0.0%	3.4%	3.4%	6.9%	93.1%	100.0%
488111	Air Traffic Control	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
488119	Other Airport Operations	0.0%	0.9%	0.0%	0.0%	0.0%	0.9%	99.1%	100.0%
531312	Nonresidential Property Managers	0.0%	0.0%	0.1%	0.0%	0.6%	0.7%	99.3%	100.0%
531320	Offices of Real Estate Appraisers	0.0%	0.0%	0.0%	0.0%	9.5%	9.5%	90.5%	100.0%
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%	96.0%	100.0%
541310	Architectural Services	0.0%	0.0%	0.0%	0.0%	6.6%	6.6%	93.4%	100.0%
541320	Landscape Architectural Services	0.0%	0.2%	0.2%	0.0%	2.1%	2.6%	97.4%	100.0%
541330	Engineering Services	0.0%	0.7%	0.5%	0.7%	6.1%	8.1%	91.9%	100.0%
541350	Building Inspection Services	0.0%	0.0%	0.0%	0.0%	6.4%	6.4%	93.6%	100.0%
541370	Surveying and Mapping (except Geophysical) Services	0.0%	1.3%	0.0%	2.6%	2.6%	6.6%	93.4%	100.0%
541380	Testing Laboratories	0.0%	0.0%	4.7%	1.6%	15.6%	21.9%	78.1%	100.0%
541511	Custom Computer Programming Services	0.4%	1.1%	0.4%	0.0%	3.7%	5.6%	94.4%	100.0%
541611	Administrative Management and General Management Consulting Services	0.3%	0.2%	0.7%	0.3%	9.9%	11.4%	88.6%	100.0%
541613	Marketing Consulting Services	0.0%	0.5%	0.0%	0.5%	9.4%	10.4%	89.6%	100.0%
541620	Environmental Consulting Services	0.0%	1.2%	0.6%	1.8%	12.6%	16.2%	83.8%	100.0%
541690	Other Scientific and Technical Consulting Services	0.0%	0.5%	0.0%	0.5%	12.2%	13.1%	86.9%	100.0%
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	0.8%	0.8%	2.4%	0.8%	9.6%	14.4%	85.6%	100.0%

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NAICS Code	NAICS Code Description	Black	Hispanic	Asian	Native American	White Women	DBE	Non-M/WBE	TOTAL
541720	Research and Development in the Social Sciences and Humanities	0.0%	0.0%	0.0%	1.5%	7.5%	9.0%	91.0%	100.0%
541922	Commercial Photography	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	94.0%	100.0%
561320	Temporary Help Services	0.0%	1.2%	0.0%	0.0%	12.0%	13.3%	86.7%	100.0%
561730	Landscaping Services	0.0%	0.3%	0.0%	0.1%	4.7%	5.1%	94.9%	100.0%
561790	Other Services to Buildings and Dwellings	0.2%	0.0%	0.2%	0.0%	4.9%	5.4%	94.6%	100.0%
561990	All Other Support Services	0.2%	0.3%	0.1%	0.4%	3.6%	4.5%	95.5%	100.0%
562910	Remediation Services	0.0%	0.0%	0.0%	3.1%	6.3%	9.4%	90.6%	100.0%
562998	All Other Miscellaneous Waste Management Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.0%	0.0%	0.0%	0.0%	3.7%	3.7%	96.3%	100.0%
813920	Professional Organizations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
TOTAL		**0.1%**	**0.4%**	**0.2%**	**0.4%**	**4.6%**	**5.7%**	**94.3%**	**100.0%**

Source: CHA analysis of Washington Airports data

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APPENDIX F: OVERALL GOALS AND THE YEARS COVERED BY THE GOAL FOR WASHINGTON STATE AIRPORTS

Table F-1: Overall Goals and the Years Covered by the Goal for Washington State Airports

	Airport Identifier	Airport Name	Goal Dates	Goal
1	SEA	Seattle-Tacoma International	FFYs 2017-2019	9.96% overall goal; 100% is to be accomplished through race-conscious goals and 0% through race-neutral measures.
2	BLI	Bellingham International Airport	FFYs 2018-2020	6.7% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
3	GEG	Spokane International	FFYs 2018-2020	2.5% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
4	PSC	Tri-Cities Airport	FFYs 2019-2021	2.97% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
5	PWT	Bremerton National Airport	FFYs 2018-2020	5.40% overall goal, 0% is to be accomplished through race-conscious goals and 100% through racer-neutral measures
6	W33	Friday Harbor Airport		Documentation not provided
7	S43	Harvey Field Airport	FFYs 2018-2020	2.6% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.

