NCHRP
REPORT 644

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program

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Jon Wainwright
NERA Economic Consulting
Austin, TX

Colette Holt
Colette Holt & Associates
Chicago, IL

Subject Areas
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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

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NERA Vice President Dr. Jon Wainwright was project director and co-Principal Investigator. Attorney Colette Holt of Colette Holt & Associates was co-Principal Investigator. The other authors of this report are Kim Stewart, M.S., Research Assistant at NERA, and J. Wesley Stewart, A.A., Research Assistant at NERA. The work was performed under the general supervision of Dr. Wainwright and Attorney Holt.

FOREWORD

By Christopher J. Hedges
Staff Officer
Transportation Research Board

This report presents guidelines for state departments of transportation (DOTs) on how to conduct effective and legally defensible disparity and availability studies to meet the requirements of the Disadvantaged Business Enterprise program for federally funded projects. It includes guidance to assist DOTs in determining when and if a disparity or availability study is recommended, a model scope of work that can be used in a request for proposals, and detailed recommendations on how to design and implement disparity and availability studies. The report will serve as an invaluable resource for legal and contracting staff in all state transportation agencies.

Since 1987, the U.S. DOT has required that grantees implement a Disadvantaged Business Enterprise (DBE) program based on regulations found in 49 C.F.R Parts 23 and 26. The most current regulations, contained at 49 C.F.R Part 26, provide the states with an annual DBE goal-setting methodology. State DOTs must set DBE goals based on demonstrable evidence of the availability of "ready, willing and able" DBEs. The regulations state that a disparity study *can* be used to demonstrate availability, but does not require its use. A ruling in the Ninth Circuit Court of Appeals, however, has made the use of a valid disparity study a legal requirement to meet the standards in that Circuit. The ruling in the Ninth Circuit as well as those in other Circuits demonstrates a trend toward utilizing a disparity study to justify race-conscious elements of a DOT DBE program in response to constitutional challenges. Thus, state DOTs, especially those in the Ninth Circuit, will be conducting disparity studies at considerable expense.

There are no guidelines or standards provided to states by the U.S. DOT on the elements of an effective disparity and availability study. Because each state is unique, a broad, overarching framework is needed to guide the development and conduct of disparity and availability studies.

Under NCHRP Project 20-76, a research team led by NERA Economic Consulting reviewed current DOT goal-setting methods, conducted a thorough review of existing disparity and availability studies, and analyzed relevant court decisions. Current studies were compared according to key elements: definition and use of geographic and product markets, development of availability estimates, analysis of contracting disparities, analyses of economy-wide disparities, and collection of anecdotal evidence. A model scope of work was developed that identified major elements to be included and offered tips for a successful process. The report includes appendices on the importance of collecting comprehensive subcontract data, understanding the concept and definition of "capacity," and legal standards for race-conscious government contracting programs.

CONTENTS

CHAPTER 1

Overview of Legal Standards for Disadvantaged Business Enterprise Programs

The project to develop the National Model Disparity Study and Request for Proposals for state departments of transportation (state DOTs) seeks to address the evidentiary tests created by the federal courts that govern the Disadvantaged Business Enterprise (DBE) Program for federally assisted transportation contracts.[1] In general, race- and gender-based government actions are subject to high levels of scrutiny: a program must be based on strong evidence and designed to be narrow in its remedies.

It is in response to these strictures that disparity studies of discrimination in the market for public contracts were first conducted. It is therefore crucial to canvass the state of the law to develop national guidelines for the examination of evidence of discrimination in the market for federally assisted transportation contracts.

This Model Study Project is designed to assist state DOTs in meeting the regulatory goal-setting requirements in conformance with strict constitutional scrutiny. Where state DOT DBE programs have been challenged, a disparity or availability study has survived judicial review. It should provide evidence relevant to the two steps in annual overall goal setting—estimating the base figure of DBE availability and the expected DBE utilization "but for" the effects of the DBE program and discrimination—as well as data relevant to contract-level goal setting.[2] Specifically, we were directed to "prepare an analysis of the federal DBE goal-setting regulations and case law in all federal circuits considering challenges to the constitutionality of the U.S. Disadvantaged Business Program. Identify common themes and key distinguishing factors in state DOT DBE programs that influenced the court ruling on constitutionality."

What follows is a summary of the case law and regulations relevant to the development of a disparity study model, with the focus on evidentiary issues. A more detailed discussion, with case and other citations, is provided in Appendix C to the report.

Strict Scrutiny Standard

In *City of Richmond v. J. A. Croson Co.,*[3] the United States Supreme Court established the constitutional contours of permissible race-based public contracting programs. Strict scrutiny requires that a government entity prove both its "compelling interest" in remedying identified race discrimination based upon a "strong basis in evidence," and that the measures adopted to remedy that discrimination are "narrowly tailored" to that evidence.

In *Croson,* the Court struck down Richmond's Minority Business Enterprise Plan that required prime contractors awarded city construction contracts to subcontract at least 30% of the project to minority-owned business enterprises (MBEs). In affirming the court of appeals' determination that the plan was unconstitutional, the Court held:

> [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.

Having found that Richmond had not presented evidence to support its compelling interest in remedying discrimination—the first prong of strict scrutiny—the Court went on to make two observations about the narrowness of the remedy—the

[1] 49 C.F.R. Part 26.

[2] *See infra* at pp. 38–39.

[3] 488 U.S. 469 (1989).

second prong of strict scrutiny. First, Richmond had not considered race-neutral means to increase MBE participation. Second, the 30% quota had no basis in evidence and was applied regardless of whether the individual MBE had suffered discrimination.

Apparently recognizing that the opinion might be misconstrued to categorically eliminate all race-conscious contracting efforts, the Court explicitly stated:

> Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the City of Richmond had evidence before it that 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. . . . 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.

In *Adarand v. Peña,*[4] the court extended the analysis of strict scrutiny to race-based federal enactments such as the DBE Program. Just as in the local government context, the national government must have a compelling interest for the use of race and the remedies adopted must be narrowly tailored to the evidence relied upon.

Intermediate Scrutiny

In general, courts have subjected preferences for Women-Owned Business Enterprises (WBEs) to "intermediate scrutiny": gender-based classifications must be supported by an "exceedingly persuasive justification" and "substantially related" to the objective. However, appellate courts reviewing the constitutionality of the DBE Program have applied strict scrutiny to the gender-based presumption of social disadvantage. Therefore, state DOTs would be wise to meet the rigors of strict scrutiny for gender preferences.

Strict Scrutiny as Applied to the Disadvantaged Business Enterprise Program

In the wake of *Adarand,* Congress reviewed and revised the DBE Program's authorizing statute and implementing regulations. To date, every court that has considered the issue has found the regulations to be constitutional on their face.[5]

Congress Established its Compelling Interest in Remedying Discrimination

All courts agree that the first prong of strict scrutiny is satisfied by the Congressional record that forms the basis for the DBE Program. Relevant evidence included:

- Disparities between the earnings of minority-owned firms and similarly situated white-owned firms;
- Disparities in commercial loan denial rates between black business owners compared to similarly situated white business owners;
- The large and rapid decline in minorities' participation in the construction industry when race-conscious contracting programs were struck down or abandoned; and
- Various types of overt and institutional discrimination by prime contractors, trade unions, business networks, suppliers, and sureties against minority contractors.

It is important to note Congress need not make specific findings on every possible ethnic subgroup that might be subject to discrimination. Moreover, much of the evidence of public and private sector discrimination went beyond the results of the DBE Program to address whether a recipient would be a passive participant in a discriminatory federal-aid market without race-conscious measures. Therefore, public and private discrimination is generally relevant not only in government contracts but also in the construction industry.

DBE Regulations are Narrowly Tailored

Next, the regulations are narrowly tailored. Part 26 provides that:

- The overall goal must be based upon demonstrable evidence of the number of DBEs ready, willing, and able to participate on the recipient's federally assisted contracts;[6]
- The goal may be adjusted to reflect the availability of DBEs but for the effects of the DBE Program and of discrimination;[7]

[4]515 U.S. 200 (1995) (*Adarand III*).

[5]*See Adarand Constructors, Inc. v. Slater,* 228 F.3d 1147 (10th Cir. 2000), *cert. granted,* 532 U.S. 941, *then dismissed as improvidently granted,* 534 U.S. 103 (2001) (*Adarand VII*); *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation,* and *Gross Seed Co. v. Nebraska Department of Roads,* 345 F.3d. 964 (8th Cir. 2003), *cert. denied,* 541 U.S. 1041 (2004); *Western States Paving Co., Inc. v. Washington Department of Transportation,* 407 F.3d 983 (9th Cir. 2005), *cert. denied,* 546 U.S. 1170 (2006); *Northern Contracting, Inc. v. Illinois Department of Transportation,* 473 F.3d 715 (7th Cir. 2007) (*Northern Contracting III*).

[6]49 C.F.R. § 26.45(b).

[7]49 C.F.R. § 26.45(d).

- The recipient must meet the maximum feasible portion of the goal through race-neutral measures,[8] as well as estimate that portion of the goal it predicts will be met through such measures;[9]
- The use of quotas is not permitted,[10] and set-asides are limited only to extreme circumstances when no other method could reasonably be expected to redress egregious instances of discrimination;[11]
- The goals are to be adjusted during the year to remain narrowly tailored;[12]
- Absent bad faith administration of the program, a recipient cannot be penalized for not meeting its goal;[13]
- Eligibility is limited to small firms owned by persons whose net worth is less than $750,000;[14]
- Certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage;[15]
- The presumption of social disadvantage for minorities and women is rebuttable;[16]
- The firm must be a small business;[17]
- Exemptions from any or all program requirements are available;[18] and
- The authorizing legislation is subject to Congressional reauthorization that will ensure periodic public debate.

State DOTs' Implementation of Part 26 Must be Narrowly Tailored

Part 26 requires that a state DOT narrowly tailor its DBE efforts to the evidence of discrimination in its marketplace. The regulations prescribe narrowly tailored methods for setting annual DBE goals to achieve a level playing field for DBEs. 49 C.F.R. § 26.45 provides that recipients must set an overall goal for DBE participation in their federally assisted contracts "based on demonstrable evidence of the availability of ready, willing and able DBEs relative to all businesses ready, willing and able to participate on your DOT-assisted contracts (hereafter, the 'relative availability of DBEs'). The goal must reflect your determination of the level of DBE participation you would expect absent the effects of discrimination."

Step 1 Analysis: Estimating DBE Availability. The process to set the overall annual DBE goal is divided into two steps under 49 C.F.R. § 26.45(c). Step 1 is to determine "a base figure for the relative availability of DBEs. The following are examples of approaches that you may take toward determining a base figure. . . . (1) Use DBE Directories and Census Bureau Data. . . . (2) Use a bidders list. . . . (3) Use data from a disparity study. . . . (4) Use the goal of another DOT recipient. . . . (5) Alternative methods. Subject to the approval of the DOT operating administration, you may use other methods to determine a base figure for your overall goal."

Step 2 Analysis: Examining Evidence of Disparities in DBE Opportunities. After the state DOT has estimated its Step 1 base figure of DBE availability, it must estimate the level of DBE availability in a discrimination-free market, that is, DBE availability "but for" discrimination. 49 C.F.R. § 26.45(d) requires that state DOTs must consider the "current capacity of DBEs to perform work in your DOT-assisted contracting program, as measured by the volume of work DBEs have performed in recent years; [and] [e]vidence from disparity studies conducted anywhere within your jurisdiction, to the extent it is not already accounted for in your base figure" and may consider "[s]tatistical disparities in the ability of DBEs to get the financing, bonding and insurance" and "[d]ata on employment, self-employment, education, training and union apprenticeship programs. . . . If you attempt to make an adjustment to your base figure to account for the continuing effects of past discrimination (often called the "but for" factor) or the effects of an ongoing DBE program, the adjustment must be based on demonstrable evidence that is logically and directly related to the effect for which the adjustment is sought." Disparity or availability studies should provide data probative of this inquiry.

Judicial Review of Disadvantaged Business Enterprise Goal Setting Under Part 26

To develop a model disparity or availability study for state DOTs, it is critical to understand the cases reviewing state DOTs' application of Part 26. We briefly summarize the three decisions that speak directly to the types of evidence relevant and necessary for state DOTs' narrowly tailored program implementation.

Northern Contracting, Inc. v. Illinois Department of Transportation. In the most recent case, the Seventh Circuit Court of Appeals held that the Illinois Department of Transportation's (IDOT's) Federal Fiscal Year (FFY) 2005 DBE Plan was narrowly tailored.

IDOT had commissioned an availability study to meet Part 26's requirements.[19] For Step 1, the IDOT Study developed a

[8]49 C.F.R. § 26.51(a)
[9]49 C.F.R. § 26.51(c).
[10]49 C.F.R. § 26.43(a).
[11]49 C.F.R. § 26.43(b).
[12]49 C.F.R. § 26.51(f).
[13]49 C.F.R. § 26.47(a).
[14]49 C.F.R. § 26.67(b).
[15]49 C.F.R. Part 26, Appendix E.
[16]49 C.F.R. § 26.67(b).
[17]49 C.F.R. § 26.65.
[18]49 C.F.R. § 26.15(a).

[19]NERA Economic Consulting. 2004a. *Disadvantaged Business Enterprise Availability Study: Prepared for the Illinois Department of Transportation.*

"custom census" designed to provide an accurate calculation of the current relative availability of DBEs, which employed a seven-step analysis that:

- Created a database of representative IDOT projects;
- Identified the appropriate geographic market for IDOT's contracting activity;
- Identified the appropriate product market for IDOT's contracting activity;
- Counted all businesses in those relevant markets;
- Identified minority-owned and women-owned businesses in those markets;
- Verified the ownership status of minority-owned and women-owned businesses; and
- Verified the ownership status of all other firms.

For Step 1, the study estimated that DBEs comprised 22.77% of IDOT's available firms.

For Step 2, the study examined whether and to what extent there were disparities between the rates at which minorities and women form businesses relative to similarly situated white men, as well as disparities in the relative earnings of those businesses. Controlling for numerous variables such as the owner's age, education, and the like, the study found that in a race-neutral marketplace, the availability of DBEs would be approximately 20.8% higher, yielding a Step 2 estimate of DBE availability "but for" discrimination of 27.51%.

In addition to the IDOT Study, the court considered:

- An availability study designed to meet Part 26 conducted for Metra, the Chicago commuter rail agency;
- Expert reports from a decision holding that the City of Chicago had a compelling interest in its minority and women business program for construction contracts;
- Expert reports and anecdotal testimony presented to the Chicago City Council in support of the city's revised Minority and Women Business Enterprise (M/WBE) Program ordinance;
- Anecdotal evidence gathered at IDOT's public hearings on the DBE program;
- Data on DBE utilization on construction projects in "unremediated" markets without DBE goals;
- DBE utilization of 1.6% in the Illinois State Toll Highway Authority's voluntary DBE program for non-federal-aid contracts; and
- IDOT's "zero goal" experiment, where DBEs received approximately 1.5% of the total value of contracts without goals.

The trial and appellate courts held this to be sufficient proof of discrimination such that race-neutral measures alone would be inadequate to ensure that DBEs operate on a "level playing field" for IDOT's contracts and subcontracts. Of particular importance for the Model Study Project is the court's affirmance of estimating the availability of DBEs by relying on the study's "custom census" approach rather than simply counting the certified DBEs among IDOT bidders, prequalified prime contractors, and registered subcontractors, as the plaintiff had urged. The court held that the remedial nature of the program favors a method of DBE availability calculation that "casts a broader net."

Sherbrooke Turf, Inc. v. Minnesota Department of Transportation. The Minnesota Department of Transportation's (Mn/DOT's) implementation of Part 26, based on a similar availability study, was likewise held to be constitutional. After holding that Congress had ample evidence of discrimination against DBEs in the market for federal-aid transportation contracts, the Eighth Circuit noted that "Sherbrooke presented evidence attacking the reliability of the data the state used in determining its recommended overall goal." But Sherbrooke "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."[20]

In *Sherbrooke's* companion case, the Nebraska Department of Roads' (NDORs') DBE goal based on an availability study[21] was upheld.

Western States Paving Co., Inc. v. Washington State Department of Transportation. The result from the Ninth Circuit was dramatically different in the challenge to the Washington State Department of Transportation's (WSDOT's) DBE Program. While the DBE Program's legislation and regulations were held to facially satisfy strict scrutiny, WSDOT's implementation of the regulations was not sufficiently narrowly tailored. Although a recipient need not demonstrate an independent compelling interest for its DBE Program, it is necessary to undertake an "as applied" inquiry into whether the state's program is narrowly tailored to its marketplace.

The Ninth Circuit held that grantees must proffer additional evidence of discrimination beyond that relied upon by Congress to apply race-conscious contract goals to meet the annual goal, including that discrimination must have affected all of the presumptively socially disadvantaged groups included in Part 26.

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[20] *Sherbrooke,* 345 F.3d. at 973–74.

[21] MGT of America, Inc., September 2000, "Availability and Goal Setting Study." This study used the bidders list approach to estimating Step 1 availability. The Eighth Circuit did not comment on this method.

WSDOT determined its Step 1 base figure of DBE availability by dividing the number of certified DBEs by the total number of establishments in the Census Bureau's *County Business Patterns* (CBP) database. In Step 2, it followed the U.S.DOT's guidelines and adjusted the base figure to reflect the average of the Step 1 estimate averaged with the median of prior 5 years' DBE participation. WSDOT did not have statistical evidence upon which to make an adjustment for discriminatory barriers and therefore could only rely upon the gap between its Step 1 estimate of 14% and the 9% DBE participation on contracts without goals. However, the court held that this 14% figure reflects the effects of the DBE Program, and thus is not indicative of DBE utilization in a race-neutral market. Further, the disparity between DBE availability and DBE utilization on race-neutral contracts was entitled to little weight because it did not account for the "relative capacity" of DBEs. Finally, the state did not rely upon any anecdotal evidence of discrimination in Washington's transportation marketplace in setting its goal.

The opinion is unclear how much evidence of discrimination in a recipient's jurisdiction is necessary to support the use of race-conscious contract goals. The court somewhat collapses the compelling interest requirement of "strong evidence" of discrimination with the requirement that the remedy be narrowly tailored to that evidence. The regulations disavow the need for grantees to conduct disparity studies, yet the opinion demands evidence that closely resembles a disparity study. It also seems to confuse the setting of an overall agency goal—the expected DBE participation in a discrimination-free market—with the means used to achieve that goal—the use of race-conscious subcontracting goals. Even if a recipient concluded that its market was fully fair and open, that does not mean that it would not set a goal, only that it would not employ race-based measures to meet it.

Perhaps this merely illustrates that if a party presents no study, the court then lacks guidance on the correct economic and legal analysis of discrimination. The Ninth Circuit pointed out that "[b]oth Minnesota and Nebraska had hired outside consulting firms to conduct statistical analyses of the availability and capacity of DBEs in their local markets, and the Eighth Circuit relied upon those studies to hold that the States' DBE Programs independently satisfied strict scrutiny's narrow tailoring requirement."[22] As a result of no study and no expert testimony, the Ninth Circuit made several serious errors, including imposing a requirement for a Step 2 adjustment, ignoring the effects of discrimination on DBE "capacity," and misstating the test for whether a disparity is substantively significant.

Given the Ninth's Circuit's reliance on *Sherbrooke,* what WSDOT lacked was the type of expert statistical evidence presented by IDOT, Mn/DOT, and NDOR in support of their programs. The *Sherbrooke* and *Northern Contracting* courts reviewed ample targeted evidence of DBEs' availability to perform on state DOT contracts and subcontracts, as well as evidence of the discriminatory barriers those firms face in pursuing such opportunities.

Additional Evidence of Discrimination

Step 2 requires recipients to consider evidence of the effects of the DBE Program and discrimination on DBE availability. The case law is very sparse regarding analysis of the elements of the determination of availability "but for" the effects of discrimination. The *Western States* opinion does not address what would suffice, and IDOT determined not to make a Step 2 adjustment. *Sherbrooke* noted without further comment that the DBE availability figure was adjusted from 11.4 to 11.6%.

This report therefore looks to cases construing state and local M/WBE programs for guidance on the types of evidence relevant to whether discrimination continues to affect the Step 1 base figure. Proof of the disparate impacts of economic factors on minority- and women-owned firms and the disparate treatment of such firms by actors critical to success should be shown using statistics and economic models to examine the effects of systems or markets on different groups. Anecdotal evidence of personal experiences with discriminatory conduct, policies, or systems is also probative. Specific evidence of discrimination or its absence may be direct or circumstantial and should include economic factors and opportunities in the private sector affecting the business success of minority and women disadvantaged business enterprises (M/W/DBEs).

Utilization of DBEs. Disparity studies examine whether and to what extent there are disparities between the availability of DBEs and their utilization on public and private sector contracts and subcontracts. This is known as the "disparity index" or "disparity ratio," which is calculated by dividing the utilization of DBEs by the availability of DBEs. Courts have looked to disparity indices in determining whether Croson's evidentiary foundation is satisfied. An index less than 100% indicates that a given group is being utilized less than would be expected based on its availability, thereby supporting an inference of the present effects of discrimination.

The government need not prove that the statistical inferences of discrimination are "correct." Statistical evidence creating inferences of discriminatory motivations has been held to meet strict scrutiny. It is the plaintiff who must then persuade the court that such proof does not support those inferences.

Past utilization of DBEs on state DOT contracts is useful in suggesting a "floor" of the availability of DBEs that are "ready, willing and able." That DBEs are utilized on the agency's

[22] 407 F.3d at 997.

contracts at greater percentages than the Step 1 headcount does not end the inquiry into whether discrimination still creates barriers to equal contracting opportunities. However, where the government has been implementing race-conscious remedies like the long-standing DBE Program, DBE utilization may merely reflect those efforts; it does not signal the end of discriminatory barriers but rather the program's success in reducing those barriers.

While § 26.45(d) clearly defines "capacity" as past utilization, some agencies have added a gloss of "capacity analysis" to lower the Step 1 base figure. They note that DBEs are often smaller and newer than established white male-owned businesses and may lack the qualifications needed for DOT work (prior DOT track record, high bonding capacity, ownership or long-term leases of equipment, existing union agreements, etc.). The agency therefore downgrades the remedial goal to reflect the "real-world" effects of discrimination.

The Ninth Circuit has further confused the issue by rejecting the only type of "capacity" marker required to be considered by the regulations it held to be constitutional—past state DOT DBE utilization. WSDOT argued that DBE capacity should reflect the relationship between its Step 1 availability estimate and its past utilization. The court, however, held that was "no evidence of discrimination" because utilization was affected by the imposition of DBE contract goals. It then rejected the disparity between DBE availability and utilization because the availability measure did not statistically control for the "relative capacity" (which it did not define). The court does not appear to have contemplated that the existence of the program would provide DBEs with more "capacity" (that is, supply) by creating more opportunities to work (that is, demand) by the application of contract goals.

In *Northern Contracting,* the Seventh Circuit recognized that lack of DBE "capacity" reflects the injury of discrimination; it is not an argument for limiting or abandoning the cure. As discussed in Appendix B, applying a "capacity" adjustment is scientifically unsound and contrary to the DBE Program's objective of remedying, not affirming, the results of discrimination. Size, longevity, bonding limits, etc., have been affected and reduced by the discrimination the legislation seeks to ameliorate, and therefore cannot be used to dilute the remedy. Proper statistical analysis should not control for the variables affected by the behavior sought to be isolated. Moreover, the construction industry is particularly elastic, such that any firm's "capacity" today is not its "capacity" tomorrow, as the award of new contracts, the completion of existing projects, and the ability to employ temporary workers and rent equipment make the ability to perform a particular contract at a particular moment impossible to determine from a research standpoint.

Economy-Wide Evidence of Discrimination. Evidence of discriminatory barriers in the private sector or economy-wide activities is also highly relevant to the state DOT's passive participation in discrimination. If DBEs are suffering discrimination in the private markets, the government has an interest in ensuring that its own contracting activities do not further this evil.

Economy-wide evidence has consisted of various types. Barriers to the formation of DBE contractors have included the following:

- Exclusion from "good old boy" networks, often the result of several generations of family participation in the industry;
- Barriers to union membership; and
- Race-based denial of access to start-up and working capital.

Barriers to competition by existing DBEs have included the following:

- Nonsolicitation of DBEs in the absence of DBE goals;
- Bid shopping of DBE quotes to non-DBEs;
- Industry domination by "informal, racially exclusionary business networks";
- Discrimination by surety bonding companies; and
- Price and delivery discrimination by suppliers.

Unremediated Markets Data. It is critical to measure the participation of minority- and women-owned firms in the absence of race-conscious goals, if such evidence is available. Evidence of race and gender discrimination in relevant "unremediated" markets, that is, markets that have no race-conscious subcontracting goals, provides an important indicator of the effects of the DBE Program and the level of DBE participation to be expected in the absence of DBE contract goals, that is, a totally race-neutral program.