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	Airport Identifier	Airport Name	Goal Dates	Goal
8	BFI	King County Int'l Airport	FFYs 2019-2021	15.0% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
9	PUW	Moscow Regional Airport	FFYs 2019-2021	1.1% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
10	PAE	Paine Field/ Snohomish County Airport	FFYs 2018-2020	4.73% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
11	EAT	Pangborn Memorial	FFYs 2019-2021	4.24% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
12	RNT	Renton Municipal Airport		Documentation not provided
13	SFF	Spokane-Felts Field	FFYs 2018-2020	2.3% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
14	TIW	Tacoma-Narrows Airport	FFYs 2016-2018	3.96% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.**
15	ALW	Walla Walla Regional Airport	FFYs 2019-2021	3.68% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
16	YKM	Yakima Air Terminal	FFYs 2019-2021	4.59% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
17	74S	Anacortes Airport	FFYs 2018-2020	11.4% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.

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	Airport Identifier	Airport Name	Goal Dates	Goal
18	S97	Anderson Field Airport	FFYs 2017-2019	Documentation not provided
19	AWO	Arlington Municipal Airport	FFYs 2018-2020	4.9% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
20	S50	Auburn Municipal Airport	FFYs 2018-2020	5.3% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
21	HQM	Bowerman Field Airport	FFYs 2018-2020	3.48% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
22	CLS	Chehalis-Centralia Airport	FFYs 2016-2017	14.5% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
23	S93	Cle Elum Municipal Airport	FFYs 2016-2017	2.84% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
24	68S	Davenport Airport	FFYs 2018-2020	3.06% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
25	DEW	Deer Park Airport	FFYs 2018-2020	.60% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
26	0S7	Dorothy Scott Airport	FFYs 2018-2020	2.19% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
27	EPH	Ephrata Municipal	FFYs 2018-2020	1.4% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.

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	Airport Identifier	Airport Name	Goal Dates	Goal
28	3W7	Grand Coulee Dam Airport	FFYs 2018-2020	1.9% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
29	MWH	Grant County International Airport	FFYs 2018-2020	2.6% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
30	0S9	Jefferson County International Airport	FFYs 2018-2020	2.43% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
31	ELN	Kittitas County Airport / Bowers Field Airport	FFYs 2018-2020	5.5% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
32	S10	Lake Chelan	FFYs 2018-2020	2.95% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
33	W04	Ocean Shores Municipal Airport	FFYs 2018-2020	8.67% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
34	43D	Odessa Municipal Airport	FFYs 2018-2020	1.2% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
35	OLM	Olympia Regional Airport		Documentation not provided
36	ORS	Orcas Island Airport	FFYs 2016-2018	3.9% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
37	S70	Othello Municipal Airport	FFYs 2018-2020	9.9% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.

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	Airport Identifier	Airport Name	Goal Dates	Goal
38	55S	Packwood Airport	FFYs 2015-2017	4.3% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
39	VUO	Pearson Field Airport		Documentation not provided
40	S31	Port of Lopez / Lopez Island Airport	FFYs 2015-2017	0.0% overall goal.
41	S94	Port of Whitman Business Air Charter	FFYs 2015-2017	Documentation not provided
42	S40	Prosser Airport / Port of Benton	FFYs 2015-2017	1.28% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures***
43	33S	Pru Field Airport	FFYs 2013- 2015	1.3% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
44	RLD	Richland/Port of Benton Airport	FFYs 2018-2020	1.62% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
45	72S	Rosalia Municipal Airport	FFYs 2016-2018	Documentation not provided
46	SHN	Sanderson Field Airport	FFY 2017	Documentation not provided
47	BVS	Skagit Regional Airport	FFYs 2018-2020	Documentation not provided
48	KLS	Southwest Washington Regional Airport	FFYs 2016-2018	6.9 % overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
49	1S5	Sunnyside Municipal Airport	FFYs 2015-2017	4.3% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.

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	Airport Identifier	Airport Name	Goal Dates	Goal
50	PLU	Thun Field Airport	FFYs 2016-2018	3.60% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.**
51	2S1	Vashon Municipal Airport		Documentation not provided
52	2S8	Wilbur Airport	FFYs 2013-2015	0.9% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
53	CLM	William R. Fairchild Int'l	FFYs 2015-2017	5.12% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
54	S52	Methow Valley State/Washington State Airports	FFYs 2015-2017	Overall goal 6.9%; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
55	OMK*	Omak Municipal Airport*	FFYs 2018-2020	3.56% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
56	8S2*	Cashmere-Dryden Airport*	FFYs 2015-2017	Documentation not provided
57	TDO*	Ed Carlson Memorial Field (Lewis County)*	FFYs 2015-2017	3.4% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
58	S23*	Ione Municipal Airport*		Documentation not provided
59	S18*	Quillayute Airport*	FFYs 2018-2020	3.0% overall goal; 0% is to be accomplished through race-conscious goals and 100% through race-neutral measures.
60	FHR*	Friday Harbor Airport*		Documentation not provided
61	W10*	Whidbey Air Park/ Langley*		Documentation not provided

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	Airport Identifier	Airport Name	Goal Dates	Goal
62	S60*	Kenmore Air Harbor Inc.*		Documentation not provided
63	63S*	Colville Municipal*		Documentation not provided
64	1W1*	Grove Field/ Camas*		Documentation not provided

** No FAA Grants during Study Period.*
*** Annual goal-setting confused with contract goals setting.*
**** Annual rather than Triennial goal-setting.*

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