The courts are clear that the government has a compelling interest in not financing the evil of private prejudice with public dollars. If DBE utilization is below availability in unremediated markets, then an inference of discrimination may be supportable. Numerous courts have recognized that the virtual disappearance of M/W/DBE participation after programs have been enjoined or abandoned strongly indicates substantial barriers remain to the participation of minority contractors. This analysis addresses whether the government has been and continues to be a "passive participant" in such discrimination, in the absence of race-conscious remedies. Thus, the results of nongoals contracts can help to demonstrate that, but for the interposition of remedial race-conscious measures, discrimination would lead to disparities in government contracting.

Anecdotal Evidence. Anecdotal evidence of experiences with discrimination in contracting opportunities, including testimony from other governments' studies and programs, is

relevant since it goes to the question of whether observed statistical disparities are due to discrimination and not to some other nondiscriminatory cause or causes. Testimony about discrimination by prime contractors, unions, bonding companies, suppliers, and lenders has been found relevant regarding barriers both to minority subcontractors' business formation and to their success on governmental projects. While anecdotal evidence is insufficient standing alone, such proof "may bring cold numbers convincingly to life." There is no requirement that anecdotal testimony be verified.

Additional Elements of Narrowly Tailored DBE Goal Setting

Definition of State DOT's Marketplace. Part 26 directs grantees to set goals based on the "relative availability of DBEs in your market."[23] State DOTs must therefore apply economic principles to empirically establish the geographic and industry dimensions of their contracting marketplace to ensure that the evidence is narrowly tailored. The studies relied upon by IDOT, Mn/DOT, and NDOR defined the relevant geographic market as those locations and industries that collectively accounted for at least 75% of the contract dollars awarded.

Race- and Gender-Neutral Remedies. Race- and gender-neutral approaches are a necessary component of a defensible and effective DBE Program. The Constitution and the regulations require that they be used to the maximum feasible extent and applied in good faith. Such measures include unbundling of contracts into smaller units, providing technical support, and addressing issues of financing, bonding, and insurance important to all small and emerging businesses.[24] 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 recipients without resort to using race or gender in their decision making. Further, governments have a duty to ferret out and eliminate discrimination against minorities and women by their contractors, staff, lenders, bonding companies, or others.

Collecting data is another necessary race-neutral measure. Agencies should track the utilization of M/W/DBEs as a measure of their success in the bidding process, including as subcontractors. Part 26 goes further in mandating the creation and maintenance of a bidders list.[25]

However, strict scrutiny does not require that every race-neutral approach must be implemented and then proven ineffective before race-conscious remedies may be utilized. While an entity must give good-faith consideration to race-neutral alternatives, every possible such alternative need not be exhausted.

Annual and Contract Goal Setting. DBE goals must be substantially related to the availability of such firms in the relevant market. To freeze the goals at current head counts would set the results of discrimination—depressed DBE availability—as the marker of the elimination of discrimination. It therefore should be reasonable for the government to seek to attempt to level the racial playing field by setting targets somewhat higher than the current head count. Thus, 49 C.F.R. § 26.51 requires grant recipients to determine the availability of DBEs in their marketplaces, absent the presence of discrimination.

In addition to the overall, aspirational goals for their annual, aggregate spending, state DOTs must set subcontracting goals for specific projects based upon the availability of DBEs to perform the anticipated scopes of subcontracting, not reiterate annual aggregate targets.[26] Not only is contract-specific goal setting probably necessary to ensure constitutionally required flexibility, but also setting goals that reflect the reality of the scopes of work of the job instead of overall agency spending targets reduces the need to conduct good-faith effort reviews because bidders are more likely to achieve realistic targets. Contract goals also reduce the temptation to create "front" companies and sham participation to meet goals not reflective of the project.

Implications and Effects of *Western States*

The implications and effects of *Western States* have been profound. All grantees in the Ninth Circuit have been directed to suspend the use of subcontracting goals until the opinion's evidentiary standards are satisfied. How to meet those standards led in large part to TRB's commissioning of this report.

U.S.DOT Guidance for Ninth Circuit Recipients

In response to *Western States,* the U.S.DOT General Counsel, in 2005, provided guidance that all Ninth Circuit grantees that lacked sufficient evidence of discrimination or its effects were to submit all race-neutral overall goals for FFY 2006 and an action plan, with timetables, to conduct a study.

In particular, the guidance provides the following:

- The study should ascertain the evidence for discrimination and its effects separately for each of the groups presumed by Part 26 to be disadvantaged.
- The study should include an assessment of any anecdotal and complaint evidence of discrimination.

[23] 49 CFR §26.45(b).
[24] 49 C.F.R. § 26.51(b).
[25] 49 C.F.R. § 26.11(c).
[26] 49 C.F.R. § 26.51.

- Recipients may consider the kinds of evidence that are used in 'Step 2' of the Part 26 goal-setting process, such as evidence of barriers in obtaining bonding and financing, and disparities in business formation and earnings.
- With respect to statistical evidence, the study should rigorously determine the effects of factors other than discrimination that may account for statistical disparities between DBE availability and participation. This is likely to require a multivariate/regression analysis.
- The study should quantify the magnitude of any differences between DBE availability and participation, or DBE participation in race-neutral and race-conscious contracts. Recipients should exercise caution in drawing conclusions about the presence of discrimination and its effects based on small differences.
- In calculating availability of DBEs, the study should not rely on numbers that may have been inflated by race-conscious programs or that may not have been narrowly tailored.
- Recipients should consider, as they plan their studies, evidence-gathering efforts that Federal courts have approved in the past. These include the studies by Minnesota and Nebraska cited in Sherbrooke Turf . . . [and] the Illinois evidence cited in Northern Contracting.

DBE Program Implementation and Goal Setting in the Ninth Circuit

While the Guidance provided the contours of the types of evidence to be analyzed, precisely what evidence a defensible study should include in the Ninth Circuit is not established. If WSDOT had presented a *Sherbrooke/Northern Contracting*-type availability study and proffered expert testimony in support of its analysis, then the court may have approved the program. Whether additional evidence of discrimination of the type presented at the *Northern Contracting* trial should also be included is uncertain because while the *Western States* court suggests disparity evidence is required, it also relied upon *Sherbrooke* where such evidence was not presented. The Seventh Circuit explained the Ninth Circuit's misreading of a previous Seventh Circuit case upon which the Ninth Circuit heavily relied, but the IDOT trial presented evidence of the type referred to by the Ninth Circuit, so it is again impossible to know the outcome had Illinois relied solely upon its availability study.

What is certain is that at a minimum, Ninth Circuit grantees, and perhaps all U.S.DOT aid recipients, must significantly customize their DBE goals to withstand strict scrutiny. It is not enough to plug the Step 1 availability estimate into a formula without considering the effects of discrimination. *Western States* also casts doubt on the value of using the state DOT's past levels of DBE utilization as a measure of the availability of DBEs "but for" discrimination because of the interposition of the DBE program. Any adjustment must be a quantifiable representation of the qualitative judgment that the ongoing effects of past or current discrimination either do or do not continue to impede DBEs' full and fair access to the recipient's market.

Western States further implies, and the U.S.DOT guidance provides, that when a Ninth Circuit recipient determines that not all the enumerated groups have suffered discrimination in its market, it must petition U.S.DOT for a waiver of the prohibition against separate goals for racial and ethnic minorities and white women. If a group is not found to suffer discrimination in the state DOT's marketplace, then certified DBEs owned by such persons cannot be counted by a prime contractor toward meeting a DBE contract goal. For example, in response to their disparity studies' findings of insufficient evidence of discrimination, a waiver to remove Hispanic and Subcontinent Asian males from goal credit has been granted to the California Department of Transportation's (Caltrans'), and the Oregon Department of Transportation's (ODOT's) request to exclude white females and Hispanics is pending.

TRB Model Disparity Study Project

This TRB project was undertaken to assist grantees in meeting these guidelines, as well as the mandates of strict scrutiny and Part 26. In particular, we were retained to do the following:

- Provide guidelines to state DOTs to determine when studies are needed;
- Develop a model scope of work for Requests for Proposals (RFPs) for studies;
- Develop a model disparity/availability study design; and
- Determine what data should be collected.

What follows is our best professional judgment on how best to respond to the evidentiary issues involved for state DOTs in meeting strict scrutiny and regulatory mandates.

CHAPTER 2

Designing Defensible DBE Programs

Introduction

The federal government apportions tens of billions of dollars each year from the National Highway Trust Fund to the fifty states and the District of Columbia to assist and support the construction and maintenance of the nation's highway infrastructure.[27] In the decade between FFYs[28] 1998 and 2007, more than $325 billion in federal highway transportation assistance (in 2007 dollars) was allocated to state DOTs.[29] In FFY 2007 alone, the amount distributed was almost $32 billion. Table 1 shows the apportionment of federal highway funds among state DOTs in FFY 2007, as well as their 2007 rankings and their average rankings from FFYs 1998 through 2007.

As a condition of receipt of these federal funds, the state DOTs must agree to abide by certain federal rules and regulations, including those governing the U.S.DOT's DBE Program.[30] The DBE Program, as originally enacted and as revised, was established by Congress in response to widespread evidence of discrimination against businesses owned by minorities and women in the construction industries, and in particular the highway construction industries.[31]

The principal objectives of the DBE Program are to:

- Ensure "nondiscrimination in the award and administration of DOT-assisted contracts in the Department's highway, transit, and airport financial assistance programs";
- "To create a level playing field on which DBEs can compete fairly for DOT-assisted contracts";
- "To help remove barriers to the participation of DBEs in DOT-assisted contracts"; and
- "To assist the development of firms that can compete successfully in the marketplace outside the DBE program."[32]

The DBE Program operates on both the supply-side and the demand-side of the market for highway construction. On the supply-side, the program encourages recipients to undertake efforts to increase the number of firms that can be certified to participate in the program and to enhance the ability of DBEs to compete effectively in the highway contracting marketplace. Such "race-neutral" activities include structuring solicitations, quantities, specifications, and delivery schedules to facilitate increased participation by DBEs; assisting DBEs to overcome barriers related to surety bonding and other types of financing; assisting start-up DBE firms to become established; implementing communications programs regarding contracting procedures and specific contract opportunities; implementing supportive services programs to develop business management, record keeping, and accounting skills; helping firms learn to handle increasingly significant projects and a greater diversity of project types; and assisting firms in the adoption of emerging technologies and use of electronic media.[33]

On the demand-side, the DBE Program requires state DOTs to encourage prime contractors and consultants to subcontract to DBEs by placing percentage participation goals on certain contracts and requiring prime contractors and consultants to make good-faith efforts to meet those goals, and ensuring distribution of the DBE directory to the widest feasible universe of prime contractors.[34] Such demand-side activities are described in Part 26 as "race-conscious" efforts.[35]

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[27] Highway Trust Fund monies are also allocated to American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the Virgin Islands. These entities, however, are excluded from the scope of the present report.

[28] The federal fiscal year runs from October 1 through September 30.

[29] U.S. Department of Transportation (2008) and U.S. Department of Labor (2008).

[30] 49 C.F.R. Part 26.

[31] *See, e.g., The Compelling Interest for Affirmative Action in Federal Procurement,* 61 Fed. Reg. 26050 *et seq* (1996).

[32] 49 C.F.R. 26.1.

[33] 49 C.F.R. 26.51(b).

[34] 49 C.F.R. 26.51(d).

[35] Since women-owned firms can also qualify as DBEs, such efforts can also be "gender-conscious." Following the nomenclature of Part 26, we shall refer to both types of efforts as "race-conscious."

Table 1. Federal-aid highway apportionments by state, FFYs 1998–2007.

State	Federal-aid Highway Fund Apportionment (in thousands) FFY 2007	Rank	Federal-aid Highway Fund Apportionment (in thousands) FFY 1998–FFY 2007	Rank
California	$2,960,914	1	$26,397,793	1
Texas	$2,624,571	2	$23,067,022	2
New York	$1,512,802	4	$14,129,262	3
Florida	$1,556,841	3	$14,044,320	4
Pennsylvania	$1,508,597	5	$13,666,393	5
Georgia	$1,148,445	7	$10,325,502	6
Ohio	$1,085,685	6	$10,079,858	7
Illinois	$965,678	8	$9,447,852	8
Michigan	$971,738	9	$8,996,057	9
North Carolina	$890,846	10	$8,150,729	10
New Jersey	$831,505	12	$7,554,338	11
Virginia	$819,035	11	$7,546,287	12
Indiana	$751,898	13	$6,935,524	13
Missouri	$739,140	14	$6,759,202	14
Tennessee	$696,083	15	$6,444,907	15
Alabama	$629,576	16	$5,745,715	16
Wisconsin	$614,695	18	$5,658,072	17
Arizona	$594,321	17	$5,184,202	18
Massachusetts	$552,890	22	$5,140,683	19
Kentucky	$539,127	19	$4,990,111	20
Washington	$519,858	21	$4,953,246	21
South Carolina	$516,771	20	$4,799,501	22
Maryland	$502,039	23	$4,638,775	23
Louisiana	$489,304	25	$4,526,336	24
Oklahoma	$493,726	26	$4,464,640	25
Minnesota	$416,012	24	$4,246,007	26
Connecticut	$450,100	27	$4,217,953	27
Arkansas	$396,891	29	$3,693,491	28
Colorado	$391,802	28	$3,628,968	29
Mississippi	$371,797	30	$3,511,338	30

Table 1. (Continued).

State	Federal-aid Highway Fund Apportionment (in thousands) FFY 2007	Rank	Federal-aid Highway Fund Apportionment (in thousands) FFY 1998–FFY 2007	Rank
Oregon	$355,299	31	$3,359,554	31
Iowa	$334,938	32	$3,296,421	32
Kansas	$340,126	34	$3,221,821	33
Alaska	$281,428	37	$3,148,654	34
West Virginia	$338,224	33	$3,088,318	35
Montana	$301,199	35	$2,867,240	36
New Mexico	$301,437	36	$2,796,547	37
Nebraska	$229,493	39	$2,213,989	38
Utah	$225,006	40	$2,169,214	39
Idaho	$232,943	38	$2,126,670	40
Nevada	$200,879	41	$2,028,138	41
Wyoming	$214,290	42	$2,005,894	42
South Dakota	$209,154	43	$1,995,007	43
North Dakota	$194,716	44	$1,872,619	44
Rhode Island	$158,583	45	$1,639,456	45
Maine	$139,141	47	$1,440,198	46
New Hampshire	$152,770	46	$1,411,474	47
Hawaii	$140,971	49	$1,393,796	48
Vermont	$133,324	48	$1,294,456	49
Delaware	$124,031	51	$1,246,687	50
District of Columbia	$125,354	50	$1,142,586	51

Source: U. S. Department of Transportation, Federal Highway Administration (2008).

As discussed in Chapter One, and in more detail in Appendix C, the U.S. Supreme Court's plurality opinion in *City of Richmond v. J. A. Croson Co.*, requires the highest level of review on the use of race-conscious classifications by public entities, even when such classifications are used as a tool for remedying the effects of past and present discrimination.[36] The Court's explanation of the type of evidence that would support a race-conscious contracting program gave rise to the "disparity study." These studies gathered statistical and anecdotal evidence of discrimination against M/WBEs to allow state or local policy makers to determine whether there was a "strong basis in evidence"—the standard of proof imposed by the Supreme Court—to adopt race-conscious remedies.

This project seeks to provide guidance and models to state DOTs considering what evidence is necessary to meet their constitutional obligations and regulatory mandates. The guidelines for disparity and availability studies, presented below, reflect recent judicial decisions about what is necessary to meet strict constitutional scrutiny and implement best practices for DBE Programs, based upon controlling precedents, sound science, and practical experience.

[36] 488 U.S. 469. *See* Chapter One for an overview and Appendix C for a detailed discussion of the law governing contracting affirmative action.

Guidelines for Conducting Disparity and Availability Studies

The objective of the study is to develop the following tools for state DOTs:

- Guidelines to assist them in determining when and if a disparity/availability study is recommended;
- A Model Scope of Work to be included in future RFPs or similar solicitations for disparity/availability studies; and
- Detailed recommendations on how to design and implement availability and disparity studies.

In *Croson,* the city's central piece of statistical evidence was that "while the general population of Richmond was 50% black, only 0.67% of the city's prime construction contracts had been awarded to minority businesses [between] 1978 and 1983."[37] The Court ruled, in essence, that the city's disparity statistic compared "apples to oranges" and therefore did not support an inference of discrimination. The correct benchmark for business discrimination cases was held to be the percentage of minority-owned firms in the *business* population of an area. The Court stressed that "proper" statistical evidence—evidence that revealed significant racial disparities between a government's minority procurement and the availability of minority businesses in the surrounding economy—would be an acceptable form of evidence in future litigation. Such evidence—possibly standing alone, or in combination with other factual showings—could be used to support an inference of discriminatory exclusion. "There is no doubt that '[w]here gross statistical disparities can be shown, they alone in a proper case may constitute prima facie evidence of a pattern or practice of discrimination' under Title VII."[38]

In light of *Croson* and subsequent decisions, many state and local governments abandoned their efforts at race-conscious contracting either voluntarily or upon being enjoined by the courts.[39] Others took a different approach and commissioned disparity studies to determine whether, in light of *Croson,* there was sufficient evidence of discrimination for their jurisdictions to justify continuation or enactment of race-conscious contracting programs.

At the federal level, the *Adarand* case established that Congress must also meet strict scrutiny. To meet this test, the DBE Program was revised in 1999 based upon the necessary compelling interest, and narrowly tailored regulations were adopted. 49 C.F.R. Part 26 describes five methods recipients may employ to set narrowly tailored goals for their implementation of the DBE Program.[40] One is to conduct a disparity study.

Over 300 disparity studies have been conducted in the 20 years since *Croson.*[41] Studies have varied considerably in content and in quality. At their best, they have been independent, objective, comprehensive assessments conducted in accordance with accepted practices in social science research and have been instrumental in assisting government entities, including state DOTs, to survive constitutional challenges to their M/WBE or DBE Programs. At their worst, they have been poorly conceived and executed, ultimately wasting the scarce public resources expended on them when they proved inadequate in litigation or even leading to ongoing programs being dropped without a legal challenge.

Below, we describe in more detail the major and minor components that are typically found in the best disparity studies. In summary, such studies typically include the following major elements:

1. A legal review discussing *Croson* and subsequent case law and legal standards;
2. An empirical assessment of the appropriate geographic market relevant to an agency's contracting activity;
3. An empirical assessment of the appropriate product markets relevant to an agency's contracting activity;
4. An estimate of the fraction of businesses within the agency's geographic and product markets that are owned by DBEs (*i.e.,* "availability");
5. An estimate of the percentage of all prime contract and subcontract dollars earned by DBEs (*i.e.,* "public sector utilization");
6. A statistical comparison of public sector utilization to availability (*i.e.,* "public sector disparity ratios");
7. Econometric analyses of DBEs' success, relative to non-DBEs' (*e.g.,* in business formation rates and in business owner earnings), and holding nondiscriminatory factors constant, in the market area surrounding the agency in question (*i.e.,* "private sector disparity ratios");
8. Econometric analysis of DBEs' access to capital and credit, relative to non-DBEs', holding balance sheet and creditworthiness information constant;
9. Qualitative evidence from DBEs and non-DBEs concerning experiences doing business or attempting to do business in the relevant marketplace, including experiences of institutionalized discrimination and/or individual disparate treatment, gathered through surveys, personal interviews, and/or public hearings (*i.e.,* "anecdotal evidence");

[37] *Croson,* 488 U.S., at 479–80.

[38] 488 U.S. at 501.

[39] For example, programs in New Jersey, Atlanta, Cleveland, Cook County, Columbus, the District of Columbia, Miami, and Philadelphia were enjoined. The State of Louisiana and the City of Milwaukee voluntarily dropped their race-conscious contracting programs.

[40] 49 CFR. § 26.45.

[41] We have catalogued over 300 disparity studies performed between 1989 and 2008. Of these, 39 were performed directly for state DOTs or included state DOTs among the agencies studied and explicitly included federally assisted DOT contracts. Ten of these 39 have been superseded at their respective agencies by more recent studies. *See* Table 2.

Figure 1. An availability study is a subset of a disparity study.

10. Qualitative and/or quantitative analysis of the effectiveness of race-neutral measures to address low DBE participation in public contracting; and
11. Review of existing policies and procedures related to DBE participation, with recommendations for changes/revisions designed to improve the effectiveness of the program and increase legal compliance.

Additionally, the best studies are supervised by professionals who can be qualified as expert witnesses under the exacting standards of the Federal Rules of Evidence to testify about a disparity or availability study's data, methods, and findings.[42] To the extent that the content of these studies largely involves economics and statistics, the courts will require expert witnesses to possess professional experience and qualifications, such as a doctoral degree, in these fields rather than in other tangential disciplines such as, for example, political science or anthropology.

Closely related to the disparity study is the "availability study." This has often caused confusion about the differences, if any, between the two. An availability study is a subset of a disparity study, focusing primarily on measuring the fraction of businesses in the relevant marketplace that are DBEs or potential DBEs (see Figure 1). Its main purpose is to assist federal grant recipients to meet the narrow tailoring requirements of strict scrutiny, and it operates on the assumption that evidence of the recipient's compelling interest in remedying discrimination is not required.

Of the 11 elements that comprise a quality disparity study, a quality availability study focuses primarily on elements 2 through 4. Availability studies often include the business formation studies listed under number 7 above as part of the "Step 2" goal-setting procedure,[43] and therefore provide compelling interest evidence in addition to their primary focus on narrow tailoring.[44] Prior to *Western States,* some state DOTs chose to forgo the expense of conducting a full disparity study because recipients are not required to independently demonstrate compelling interest (since that has previously been established by Congress).[45] Instead, some commissioned availability studies to assist their programs to become narrowly tailored by providing improved estimates of DBE availability from which to set annual DBE participation goals, as required by 49 CFR 26. To date, this approach has been upheld by the court that has addressed the issue.[46]

In the remainder of this chapter, we identify best practices regarding if, when, why, and how state DOTs should conduct disparity or availability studies rather than employ one of the other four methods allowed for under 49 CFR 26.45.[47] These results will contribute to improved state DOT decision making and more effective implementation of the DBE Program.

When is a Study Required?

It is neither possible nor prudent to provide definite or absolute answers to the question of when or if a state DOT should conduct a disparity or availability study since the law in this field is constantly evolving and each state DOT's situation is likely to be unique in several respects. With this caveat firmly in mind, we offer the following guidance.

Part 26 does not require state DOTs to independently establish evidence of business discrimination within their contracting marketplace in order to satisfy the compelling interest prong of constitutional strict scrutiny. The *Western States* ruling, however, has created uncertainty about this principle for Ninth Circuit state DOTs.[48]

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[42] Fed. Reg. Ev. 702 ("If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.")

[43] 49 C.F.R § 26.45(d).

[44] This is because business formation studies use econometrics to answer the question of "how different would minority (or female) business formation rates be if they faced the same market structure as similarly situated non-minority males?" If minority or female business formation rates would be statistically significantly larger under the nonminority male market structure, this difference can be used to quantify a "Step 2" adjustment under 49 CFR 26.45. Most economists would also accept it as evidence of discrimination. *See, e.g.* Oaxaca (1973), Fairlie and Meyer (2000), and Wainwright (2000).

[45] *Adarand Constructors, Inc. v. Slater,* 228 F.3d 1147 (10th Cir. 2000), *cert. granted,* 532 U.S. 941, *then dismissed as improvidently granted,* 534 U.S. 103 (2001) (*Adarand VII*); *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation,* (8th Cir. 2003), *cert. denied,* 541 U.S. 1041 (2004).

[46] *Sherbrooke Turf, Inc,* 345 F.3d. at 973–74.

[47] *I.e.,* (1) using DBE directories and Census data; (2) using bidders lists; (3) using the DBE goal of another U.S.DOT recipient; or (4) using other types of contractor lists.

[48] *See* Chapter One, *supra,* and Appendix C, *infra.*

State DOTs in the Ninth Circuit must now gather evidence of discrimination (as part of a disparity study, an availability study, or through other means), if they have not already done so, and include it as part of their annual DBE goal submission. All nine state DOTs in the Ninth Circuit have opted to collect such evidence by means of a disparity study.

Compliance with the federal regulations and guidance, however, is only one of several considerations. First, the state DOT's legal counsel must consider the likelihood of litigation against its implementation of the DBE Program.[49] Litigation risks can be influenced by many factors, including the following:

- The level of consensus in the local contracting community, both DBE and non-DBE, concerning the need for and appropriateness of race-conscious contracting goals;[50]
- The quality of relationships between the state DOT and the local contracting community, both DBE and non-DBE;
- The extent of the race-neutral aspects of the DBE Program and the level of resources devoted to such efforts;
- How vigorously the race-conscious aspects of the DBE Program are implemented and enforced;
- The reasonableness of the current overall DBE goals;
- The reasonableness of the current contract-level DBE goals and the method by which they are determined;
- The reasonableness of the agency in granting waivers of DBE goals when legitimate good-faith efforts to achieve the goals proved insufficient; and
- Whether there is a race-conscious program for state-funded transportation contracts in addition to the federal DBE Program.

The greater the perceived likelihood of a legal challenge to the DBE Program, the more prudent it becomes to consider commissioning a disparity or availability study.

Although we do not read the law as requiring it, if a legal challenge does occur, being able to rely on a reasonably current and high-quality disparity or availability study, and access to credible expert witnesses to testify about the data, methods, and findings of the study, will be a great asset to state DOT defendants. In *Sherbrooke* and *Northern Contracting,* proffering these studies along with qualified experts to testify about these studies' data, methods, and findings, contributed significantly to each agency's successful defense.

In the *Western States* case, in contrast, WSDOT's DBE goals at the time were not based on an availability study and no expert testimony was presented. In general, race-conscious contracting programs supported by only an outdated study, or a study with inadequate evidence, or no study at all, have not fared well when challenged.[51]

There is one other circumstance in which a disparity study should be considered: where all or most of a state DOT's annual DBE goal is projected to be met through race-neutral means. Although an all race-neutral program is unlikely to draw a constitutional challenge, it must be consistent with Congress' findings that discrimination still results in a lack of equal opportunities for DBEs. Therefore, state DOTs that propose to wholly or mostly eliminate race-conscious contract goal setting should be confident that such an approach to ensuring a level playing field is warranted by quantitative and qualitative evidence of a lack of discrimination in its relevant markets, a consistent ability in the past to meet its DBE goals without race-conscious means, and a numerical goal that fairly reflects DBE availability.

Disparity Study or Availability Study?

State DOTs in the Ninth Circuit would be prudent to conduct disparity studies rather than availability studies to make

[49]It seems probable that the U.S.DOT directive and an assessment of increased likelihood of a challenge played a role in Ninth Circuit state DOTs' decision to conduct disparity studies.

[50]Building and achieving consensus is important. If racial and ethnic disparities in business enterprise emerge due to unequal business opportunities caused by discrimination, then the entire country pays a price resulting from decreased competition, underdeveloped human resources, and reduced social cohesion. Marshall (1991, 10), for example, has observed that, ". . . as long as minorities and women are denied access to business opportunities, the distribution of wealth, income, and power will continue to be unfair and even to polarize, with grave consequences for the economy, polity, and society." Similarly, Fairlie and Meyer (1994, 1–2), note that

> Understanding the ethnic/racial character of self-employment is important for at least three reasons. First, conflicts between ethnic and racial groups in the U.S. have often been partly caused by business ownership patterns. . . . Second, self-employment has historically been a route of economic advancement for some ethnic groups. . . . Third, small business owners have an important effect on political decisions in the U.S. The under-representation of many ethnic/racial groups in business means that these groups may possess less political power than is suggested by their proportion of the population.

Aronson (1991, 76–77) expressed similar concerns, noting, "[h]istorically, self-employment and small business ownership have been an important path by which ethnic, racial, and religious minorities in the United States have overcome social and cultural disabilities and entered the so-called mainstream."

[51]*See, e.g., Thompson Building Wrecking Company, Inc., v. Augusta, Georgia,* 2007 U.S. Dist. LEXIS 27127 (S.D Ga. 2007) (13-year-old study not sufficient to establish ongoing compelling interest, M/WBE program enjoined); *Builders Association of Greater Chicago v. County of Cook,* 256 F.3d 642 (7th Cir. 2001) (no disparity study or analysis); *Associated Utility Contractors of Maryland, Inc. v. Mayor and City Council of Baltimore et al,* 83 F.Supp.2d 613 (D. Md. 2000) (10-year-old evidence to justify goals is equivalent to no evidence); *Association for Fairness in Business, Inc. v. New Jersey,* 82 F.Supp.2d 353 (D. N.J. 2000) (no evidence leading to particularized findings of discrimination); *W. H. Scott Construction Company, Inc. v. City of Jackson,* Mississippi, 199 F.3d 206 (5th Cir. 1999) (study addressed only prime contracts; no evidence about the availability and utilization of subcontractors); *Associated General Contractors of Ohio, Inc. v. Drabik,* 50 F.Supp.2d 741 (S.D. Ohio 1999) (old evidence was insufficient); *Associated General Contractors of America v. City of Columbus,* 936 F.Supp. 1363 (S.D. Ohio 1996) (studies rejected as invalid and incomplete); *Associated General Contractor of Connecticut v. City of New Haven,* 791 F.Supp. 941 (D. Conn. 1992) (no statistical evidence presented).

sure that they have examined the type of evidence of discrimination in their markets that establishes the need to use race-conscious measures to meet the annual DBE goal. While the court in *Western States* clearly held that the regulations are constitutional, and the regulations are explicit in not requiring a disparity study,[52] the types of evidence listed by the Ninth Circuit would be included in a disparity study but not typically in an availability study.[53]

Outside the Ninth Circuit, an availability study may be sufficient to meet a state DOT's constitutional obligations under strict scrutiny. There are risks to this approach, however, as only the Eighth Circuit has relied solely upon an availability study to uphold a recipient's program. Therefore, if the state DOT believes there is a substantial likelihood of a challenge to the DBE Program, then serious consideration should be given to conducting a disparity study that provides quantitative and qualitative evidence of discrimination. An availability study, in contrast, generally does not present any qualitative or quantitative evidence regarding discrimination.[54]

If a constitutional challenge is not likely, but consensus regarding the DBE Program is still lacking in the local contracting community, a disparity study can still be a useful tool for building agreement about the need for a race-conscious remedy and the scope of the remedy. If consensus exists, then a periodic disparity or availability study can play a role in maintaining such consensus.[55]

If the state as a whole (not just the state DOT) has a race-conscious M/WBE Program for state-funded transportation contracts, then a disparity study is strongly recommended because such a program may not be able to rely upon Congressional findings of a compelling interest.[56] In such cases, the marginal cost of expanding the scope of such a study to also include a DBE availability or disparity study should be relatively modest. Therefore, it may be sensible for a state DOT to consider adding a DBE study onto the state-funds disparity study.

[52]The "Department is not requiring recipients to do a disparity study." 64 Fed. Reg. 5110.

[53]407 F.3d at 999–1001 (evidence of discrimination against each minority group and women in the state's marketplace, detailed availability analysis, disparity testing, anecdotal evidence, etc.).

[54]49 C.F.R. §26.45 requires public input regardless of the method chosen to set DBE goals.

[55]The State of Maryland, for example, under the supervision of the Maryland Department of Transportation (MDOT) conducts a disparity study, by law, every 5 years. Each study is used to revise the state's MBE Program, as well as to provide current data to support the DBE goal-setting activities at all of MDOT's modal administrations. The study also collects feedback from DBEs and non-DBEs about the operation of the various programs.

[56]Therefore, a state or local government that is setting race-conscious goals on non-federally funded contracts should have a disparity study documenting that such goals are based on a compelling government interest and are narrowly tailored to the evidence relied upon. For contracts subject to 49 C.F.R. Part 26 or Part 23, outside the Ninth Circuit, an availability study may still suffice to demonstrate a narrowly tailored program. Since *Western States,* it seems clear that in the Ninth Circuit it would be prudent to supplement an availability study with evidence of discrimination.

Timing

If a state DOT's DBE Program that is not based on a study for its annual DBE goal setting is challenged, then it may still be possible in some cases to commission a study and employ the results at trial. The obvious advantage to this strategy is that, if no challenge occurs, it saves the resources that would otherwise be expended on a study. There are at least three disadvantages to not collecting independent evidence prior to a legal challenge.

First, the state DOT runs the risk that the trial court will either deny the motion to supplement the record or will not allow enough time to complete the work and prepare witnesses before trial. Such was the case in *Kossman Contracting Co., Inc. v. Texas Department of Transportation.*[57] The challenge to Texas' Historically Underutilized Business Program for state-funded contracts was filed just before Christmas 1999, and the judge set the trial date for mid-February 2000—leaving insufficient time for the state to prepare its defense, let alone conduct a new study. As a result, TxDOT settled the case by dropping race-conscious subcontracting goals and paying the plaintiff's legal fees and costs.

Second, the costs of a study procured during litigation are likely to rise due to the time pressures involved. Nevertheless, this is preferable to going to trial with no study at all.

Finally, failing to gather and evaluate evidence beyond DBE directories and bidders lists risks presenting an incomplete picture of the barriers to full opportunities for DBEs. Adopting broad measures of availability, examining economy-wide data, and gathering anecdotal evidence gives a fuller picture of the elements relevant to a narrowly tailored program as well as provides a supportable benchmark for determining the level of DBE participation in a marketplace that does not discriminate. This furthers the overall remedial purpose of the DBE Program.

Quality of Disparity and Availability Studies

Completing a disparity or availability study before a challenge is only part of the equation. The study must also be of sufficient breadth, depth, and quality to withstand judicial scrutiny. Moreover, to the extent the study is used as a tool for consensus building, its scope and quality matter regardless of the likelihood of a challenge.

In the remaining sections of this report, we review disparity and availability studies performed for state DOTs, identifying included and excluded elements and discussing differences in how the elements have been designed and implemented. Next, we provide an overview of goal-setting methods currently in use at state DOTs along with an extended discussion of our rec-

[57]C.A. No. H-99-0637 (S.D. Tex. 2000).

ommended method for measuring DBE availability. Finally, we incorporate these elements into a Model Scope of Work to be used in future RFPs, along with other advice for improving the disparity/availability study RFP process. Appendix A, as well as other subsections in the report, provides detailed information on the type and quality of data necessary to support a high-quality disparity or availability study. Appendix D provides a glossary of abbreviations and technical terms such as "endogenous," and "multivariate regression," and their meaning in disparity and availability studies. Appendix C is a full discussion of the legal issues and judicial decisions.

Review of Existing Studies

State DOTs That Have Performed Disparity or Availability Studies

For this report, we contacted each state DOT and the District of Columbia and requested its annual DBE goal submissions for FFYs 2006, 2007, and 2008.[58] We also asked whether each was currently performing, had recently performed, or had ever performed a disparity or availability study. If an agency had recently performed or was currently performing a study, we also asked for a copy of the RFP for the study.

Of the 51 state DOTs we contacted, 26 have performed or are currently performing, a disparity or availability study. These 26 states account for 28 studies altogether since two states—Colorado (CDOT, ongoing) and North Carolina (NCDOT, ongoing)—are currently conducting studies to replace earlier ones. Of those 28 studies, 22 were commissioned directly by the state DOT while the remaining 6 included the DOT as part of a multi-agency statewide study.[59]

Five state DOTs have studies in progress, as of this writing—Hawaii (HDOT, ongoing) and Montana (MDT, ongoing), both in the Ninth Circuit; as well as Colorado (CDOT, ongoing), New York State (NY, ongoing), and North Carolina (NCDOT, ongoing).

Sixteen states have completed studies within the last six years This includes the other seven Ninth Circuit state DOTs—Arizona DOT (ADOT, 2009), Caltrans (2007), Idaho Transportation Department (ITD, 2007), Nevada DOT (NDOT, 2007), ODOT (2007), WSDOT (2006), and Alaska Department of Transportation and Public Facilities (Alaska DOT&PF, 2008)—as well as Georgia DOT (GDOT, 2005), IDOT (2004), the State of Maryland (MD, 2006), Mn/DOT (2005), Missouri DOT (MoDOT, 2004), the State of New Jersey (NJ, 2005), NCDOT (2004), Tennessee DOT (TDOT, 2007), and Virginia DOT (VDOT, 2004).

Seven states currently have studies that are more than 5 years old: CDOT (2001), Florida DOT (FDOT, 1999), the State of Louisiana (LA, 1990; LA, 1991);[60] NDOR (2000); New Mexico DOT (NMDOT, 1995); the State of Ohio (OH, 2001a; OH, 2001b);[61] and South Carolina DOT (SCDOT, 1995).

Of the 14 state DOTs with current studies,[62] only 8[63] used them, in whole or in part, as the basis for DBE goals for FFYs 2006, 2007, and/or 2008.[64] CDOT used its previous study to set goals for FFY 2006 and used the City of Denver's local study to set goals for FFYs 2007 and 2008,[65] and it is currently conducting a new study (CDOT, ongoing). GDOT made explicit use of its disparity study in recommending DBE goals for FFYs 2006, 2007, and 2008 to the State Transportation Board. However, the board adopted lower goals, without explanation or modification of the evidentiary basis, in lieu of the recommended ones in all three years. ADOT's study (ADOT, 2009) is being used as the basis for its FFY 2009 DBE goals. The remaining five DOTs[66] used one of the other methods from § 26.45(c) to set annual goals.

Common Elements in State DOT Disparity and Availability Studies

As a prelude to developing the model recommendations, we reviewed 25 of the 28 studies identified above.[67] Nineteen were disparity studies; the remaining five were availability studies. Table 2 lists the 29 studies, the study type (disparity or availability), and the year they were completed. Table 3 shows which studies included which elements.

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[58]Few DOTs post their annual DBE goals and supporting goal-setting methods on their departmental Web sites. Of those that did, most posted only the latest submission. In a few cases, despite providing a letter of introduction from TRB, we had to file open records/freedom of information requests to obtain the goal-setting information. In contrast, a handful of state DOTs had a great deal of information posted on their Web sites. North Dakota DOT's [NDDOT] Web site, in particular, was excellent. *See* http://www.dot.nd.gov/divisions/civilrights/dbeprogram.htm.

[59]Multi-agency statewide studies in this category not only had to include the state DOT but also had to include federally assisted state DOT contracts.

[60]Volume 1 of the 1990 State of Louisiana Study was performed by two local university professors and completed in 1990. The state subsequently determined additional analysis was needed and commissioned another consultant, D.J. Miller & Associates, to perform Volume II, which was completed in 1991.

[61]Ohio's study was conducted by two consultants. D. J. Miller & Associates conducted the statistical portion and Mason Tillman Associates, Ltd. conducted the historical and anecdotal portion.

[62]California, Georgia, Idaho, Illinois, Maryland, Minnesota, Missouri, Nevada, New Jersey, North Carolina, Oregon, Tennessee, Virginia, and Washington.

[63]California, Illinois, Maryland, Minnesota, Missouri, Nevada, North Carolina, and Washington.

[64]Alaska's study was not completed in time to be used for FFY 2008.

[65]Colorado DOT used CDOT (2001) to help set goals for FFY 2006. For FFY 2007 and 2008, it used CCD (2006).

[66]New Jersey, Virginia, Tennessee, Oregon, and Idaho.

[67]We were unable to review the remaining three studies. For one that was ongoing, we were unable to obtain a copy of the winning proposal (NCDOT). Another study was never publicly released (TDOT), and a copy of one study could not be located (FDOT). For the other four ongoing studies (CDOT, Hawaii DOT [HDOT], Montana DOT [MDT], and New York State), we obtained copies of the winning proposals and based our review on the contents of those proposals.

Table 2. State DOT disparity and availability studies reviewed.

State	Consultant	Type of Study	Year Completed
AK	D. Wilson Consulting Group, LLC	Disparity	2008
AZ	MGT of America, Inc.	Disparity	2009
CA	BBC Research & Consulting	Disparity	2007
CO	MGT of America, Inc.	Disparity	2001
CO	D. Wilson Consulting Group, LLC	Disparity	ongoing
FL	MGT of America, Inc.	Disparity	1999
GA	Boston Research Group	Disparity	2005
HI	NERA Economic Consulting	Disparity	ongoing
ID	BBC Research & Consulting	Disparity	2007
IL	NERA Economic Consulting	Availability	2004
LA	D.J. Miller & Associates & Lunn/Perry	Disparity	1991
MD	NERA Economic Consulting	Disparity	2006
MN	NERA Economic Consulting	Availability	2005
MO	NERA Economic Consulting	Availability	2004
MT	D. Wilson Consulting Group, LLC	Disparity	ongoing
NC	EuQuant[68]	Disparity	ongoing
NC	MGT of America, Inc.	Disparity	2004
NE	MGT of America, Inc.	Availability	2000
NJ	Mason Tillman Associates, Ltd.	Disparity	2005
NM	BBC Research & Consulting	Disparity	1995
NV	BBC Research & Consulting	Disparity	2007
NY	NERA Economic Consulting	Disparity	ongoing
OH	D.J. Miller & Associates & Mason Tillman Associates, Ltd.	Disparity	2001
OR	MGT of America, Inc.	Disparity	2007
SC	MGT of America, Inc.	Disparity	1995
TN	Mason Tillman Associates, Ltd.	Disparity	2007
VA	MGT of America, Inc.	Disparity	2004
WA	NERA Economic Consulting	Availability	2006

[68]EuQuant was formerly Boston Research Group.

The remainder of this section discusses important study elements and whether these were included in the studies we examined. For ease of reference, Table 3 is presented in three parts, 3a, 3b, and 3c: study elements (a) through (d) are referenced in Table 3a, study elements (e) through (i) are referenced in Table 3b, and study elements (j) through (m) are referenced in Table 3c.

The next section introduces our proposed Model Disparity Study by examining differences in how certain elements were implemented in these 25 studies and making recommendations as to the most constitutionally sound approach to each study element.

Executive Summary and Introduction. None of the five availability studies (0%) included an executive summary. All (100%) included an introduction. Seventeen of 18 disparity studies (94%) included an executive summary. Seventeen of 18 disparity studies (94%) included an introduction.[69] Every study, though, included at least one or the other.

An introductory chapter describing, at a minimum, the objectives of the study and the structure of the study report orients the reader to the material to follow and is a useful contribution to any study. An executive summary that briefly describes the data, methods, key findings, and conclusions also provides a handy digest of what is typically a lengthy and fairly complex collection of quantitative and qualitative analyses. The longer the study, the more important an executive summary.

Although an executive summary provides a handy digest, it is only that—a digest. Should a DBE Program that is supported by a disparity or availability study ever be challenged, it will be helpful to be able to establish that key decision makers in the organization read and carefully considered the entire study—not just the executive summary.

Legal Review. Four of the five availability studies (80%) included a legal review. Fifteen of 20 disparity studies (75%) included a legal review.

Since the case law in the field of race-conscious contracting is constantly evolving, it is helpful to include a section in the study that reviews and evaluates relevant case law and shows how the study methods comport with the consultant's understanding of the law. This section of the study also provides helpful information for state DOT attorneys if a program is challenged. This section allows the state DOT's attorneys to determine whether the consultant's grasp of strict scrutiny and the relationship of its methods to the law is satisfactory, and guides the court about the legal principles as applied by the consultant.

Historical Review. None of the five availability studies (0%) included any review of the history of the impact of discrimination on business enterprise. Only two of 20 disparity studies (10%) included such an historical review, and they were also among the oldest studies we examined (LA, 1991; SCDOT, 1995).[70]

Many disparity studies in the immediate post-*Croson* era included historical reviews, including of the civil rights movement, and the emergence of black-owned businesses. This approach soon fell out of favor. Nothing in *Croson,* however, indicates that specific historical evidence of discrimination does not have a place as part of a larger mosaic of quantitative and qualitative evidence produced in a disparity study, only that such studies cannot rest on such evidence in isolation. On the contrary, high-quality historical analyses can provide important context, for both policy makers and jurists, for understanding how current disparities arose and the linkages between different types of past discrimination and the current disadvantaged status of many minority- and women-owned business enterprises. Such information may be solicited as part of the anecdotal interviews with local business owners, however, rather than as a stand alone section in a study. For example, in finding that the City of Chicago had a strong basis in evidence to continue its M/WBE program for construction contracts, the court reviewed the history of the "long, slow, painful and continuing process" of eradicating the continuing effects of slavery and discrimination.[71]

Review of Contracting Policies and Procedures. None of the five availability studies (0%) included a review of contracting policies and procedures. Fourteen of 20 disparity studies (70%) included such a review.

A race- and gender-based contracting program must be "narrowly tailored" to any evidence of discrimination in the agency's markets. For state DOTs, this is the crucial task for goal setting under Part 26:[72] recipients must utilize race-neutral means to the maximum feasible extent to meet the overall goal[73] and project the portion of the goal that it expects to meet through race-neutral measures and race-conscious subcontracting goals.[74] The requirement that recipients utilize

[69]For CDOT (ongoing) and MDT (ongoing), only the proposals were available, and these did not specify whether introductory chapters or executive summaries would be provided. For FDOT (1999), neither the study nor a copy of the proposal could be located. For NCDOT (ongoing), the proposal was not available, and for TDOT (2007) the study was never released.

[70]The State of Ohio study (OH, 2001b) also included an historical section. However, it was only two pages in length and did not qualify to be counted in this category.

[71]*Builders Association of Greater Chicago v. City of Chicago,* 298 F. Supp.2d 725, 727 (N.D. Ill. 2003).

[72]64 Fed. Reg. 5109 (Feb. 2, 1999) (section 26.45 "is critical to meeting our constitutional obligation to ensure that the program is narrowly tailored to remedy the effects of discrimination.").

[73]49 C.F.R. § 26.51(a).

[74]49 C.F.R. § 26.51(c).

Table 3a. Elements included in state DOT disparity and availability studies.

Study	Type	Intro-duction	Execu-tive Sum-mary	Legal Review and Anal-ysis	Histor-ical Analy-sis	Review of Con-tracting Policies and Proce-dures
WSDOT (2006)	A	x		x		
Mn/DOT (2005)	A	x		x		
MoDOT (2004)	A	x		x		
IDOT (2004)	A	x		x		
NDOR (2000)	A	x				
HDOT (ongoing)	D	x	x	x		x
NY (ongoing)	D	x	x	x		x
MD (2006)	D	x	x	x		x
ADOT (2009)	D	x	x	x		x
ODOT (2007)	D	x	x	x		x
NCDOT (2004)	D	x		x		x
VDOT (2004)	D	x	x	x		x
CDOT (2001)	D	x	x			
FDOT (1999)	D	n/a	n/a	n/a	n/a	n/a
SCDOT (1995)	D	x	x	x	x	x
Caltrans (2007)	D	x	x			
ITD (2007)	D	x	x			
NDOT (2007)	D	x	x	x		
NMDOT (1995)	D	x	x	x		x
OH (2001)	D	x	x			
LA (1991)	D	x	x		x	x
NJ (2005)	D		x	x		x
TDOT (2007)	D	n/a	n/a	n/a	n/a	n/a
Alaska DOT&PF (2008)	D	x	x	x		x
CDOT (ongoing)	D	n/a	n/a	x		x
MDT (ongoing)	D	n/a	n/a	x		x
GDOT (2005)	D	x	x	x		
NCDOT (ongoing)	D	n/a	n/a	n/a	n/a	n/a

Notes: (1) *x* indicates the relevant study element was present, an empty cell indicates that the element was not present; (2) in the *type* column, *A* indicates an availability study, *D* indicates a disparity study; (3) *n/a* means the necessary information to make a determination was not available, usually because the study was ongoing and the study proposal was not available or did not address a particular element, or because the study was never released or could not be located.

Table 3b. Elements included in state DOT disparity and availability studies.

Study	Type	Geographic Market Definition	Product Market Definition	Availability Analysis	Public Sector Utilization	Public Sector Disparity
WSDOT (2006)	A	x	x	x		
Mn/DOT (2005)	A	x	x	x		
MoDOT (2004)	A	x	x	x		
IDOT (2004)	A	x	x	x		
NDOR (2000)	A	x		x	x	x
HDOT (ongoing)	D	x	x	x	x	x
NY (ongoing)	D	x	x	x	x	x
MD (2006)	D	x	x	x	x	x
ADOT (2009)	D	x		x	x	x
ODOT (2007)	D	x		x	x	x
NCDOT (2004)	D	x		x	x	x
VDOT (2004)	D	x		x	x	x
CDOT (2001)	D	x	x	x	x	x
FDOT (1999)	D	n/a	n/a	n/a	n/a	n/a
SCDOT (1995)	D	x		x	x	x
Caltrans (2007)	D	x	x	x	x	x
ITD (2007)	D	x	x	x	x	x
NDOT (2007)	D	x	x	x	x	x
NMDOT (1995)	D	x		x	x	x
OH (2001)	D	x		x	x	x
LA (1991)	D			x	x	x
NJ (2005)	D	x		x	x	x
TDOT (2007)	D	n/a	n/a	n/a	n/a	n/a
Alaska DOT&PF (2008)	D	x		x	x	x
CDOT (ongoing)	D	x	n/a	x	x	x
MDT (ongoing)	D	x	n/a	x	x	x
GDOT (2005)	D	x	x	x	x	x
NCDOT (ongoing)	D	n/a	n/a	n/a	n/a	n/a

Notes: (1) *x* indicates the relevant study element was present, an empty cell indicates that the element was not present; (2) in the *type* column, *A* indicates an availability study, *D* indicates a disparity study; (3) *n/a* means the necessary information to make a determination was not available, usually because the study was ongoing and the study proposal was not available or did not address a particular element, or because the study was never released or could not be located.

Table 3c. Elements included in state DOT disparity and availability studies.

Study	Type	Private Sector Disparities	Credit Access	Anecdotal Evidence	Recommendations
WSDOT (2006)	A	x		x	x
Mn/DOT (2005)	A	x			x
MoDOT (2004)	A	x			x
IDOT (2004)	A	x			x
NDOR (2000)	A				x
HDOT (ongoing)	D	x	x	x	x
NY (ongoing)	D	x	x	x	x
MD (2006)	D	x	x	x	x
ADOT (2009)	D	x	x	x	x
ODOT (2007)	D	x	x	x	x
NCDOT (2004)	D	x		x	x
VDOT (2004)	D			x	x
CDOT (2001)	D				x
FDOT (1999)	D	n/a	n/a	n/a	n/a
SCDOT (1995)	D	x		x	x
Caltrans (2007)	D	x	x	x	x
ITD (2007)	D	x	x	x	x
NDOT (2007)	D	x	x	x	x
NMDOT (1995)	D	x		x	x
OH (2001)	D	x		x	x
LA (1991)	D		x	x	x
NJ (2005)	D			x	x
TDOT (2007)	D	n/a	n/a	n/a	n/a
Alaska DOT&PF (2008)	D			x	x
CDOT (ongoing)	D	x		x	x
MDT (ongoing)	D	x		x	x
GDOT (2005)	D			x	x
NCDOT (ongoing)	D	n/a	n/a	n/a	n/a

Notes: (1) *x* indicates the relevant study element was present, an empty cell indicates that the element was not present; (2) in the *type* column, *A* indicates an availability study, *D* indicates a disparity study; (3) *n/a* means the necessary information to make a determination was not available, usually because the study was ongoing and the study proposal was not available or did not address a particular element, or because the study was never released or could not be located.

race-neutral measures to the maximum feasible extent has been critical to the unanimous judicial conclusion that the regulations are facially narrowly tailored.[75] It was also useful in defending IDOT's DBE Program, where expert testimony was admitted to establish that the DBE Program complied with Part 26 and best practices, as well as the process for adopting the annual goal. A review of current contracting policies and procedures should therefore document whether, and to what extent, the state DOT's implementation of the regulations meets the constitutional objective.

Conducting this type of review also familiarizes the consultant with the agency's policies and procedures, which allows a more effective collection and analysis of anecdotal and other qualitative information regarding the interaction of both DBEs and non-DBE with the agency's policies and procedures. It further permits recommendations for program improvements that support the success of the state DOT's program in leveling its playing field.

Determination of Relevant Geographic Market Area. All five availability studies (100%) included a section describing how geographic markets were empirically determined based on contract and subcontract expenditure data. Nineteen of 20 disparity studies (95%) included a geographic market analysis.

The importance of establishing the geographic market area stems from *Croson:*

> Finally, the city and the District Court relied on Congress' finding in connection with the set-aside approved in Fullilove[76] that there had been nationwide discrimination in the construction industry. The probative value of these findings for demonstrating the existence of discrimination in Richmond is extremely limited. By its inclusion of a waiver procedure in the national program addressed in Fullilove, Congress explicitly recognized that the scope of the problem would vary from market area to market area.[77]

While the DBE Program was established by Congress and based on findings of nationwide discrimination in the construction industry, establishing the state DOT's geographic market area is nevertheless an important component of narrowly tailoring its DBE Program. The DBE annual goal should reflect DBE availability within the specific geographic market from which that state DOT draws the vast bulk (75% or more) of its contractors and subcontractors.

Determination of Relevant Product Market Area. Four of the five availability studies (80%) included a section describing how product markets were empirically determined based on contract and subcontract expenditure data.[78] Only eight of 18 disparity studies (44%) included a product market analysis.[79]

Narrow tailoring also applies to product markets. The extent of discrimination may differ from industry to industry just as among geographic locations.[80] Documenting the specific industries that comprise a state DOT's contracting activities and the relative importance of each to contract and subcontract spending is an important study element. A careful product market definition allows for (1) implementation of more narrowly tailored availability estimation methods, (2) contract-level goal setting, and (3) overall DBE availability estimates and annual goals that are a weighted average of underlying industry-level availability estimates, rather than a simple average. The weights used are the proportion of dollars spent with each industry and allow the overall availability measure to be influenced more heavily by availability in those industries where more contracting dollars are spent, and less heavily by availability in those industries where relatively few contracting dollars are spent.

Estimation of DBE Availability. Estimating DBE availability is at the core of any disparity or availability study. Measures of DBE availability are needed in order to set narrowly tailored goals and to make comparisons to utilization in order to gauge disparities. All five availability studies (100%) and all 20 disparity studies (100%) included a section describing how availability was estimated.

State DOT DBE Utilization. Only one of the five availability studies (20%) included a section on DBE utilization by the state DOT itself. However, all 20 disparity studies (100%) included a utilization section.

Like availability, measuring the utilization of DBEs as prime contractors and subcontractors on state DOT contracts is a key part of any disparity study. It is not as often seen as a stand-alone section in availability studies since the focus is on assisting state DOTs with narrowly tailored goal setting rather than making compelling interest determinations of disparities (derived in part by comparing DBE utilization to DBE availability).

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[75] *See, e.g., Sherbrooke Turf, Inc. v. Minnesota Department of Transportation,* 345 F.3d. 964, 973 (8th Cir. 2003), *cert. denied,* 541 U.S. 1041 (2004).

[76] *Fullilove v. Klutznick,* 448 US 448 (1980).

[77] *Croson,* at 504 (citations omitted, emphasis added).

[78] The NDOR (2000) study included some statistical analysis of how the department's contract dollars were distributed according to internal work codes (grading, concrete pavement, landscaping, bridges, *etc.*); however, this information was not used to weight the overall DBE availability figure according to the different levels of spending within each work code.

[79] CDOT (ongoing) and MDT (ongoing) were excluded from this figure since we could not determine from the proposals whether a product market analysis would be included in the study.

[80] *See,* however, Wainwright (2000), documenting that, in general, the similarities in the amount of discrimination present in different industries and geographic locations significantly outweighs the differences.

State DOT Disparity Analysis. Only one of the five availability studies (20%) included a section on disparities in the state DOT's own utilization. However, all 20 disparity studies (100%) included such a section.

Assessing disparities between DBE participation on DOT contracts and DBE availability in the DOT's relevant markets is a central element of any disparity study. To determine whether DBEs have or have not been used by the state DOT in proportion to their availability in the marketplace, the consultant should ideally examine contracting expenditures that were *not* subject to race-conscious goals. However, since a state DOT's federally assisted contracting expenditures *are* subject to the DBE Program, its data may not show evidence of a lack of participation even if it exists in the private sector of the state's relevant market area. Instead, the state DOT's own data are typically most useful for examining the effectiveness of its DBE policies during the study period. On the other hand, of course, if actual participation in state DOT contracts still turns out to be significantly less than availability in any industry or procurement category, then the state DOT's data will still provide evidence of adverse impact.

Economy-Wide Disparity Analyses. Four of the five availability studies (80%) included a section on economy-wide disparity analyses. Fifteen of 20 disparity studies (75%) included such a section.

Assessing the presence or absence of disparities in contracting and other business activities that are *not* already subject to race-conscious goals is at the core of the compelling interest inquiry. As the Tenth Circuit noted in *Adarand VII:*

> [T]he evidence presented by the government in the present case demonstrates the existence of two kinds of discriminatory barriers to minority . . . 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 . . . 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 . . . 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 . . . studies of local subcontracting markets *after the removal of affirmative action programs.*[81]

In disparity studies, econometric studies of minority and female business formation rates address the first type of barrier, and econometric studies of minority and female business owner earnings address the second type of barrier. These analyses focus on the private sector as opposed to the public sector because race-conscious contracting in the private sector is far less common and there are a significant number of construction firms that work in both sectors.

The business formation disparity analysis can also be important for assessing "Step 2" adjustments under §26.45(d)(3), as a way to quantify how much higher "Step 1" DBE availability would be "but-for" the "present effects of past discrimination."

This type of disparity analysis can additionally be conducted by comparing DBE participation on public sector contracts with goals to participation on contracts without goals. There are several possible sources of data on contracts without goals. Within the public sector, they can come from non-federally assisted state DOT contracts without M/WBE requirements (such as, for example, in California or Washington State);[82] representative state DOT "control" or "zero goals" contracts, such as IDOT presented at the *Northern Contracting* trial;[83] and from comparing different time periods within the same geographic and product markets when goals were and were not in force. Moreover, comparisons can also be made between the state DOT and other public agencies in the relevant market without race-conscious programs.[84] In the private sector, F.W. Dodge Reports or Reed Construction Data can be used, in some circumstances,[85] to compare M/WBE participation on private contracts in a given geographic market to M/WBE participation on public contracts. Some studies also used building permit data for this purpose.

This type of economy-wide evidence is relevant not only to the presence or absence of discrimination in the marketplace but also to whether any discrimination would be sufficiently ameliorated through solely race-neutral methods. Surprisingly, some disparity studies omit these critical economy-wide analyses, making it impossible to determine whether an agency is a passive participant in a discriminatory marketplace.

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[81] *Adarand Constructors, Inc. v. Slater* (*Adarand VII*), 228 F.3d 1147, 1167–68 (10th Cir. 2000), *cert. granted,* 532 U.S. 941, *then dismissed as improvidently granted,* 534 U.S. 103 (2001) (emphasis added).

[82] Both states have passed citizen-initiated propositions banning the use of race-conscious affirmative action in public contracting. Cal. Const. art. 1, sec. 31(a); RCW 49.60.400.

[83] *See* fn. 136 and the accompanying discussion.

[84] Comparisons between DBE participation at IDOT and the Illinois State Toll Highway Authority were mentioned previously. In a recent study performed for the Commonwealth of Massachusetts, similar comparisons were made between two agencies operating race-conscious programs, the Massachusetts Housing Finance Agency and the Division of Capital Asset Management, and two agencies whose programs had been either legally enjoined (Massachusetts Bay Transportation Authority) or voluntarily suspended pursuant to a disparity study (City of Boston) (MA, 2006; MA, 2008).

[85] The completeness of these data sources varies significantly by region. Some parts of the country have very complete data (*e.g.,* NCDOT, 2004, Ch. 7), others much less so (*e.g.,* ODOT, 2007, Ch. 7).

Credit Market Access. None of the five availability studies (0%) included a section on lending discrimination. Nine of 20 disparity studies (45%) included this section.

Discrimination in access to capital is one of the most common and long-standing problems voiced by minority and women entrepreneurs. As long ago as 1944, Gunnar Myrdal's seminal study of race in America found:

> The Negro businessman . . . encounters greater difficulties than whites in securing credit. This is partly due to the marginal position of Negro business. It is also partly due to prejudicial opinions among whites concerning business ability and personal reliability of Negroes. In either case a vicious circle is in operation keeping Negro business down.[86]

Evidence of this type of discrimination has proven repeatedly persuasive to courts in upholding race-conscious contracting programs. In determining that the DBE Program met strict scrutiny, the Tenth Circuit wrote:

> 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. . . . [One study,[87] for example] . . . surveyed 407 business owners in the Denver area. It found that African Americans were 3 times more likely to be rejected for business loans than whites. The denial rate for Hispanic owners was 1.5 times as high as white owners. Disparities in the denial rate remained significant even after controlling for other factors that may affect the lending rate, such as the size and net worth of the business. The study concluded that "despite the fact that loan applicants of three different racial/ethnic backgrounds in this sample (Black, Hispanic and Anglo) were not appreciably different as businesspeople, they were ultimately treated differently by the lenders on the crucial issue of loan approval or denial."
>
> Lending discrimination alone of course does not justify action in the construction market. . . . However, the persistence of such discrimination, which is already unlawful under federal law, supports the assertion that the formation, as well as utilization, of minority-owned construction enterprises has been impeded.[88]

The first formal econometric analysis of credit market discrimination was introduced during the *Concrete Works v. Denver* trial. Using data compiled by the Federal Reserve Board and the U.S. Small Business Administration, Denver's expert economists demonstrated that large and statistically significant differences in commercial loan denial rates between minority and nonminority firms were evident even when balance sheet and creditworthiness measures were held constant.[89] Denver also introduced the Colorado Center for Community Development (CCD, 1996) study, as well as testimony from the former top state banking official in Colorado who examined the financial records of several DBEs who had been recently denied credit and concluded that the denials could not be justified by their finances. Additionally, there was testimony from MBEs and WBEs concerning their difficulties in obtaining capital for their businesses and requirements that were placed on them by lenders that were not placed on majority firms.

Upon review, the Tenth Circuit noted:

> The City presented evidence of lending discrimination to support its position that M/WBEs in the Denver MSA[90] construction industry face discriminatory barriers to business formation. . . . [Plaintiffs] did not present any evidence that undermines the reliability of the lending discrimination evidence but simply repeats the argument, foreclosed by circuit precedent, that it is irrelevant. . . . [However,] in *Adarand VII* we took "judicial notice of the obvious causal connection between access to capital and ability to implement public works construction projects."

Outside of litigation, analysis of lending discrimination problems has been relatively rare in disparity studies. Statistical tabulations comparing M/WBE and non-M/WBE answers to a number of survey questions relating to credit and bonding were included in Louisiana (LA, 1991). Formal econometric analysis of race and gender differences in lending discrimination did not appear, however, until Maryland (MD, 2001). Recently, Caltrans (2007), ITD (2007), NDOT (2007), ODOT (2007), and ADOT (2009) have included similar analyses.[91]

Anecdotal Analyses. One of the five availability studies (20%) included anecdotal and/or other types of qualitative evidence. Nineteen of 20 disparity studies (95%) included anecdotal evidence.

Qualitative or anecdotal evidence of the direct experiences of minority and female business owners with discrimination is a crucial complement to the statistical evidence in any dis-

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[86]Myrdal (1944, 308).

[87]Colorado Center for Community Development (1996). *See also,* U.S. Department of Justice (1996, at 26057–58).

[88]*Adarand VII* at 1169–70, fn 13, citations omitted.

[89]In the interest of full disclosure, Denver's trial experts were NERA economists and Colette Holt served as outside counsel.

[90]"Metropolitan Statistical Area." *See also* Appendix D—Glossary.

[91]The two proposals from D. Wilson Consulting, LLC (CDOT, ongoing; MDT, ongoing) mention the main data set that has been used to produce econometric studies of lending discrimination (the *Survey of Small Business Finances*) but give no indication how it will be used: "The Wilson Group will use data from the National Survey of Small Business Finances (NSSBF) conducted by the Federal Reserve Board and the U.S. Small Business Administration, the Current Population Survey (CPS) and the Five Percent Public Use Microdata Samples (PUMS) from the 2000 decennial census. These data are used to examine the incidence of minority and female business ownership and [their] earnings. . . ." However, the NSSBF cannot be used for analyses of M/WBE ownership or earnings and the CPS and PUMS cannot be used to analyze disparities in credit access.

parity study. As we have already noted in Chapter One, anecdotal evidence of experiences with discrimination in contracting opportunities is highly relevant since it addresses whether observed statistical disparities are due to discrimination and not to some other nondiscriminatory cause or causes. As stated in *Croson,* ". . . [e]vidence 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."[92] Testimony about personal experiences can bring "cold numbers convincingly to life." As the Supreme Court has put it, in the context of an employment discrimination case:

> The company's principal response to this evidence is that statistics can never in and of themselves prove the existence of a pattern or practice of discrimination, or even establish a prima facie case shifting to the employer the burden of rebutting the inference raised by the figures. But, as even our brief summary of the evidence shows, this was not a case in which the Government relied on "statistics alone." The individuals who testified about their personal experiences with the company brought the cold numbers convincingly to life. . . . In any event, our cases make it unmistakably clear that "[s]tatistical analyses have served and will continue to serve an important role" in cases in which the existence of discrimination is a disputed issue. We have repeatedly approved the use of statistical proof, where it reached proportions comparable to those in this case, to establish a prima facie case of racial discrimination in jury selection case. Statistics are equally competent in proving employment discrimination. We caution only that statistics are not irrefutable; they come in infinite variety and, like any other kind of evidence, they may be rebutted. In short, their usefulness depends on all of the surrounding facts and circumstances.[93]

Anecdotal evidence is not often included in availability studies, since they are addressed primarily toward narrow tailoring, with the understanding that the existence of discrimination has already been established. The Ninth Circuit's *Western States* decision, as previously noted, has confused and conflated the distinction between the two prongs of strict scrutiny. Reflecting this, WSDOT (2006) supplemented its availability study with anecdotal evidence to support resuming the use of DBE subcontracting goals to meet its annual goal.

Findings and Recommendations. All availability studies and disparity studies included a final chapter containing findings and recommendations.

Recommendations allow the consultant to opine whether the evidence developed in its study could or could not support the adoption or continuation of race-conscious measures. Some consultants further advise the client on what DBE goals to adopt; other researchers, including ourselves, do not because it usurps the agency's role as policy maker. Translating availability measures into DBE goals is the responsibility of agency policy makers, not the consultant, because it reflects the application of judgment to the findings of the study in relationship to overall agency objectives.

Current State DOT Goal-Setting Methods

Of the 51 state DOTs examined, only 10 set DBE goals during any portion of FFYs 2006–2008 using disparity or availability studies. Table 4 and the accompanying Figures 2–4 show the goal-setting method used by each DOT in each of the three fiscal years studied.

Clearly, the most commonly employed method for establishing annual DBE goals is the use of a bidders list.[94] Just over half the state DOTs opted for this approach. For FFY 2006, 27 state DOTs used bidders lists, and two employed a combination of a bidders list approach and a disparity study. For FFY 2007, 27 state DOTs employed the bidders list approach, one employed a combination of a bidders list approach and a disparity study, and one used a combination of a bidders list approach and two other approaches.[95] For FFY 2008, 25 state DOTs employed a bidders list approach, one used a combination of a bidders list approach and a disparity study, and one used a combination of a bidders list approach and two other approaches.

After the bidders list approach, the next most frequently used is an "alternate method."[96] In all cases, the alternate method has been essentially the bidders list approach—but with a different list. In the vast majority of these cases, the alternate list chosen for use was a list of prequalified contractors. State DOTs using prequalified contractor lists to set DBE goals were Indiana, Kentucky, Michigan, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.[97]

By comparison to the use of bidders lists and alternates such as prequalified contractor lists, the two remaining goal-setting options were employed with much less frequency. Other than Maine DOT in FFYs 2007 and 2008, no state DOT has used the goals of other DOT recipients to set its own goals, and only five states have employed the DBE directory and Census Bureau data approach.

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[92] *Croson,* at 509.

[93] *International Brotherhood of Teamsters v. United States, et al.,* 431 U.S. 324 (1977), at 339; *see also Concrete Works II,* 36 F.3d at 1521 ("*Croson* impliedly endorsed the inclusion of personal accounts of discrimination").

[94] 49 C.F.R. § 26.45(c)(2).

[95] Maine DOT combined of a bidders list approach and two other approaches. For 2007 and 2008, Maine calculated Step 1 availability using three different approaches: bidders list; DBE directory and Census Bureau data; and the goals of other DOT recipients. It then used the average of all three to arrive at the Step 1 figure.

[96] 49 C.F.R. § 26.45(c)(5).

[97] Other types of lists employed included lists of licensed contractors (Nevada), plan holders (Iowa), and contractors with approved EEO policies (Kansas).

Table 4. Goal-setting methods employed by state DOTs, FFYs 2006–2008.

State	FHWA DBE Overall Goal 2006 Method	FHWA DBE Overall Goal 2007 Method	FHWA DBE Overall Goal 2008 Method
California	1	1	3
Colorado	2 & 3	3	3
Georgia	3	3	3
Illinois	3	3	3
Maryland	1 & 3	3	1 & 3
Minnesota	3	2	3
Missouri	3	3	3
Nevada	5	5	3
North Carolina	2 & 3	2 & 3	2 & 3
Washington	3	3	3
Hawaii	1	1	1
New Jersey	1	1	1
New York	1	1	1
Alabama	2	2	[98]
Alaska	2	[99]	[100]
Arizona	2	2	2
Arkansas	2	2	2
Connecticut	2	2	2
D. C.	2	2	2
Delaware	2	2	2
Florida	2	2	2
Idaho	2	2	2
Louisiana	2	2	2
Massachusetts	2	2	2
Mississippi	2	2	2
Montana	[101]	2	2

[98]Alabama DOT (ALDOT) was awaiting approval of its 2008 goal documents by FHWA.

[99]Alaska DOT&PF indicated that data problems prevented it from setting a DBE goal in FFY 2007 or FFY 2008 using any of the methods available in § 26.45(c). Instead, Alaska set a 4% all race-neutral goal in each year.

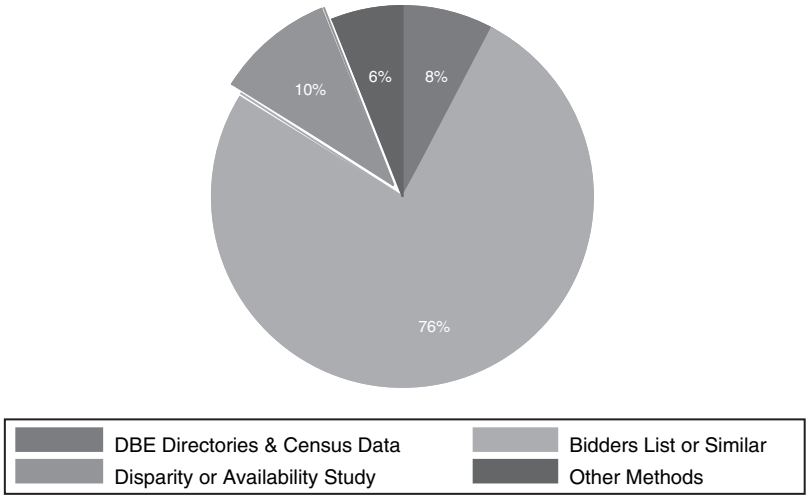
[100]*See* fn 99.

[101]According to our correspondence with Montana DOT (MDT), it did not submit an annual DBE goal to FHWA for FFY 2006.

Table 4. (Continued).

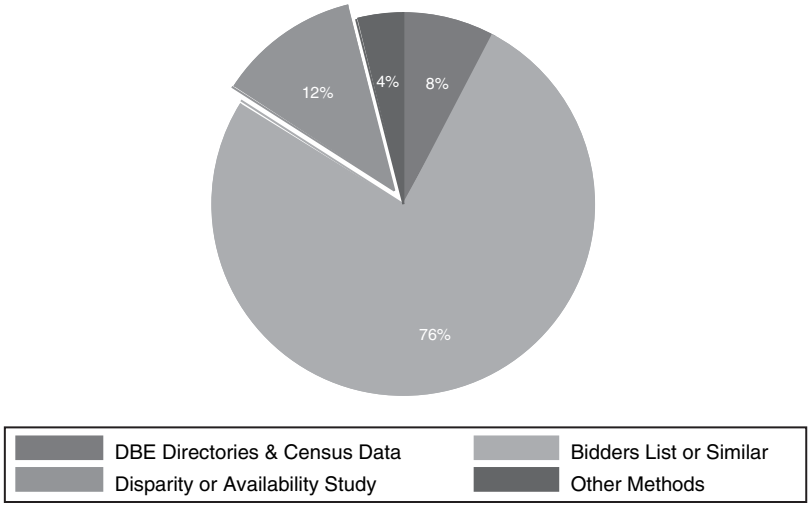
State	FHWA DBE Overall Goal 2006 Method	FHWA DBE Overall Goal 2007 Method	FHWA DBE Overall Goal 2008 Method
Nebraska	2	2	2
New Hampshire	2	2	2
New Mexico	2	2	2
North Dakota	2	2	2
Oklahoma	2	2	2
Oregon	2	2	2
Rhode Island	2	2	2
South Carolina	2	2	2
South Dakota	2	2	2
Texas	2	2	2
Utah	2	2	2
Vermont	2	2	2
Wisconsin	2	2	2
Wyoming	2	2	2
Indiana	5	5	5
Iowa	5	5	5
Kansas	5	5	5
Kentucky	5	5	5
Michigan	5	5	5
Ohio	5	5	5
Pennsylvania	5	5	5
Tennessee	5	5	5
Virginia	5	5	5
West Virginia	5	5	5
Maine	2	1, 2 & 4	1, 2 & 4

Note: Method 1 corresponds to 49 C. F. R. 26.45(c)(1) (used DBE directories and Census Bureau data); method 2 or 5 corresponds to 49 C. F. R. 26.45(c)(2) or (c)(5) (used bidders list or other types of contractor lists); method 3 corresponds to 49 C. F. R. 26.45(c)(3) (used disparity or availability study) method 4 corresponds to 49 C. F. R. 26.45(c)(4) (used the goal of another DOT recipient, 26.45(c)(5) "Use an alternative method."



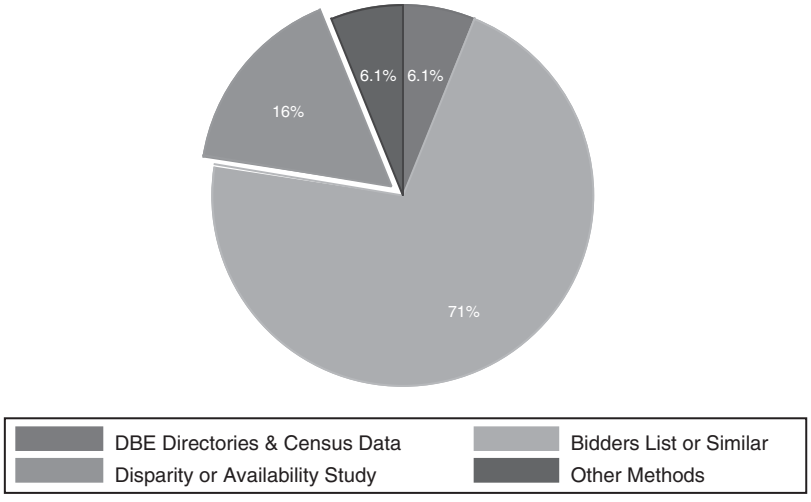
Source: Table 15

Figure 2. Goal-setting methods used by state DOTs, FFY 2006.



Source: Table 15

Figure 3. Goal-setting methods used by state DOTs, FFY 2007.



Source: Table 15

Figure 4. Goal-setting methods used by state DOTs, FFY 2008.

CHAPTER 3

Model Disparity Study

The disparity and availability studies reviewed for this report differ not only in the elements included but also in their design and implementation. In this section, we compare the studies reviewed according to the key elements: the definition and use of geographic and product markets; the development of availability estimates; the analyses of state DOT contracting disparities; the analyses of economy-wide disparities; and the collection of anecdotal evidence. For each key element, we present the recommended approach judged by actual success or potential for success under strict scrutiny review.

Determination of Relevant Geographic Market Area

Recommended Approach. In high-quality disparity and availability studies, the relevant geographic market area identifies those vendor locations that account for at least 75% of contract and subcontract[102] dollar expenditures in the project database for the study period.[103] The report should describe how the contract and subcontract data were used to make this determination and one or more tables should be presented showing the results.

Location should be determined by linking the zip code of the contractor or subcontractor to the associated state and county. For multi-establishment firms, location does not have to be defined as the headquarters of the firm. If the firm has established a local presence, then it is appropriate to use that address for purposes of market determination.

Since the two major contracting categories typically examined in state DOT studies are construction and construction-related professional services,[104] it is also advisable to make separate geographic market determinations for each category, as well as for a combined category.[105]

Review of Studies. Most of the studies followed the recommended approach in most or all respects. When they did not, the following were the chief concerns:

- Assuming, rather than empirically determining, the market area;
- Not including subcontract data in the determination;
- Using states rather than counties as the unit of analysis for the determination;[106]
- Not providing details or tables showing how the determination was made; and
- Not providing separate determinations for construction and construction-related professional services.

Some studies went beyond the minimum recommended approach and provided separate geographic market calculations by highway district as well as statewide.

Determination of Relevant Product Market

Recommended Approach. In high-quality disparity and availability studies, the relevant product market identifies the detailed industries that account for at least 75% of contract and subcontract dollar expenditures in the project database for the study period. The amounts accounted for by each industry should be listed by dollars and as a percentage of overall contract and subcontract spending.[107]

The report should describe how the contract and subcontract data were used to make this determination and one or more tables should be presented showing the results.

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[102]To the extent that studies have not reconstructed or otherwise accounted for incomplete subcontractor or subconsultant data, the determination of the relevant geographic market area will be incomplete.

[103]A detailed description of the project database and the steps necessary to its assembly appears in Step A—Create a Database of Representative, Recent, and Complete State DOT Projects, *infra.*

[104]Sometimes also referred to as "architecture & engineering," "design," "preconstruction," or just "consulting."

[105]*See, e.g., Sherbrooke,* 345 F.3d at 973–74.

[106]This is less of a concern in very small states such as Delaware or Rhode Island.

[107]The percentage distribution by industry is used elsewhere in the study to calculate overall DBE availability as a dollar-weighted average of detailed industry level DBE availability. *See infra,* Carrying Out Final Step 1 Availability Calculations.

Detailed industry affiliation should be determined by assigning a four-, five-, or six-digit North American Industry Classification System (NAICS) code, as appropriate, to each contractor and subcontractor in the project database.

For firms whose work qualifies under more than one NAICS code, the assignment should be made based on the firm's primary code unless there is enough information available to allocate the firm's work by dollars across multiple industries.[108] However, if multiple NAICS codes *are* assigned to firms, the study must be careful to avoid double-counting.

We recommend using NAICS codes even if agencies use systems other than NAICS (such as Construction Specification Institute codes or other internal work code systems) to classify contract and subcontract work.[109] This is because the data necessary to implement high-quality availability estimates are classified according to NAICS (*i.e.,* Dun & Bradstreet data). Moreover, the courts are familiar with NAICS and Standard Industrial Classification (SIC, NAICS predecessor), but will be less so with other types of work classification systems.

While all the studies examined provided results according to aggregate industry sectors (*e.g.,* construction and construction-related professional services), only a few:

- Calculated detailed industry weights to be used for producing dollar-weighted overall availability estimates.
- Provided detailed industry availability estimates and/or carried out utilization and disparity analyses by detailed industry.

One study asserted that the lack of disaggregated data by industry was due to limitations of the state DOT's contract and subcontract data:

> Some studies have provided for data at the . . . SIC . . . level and others have aggregated the data into business type categories such as architect & engineering; construction; professional services; and goods and non-professional services. The amount of data [dis]aggregation is generally limited by a governmental agency's record-keeping format. The business type or procurement categories identified above [architecture/engineering, construction, professional services, and goods and non-professional services] form the level of aggregation for this study.[110]

This is not a problem with the state DOT's data but rather with the study's methods. If the project database assembled for the study contains the name of the firm, its address, and a brief description of the project, then the study can assign a detailed SIC or NAICS code. Even without a project description, lookups in *Dun & Bradstreet, SelectPhone, InfoUSA,* or even Google, will almost always turn up enough information to properly assign a detailed industry code to a firm.

Without a dollar-weighted overall availability estimate, availability in an industry with only $1,000 of contract and subcontract spending has as much impact on the overall availability estimate as availability in an industry with $1,000,000,000 of contract and subcontract spending.[111] Without availability estimates by detailed industry, the state DOT is deprived of an extremely useful tool for conducting contract-level goal setting. Without utilization and disparity analyses by detailed industry, a study can be criticized for ignoring aggregation issues.[112]

Estimation of DBE Availability

Recommended Approach. The recommended approach to estimating availability is a "custom census" designed to provide an accurate calculation of the current availability of DBEs in the relevant market.[113] This is the only method under Part 26 that has received favorable judicial analysis.[114] The custom census approach employs a seven-step analysis that (1) creates a database of representative state DOT projects, (2) identifies the appropriate geographic market for the state DOT's contracting activity, (3) identifies the appropriate product market for the state DOT's contracting activity, (4) counts all businesses in those relevant markets, (5) identifies listed minority-owned and women-owned businesses in the relevant markets, (6) verifies the ownership status of listed minority-owned and women-owned businesses, and (7) verifies the ownership status of all other firms. This method results in an overall DBE availability number that is a dollar-weighted average of all the underlying industry availability numbers, with larger weights applied to industries with relatively more spending and lower weights applied to industries with relatively less spending. The availability figure can also be subdivided by race, ethnicity, and gender group, as well as by highway district, where appropriate.[115]

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[108]If the state DOT's contract data contain enough descriptive information about the nature of the work being performed, then this may be possible. Otherwise, the allocation becomes arbitrary. For example, should a firm working in two NAICS codes be classified as split between them 50/50, or 70/30, or 90/10?

[109]Commodities are sometimes classified according to the National Institute of Government Purchasing (NIGP) system. This system is commodity based rather than industry based. For studies that include commodities as a contracting category, we would recommend classifying according to NAICS.

[110]OH (2001, Ch. 3, n.p.).

[111]U.S.DOT "Tips for Goal-Setting in the Disadvantaged Business Enterprise (DBE) Program" ("Whenever possible, use weighting . . . to insure that your Step One Base Figure is as accurate as possible.").

[112]Simpson's Paradox states that outcomes observed when data are aggregated may not be observed when data are disaggregated, and vice versa. Some courts have criticized public agencies for ignoring this issue. See Appendix A, Non-DBE Subcontract Data is Just as Important as DBE Subcontract Data, for further discussion of this phenomenon.

[113]*See Northern Contracting III,* 473 F.3d at 723; *Sherbrooke,* 345 F.3d at 973.

[114]*Sherbrooke,* 345 F.3d at 973*; see Concrete Works IV,* 321 F.3d at 966 (custom census was "more sophisticated" than earlier studies using Census data and bidders lists).

[115]*Recommended Approach to Measuring DBE Availability, supra,* provides an extended discussion of how to implement the "custom census" method.

Review of Studies: Different Approaches to Measuring Availability

A variety of approaches to measuring availability appear in the 25 studies we reviewed. The recommended approach, discussed in detail in *Recommended Approach to Measuring DBE Availability,* was used in seven of 25 studies. Another ten studies relied primarily on internal state DOT lists of contractors and subcontractors, such as certified DBE directories, bidders lists, prequalified contractor lists, registered subcontractor lists, licensed contractor lists, plan-holder lists, or lists of winning contractors or subcontractors. Internal lists were sometimes supplemented with lists gathered from other sources. However, the internal lists remained primary. We will refer to this as the "bidders list approach."

The bidders list approach has appeal since these types of lists tend to be readily available and since it seems natural to base an availability measure on firms that are already working or trying to work with the state DOT. Some have also posited that inclusion on the lists is a measure of whether DBEs are "ready, willing and able."[116] However, there are several drawbacks to this approach:

- The remedial aspect of Congress' intent in passing the DBE Program is easily lost because it limits the availability pool to only those firms with which the state DOT is already familiar or already does business. A broader measure is preferred.[117]
- To the extent that there is still discrimination against DBEs, they are likely to be underrepresented on such lists. This approach is therefore likely to lead to lower estimates of availability than are actually present in the relevant markets.
- To the extent that economy-wide discrimination in the relevant markets channels DBEs into state DOT work because of the remedy of the DBE Program, DBEs may be overrepresented on such lists. This approach is therefore likely to lead to higher estimates of availability than are actually present in the relevant markets.
- To the extent that such lists are produced using different methods and criteria (*e.g.,* criteria for DBE certification is different from criteria for prime or subcontractor prequalification), such lists mix "apples and oranges."
- The bidders list approach often calculates availability separately for prime contractors and subcontractors. First, firms may perform as subcontractors on some jobs and prime contractors on others, so assigning firms to separate categories may not yield an accurate picture. This may be especially true for state DOTs that are implementing aggressive race-neutral measures to reduce barriers for DBEs seeking to perform prime contracts (*e.g.,* setting aside smaller contracts for bidding by small firms, providing bonding and financing support, reducing prequalification burdens). Further, if DBEs suffer discrimination in the relevant markets, then their ability to progress from subcontractors to prime contracts is likely to have been affected.[118] Creating separate availability measures for primes and subs serves to exacerbate rather than remedy this problem.[119]
- The bidders list approach rarely includes attempts to validate whether firms are correctly classified by race and gender.

A variation on the bidders list approach was used in four studies. Three studies used one such variation and a fourth used another. We will refer to these collectively as the "bidders list approach with capacity adjustments."

This method seeks to test whether firms with lower revenues won fewer contracts and subcontracts while firms with higher revenues won more. The method was implemented by surveying state DOT bidders to collect data on revenues and then comparing that data to existing data on contract and subcontract awards using regression analysis.

However, the three studies that employed this "capacity" test could not find a statistically significant relationship between revenues and contract awards.[120] In part, the data did not fit because firms of given revenue sizes won a variety of contracts and subcontracts both large and small.[121]

Despite finding no empirical support for the hypothesized relationship between revenue size and propensity to win contract and subcontract awards, all three studies proceeded without explanation to eliminate firms from their availability calculations if they had revenue levels lower than those of survey respondents that had actually won state DOT contracts or subcontracts. This resulted in an unjustified downward adjustment to most of the initial availability estimates.

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[116] *See, e.g., Concrete Works IV,* 321 F.3d at 984 (discussing plaintiff's argument that bidding data are the only measure of availability).

[117] *Northern Contracting III,* 473 F.3d at 723 (The "remedial nature of the federal scheme militates in favor of a method of DBE availability calculation that casts a broader net.").

[118] *See Northern Contracting II,* 2005 U.S. Dist. Lexis at *74 ("The ability of DBEs to compete successfully for prime contracts may be indirectly affected by discrimination in the subcontracting market, or in the bonding and financing markets. Such discrimination is particularly burdensome in the construction industry. . . .").

[119] *See* Appendix B for further discussion.

[120] Moreover, none of these studies describes why a firm's revenue can be appropriately construed as a race-neutral explanatory variable. Additional discussion of the difficulties involved in using variables, such as revenue, that can be impacted by discrimination to explain success or failure in the award of contracts or subcontracts appears in Appendix B.

[121] *See Concrete Works IV,* 321 F.2d at 981 ("At trial, Denver introduced evidence that the median number of employees of all construction firms in the Denver MSA is three and presented testimony that even firms with few permanent employees can perform large, public contracts by hiring additional employees or subcontractors and renting equipment. Additionally, the district court found that 'most firms have few full-time permanent employees and must grow or shrink their performance capacity according to the volume of business they are doing.' ").

A fourth study also implemented a "capacity" adjustment with its bidders list approach to measuring availability. This adjustment, however, was implemented in a way that was not obviously biased by past discrimination against DBEs. The study performed a regression analysis of total dollars awarded to non-DBE contractors and subcontracts against the largest successful bid from each non-DBE contractor or subcontractor. It then applied the statistical relationship implied by the non-DBE regression to DBEs and used the results to estimate "expected utilization" for DBEs. The expected utilization figure was then compared to the actual utilization figure to form a disparity ratio. This approach is roughly analogous to the approach used to estimate potential business formation among minorities and women.[122] As a potential measure of disparity, it is quite useful. As a measure of availability, however, it suffers from the same infirmities as other bidders list approaches to availability measurement.[123]

Moreover, from a practical standpoint, the necessary data on successful and unsuccessful bid values, particularly at the subcontractor level, are rarely available. This study did not describe how complete the data were for this exercise, although elsewhere there are indications that a significant amount of non-DBE subcontractor data were in fact missing. The study's regression results do not report the number of DBE and non-DBE observations included. These omissions made it difficult to evaluate this approach's litigation potential, as an adverse party's expert might be unable to duplicate the results from the study.

Another method used to account for capacity appears in three other studies we reviewed. We will refer to this as the "custom census approach with capacity adjustments."

The three studies using this method started with Dun & Bradstreet data as their source for the availability denominator. The Dun & Bradstreet data were then restricted to the relevant geographic market based on the location of contractors and subcontractors on federally assisted state DOT contracts. The data were further restricted to the relevant product market by matching the names and addresses of firms that had bid on state DOT contracts as prime contractors or first-tier subcontractors with the Dun & Bradstreet data to determine the relevant SIC or NAICS codes.

All the firms identified in this manner were then surveyed by telephone. Firms that could not be reached were discarded, including firms that may actually have worked for the agency as prime contractors or subcontractors. Any firms that had not worked or attempted to work on construction or construction-related professional services contracts were also discarded. In one of these studies, for example, the original pool of 39,911 establishments was reduced by over 90%—leaving only 3,398 firms in the availability denominator. The process used in the other two studies was very similar.

As part of the telephone survey, each firm was asked whether it was 51% or more minority or female owned. If it reported being minority owned, then the survey asked which race or ethnicity comprised the bulk of the minority ownership. In this way, 32% of the 3,398 firms identified in the survey were identified as minority owned and/or woman owned.

The study examined five years of DOT contract and subcontract data. From this, dollar-based weights were derived to account for the amount of contract and subcontract spending in each SIC or NAICS code. Although the study does not describe the method, additional weights were also derived to account for prime contractor versus subcontractor status, contract dollar size categories, and regions within the state. Based on this weighting procedure, the overall estimate of availability fell from 32% to under 18%.

Finally, firms that were considered too large to meet U.S.DOT DBE certification guidelines were excluded from the availability measure. Any DBE construction firm that responded to the telephone survey and reported prior year gross revenues exceeding $10 million,[124] or any DBE engineering firm reporting more than $5 million, was dropped from the calculation. The final availability figure arrived at through this process was 13.5%.

As with the "bidders list with capacity adjustments" approach, the "custom census with capacity adjustments" approach is biased downward. It reduces the availability percentage by controlling for factors that are likely to be directly affected by the presence of discrimination in the relevant markets. Whether firms have worked or attempted to work on state DOT projects have been awarded prime contracts or the size of those contracts should not be used to limit the DBE availability measure.[125] Not only is this a problem in its own right, but also it may hide the existence of discrimination because a downward bias in availability can lead to a conclusion of no significant disparity when, in fact, a disparity exists.[126]

[122]A business formation regression is calculated for nonminority males and the resulting model is applied to minorities and women to derive their expected rate of business formation. *See* Chapter Three, Economy-Wide Disparity Analysis for the Relevant Markets, *infra.*

[123]*See* Chapter Three, Estimation of DBE Availability, *supra.*

[124]*Cf.* 49 C.F.R. § 26.65, establishing the size limits for DBE eligibility as those imposed by the SBA under 13 C.F.R. Part 121. SBA limits at the time of the study ranged from $13 million for specialty trade contractors to $31 million for general and heavy construction firms. The current overall DBE Program cap is $20.41 million. No explanation is provided in the study of how the lower ceiling was determined or why it was imposed.

[125]*See also* the discussion of capacity in Appendix B.

[126]Based on the results of one of these studies, the state DOT has sought a waiver to exclude DBEs owned by Hispanic males and Subcontinent Asian males from its race-conscious measures, *i.e.,* denying their eligibility for credit toward meeting subcontracting goals based on a finding of no significant disparity.

Disparity study authors, along with a number of courts, have wrestled with the concept of DBE or M/WBE "capacity." Concerns regarding capacity arise not only in the context of availability measurement but also in the context of assessing disparities. Appendix B provides an extended discussion of "capacity" issues in the context of disparity and availability studies and related litigation. In summary, where "capacity," whether measured by firm revenues, employment size, or some other metric, is influenced by the presence of discrimination in the relevant markets, it is inappropriate to use such measures to "correct" or "adjust" Step 1 availability or Step 2 disparity statistics.

Finally, one study calculated DBE availability six different ways yielding six different estimates. Such an approach can be a drawback in litigation as it provides a plaintiff an opportunity to cast doubt on the entire study by pointing out that the multiple estimates cannot all be correct.[127] In fairness, however, this particular study is one of the earliest that we reviewed, from a period when recipients were still striving to find an approach to availability measurement that the courts would find acceptable.[128]

Recommended Approach to Measuring DBE Availability

Introduction. The determination of DBE availability is the cornerstone of an availability or disparity study. Accurate, comprehensive estimates of availability are critical. An expansive concept of availability is important because, as the courts have held, looking beyond the recipient's contracting results helps to further Congress' remedial intent.

> [T]he purpose of the overall goal—and, in fact, the DBE program, as a whole—is to achieve a "level playing field" for DBEs seeking to participate in federal-aid transportation contracting. To reach a level playing field, recipients need to examine their programs and their markets and determine the amount of participation they would expect DBEs to achieve in the absence of discrimination and the effects of past discrimination.[129]

Limiting the inquiry to agencies' internal lists of firms cannot fully result in an annual goal that "reflect[s] . . . the level of DBE participation you would expect absent the effects of discrimination."[130] Such an approach reflects in part the current effects of past or current discrimination and so should not be used to limit the examination of how the market would look if it became discrimination free.

Although 49 C.F.R. § 26.45(c)(1) permits the use of DBE directories and Census Bureau data to estimate availability, this is a less than optimal approach. It necessitates a comparison of "apples to oranges" because the methods used to identify and certify firms as DBEs are entirely different from the methods used by the Census Bureau to count businesses or business establishments for inclusion in CBP *Survey of Business Owners* (SBO) or other statistical databases. As a result, no defensible comparisons are likely to result from dividing figures from one of the latter sources by figures from the former.

What has been termed the "custom census" approach to measuring DBE availability, when properly executed, is superior to the other methods allowable under 49 C.F.R. § 26.45 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. Second, by "casts[ing] a broader net" it comports with the remedial nature of the DBE Program. Third, a custom census is less likely to be tainted by the effects of past and present discrimination than the other methods.

Finally, it has been upheld by every court that has reviewed it. The Tenth Circuit found the custom census approach to be "a more sophisticated method to calculate availability than the earlier studies."[131] Likewise, this method was successful in the defense of the DBE Programs for Mn/DOT[132] and IDOT,[133] as well as the M/WBE construction program for the City of Chicago.[134]

The following are the seven steps to the custom census approach:

(A) Create a database of representative, recent, and complete state DOT projects;
(B) Identify the contracting activity's relevant geographic market;
(C) Identify the contracting activity's relevant product market for the contracting activity in question;
(D) Count all businesses in the relevant markets;
(E) Identify listed minority-owned and women-owned businesses in the relevant markets;
(F) Verify the ownership status of listed minority-owned and women-owned businesses; and

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[127] *Cf. Associated General Contractors of America v. City of Columbus,* 936 F. Supp. 1363, (S.D. Ohio 1996) (discussing various measures of availability).

[128] Another of these early studies presented seven different availability measures. However, the agency ultimately chose just one (a bidders list approach) to use for disparity testing purposes.

[129] 64 Fed. Reg. 5108.

[130] *Ibid.*

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

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

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

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

(G) Verify the ownership status of all other firms in the relevant markets.

Each step is described in more detail below, in the context of estimating availability for construction and construction-related professional services—the two most commonly studied (and litigated) sectors in disparity and availability studies. The methods generalize to other industry sectors as well.

Step A—Create a Database of Representative, Recent, and Complete State DOT Projects. The first step is to create a database of state DOT projects. This database provides the empirical basis for many of the statistical analyses in the study. Each project in the database should contain information on all relevant prime contracts and all associated first-tier agreements with subcontractors, subconsultants, or suppliers.[135]

It is imperative to obtain subcontract information for both DBEs and non-DBEs. If all of the necessary subcontract data have been maintained, then all of it should typically be included in the project database. If the state DOT has *not* collected and maintained this data, then it will be necessary to either request the information directly from each relevant prime contractor or consultant or reconstruct the required information by other means.[136]

The project database must be representative of the type of work usually undertaken by the state DOT. It is therefore advisable to study several years' worth of contract and subcontract data so that atypical projects do not unduly affect the statistical analysis.[137]

Most state DOT disparity and availability studies have relied on a study period of 5 years—typically the most recent five full fiscal or calendar years.[138] Of the 28 state DOTs that have performed, or are currently performing, a disparity or availability study, we were able to obtain the number of years of contract and subcontract data studied for 25. This is shown in Table 5.[139]

Of these 23 studies, study periods ranged from 2 years to 14 years. A study period of only two years, in our view, is likely to be inadequate due to the smaller sample sizes yielded. For example, a significant share of projects awarded during that period may still not yet be complete. This could cause the resulting database to be biased by the exclusion of larger projects with longer completion times.

The median study period length was 5 years and the average was 5.3 years. The disparity or availability studies introduced as evidence in the *Sherbrooke* and *Northern Contracting* cases covered 5 years.

Because the types of subcontracting that occur early in a project are often different from those that occur later, we recommend that only complete or substantially complete projects be studied; that is, enough of the project has been finished (*e.g.,* it is now open to traffic) so an accurate picture of all subcontracting activity emerges. If payment data are being used in the analysis (as opposed to or in addition to award data), then including incomplete projects could lead to inaccurate conclusions about the relative weight of different subcontracting activities.

In order to assist in the determination of the level of DBE participation that would be expected in a race-neutral contracting environment, it is important that the project database include contracts with and without DBE goals.[140] In states without a M/WBE program for state-funded contracts, this can be achieved by including non-federally assisted projects in the database.

For states without these data, more creative approaches can be applied. For example, in preparing for the *Northern Contracting* trial, IDOT initiated a "zero goals" experiment, where selected prime contracts that ordinarily would have been subject to a DBE goal based on the scopes of work and DBEs certified in those industries were solicited with a "zero goal." The result was that DBEs received approximately 1.5% of the total value of these contracts. This evidence of the results of totally race-neutral measures was found to be probative by the court.[141] Several courts have likewise held that a large contrast between DBE participation on contracts with and without goals can be probative of the continuing need for race-conscious remedies.[142]

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[135]Hereafter, unless otherwise indicated, we refer to these collectively as "subcontractors" or "subcontracts."

[136]For additional discussion of the subcontract data collection issue, *see* Appendix A.

[137]In some cases, it can be appropriate to ignore or prorate unusual projects. For example, in Denver's study, 1999 projects associated with the construction of the Denver International Airport were excluded from the main analysis, because this sort of project was not representative of typical Denver construction projects and was unlikely to be undertaken again for decades. In that same study, several large bond-funded public library construction projects that were likely to be undertaken only once per decade were prorated. Since the study period was 5 years, half of the value of these projects was included in the database.

[138]Typically, the federal fiscal year (which runs from October through September) is used, although calendar years are sometimes used depending on the study's scope and on organization of the agency's data.

[139]Of the remaining three, one is ongoing (North Carolina), one could not be located (Florida), and one was never released (Tennessee).

[140]One objective of the DBE Program is to "assist the development of firms that can compete successfully in the marketplace *outside* the DBE program." 49 C.F.R. § 26.1(f) (emphasis added). A disparity study can examine how DBEs are faring on contracts that are not federally assisted, which may provide information that is useful to the agency in this regard, as well as the need to continue to use race-conscious goals to meet the annual goal.

[141]*Northern Contracting III,* 473 F.3d at 719.

[142]*See, e.g., Western States,* 407 F.3d at 992 (Congress properly considered evidence of the "significant drop in racial minorities' participation in the construction industry" after state and local governments removed affirmative action provisions); *Adarand VII,* 228 F.3d at 1186 (evidence included "studies of local subcontracting markets after the removal of affirmative action programs"); *Concrete Works IV,* 321 F.3d at 984–85.

Table 5. Study period length for state DOTs that are currently performing or have recently performed disparity or availability studies.

State	Consultant	Years of Contract Data in Most Recent Study
NC	EuQuant	ongoing
FL	MGT of America, Inc.	not obtained
TN	Mason Tillman Associates, Ltd.	not released
LA	D.J. Miller & Associates	2
NJ	Mason Tillman Associates, Ltd.	2
CO	MGT of America, Inc.[a]	3.5
ID	BBC Research & Consulting	4
AK	D. Wilson Consulting Group, LLC	5
CA	BBC Research & Consulting	5
CO	D. Wilson Consulting Group, LLC[b]	5
NV	BBC Research & Consulting	5
NM	BBC Research & Consulting	5
OH	D.J. Miller & Associates	5
NE	MGT of America, Inc.	5
NC	MGT of America, Inc.[c]	5
VA	MGT of America, Inc.	5
HI	NERA Economic Consulting	5
IL	NERA Economic Consulting	5
MD	NERA Economic Consulting	5
MN	NERA Economic Consulting	5
NY	NERA Economic Consulting	5
WA	NERA Economic Consulting	5
AZ	MGT of America, Inc.	6
GA	Boston Research Group	6
MT	D. Wilson Consulting Group, LLC[b]	6
MO	NERA Economic Consulting[d]	6.5
OR	MGT of America, Inc.	8
SC	MGT of America, Inc.	14

Notes: (a) Colorado's current study is ongoing—this figure is for its 2001 study; (b) study is ongoing, study period based on consultant's proposal; (c) North Carolina's current study is ongoing—this figure is for its 2004 study; (d) figure is for construction contracts—only 3 years of data were available for construction-related professional services and local assistance contracts.

For each project in the database, the following are key prime contract fields that should be included:[143]

- Unique contract number for prime contract;
- Brief description of the prime contract;
- Department or subdepartment for which the project was performed;
- Date of prime contract award;
- Original dollar amount of prime contract;
- Total dollar amount of prime contract (including all change orders);
- Date of completion or substantial completion;
- Total dollar amount paid through completion or substantial completion;
- Business name of prime contractor or consultant;
- Unique identification code for the prime contractor or consultant;[144]
- Street address, city, state, and zip code of prime contractor or consultant;
- Telephone number of prime contractor or consultant;
- Contact person name and title for prime contractor or consultant;
- Certification status of prime contractor or consultant;
- Race and gender of prime contractor or consultant ownership;[145]
- Brief description of prime contractor work specialties;
- Indication of whether prime contract was federally assisted;
- DBE goal for the prime contract; and
- DBE goal for associated change orders.[146]

For each project in the database, the following key subcontract fields should be included:

- Unique contract number for prime contract;
- Brief description of the subcontract;
- Original dollar amount of subcontract;
- Total dollar amount of subcontract (inclusive of all change orders);
- Total dollar amount paid through completion or substantial completion;
- Business name of subcontractor or consultant;
- Unique identification code for the subcontractor;
- Street address, city, state, and zip code of subcontractor;
- Telephone number of subcontractor;
- Contact person name and title for subcontractor;
- Certification status of subcontractor;
- Race and gender of subcontractor ownership;[147] and
- Brief description of subcontractor work specialties.

Steps B & C—Identify the Relevant Markets. Markets have both a geographic and an industry dimension.[148] Once the project database is assembled, the next step in determining availability is to identify the geographic locations and the industries from which the state DOT draws the preponderance of its prime contractors and consultants and from which the state DOT's prime contractors and consultants draw the preponderance of their subcontractors, subconsultants, and suppliers.

The unit of analysis to define "preponderance" should be the number of contract dollars since subcontracting goals are set as a percentage of total dollars awarded and since contracts and subcontracts vary greatly by dollar size.[149]

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[143]For projects procured using the construction manager or construction manager at-risk process, similar data should be included for the construction manager.

[144]The use of unique codes to identify vendors in contracting records is preferable to using the vendor's name as an identifier, since vendor names can (and usually are) entered inconsistently. Reconciling this inconsistent information can be a huge, costly, and time-consuming task for a study consultant, especially in contract files containing thousands (or millions) of records. The use of unique vendor IDs eliminates the inconsistency inherent in the use of names as identifiers. It also facilitates the integration of contracting and contractor data into larger *relational database* systems, which have many advantages, from an information management perspective, over more traditional, or *flat file* database management systems. *See, e.g.* Wiley Publishing, Inc. (2008).

[145]If the contractor is publicly owned, this should be noted. In the absence of information to the contrary on a specific company, however, it is appropriate to treat publicly owned companies as non-DBEs. According to the Census Bureau (2008, Tables 2 and 5), of the total value of stock and mutual fund shares owned by U.S. households in 2002 (the latest data available), black households owned only 3.5%, Hispanic households 6.9%, Asian households 4.3%. Non-Hispanic white households owned 77.3%.

[146]We have observed many instances where DBE goals on awarded contracts have not been applied to change orders. Since change orders can often account for a large share of a construction project's dollar value, this can lead to a significant dilution of DBE participation.

[147]If the subcontractor is publicly owned, this should be recorded in lieu of race and gender. *See* footnote 145.

[148]*See, e.g., Spectrum Sports, Inc. v. McQuillan,* 506 U.S. 447, 459 (1993).

[149]For example, data from WSDOT for FFY 1999–2003 [NERA Economic Consulting (2005)] included 624 federally funded prime construction contracts valued at $1.52 billion. These contracts ranged in value from a minimum of $54,000 to a maximum of $204 million, with a median of $961,000 and an average of $2.44 million. Of the 624 prime contracts, 182 (29%) were valued at $500,000 or less. However, these 182 contracts accounted for less than 3.5% of total dollars. Even if we exclude the largest prime contracts (*e.g.,* those in excess of $20 million), which collectively account for 35% of all dollars, the share of total dollars accounted for by contracts of $500,000 or less is still only 5.0% of the total. A similar pattern is observed in subcontracts. In the WSDOT data, there were 4,998 subcontracts totaling almost $560 million. Subcontracts ranged in size from $100 to almost $15 million, with a median of $18,000 and an average of $111,000. Subcontracts of $15,000 or less accounted for 46% of all subcontracts but less than 2.5% of all subcontract dollars. Once again, even if we ignore all subcontracts valued above $2 million (27% of all subcontract dollars), subcontracts of $15,000 or less account for just over 3.0% of all subcontract dollars. Finally, in the WSDOT data, more than 96% of all DBE participation occurred on contracts valued above $500,000. Similar patterns are observed in the construction-related professional services contracts data. Not only does this example demonstrate the wide variation in prime contract and subcontract sizes, but it also casts in doubt a method that limits most or all statistical analyses to prime contracts of $500,000 or less. This approach will cause a very large share of its contract spending, including the DBE spending, to go unanalyzed. *See, e.g.,* Texas Building and Procurement Commission (2007, 5–6).

Table 6. Distribution of contract dollars by contract category.

Location	Construction (%)	Consulting (%)	Subrecipients (%)
Inside State	82.1	83.8	82.4
Outside State	17.9	16.2	17.6
Inside Metropolitan Statistical Area	86.7	89.2	99.6
Outside Metropolitan Statistical Area	13.3	10.8	0.4

Using the project database, the county in which each contractor is located can be identified using the firm's zip code. Then, the percent of dollars awarded and/or paid to contractors and subcontractors in each state/county unit can be calculated. Drawing on work in the antitrust field, a geographic market can be defined as that area in which the state DOT operates and as well as the area where it "can predictably turn" to obtain construction services and where "the vast bulk" of the agency's contract and subcontract dollars are spent.[150] Although there is no single numerical percentage that determines "the vast bulk," a figure of 75% is often employed as a reasonable approximation.[151] Table 6, drawn from an actual availability study, provides an example of how the information from the project database can be arrayed by geography to assist in determining the appropriate geographic market. For that study, the geographic market was defined to be the state as a whole.

In order to identify the product market, each contactor and subcontractor in the project database can be assigned a primary industry code, using the NAICS system. If enough detail is provided in the project database, the project name and description can be used to assign primary industry codes to prime contractors and the subcontract task descriptions can be used to assign codes to subcontractors.

When the description of the task does not clearly indicate the appropriate NAICS code for a contract or subcontract, lookups can be performed using Dun & Bradstreet's *MarketPlace, SelectPhone, InfoUSA,* or other sources. Most of these sources still use SIC codes, the predecessor to the NAICS system, to classify firms. Crosswalk tables allowing conversion between SIC and the several editions of NAICS and *vice versa* are available online from the Census Bureau.[152] In construction and construction-related professional services, a four-digit NAICS code is most comparable to a four-digit SIC code for general contracting categories.[153] For specialty trades and professional services, a five-digit NAICS code is most comparable.

Once NAICS codes are assigned to all firms in the project database, the percent of dollars awarded and/or paid to contractors and subcontractors in each detailed industry can be calculated to determine which ones are most relevant for a state DOT's contracting activity. Some NAICS codes will have much larger percentage shares than others, as some industries account for a larger share of agency contract spending than others. These percentage shares are referred to as "product market weights" because they will be used to create an overall availability figure that is a weighted average of all the individual four-digit and five-digit NAICS level availability estimates, with the weights being the percentage dollar shares of spending. Table 7, drawn from an actual availability study we performed, provides an example of how the information from the project database can be arrayed by industry (in this case using SIC rather than NAICS codes) to assist in determining the appropriate product market.

As Table 7 shows, 22 SIC codes were identified in this state DOT's subrecipient contracting market. Ninety percent of such contracting and subcontracting activity occurred in just eight industries and that one industry, SIC 1611, accounted for 24% of all such activity.

As with the geographic market, it is important that the disparity or availability study captures the "vast bulk" of an agency's spending. Here too, the courts have not established any clear numerical boundary.[154] Since one of the deliverables from a high-quality study should be detailed (*i.e.,* four-digit or five-digit NAICS) estimates of DBE availability that can be used to assist in establishing DBE contract goals, the agency should have as many relevant NAICS codes included in its study as possible. On the other hand, it is not cost-effective to

[150]*See, e.g., Tampa Electric Co. v. Nashville Coal Co.,* 365 U.S. 320, 367 (1963); *United States v. Philadelphia National Bank,* 374 U.S. 321, 359 (1963); also Areeda, Kaplow and Edlin (2004).

[151]This was the benchmark employed in the availability studies that were upheld in the *Sherbrooke* and *Northern Contracting* cases.

[152]*See* NAICS at http://www.census.gov/epcd/www/naics.html.

[153]Four digits is the most detailed classification available in the SIC system.

[154]*See* fn. 149; however, it is not advisable to structure a study so that only a small fraction of overall spending is captured.

Table 7. Product market for subrecipient contracts.

SIC Code	SIC Description	Percentage	Cumulative Percentage
1611	Highway and Street Construction	24.26	24.26
1622	Bridge, Tunnel, and Elevated Highway	22.10	46.35
1794	Excavation Work	14.69	61.04
1771	Concrete Work	11.43	72.48
1623	Water, Sewer, and Utility Lines	6.02	78.49
1542	Nonresidential Construction, n.e.c.	5.30	83.80
1629	Heavy Construction, n.e.c.	3.42	87.22
0782	Lawn and Garden Services	3.27	90.49
1731	Electrical Work	3.12	93.61
3273	Ready-Mixed Concrete	1.44	95.05
1521	Single-Family Housing Construction	1.08	96.13
5051	Metals Service Centers and Offices	1.05	97.18
1791	Structural Steel Erection	0.86	98.05
4212	Local Trucking without Storage	0.73	98.78
1541	Industrial Buildings and Warehouses	0.39	99.17
7359	Equipment Rental and Leasing, n.e.c.	0.30	99.47
8711	Engineering Services	0.22	99.69
3272	Concrete Products, n.e.c.	0.18	99.86
1721	Painting	0.06	99.92
5063	Electrical Apparatus and Equipment, Wiring Supplies, and Construction Materials	0.04	99.97
5172	Petroleum and Petroleum Products Wholesalers, except Bulk Stations and Terminals	0.02	99.98
3446	Architectural Metal Work	0.02	100.00
	TOTAL	$48,540,859	

create availability estimates for NAICS codes in which the total spending over a 5-year study period is relatively negligible; some balance must be struck. Our experience is that in using a well-constructed project database, it is usually possible to analyze at least 80% of contract spending and in some cases as much as 95% or more.[155]

Steps D & E—Count All Businesses in the Relevant Markets and Identify Listed Minority-Owned and Women-Owned Firms. Once the geographic and product markets have been defined, it is possible to define the "baseline" population of relevant businesses for the study. In the custom census approach, Dun & Bradstreet's *MarketPlace* database is used to define the baseline business population. *MarketPlace* is the most comprehensive and objective available micro-level database of U.S. businesses.[156] *MarketPlace* contains over 14 million records, is updated continuously, and revised each quarter. Using *MarketPlace,* it is possible to purchase a list of all businesses within the geographic market area that have an NAICS code to which a product market weight has been assigned using the project database.

While extensive, *MarketPlace* does not sufficiently identify businesses owned by minorities or women. That is, although these firms are included in *MarketPlace,* they are not always identified as being minority or women owned. Although many such businesses *are* correctly identified in *MarketPlace,* experience has demonstrated that many are not. For this reason, the minority- and women-owned share of the baseline business population cannot be calculated directly from *MarketPlace.* Doing so would yield an availability estimate that was lower than the actual share of minority- and women-owned businesses in the relevant markets.

To compensate for this limitation, the custom census method supplements the existing *MarketPlace* race and gender identifiers with race and gender identifiers from other directories and business listings gathered within and around the relevant geographic market. This requires conducting an "extensive and intensive" search for information on minority-owned and women-owned businesses in the relevant geographic market.[157]

Beyond the information already in *MarketPlace,* this includes obtaining the state's Unified Certification Program directory as well as DBE listings from numerous other public and private entities in the relevant market.

As an example, the following is a listing of directories obtained and/or agencies contacted as part of the WSDOT (2006) availability study:

WSDOT certified DBE directory
Associated General Contractors of Washington
Bank of America Supplier Diversity Program
Black Chamber of Commerce Pacific Northwest
Boeing Company Supplier Diversity Program
Boise Cascade Corp Supplier Diversity Program
Business Research Services National Directory of Minority-Owned Businesses
Business Research Services National Directory of Women-Owned Businesses
Caltrans
Central Contractor Registration database
CH2M Hill
Chevron/Texaco Supplier Diversity Program
City of Bellevue
City of Olympia
City of Portland Sheltered Market Program
City of Seattle Boost Program
City of Seattle Vendor & Contractor Registration
City of Spokane
City of Tacoma
City of Vancouver
City of Olympia
Coca-Cola Supplier Diversity Program
Community Capital Development SMWBE list
Conoco/Phillips Supplier Diversity Program
Urban League of Metropolitan Seattle
Diversity Information Resources
Georgia-Pacific Supplier Diversity Program
Howard S. Wright Construction Supplier Diversity Program
Idaho Transportation Department
King County
Kroger Company
Microsoft Supplier Diversity Program
Montana Department of Transportation
National Association of Minority Contractors
National Association of Women Business Owners—Inland Northwest Chapter
National Association of Women in Construction (various Chapters)
National Center for American Indian Economic Development
National Minority Business Council
Nevada Department of Transportation
Nike Supplier Diversity Program

[155]This can be done by excluding all prime contracts below a certain dollar threshold, say $25,000, or by cumulating total spending by NAICS code and then excluding contract spending in those NAICS codes above a certain percentage cutoff, say 90%, or by some combination of these two methods. *See also* the discussion at fn. 149.

[156]"Micro-level" means a database where the individual firms within the database can be identified. Many Census databases, by contrast, simply provide counts of businesses in different categories.

[157]We say "extensive" because, as the list below illustrates, a wide variety and large number of organizations were contacted as potential sources of information on minority- and women-owned businesses. We say "intensive" because obtaining a given list in the necessary timeframe with the necessary information (*i.e.,* race and gender identification in addition to standard data such as business name, address, and telephone number) and in a usable format often requires a great deal of patience and perseverance.

Nordstrom Department Stores Supplier Diversity Program
Northwest Minority Business Council
Northwest Native American Business Development Center
Oregon Association of Minority Entrepreneurs
Oregon Office of Minority, Women and Emerging Small Business
Pepsico
Port of Portland
Port of Seattle
Port of Tacoma
Qwest Communications
Raytheon
Safeco Insurance Company Supplier Diversity Program
Seattle Mariners Supplier Diversity Program
Seattle Monorail Project
Seattle/Washington State Minority Business Development Center
Sound Transit Diversity Programs
South Puget Sound Hispanic Chamber of Commerce
Starbucks Supplier Diversity Program
Tabor 100 (Northwest Association of African-American Businesses)
Tacoma Housing Authority
Thurston County
U.S. Army Corps of Engineers
University of Washington
W.W. Grainger Co. Supplier Diversity Program
Washington Mutual
Washington State Hispanic Chamber of Commerce
Washington State Office of Minority & Women's Business Enterprise
Wells Fargo Supplier Diversity Program
Women and Emerging Small Business
Women Business Owners of Puget Sound
Women's Business Enterprise National Council
Xerox Corporation.

Not every agency in the list above ultimately provided a directory or listing to the study team. Some entities use the lists of other agencies, some do not track race or gender information (rendering the list much less useful for disparity or availability study purposes), and some had lists but were unwilling or unable to cooperate with the study effort.

All of the lists and directories obtained in this manner are combined in a standardized format. Duplicate entries are eliminated and information from multiple records consolidated and reconciled. Obvious out-of-scope and non-M/W/DBE listings should be dropped. The result is a "master directory" of listed (or "known") M/W/DBEs.

The master directory is then merged with the corresponding Dun & Bradstreet *MarketPlace* database to enhance the identification of minority- and women-owned firms. However, in order to maintain the "apples to apples" comparability between M/W/DBEs and non-M/W/DBEs, firms in the master directory for which there is no corresponding record in *MarketPlace* are not included in the analysis.

Steps F & G. Verifying the Ownership Status of Firms in the Relevant Markets. If the listed DBEs[158] identified above are, in fact, all DBEs and are the only DBEs among all the businesses identified, then the custom census estimate of DBE availability reduces simply to the number of listed DBEs divided by the total number of businesses in the relevant market. However, neither of these two conditions holds true in practice, and therefore this is not a complete measure of DBE availability.

In order to derive a more accurate measure of availability, the possibility that some firms have been incorrectly classified as DBEs must be taken into account. This type of misclassification, if uncorrected, will lead to estimates of DBE availability that are upwardly biased. Similarly, the possibility that some firms not initially identified as DBEs are, in fact, DBEs must also be accounted for. This type of misclassification (which we refer to as "nonclassification" to avoid confusion), if uncorrected, will lead to estimates of DBE availability that are downwardly biased.

In the custom census method, these two types of classification bias are corrected by a supplementary telephone survey administered to a stratified random sample of firms in the baseline business population. These firms are contacted and asked directly about the race and gender of the firm's primary owner(s). The results of the survey are then used to statistically adjust the estimates of DBE availability for misclassification by race and gender.

Tables 8 through 11 summarize the results from a misclassification survey we recently completed for a large municipality in the southwest. Tables 8 and 9 show the fraction of firms originally classified as DBEs that were verified as such through the survey. Table 8 arrays the results by industry grouping and Table 9 by race and gender. Tables 10 and 11 show comparable results for the firms originally classified as non-DBE. As these four tables make clear, misclassification fractions are not insubstantial.

Carrying Out Final Step 1 Availability Calculations. Once steps A through G are completed, final overall and detailed availability figures can be calculated. Below we define terms and provide the specific formula for estimating custom census availability. We also provide a prose description of how the estimates are calculated in practice using the formula.

[158]As used here, "DBE" includes not only certified DBEs but also all other minority-owned and/or women-owned firms. See the discussion from the *Northern Contracting* case in Appendix C, Judicial Review of DBE Goal Setting Under Part 26.

Table 8. Listed DBE survey—amount of misclassification by NAICS code grouping.

Listed DBE By NAICS Code Grouping	Misclassification (Percentage White Male)	Percentage Actually M/WBE Owned	Number of Businesses Interviewed
NAICS 236	24.0	76.0	104
NAICS 237	37.8	62.2	37
NAICS 238	20.2	79.8	252
NAICS 327, 332	25.0	75.0	12
NAICS 484	18.0	82.0	39
NAICS 42	31.8	68.2	129
NAICS 5413	19.5	80.5	174
Balance of NAICS Codes	12.2	87.8	557
All NAICS Codes	18.6	81.4	1,304

Note: NAICS 236—Building Construction, NAICS 237—Heavy Construction, NAICS 238—Special Trades Construction, NAICS 327—Nonmetallic Mineral Product Mfg., NAICS 332—Fabricated Metal Product Mfg., NAICS 484—Truck Transportation, NAICS 42—Wholesale Trade, NAICS 5413—Architecture, Engineering & Related Services.

Table 9. Listed DBE survey—amount of misclassification by putative DBE type.

Putative Race/Gender	Misclassi-fication (Percentage White Male)	Misclassification (Percentage Other DBE Type)	Percentage Correctly Classified	Number of Businesses Interviewed
African-American (either gender)	12.3	5.2	82.5	114
Hispanic (either gender)	15.5	4.4	80.1	401
Asian (either gender)	17.1	3.1	73.7	76
Native American (either gender)	47.6	26.2	26.2	42
White female	20.0	5.5	74.5	671
All DBE Types	18.6	N/A	81.4	1,304

Table 10. Nonclassified businesses survey—by NAICS code grouping.

Listed DBE by SIC Code Grouping	Percentage Actually White Male Owned	Percentage DBE	Number of Businesses Interviewed
NAICS 236	88.4	11.6	335
NAICS 237	88.6	11.4	140
NAICS 238	81.1	18.9	874
NAICS 327, 332	92.1	7.9	63
NAICS 484	67.6	32.4	145
NAICS 42	82.8	17.2	442
NAICS 5413	89.6	10.4	574
Balance of NAICS Codes	80.9	19.1	507
All NAICS Codes	83.6	16.4	3,080

Table 11. Nonclassified businesses survey—by race and gender.

Verified Race/Gender	Number of Businesses Interviewed	Percentage of Total
White male	2,575	83.6
White female	254	8.3
African-American	26	0.8
Hispanic	170	5.5
Asian	31	1.0
Native American	24	0.8
Total	3,080	100.0

All terms defined below are restricted to the relevant geographic market.

Individual industry categories are denoted by the subscript *i,* which runs from 1 through *n,* where *n* is the total number of detailed industries included in the analyses, that is ($i = 1, 2, \ldots, n$). In this particular example, *n* is 20.

D_i— Total number of "listed DBE" establishments in industry *i.*

N_i— Total number of establishments in industry *i.*

x_i— Percentage of listed DBE establishments in industry *i* that aren't actually minority or female owned—the "misclassification percentage."

y_i— Percentage of establishments other than listed DBEs in industry *i* that aren't actually majority male owned—the "nonclassification percentage."

$1\text{-}x_i$— Percentage of listed DBEs in industry *i* that are actually minority or female owned.

$1\text{-}y_i$— Percentage of establishments other than listed DBEs in industry *i* that are actually majority male owned.

D_{ai}— Total number of DBE establishments in industry *i,* adjusted for misclassification and nonclassification.

A_i— Estimated percentage availability in industry *i.*

w_i— Percentage of total dollars spent in industry *i,* ("dollar-based industry weights"). Note: these weights sum to 1.0.

A— Overall estimated percentage availability.

The overall availability percentage, **A,** is then derived as follows:[159]

(F1) Total adjusted number of DBE establishments in industry *i:*

$$D_{ai} = D_i * (1 - x_i) + (N_i - D_i) * (y_i)$$

(F2) Availability percentage in industry *i:*

$$A_i = \left(D_{ai} \Big/ N_i \right) * 100$$

(F3) Overall percentage availability:

$$A = \sum_{i=1}^{20} (A_i * w_i)$$

(F4) The full estimated availability formula is therefore:

$$A = \sum_{i=1}^{20} \left(\left(\left(D_i * (1 - x_i) + (N_i - D_i) * (y_i) \right) \Big/ (N_i) \right) * 100 \right) * w_i$$

Below we provide a numerical representation of how this formula was used to derive the Step 1 DBE availability figure of 24.34% in a state DOT study we recently completed, along with a detailed explanation of the derivation. Table 12 provides the actual numbers used for that study.

Step 1 availability is calculated as a *weighted average* of the 20 individual estimated availability percentages (A_i). There is one individual availability estimate for each of the 20 SIC codes included in the calculation. These 20 individual availability percentages appear in column (9) of Table 12. For example, A_i for SIC code 1611 is 20.95%, for SIC code 8711 it is 24.51%, and so on.

To derive the overall Step 1 availability estimate, A, of 24.34%, these 20 individual estimates must be averaged together, using Formula F3 above and the individual weights, w_i, that appear in column (8) of Table 12. To calculate this weighted average, each individual availability estimate, A_i, from column (9) is multiplied by its corresponding weight, w_i, from column (8). The result of this multiplication is shown in column (10). For SIC code 1611, for example, A_i equals 20.95%, w_i equals 0.4293, and the product of the two is equal to 8.99, as shown in column (10). The sum of the 20

[159]Asterisk (*) indicates multiplication.

Table 12. Numeric representation of Step 1 DBE availability calculation.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
i	SIC Code	D_i	x_i	N_i	y_i	D_{ai}	w_i	A_i	$A_i * w_i$
1	1611	78	0.238	644	0.13338	134.93	0.4293	20.95	8.99
2	8711	655	0.193	3582	0.11932	877.83	0.1243	24.51	3.05
3	1622	8	0.238	24	0.15458	8.57	0.0862	35.71	3.08
4	1541	33	0.253	307	0.12547	59.03	0.0736	19.23	1.42
5	5051	19	0.159	208	0.26484	66.03	0.0610	31.75	1.94
6	1731	331	0.231	3305	0.17129	763.94	0.0357	23.11	0.82
7	1771	131	0.231	1068	0.16293	253.40	0.0311	23.73	0.74
8	1791	24	0.231	114	0.18101	34.75	0.0239	30.48	0.73
9	1623	29	0.238	291	0.14372	59.75	0.0189	20.53	0.39
10	3273	9	0.159	70	0.26653	23.83	0.0179	34.04	0.61
11	1794	65	0.231	980	0.16959	205.16	0.0145	20.93	0.30
12	1799	278	0.231	3523	0.17113	769.08	0.0140	21.83	0.31
13	1721	330	0.231	2748	0.16933	663.21	0.0129	24.13	0.31
14	3569	2	0.159	29	0.26462	8.83	0.0123	30.44	0.37
15	782	202	0.159	2792	0.26543	857.35	0.0090	30.71	0.28
16	8748	2432	0.159	10449	0.27544	4253.52	0.0087	40.71	0.35
17	3531	2	0.159	45	0.25857	12.80	0.0076	28.45	0.22
18	1629	35	0.238	372	0.13153	70.99	0.0071	19.08	0.13
19	1741	87	0.231	1064	0.16877	231.79	0.0069	21.78	0.15
20	6512	90	0.159	1841	0.26450	538.82	0.0052	29.27	0.15
							Overall Step 1 M/W/DBE Availability:		**24.34**

numbers in column (10) is 24.34%—the overall Step 1 DBE availability figure for the agency.

The individual availability estimates, A_i, were calculated using formulas F1 and F2 above. Formula F2 says that each A_i is equal to the total number of listed DBE establishments in industry *i,* adjusted for misclassification and nonclassification (D_{ai}), divided by the total number of establishments in industry *i.* The result is then multiplied by 100 to yield a percentage.

Before we can carry out this calculation, however, we must calculate D_{ai}. For that, we use formula F1 above, where D_{ai} is equal to the number of "listed" DBE establishments in industry *i,* D_i, multiplied by 1 minus the misclassification percentage, x_i, *plus* the total number of remaining establishments in industry *i,* $(N_i - D_i)$, multiplied by the nonclassification percentage y_i. That is, $D_{ai} = D_i * (1 - x_i) + (N_i - D_i) * (y_i)$. In SIC code 1611, for example, D_i equals 78, 1 minus x_i equals $(1 - 0.238) = 0.762$, $N_i - D_i$ equals 644 minus 78, or 566, and y_i equals 0.13338. Therefore, D_{ai} is $(78 * 0.762) + (566 * 0.13338)$ which equals 134.93, as shown in column (7) of Table 12.

Now that we know D_{ai} is equal to 134.93 for SIC code 1611, we can calculate estimated availability for that industry, A_i, using formula (2) above. That is, we divide 134.93 by 644 and multiply the result by 100 to yield the estimated availability figure for SIC code 1611 of 20.95%, as shown in column (9) above.

This process is repeated for each of the 20 SIC codes in the agency's product market, which yields the 20 individual industry availability estimates, A_i, that appear in column (9) of Table 12. Finally, as explained above, each one of these A_i estimates is multiplied by its corresponding dollar-based industry weight, w_i, to yield the $A_i * w_i$ figures in column (10). The 20 figures in column (10) are then added together to obtain the overall Step 1 DBE availability figure, A, of 24.34%.

Below, we repeat formulas F1 through F4 and provide numerical tables below each formula showing the exact calculations undertaken at each step for this particular example.

(F1) Total adjusted number of DBE establishments in industry *i:*

$$D_{ai} = D_i * (1 - x_i) + (N_i - D_i) * (y_i)$$

i	SIC Code	D_{ai}	=	D_i	*	$(1-x_i)$	+	(N_i-D_i)	*	y_i
1	1611	134.93	=	78	*	0.762	+	566	*	0.13338
2	8711	877.83	=	655	*	0.807	+	2927	*	0.11932
3	1622	8.57	=	8	*	0.762	+	16	*	0.15458
4	1541	59.03	=	33	*	0.747	+	274	*	0.12547
5	5051	66.03	=	19	*	0.841	+	189	*	0.26484
6	1731	763.94	=	331	*	0.769	+	2974	*	0.17129
7	1771	253.40	=	131	*	0.769	+	937	*	0.16293
8	1791	34.75	=	24	*	0.769	+	90	*	0.18101
9	1623	59.75	=	29	*	0.762	+	262	*	0.14372
10	3273	23.83	=	9	*	0.841	+	61	*	0.26653
11	1794	205.16	=	65	*	0.769	+	915	*	0.16959
12	1799	769.08	=	278	*	0.769	+	3245	*	0.17113
13	1721	663.21	=	330	*	0.769	+	2418	*	0.16933
14	3569	8.83	=	2	*	0.841	+	27	*	0.26462
15	782	857.35	=	202	*	0.841	+	2590	*	0.26543
16	8748	4253.52	=	2432	*	0.841	+	8017	*	0.27544
17	3531	12.80	=	2	*	0.841	+	43	*	0.25857
18	1629	70.99	=	35	*	0.762	+	337	*	0.13153
19	1741	231.79	=	87	*	0.769	+	977	*	0.16877
20	6512	538.82	=	90	*	0.841	+	1751	*	0.26450

(F2) Availability percentage in industry *i:*

$$A_i = \left(D_{ai} \Big/ N_i \right) * 100$$

i	SIC Code	A_i	=	(D_{ai}	÷	N_i)	*	100
1	1611	20.95	=	134.93	÷	644	*	100
2	8711	24.51	=	877.83	÷	3582	*	100
3	1622	35.71	=	8.57	÷	24	*	100
4	1541	19.23	=	59.03	÷	307	*	100
5	5051	31.75	=	66.03	÷	208	*	100
6	1731	23.11	=	763.94	÷	3305	*	100
7	1771	23.73	=	253.40	÷	1068	*	100
8	1791	30.48	=	34.75	÷	114	*	100
9	1623	20.53	=	59.75	÷	291	*	100
10	3273	34.04	=	23.83	÷	70	*	100
11	1794	20.93	=	205.16	÷	980	*	100
12	1799	21.83	=	769.08	÷	3523	*	100
13	1721	24.13	=	663.21	÷	2748	*	100
14	3569	30.44	=	8.83	÷	29	*	100
15	782	30.71	=	857.35	÷	2792	*	100
16	8748	40.71	=	4253.52	÷	10449	*	100
17	3531	28.45	=	12.80	÷	45	*	100
18	1629	19.08	=	70.99	÷	372	*	100
19	1741	21.78	=	231.79	÷	1064	*	100
20	6512	29.27	=	538.82	÷	1841	*	100

(F3) Overall percentage availability for state DOT:

$$A = \sum_{i=1}^{20} \left(A_i * w_i \right)$$

i	SIC Code	$A_i * w_i$	=	A_i	*	w_i
1	1611	8.99	=	20.95	*	0.4293
2	8711	3.05	=	24.51	*	0.1243
3	1622	3.08	=	35.71	*	0.0862
4	1541	1.42	=	19.23	*	0.0736
5	5051	1.94	=	31.75	*	0.0610
6	1731	0.82	=	23.11	*	0.0357
7	1771	0.74	=	23.73	*	0.0311
8	1791	0.73	=	30.48	*	0.0239
9	1623	0.39	=	20.53	*	0.0189
10	3273	0.61	=	34.04	*	0.0179
11	1794	0.30	=	20.93	*	0.0145
12	1799	0.31	=	21.83	*	0.0140
13	1721	0.31	=	24.13	*	0.0129
14	3569	0.37	=	30.44	*	0.0123
15	782	0.28	=	30.71	*	0.0090
16	8748	0.35	=	40.71	*	0.0087
17	3531	0.22	=	28.45	*	0.0076
18	1629	0.13	=	19.08	*	0.0071
19	1741	0.15	=	21.78	*	0.0069
20	6512	0.15	=	29.27	*	0.0052

(F4) The full estimated availability formula is therefore, once again:

$$A = \sum_{i=1}^{20} \left(\left(\left(D_i * \left(1 - x_i\right) + \left(N_i - D_i\right) * \left(y_i\right) \right) \Big/ \left(N_i\right) \right) * 100 \right) * w_i$$

Relationship Between Choice of Availability Measure and Resulting Annual DBE Goals

The difference between the custom census method and other methods is evident when the annual DBE goals set by state DOTs during FFYs 2006, 2007, and 2008 are examined. Table 13 shows the overall DBE goals set by each state DOT during this period, as well as their race-conscious portions.[160]

Using the goal information in Table 13, we calculated some summary statistics to compare DBE goals derived from disparity or availability studies to those derived using bidders lists, prequalified contractor list, or other types of contractor lists or from DBE directories and Census Bureau data. The results of this analysis are shown in Table 14.

Consistent with the concept of "casting a broader net," it is clear from the top six rows of Table 14 that disparity or availability studies tend to yield larger estimates of DBE availability than the other methods. Compared to the bidders list or prequalified contractors list approach, the disparity or availability study approach yielded median overall DBE goals that were 3.8 percentage points higher on average, and mean overall DBE goals that were 5.6 percentage points higher on average. Compared to the method of DBE directories and Census Bureau data, the figures were 1.6 and 3.2 percentage points higher, respectively.

The difference is even more pronounced when the race-conscious portion of the goal is examined. The disparity or availability study approach yielded median race-conscious DBE goals that were 4.5 percentage points higher and mean goals that were 5.8 percentage points higher, on average, compared to using bidders lists, prequalified contractor lists, or other contractor lists. Compared to using DBE directories and Census Bureau data, the race-conscious figures were 6.3 and 6.3 percentage points higher, respectively.[161]

It is possible that these differences do not arise because the availability estimation methods of disparity studies generally cast a broader net, but are instead due to larger M/WBE shares in those states that commissioned (and used) disparity or availability studies for their goal setting. To check for this possibility, we standardized the comparisons by dividing all the goals by the percentage of the construction business population that was minority owned or women owned according to the *2002* SBO.[162] The results appear in the last six rows

[160]The race-neutral portion, of course, is obtained by subtracting the race-conscious portion from the overall goal.

[161]Similar differences are observed in both overall and race-conscious goals if state DOTs from the Ninth Circuit are excluded from the comparison.

[162]These percentages of minority-owned and women-owned businesses in each state were derived from U.S. Census Bureau (2006). The 2002 data are the most recent available.

Table 13. FHWA annual DBE goals submitted by state DOTs, FFYs 2006–2008.

State	Method	DBE Overall Goal 2006	DBE Race-Conscious Goal 2006	DBE Overall Goal 2007	DBE Race-Conscious Goal 2007	DBE Overall Goal 2008	DBE Race-Conscious Goal 2008
CA	3	10.50%	0.00%	10.50%	0.00%	13.50%	6.75%
CO	3	12.19%	10.89%	13.76%	10.45%	12.80%	10.50%
GA	3	12.00%	6.00%	12.00%	6.00%	12.00%	6.00%
IL	3	22.77%	20.74%	22.77%	20.74%	22.77%	18.85%
MD	3	16.10%	8.90%	24.34%	19.79%	25.30%	21.90%
MN	3	9.57%	8.75%	6.27%	4.27%	15.30%	13.60%
MO	3	13.50%	9.45%	13.37%	9.36%	13.34%	10.00%
NC	3	10.40%	7.66%	9.90%	7.40%	10.10%	7.60%
NV	3	3.30%	0.00%	3.00%	0.00%	5.70%	0.00%
WA	3	12.70%	9.34%	18.77%	14.70%	18.77%	14.70%
HI	1	11.00%	0.00%	9.00%	0.00%	7.50%	0.00%
NJ	1	15.10%	14.10%	15.10%	14.50%	15.60%	0.38%
NY	1	12.00%	9.20%	12.00%	9.50%	12.00%	5.00%
AK	2 or 5	7.50%	3.50%	4.00%	0.00%	5.00%	0.00%
AL	2 or 5	9.14%	4.32%	9.54%	5.34%	*	*
AR	2 or 5	8.40%	6.40%	8.00%	6.10%	7.80%	5.00%
AZ	2 or 5	10.50%	0.00%	9.67%	0.00%	9.91%	0.00%
CT	2 or 5	15.50%	9.50%	13.40%	8.40%	13.60%	8.40%
DC	2 or 5	32.84%	7.16%	32.70%	8.50%	26.89%	19.37%
DE	2 or 5	11.02%	9.40%	10.01%	8.52%	11.73%	10.66%
FL	2 or 5	7.87%	0.00%	8.12%	0.00%	8.07%	0.00%
IA	2 or 5	4.80%	4.32%	4.50%	4.10%	4.60%	4.10%
ID	2 or 5	11.00%	10.39%	11.00%	7.98%	11.00%	7.98%
IN	2 or 5	9.85%	4.97%	8.80%	3.73%	9.90%	4.18%
KS	2 or 5	9.19%	7.49%	10.02%	7.07%	10.19%	6.85%
KY	2 or 5	7.00%	5.00%	7.00%	5.00%	7.00%	5.00%
LA	2 or 5	10.00%	9.00%	10.00%	9.00%	10.50%	9.50%

(continued on next page)

Table 13. (Continued).

State	Method	DBE Overall Goal 2006	DBE Race-Conscious Goal 2006	DBE Overall Goal 2007	DBE Race-Conscious Goal 2007	DBE Overall Goal 2008	DBE Race-Conscious Goal 2008
MA	2 or 5	13.80%	8.00%	13.80%	9.00%	13.80%	10.00%
ME	2 or 5	6.60%	1.60%	6.00%	1.00%	4.50%	1.00%
MI	2 or 5	11.00%	8.50%	11.00%	8.50%	11.00%	8.50%
MS	2 or 5	10.00%	4.00%	10.00%	5.00%	10.00%	4.00%
MT	2 or 5	0.00%	0.00%	10.50%	0.00%	9.89%	0.00%
ND	2 or 5	8.12%	3.25%	7.68%	3.88%	7.38%	3.76%
NE	2 or 5	7.08%	4.32%	6.91%	4.44%	6.48%	4.53%
NH	2 or 5	5.00%	1.00%	4.00%	1.00%	5.00%	1.00%
NM	2 or 5	9.69%	0.00%	8.79%	0.00%	9.32%	0.00%
OH	2 or 5	6.70%	5.60%	6.70%	5.90%	7.10%	5.80%
OK	2 or 5	8.50%	6.50%	8.10%	5.10%	8.10%	4.52%
OR	2 or 5	10.26%	5.89%	11.32%	0.00%	11.58%	0.00%
PA	2 or 5	9.52%	6.88%	9.49%	5.37%	7.70%	4.52%
RI	2 or 5	10.00%	7.00%	11.00%	6.20%	10.00%	7.04%
SC	2 or 5	10.50%	7.50%	10.50%	7.50%	10.50%	7.50%
SD	2 or 5	8.30%	3.59%	8.33%	3.64%	8.30%	3.94%
TN	2 or 5	8.48%	6.96%	9.87%	6.63%	8.38%	5.04%
TX	2 or 5	12.54%	6.00%	12.12%	6.00%	12.12%	6.00%
UT	2 or 5	8.30%	4.40%	8.20%	4.00%	8.00%	3.80%
VI	2 or 5	10.02%	10.02%	10.20%	10.20%	9.80%	9.50%
VT	2 or 5	6.90%	0.00%	5.00%	0.00%	5.20%	0.00%
WI	2 or 5	14.44%	11.20%	10.65%	7.15%	11.00%	8.80%
WV	2 or 5	5.20%	4.00%	6.75%	5.46%	7.89%	5.15%
WY	2 or 5	5.00%	0.00%	6.00%	0.00%	4.05%	0.00%

* We were unable to obtain a copy of ALDOT's FFY 2008 DBE goals.

Notes: (1) Method 1 corresponds to 49 C. F. R. 26.45(c)(1) (DBE directories and Census Bureau data), method 2 or 5 corresponds to 49 C. F. R. 26.45(c)(2) or (c)(5) (bidders lists or other types of contractor lists), method 3 corresponds to 49 C. F. R. 26.45(c)(3) (disparity or availability study); (2) the race-neutral portion of the goal for each FFY is not presented due to space limitations. To calculate it, simply subtract the race-conscious goal from the corresponding overall goal; (3) goals were not necessarily approved as submitted to U.S.DOT; (4) Caltrans' goals were set using method 1 in FFYs 2006 and 2007 and method 3 in FFY 2008; (5) Mn/DOT's goals were set using method 3 in FFYs 2006 and 2008 and method 2 in FFY 2007; (6) NDOT's goals were set using method 2 in FFYs 2006 and 2007 and method 3 in FFY 2008.

Table 14. Summary statistics for DBE goals set by different methods.

Goal-Setting Method	Summary Statistic	Overall FFY DBE Goal			Race-Conscious FFY DBE Goal		
		2006	2007	2008	2006	2007	2008
1	Median	11.5%	11.3%	12.0%	4.6%	4.8%	0.4%
2 or 5	Median	9.2%	9.5%	9.6%	5.3%	5.1%	4.8%
3	Median	12.4%	13.8%	13.4%	9.1%	10.5%	10.3%
1	Mean	12.2%	11.7%	11.7%	5.8%	6.0%	1.8%
2 or 5	Mean	9.6%	9.4%	9.4%	5.2%	4.7%	5.2%
3	Mean	13.7%	16.4%	15.0%	10.2%	12.6%	11.0%
1	Minimum	10.5%	9.0%	7.5%	0.0%	0.0%	0.0%
2 or 5	Minimum	3.3%	3.0%	4.1%	0.0%	0.0%	0.0%
3	Minimum	9.6%	9.9%	5.7%	6.0%	6.0%	0.0%
1	Maximum	15.1%	15.1%	15.6%	14.1%	14.5%	5.0%
2 or 5	Maximum	32.8%	32.7%	26.9%	11.2%	10.2%	19.4%
3	Maximum	22.8%	24.3%	25.3%	20.7%	20.7%	21.9%
1	No. Obs.	4	4	3	4	4	4
2 or 5	No. Obs.	38	39	36	38	39	36
3	No. Obs.	8	7	10	8	7	10
1	Std. Median	0.420	0.420	0.485	0.186	0.192	0.021
2 or 5	Std. Median	0.726	0.752	0.758	0.482	0.460	0.436
3	Std. Median	0.874	0.825	0.805	0.704	0.671	0.680
1	Std. Mean	0.465	0.457	0.492	0.289	0.298	0.074
2 or 5	Std. Mean	0.791	0.781	0.802	0.461	0.415	0.442
3	Std. Mean	0.881	0.978	0.922	0.680	0.751	0.698

Note: Method 1 corresponds to 49 C. F. R. 26.45(c)(1) (used DBE directories and Census Bureau data); method 2 or 5 corresponds to 49 C. F. R. 26.45(c)(2) or (c)(5) (used bidders lists or other types of contractor lists); method 3 corresponds to 49 C. F. R. 26.45(c)(3) (used disparity or availability study).

of Table 14. As with the raw data, both the median and mean standardized DBE goals—overall and race-conscious—are larger among those state DOTs that used disparity or availability studies to help in the goal-setting process.

It is also worth noting that for both FFY 2006 and FFY 2007, no state DOT that relied upon a disparity or availability study to assist in its DBE goal setting had an entirely race-neutral DBE goal.[163]

State DOT Utilization Analyses

Recommended Approach. A high-quality utilization and disparity analysis requires a well-constructed project database detailing several years of past contract and subcontract activity. It is important that the database capture subcontracting activity for both DBEs and non-DBEs.[164] Utilization and disparity statistics are most informative when they are disaggregated along the following four key dimensions, including:

- Race, ethnicity, and gender, as well as more aggregated groupings—minorities, white women, and all DBEs;
- Contracts with DBE goals versus contracts without DBE goals;[165]
- Major procurement categories *(i.e.,* construction and construction-related professional services); and
- NAICS sectors (two-digit) and subsectors (three-digit), and industry groups (four-digit).

Disaggregating by highway districts can also be useful, depending on the state DOT's needs.

All the disparity studies reviewed provided utilization statistics by race, ethnicity, and gender as well as for the aggregated groupings of MBE, WBE, and DBE.[166] Most studies provided comparisons of federally assisted contracts to non-federally assisted contracts or otherwise attempted to provide comparisons of DBE utilization on projects with goals to projects without goals. All of the studies examined utilization by major procurement categories.

Most studies conducted separate utilization analyses for prime contracts versus subcontracts. In such cases, it is recommended that utilization also be calculated for prime contracts and subcontracts combined in order to provide a fuller picture of DBE participation relative to all contract and subcontract spending.[167]

Some studies did not have complete subcontractor data. The usefulness of their utilization (and disparity) statistics is correspondingly reduced.

Few studies provided any utilization statistics by NAICS sector or subsector; omitting such detailed industry analysis is a practice that has been viewed negatively by some courts.[168]

State DOT Disparity Analyses

Recommended Approach. A disparity analysis of state DOT spending is simply a comparison of DBE utilization to DBE availability. Therefore, the preceding discussions of market definition, availability measurement, and utilization statistics are all relevant to the ability to produce a useful disparity analysis. The primary analysis should be conducted on projects or business activities that were generally *not* subject to race-conscious contracting requirements. This means state DOT contracts without DBE goals, or the utilization of DBEs in the surrounding economy or, preferably, both. Proper testing for substantive and statistical significance must be performed in order to identify whether disparities are large and whether the observed disparities could have arisen due to random chance alone.

Data Impacted by Race-Conscious Contracting Requirements

As already explained, performing a disparity analysis on contracting and subcontracting dollars that were subject to race-conscious affirmative action requirements, as is often the case for state DOTs, is of limited value in strict scrutiny analysis. Much more informative is disparity analysis on contracting and subcontracting dollars that were not subject to affirmative action requirements, at the state DOT, economy-wide, or both.

Some studies performed disparity analyses only on state DOT contracts and subcontracts that were subject to race-

[163] *See* line 9 in Table 14, above. This changed in FFY 2008 with the introduction of a completely race-neutral goal at NDOT subsequent to completion of its disparity study.

[164] *See* Step A—Create a Database of Representative, Recent, and Complete State DOT Projects, for an extended discussion of how to build such a database. Appendix A also provides an discussion regarding the collection of subcontract data.

[165] *See* Chapter Three, Economy-Wide Disparity Analysis for the Relevant Markets, *supra,* for discussion of different methods for making this comparison.

[166] The one availability study that included a utilization analysis (NDOR, 2000) did not disaggregate by race, ethnicity, and gender.

[167] *See* 49 C.F.R. § 26.45(a) (goals are set on DOT-assisted contracts, not just the subcontract portion of DOT-assisted contracts); *Northern Contracting, Inc. v. Illinois Department of Transportation,* 2005 U.S. Dist. LEXIS 19868, *73 (Sept. 8, 2005) (*Northern Contracting II*) ("At no point do the Regulations limit the application of DBE goals to the subcontracting portion of contracts. To the contrary, the Regulations expressly provide that the goals requirements are imposed on prime contractors.").

[168] *See, e.g.,* fn. 191.

conscious contracting requirements.[169] These studies included no comparison of DBE participation on projects with goals to DBE participation on projects without goals and also lacked any economy-wide analysis of business disparities. When studies such as these find "overutilization" in certain categories, policy makers may be misled to conclude that there is an absence of discrimination.

Several courts have recognized that this is incorrect. The plaintiffs in *Concrete Works III* argued that "overutilization" on projects subject to race-conscious contracting requirements indicated an absence of discrimination. The court rejected this argument, concluding that the more pertinent inquiry should focus on M/WBE participation on projects without goals.[170]

Disparity analyses should strive to compare DBE participation and DBE availability on projects that were *not* subject to race-conscious contracting requirements, either in the public sector, economy-wide, or both. This has been accomplished in several ways, described below:

- Comparing disparity ratios on contracts subject to goals to those on contracts not subject to goals. In states where there is no M/WBE program for state-funded projects, this can be accomplished by comparing disparities on federally assisted contracts with those on state-funded contracts.
- Selecting certain contracts to be "control" or "zero goals" contracts and comparing disparity ratios on these contracts to those on contracts with goals.
- Comparing disparity ratios on state DOT projects subject to goals to disparity ratios from other public entities in the relevant market that do not use goals.
- Comparing disparity ratios on state DOT projects subject to goals to disparity ratios from private entities in the relevant market.

Importance of Significance Testing

Another important aspect to disparity analysis is significance testing. There are two dimensions to assessing significance. The first is "constitutional" or "substantive" significance.[171] This type of significance addresses the size of a given disparity. The second is "statistical" significance. This type of significance addresses whether a given disparity could have arisen due to random chance alone. Both types of significance need to be considered in disparity analyses.

For example, suppose DBE participation in a given category (not subject to race-conscious contracting requirements) was 13.9% and DBE availability in that same category was 14.0%. The disparity ratio would be $0.139 \div 0.140 = 0.99$. While it is possible that this disparity might be statistically significant (if, *e.g.,* a large number of contracts and subcontracts was involved), it is difficult to imagine such a small disparity being a source of concern to anyone. In contrast, sometimes substantively significant disparities may not be statistically significant. This often occurs when statistics are based on a relatively small sample of contracts.

The Equal Employment Opportunity Commission has adopted a standard for substantive significance in the employment discrimination setting. This so-called "80% rule" has been endorsed as a relevant way to gauge legally meaningful racial or gender disparities rather than simply testing for statistical significance alone. According to Meier, Sacks, and Zabell (1986, 32):

> Properly understood, the 80% rule has the potential to rationalize much of the case law to date. . . . As a practical matter, even when statistically significant differences have been noted, the courts have been reluctant to find adverse impact when the differences lack what is variously described as "practical," "substantive," or "constitutional" significance. And conversely, substantial disparities have been found insufficient to establish a *prima facie* case when the sample sizes are so small as to make statistical significance unlikely. The 80% rule appears to be a reasonable articulation of a statistical criterion to determine whether statistically significant differences are substantial enough to warrant legal liability.

The 80% rule states that for statistical disparities to be taken as legally dispositive in the discrimination context, they should be (a) statistically significant and (b) "substantively" significant. Substantive significance is taken to mean, for example, a DBE utilization measure that is less than or equal to 80% of the corresponding DBE availability measure. The distinction between these two types of "significance" has sometimes been a source of confusion to courts (Gastwirth 1988, 248).

Among the studies we reviewed, four indicated whether disparity ratios were at or below the 80% threshold but did not perform any statistical significance testing on the disparity ratios. As Meier, Sacks, and Zabell (1986) note, a proper use of the 80% rule requires disparity ratios to be at or below 80% and also be statistically significant.

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[169]CDOT (2001), GDOT (2005), OH (2001), NJ (2005). The OH (2001) study included some limited analysis of private sector disparities but still treated "overutilization" of M/WBEs by state agencies subject to affirmative action requirements as evidence of the absence of discrimination ("American Indian [firms at Ohio DOT] are overutilized at rates that are statistically significant. . . . Accordingly, race- and gender-conscious remedies are . . . [not] recommended . . . for American Indians.").

[170]*Concrete Works III,* 321 F.3d at 984–85; *see also Western States,* 407 F.3d at 992; *Northern Contracting II,* 2004 U.S. Dist. Lexis at *37–38; *Hershell Gill Consulting Engineers, Inc. v. Miami-Dade County, Florida,* 333 F.Supp.2d 1305, 1318 (S.D. Fla. 2004) ("[The court] will keep the potential effect of the MWBE programs in mind when analyzing the evidence presented by the County.").

[171]See also fns. 395 and 201 and the accompanying discussion in the text.

Three of the studies we reviewed employed the 80% rule and tested for statistical significance. Three more employed statistical significance testing but did not employ the 80% rule. However, in all six of these studies, the significance test used is only correct under the assumption that contracts and subcontracts are all the same size. If each contract and subcontract were the same size, the correct t-statistic would be:

$$t = \frac{u - a}{\sqrt{a * (1 - a)}} \tag{1}$$

where u is the ratio of DBE contract and subcontract dollars to total contract and subcontract dollars, and a is the ratio of DBE firms to all firms.

However, contract and subcontract values vary greatly in amount. Consequently, the correct t-statistic is:[172]

$$t = \frac{u - a}{\sqrt{\frac{a * (1 - a) * \sum c_i^2}{\left(\sum c_i\right)^2}}} \tag{2}$$

where c_i is the dollar award or payment amount for contract or subcontract i.[173] This statistic is employed to do disparity testing in only three of the studies we reviewed.

Not all data are normally distributed, but many probability distributions are approximately normal and samples from many other distributions are approximately normal. The t-distribution is one such distribution. It is often employed in practice to model data based on the assumption that the sample they are drawn from is approximately normal.

In any particular application, the absolute value of the t-statistic resulting from equation (2) can be compared to a table of critical values for Student's t distribution to determine whether the result is statistically significant.[174] In discrimination cases, the courts have usually required p-values of 5% or less to establish statistical significance in a two-sided case. The analogous p-value for the one-sided case is half of the two-sided p-value, or 2.5%.

A two-sided p-value of 5% corresponds approximately to two standard deviations. The relevance of "two standard deviations" in statistics and the law is that it corresponds to a 95% confidence interval around a normal distribution. In the simplest terms, in normally distributed data, approximately 95% of the values lie within two standard deviations (a 95% confidence interval) above or below the mean, and 5% lie outside this range. Therefore, if we compare two numbers drawn from a normal probability distribution and their difference is greater than or equal to two standard deviations, we can infer that the observed difference in the numbers is due to more than just random chance. If we were to draw these two numbers repeatedly, we would observe that this inference was correct, on average, only 19 out of every 20 draws. In other words, it would be correct 95% of the time and incorrect 5% of the time.

One other type of significance testing was observed in three of the studies we reviewed—Monte Carlo simulation studies. Starting from the project database of contracts and subcontracts, all with differing dollar sizes, these studies simulate the award process by programming a computer to randomly assign contract awards to the several types of DBEs as well as to non-DBEs, based on their estimated availability percentage. For example, if black-owned firms had estimated availability of 5%, then the computer would randomly pick 5% of the contracts and subcontracts and assign them to black-owned firms. The total value of the randomly assigned awards would then be totaled and compared to availability to assess whether there was a disparity between utilization and availability. The simulation exercise is then repeated a large number of times. If utilization fell below availability in 95% or more of the runs, that disparity is statistically significant.

Monte Carlo studies are typically used in cases where sample sizes are small and the underlying distribution is not known. In large samples, however, sample mean statistics tend to converge toward a normal distribution, and the t-statistic provided in equation (2) can be used. In the three studies we reviewed, the Monte Carlo simulations were performed only on the full overall sample of contracts and subcontracts. In one study we reviewed, simulations were performed once for all federally funded construction and engineering contracts statewide over the entire study period and once for all state-funded construction and engineering contracts statewide over the entire study period. Both of these samples were quite large and the t-test from equation (2) could have been easily implemented instead. No explanation was provided of the choice to use Monte Carlo simulations.

However, these three studies also presented dozens of separate tables of disparity statistics disaggregated along several dimensions, for example, agency, funding source, major procurement category, contractor type, time period, and geographic region. Several of these tables therefore had only a small number of contracts and subcontracts included. Disparity statistics were presented in each of these tables, but no significance testing was done. These tables would have been excellent candidates for Monte Carlo simulations that, as we have said, can be helpful for assessing the significance of disparity ratios in cases with small samples. No explanation was provided of the choice not to use Monte Carlo simulations.

[172]TX (1994, 88–90).

[173]In implementing this test statistic, prime contractor award or payment amounts must be a net of subcontract award or payment amounts.

[174]A table of critical values for the t-distribution can be found in any college-level statistics textbook.

Economy-Wide Disparity Analyses for the Relevant Markets

Recommended Approach. Statistical analyses that assess how minorities and women fare in several key aspects of business enterprise activity should be conducted to determine whether a state DOT is passively participating in an industry sector tainted by discrimination.

In *Concrete Works III,* the court discussed the importance of evidence of economy-wide (or "marketplace") discrimination:

> In *Adarand VII,* we specifically concluded that evidence of marketplace discrimination can be used to support a compelling interest in remedying past or present discrimination through the use of affirmative action legislation. . . . We clearly stated that evidence explaining "the Denver government's role in contributing to the underutilization of MBEs and WBEs in the *private construction market in the Denver MSA*" was relevant to Denver's burden of producing strong evidence. . . .
>
> The City can demonstrate that it is a "passive participant in a system of racial exclusion practiced by elements of the local construction industry" by compiling evidence of marketplace discrimination and then linking its spending practices to the private discrimination. Therefore, evidence of marketplace discrimination is not only relevant but, in this case, it is essential to the City's claim that it is an indirect participant in private discrimination. Consequently, we again reject [plaintiff's] argument and conclude that the district court's determination that the marketplace data was irrelevant was a legal error that significantly affected the court's analysis of Denver's evidence.[175]

A disparity studies should not ignore such evidence.[176]

Evidence of economy-wide discrimination in disparity and availability studies has taken several forms, including the following:

- Regression analyses comparing business formation rates between minorities, women, and similarly situated nonminority males in the relevant markets. These have been implemented using the Census Bureau's *5% Public Use Microdata Samples* (PUMS) from the decennial census and/or the *Current Population Surveys* (CPS), produced jointly by the Census Bureau and the Bureau of Labor Statistics.
- Regression analyses comparing the earnings of minority and female business owners to those of similarly situated nonminority male business owners in the relevant markets. These have also been implemented using the PUMS and/or the CPS.
- Regression analyses comparing denial rates on commercial loans between minority, female, and similarly situated nonminority male business owners. These have been implemented using data from the *Survey of Small Business Finances* produced by the Federal Research Board and the Small Business Administration.
- Disparity ratios comparing market share of revenues to market share of business population between minority, female, and nonminority businesses using data from the Census Bureau's SBO.
- Disparity ratios comparing minority and female utilization to availability using data on private sector construction projects from Reed Construction Data and/or F. W. Dodge and/or building permit databases.

Regression analyses of business formation rates have also been used to quantify Step 2 adjustments, which must be considered under 49 C.F.R. § 26.45(d). This is accomplished by first estimating a business formation regression model for nonminority males and then applying that model to the minority and female observations to estimate the business formation rate that would be expected if minorities and women faced the same market structure as nonminority males.

Anecdotal Analyses

Recommended Approach. Anecdotal evidence has been collected in a variety of formats including mail surveys, individual interviews, group interviews or focus groups, and public hearings. All of these approaches can and have produced qualitative evidence of barriers to full and fair participation by DBEs in the public contracting and subcontracting process. High-quality studies often employ multiple approaches to gathering this type of evidence, *e.g.,* mail surveys and focus groups or personal interviews.

Mail surveys are particularly important to establish a broad base of coverage that is capable of being quantified. Several studies used mail or telephone surveys, but most failed to test for nonresponse bias. Since response rates on voluntary surveys tend to be low (typically 5%–115%), it is important to test whether nonrespondents differ from respondents in ways that would alter the conclusions drawn from the survey. Failure to test for nonresponse bias may likewise undermine the persuasiveness of the results.

Studies should gather evidence from non-DBEs as well as DBEs. It is critical to explore the extent to which barriers reported by anecdotal sources are the result of discrimination rather than the usual challenges facing all businesses related to developing markets, finding suppliers, managing cash flow, etc. This is also the state DOT's opportunity to explore the operations of the DBE Program. This should include questions regarding the use of race-conscious goals from the point of view of both the DBEs and non-DBEs. These include

[175] *Id.* at 976.

[176] *See Adarand VII,* 228 F.3d at 1167–68.

Table 15. Types of anecdotal evidence collected in state DOT disparity and availability studies.

Study	Study Type	Individual Interviews	Focus Groups	Public Hearings	Mail Surveys	Telephone Surveys	Nonresponse Testing
IDOT (2004)	A						
Mn/DOT (2005)	A						
MoDOT (2004)	A						
NDOR (2000)	A						
WSDOT (2006)	A		x				
CDOT (ongoing)	D	x	x	x	x		
HDOT (ongoing)	D		x		x		
MDT (ongoing)	D	x	x	x			
NCDOT (ongoing)	D	n/a	n/a	n/a	n/a	n/a	n/a
NY (ongoing)	D		x		x		
ADOT (2009)	D	x	x			x	
Alaska DOT&PF (2008)	D	x		x		x	
Caltrans (2007)	D	x		x			
ITD (2007)	D	x					
NDOT (2007)	D	x					
ODOT (2007)	D	x				x	
TDOT (2007)	D	n/a	n/a	n/a	n/a	n/a	n/a
MD (2006)	D		x		x		
GDOT (2005)	D	x		x		x	
NJ (2005)	D	x					
NCDOT (2004)	D	x	x			x	
VDOT (2004)	D						
CDOT (2001)	D						
OH (2001)	D	x					
FDOT (1999)	D	n/a	n/a	n/a	n/a	n/a	n/a
NMDOT (1995)	D	x					
SCDOT (1995)	D	x		x	x		
LA (1991)	D	x					

Note: (1) *x* indicates this type of anecdotal evidence was collected as part of the study; *n/a* indicates that we do not know whether this type of anecdotal evidence was collected as part of the study or not, because the study was unavailable to us; a blank indicates that this type of anecdotal evidence was not collected as part of the study; (2) anecdotal evidence is sometimes collected directly by the state DOT rather than the consultant and presented in its annual DBE goals submissions to the FHWA.

how goals are set; evaluating bidders' DBE submissions; and monitoring compliance with DBE contractual commitments. Evidence gathering should also include the effectiveness of race-neutral measures such as unbundling contracts and setting aside contracts for bidding by small firms; bonding and financing support programs; certification outreach; and other supportive services. Special emphasis should be placed on the experiences of DBEs that desire to obtain prime contracts as a measure of continuing barriers to full participation in the marketplace. Careful consideration of race-neutral measures is necessary to provide support for the state DOT's projection of the amount of the DBE goal it can meet solely through race-neutral measures.

Studies should also have a wide enough variety of interviewees, survey participants, *etc.,* to ensure representation of all racial and ethnic minorities, white women and white men, and all major procurement categories.

All disparity studies provided some anecdotal evidence; one availability study was supplemented with anecdotal evidence through interviews with business owners.[177] The evidence collected ranged from individual interviews, to group interviews, to public hearings, to large scale quantitative surveys. As Table 15 shows, the most commonly used technique was individual interviews.

While the interviews generally elicited useful information, some studies interviewed only DBEs, or only a very small number of non-DBEs. This is a serious deficiency, as it is important to tease out the effects of discrimination from the general barriers faced by all small and new firms. This lack of balance may undermine the results, since the race-conscious elements must be narrowly tailored to only the categories of identified victims of discrimination and the impact of race-conscious programs on third-parties such as non-DBE subcontractors must be considered.

[177]This anecdotal evidence was gathered after the completion of the study in light of *Western States.*

CHAPTER 4

Study Resource Issues

It's unwise to pay too much, but it's also unwise to pay too little. When you pay too much you lose a little money, that is all. When you pay too little, you sometimes lose everything, because the thing you bought was incapable of doing the thing it was bought to do. The common law of business balance prohibits paying a little and getting a lot——it can't be done. If you deal with the lowest bidder, it is well to add something for the risk you run. And if you do that, you will have enough to pay for something better.

—John Ruskin (1819–1900)
English author, artist, scientist, poet, philosopher

The cost of conducting an availability or disparity study is a significant concern for state DOTs. Limited resources and competing priorities mean that costs must be justified and managed to deliver the best value. A study's true value, however, comes in its ability to withstand strict scrutiny in court. While studies were expensive, as a percentage of total state DOT contract awards over 5 or 6 years, the cost of a disparity or availability study is still very small.[178] In many ways, a disparity study is like an insurance policy for the DBE Program: the cost is a small fraction of the value of what is being insured.

We interviewed several state DOTs to obtain information about the price of their studies, the internal resources necessary to manage the process, and advice for other agencies considering studies. The following issues emerged that state DOTs may want to consider when they evaluate the costs of procuring studies and conducting studies. As with the other challenges of conducting studies, the costs must be weighed against the litigation risk that accompanies a less comprehensive study, or no study at all, and the benefits of a constitutionally sound DBE Program.

[178] The average Federal-aid highway fund apportionment to state DOTs in FFY 2007 was about $600 million—or about $3 billion per state DOT over a 5-year period. *See* Table 1. If a disparity study for the average state DOT will cost $1.5 million, which was actually the price for only the largest states, this would be 0.05% of the federal funds disbursed during the study's projected coverage.

Sources of Funds

Most state DOTs used state funds to pay for their studies, regardless of type. At least one state DOT expressed concern that the FHWA would want to direct the study process if the state DOT used federal funds. One state DOT we interviewed had successfully used FHWA funds, Airport Improvement Program grant funds (the airport was included in the study), and contributions from the other local partners.

Management of the Study Process

Most state DOTs stated that it was critical to include senior management in the study process as early as possible, including ensuring that they understood the study's legal and statistical challenges. This helped to ensure that the process was adequately funded and realistic timelines were developed.

A few agencies have hired outside consultants to assist with drafting the RFP or managing the study process. One state DOT paid $20,000 to a supportive services consultant to assist with the drafting process and to respond to the DBE community's desire to participate in the study. That consultant surveyed stakeholders about their preferences for what to include in the study and incorporated those concerns into the RFP.

A multi-agency statewide study that included the state DOT hired an outside study manager for approximately $100,000 over 18 months. All agencies strongly stressed that a (close to) full-time study manager was necessary to ensure smooth and timely completion. If an outside study manager is used, it is important that he/she be vested with the bureaucratic authority to obtain responsiveness from other state DOT personnel and prime contractors. An outside manager who is unfamiliar with key actors may encounter significant difficulties securing their assistance with the study.

One DBE director suggested that the state DOT also consider hiring a consultant to assist it to communicate with the department's outside constituencies about the study. While

the study consultant can provide information to outside parties, it is important that the perception of the firm's objectivity not be compromised by "reporting" to groups or persons with vested interests in the study's outcome. This state DOT reported that an excellent communications strategy would have helped to increase inclusion in the study's anecdotal data-gathering efforts and stakeholders' familiarity with the legal and administrative challenges of the process. No cost estimate was available, as this approach was not in fact pursued by the department. However, one state DOT reported that it used internal personnel to conduct extensive community outreach and Web site maintenance.

If no outside assistance is procured, the state DOT must "budget" internally for a study manager and communications strategy. It would be prudent to allocate the time, if not the salary, of a full-time experienced employee to oversee the study process.

In-House Studies versus Outside Consultants

Despite the potential for reducing study costs, conducting disparity or availability studies using primarily state personnel is not recommended because of the possible appearance of bias in favor of the agency's decisions. No state DOT conducted a study using its own personnel. While there were some public entities that produced studies in-house in the early days after *Croson,* governments quickly learned that outside consultants were needed to provide the type of independent statistical and economic expertise that courts would require. While it would obviously be less costly in the short run to conduct the study using state staff already on payroll, the risk of such a report being rejected by the courts as biased is equally obvious.

State personnel have, however, been used to calculate DBE goals using the nonstudy methods listed in 49 C.F.R § 26.45 (c).[179]

Availability Studies versus Disparity Studies

One critical factor in determining the cost of studies is which analytical elements are included. Availability studies, because they typically lack the compelling interest components, cost less. Forgoing disparity testing on the state DOT's own contracts and subcontracts, eliminating the gathering of statistical evidence of economy-wide discrimination, not gathering anecdotal or other qualitative evidence of discrimination, and not including a review of the state DOT's race- and gender-neutral policies will significantly reduce study costs. One state DOT outside the Ninth Circuit has successfully relied solely upon an availability study.[180]

For these reasons, we found that availability studies generally cost under $400,000, and potentially less if complete subcontract data are available. According to our interviews, costs for disparity studies ranged from a low of approximately $405,000 for a smaller DOT to $1,500,000 for a large state DOT.

Collection of Subcontracting Data

A second significant cost element of studies is the collection of data on first-tier subcontracts. This cost element plays a role in both disparity and availability studies since it is a prerequisite for developing a defensible estimate of DBE availability.[181]

One of the first tasks for a state DOT considering a study is to evaluate the state of its existing subcontract records. Often, records on non-DBE subcontracts are less complete than those on DBE subcontracts, and even absent in their entirety. A good disparity or availability study will reconstruct the missing data for at least a sample of relevant contracts, and this reconstruction is one of the most significant single elements in a study. A study that includes good subcontract records is less vulnerable if challenged than one that does not.[182]

If such subcontract data are complete, then a study cost reduction of 15%–20% may be achieved.[183] If such data are missing or incomplete, before commissioning a study the state DOT itself can reconstruct the missing data.[184] If done correctly, similar cost savings can then be achieved when the state DOT commissions a study. However, all DBE directors we interviewed specifically mentioned problems with data collection related to subcontracts. One state DOT attempted to save money by gathering the missing data itself, but reported that the effort did not work out well and strongly urged others to have the consultant conduct all data gathering.

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[179] *E.g.,* dividing the number of firms in a state DOT's DBE Directory by the *County Business Patterns* data or the use of bidder's list information.

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

[181] Information on how the state DOT's contract and subcontract dollars are distributed across different industries and geographic locations is used to provide weighted availability statistics, which, in turn, are important to support assertions that an agency's statistics are narrowly tailored. *See supra* at Chapter Three, Determination of Relevant Product Market.

[182] *E.g., Contractors Association of Eastern Pennsylvania, Inc. v. City of Philadelphia,* 91 F.3d 586, 601 (3rd Cir. 1996) (the subcontracting analysis was insufficient because the review of records by a city employee was "cursory" and the study did not include subcontracting. There was not a "firm basis for inferring discrimination by contractors in the subcontracting market during the period," and therefore insufficient evidence for a subcontracting goal).

[183] Detailed cost data for different consultants could not be obtained. This estimate is based on our own experience in conducting studies.

[184] The particular issues involved in reconstructing missing or incomplete subcontract records are discussed in detail in Appendix A.

In addition to the costs associated with reconstructing *past* subcontract records, state DOTs are well advised to take steps to ensure the collection of *current and future* data.[185] Once procedures have been adopted for subcontract data collection, appropriate software for maintaining and tracking this data can be developed or purchased. There are several contract compliance software products on the market that make ongoing data gathering easier and facilitate production of required annual U.S.DOT submissions and other reports. Since disparity and availability studies must be repeated periodically (every 5 to 6 years is recommended),[186] investment in subcontract data collection procedures and software will generate cost savings on future studies.

Finally, a state DOT should provide complete and accurate information to potential proposers so that proposed cost estimates will accurately reflect the costs of reconstructing missing data. To the extent that the department does not provide full information, proposers are likely to assume the worst and price accordingly.

Subrecipient Data

State DOTs routinely pass-through a portion of their federal-assistance dollars to other state and local agencies. These dollars support activities such as construction, design, planning, and transit and airport operations.

State DOTs should consult with their regional modal administrations to confirm which of their subrecipients, if any, are responsible for reporting DBE activity; this will ensure that those subrecipients will be included in the scope of any availability or disparity study. Further, the subrecipients' contracting and subcontracting data should conform to the same requirements presented above for the state DOT's direct contracting and subcontracting data. Any additional effort required to acquire the subrecipients' data and bring it up to the same quality level as the state DOT's data should be factored into the estimated cost and timeframe of any study.

Examples of Costs for Other Analytical Elements

Verification of Business Owner Race and Gender

As previously illustrated, the race and gender of business owners obtained from various directories and lists is often in error.[187] It is therefore important to verify race and gender assignments by contacting a sample of business owners directly. Such "misclassification" surveys, typically done by phone, are costly due in part to the sample sizes required for reliable results.[188] Studies that include such verification procedures will cost more than studies that do not. Studies that do not, however, may prove more vulnerable to the charge that they are not sufficiently narrowly tailored.

Nonrespondent Surveys

Similarly, most studies conduct one or more mail surveys as part of their analyses. Such mail surveys typically achieve response rates of 5%–15%, due largely to the fact that participation is voluntary. To have confidence in any inferences drawn from such a survey, a competent social scientist will test whether the respondents were representative of the entire survey sample, that is, some comparison of respondents and nonrespondents is required. Such nonresponse testing is also typically conducted over the telephone and, like the misclassification surveys, is relatively costly. However, also like misclassification surveys, studies that ignore nonresponse bias may find their mail survey results disregarded, if challenged.

Multi-Jurisdiction Studies

One potential source of costs savings is to conduct a study jointly with other government agencies. This approach is most cost-effective when there is significant overlap in the geographic and product markets of the participating agencies.

However, because state DOT contracting can differ substantially from that of governments like cities and counties, geographic and product markets do not overlap as much as might be desired. In these cases, the savings will be less than would be the case with more compatible study partners.

There are, however, significant potential cost savings in partnering with other compatible governments, particularly for disparity studies. Costs for building the availability database, conducting the economy-wide statistical analyses, and gathering the anecdotal evidence, can all be readily prorated among the participants. State DOTs must, however, weigh the inevitable delays and complications that will result from more participants in the process against the potential cost savings.

One way to offset these is to reach an understanding before issuing the RFP regarding the responsibilities of each participating agency to provide its available contracting and

[185] *See* Appendix A, Methods for Collecting Subcontract Data in anticipation of Future Studies.

[186] Five to six years is our recommendation as a rule of thumb based on the study period length documented in Table 5. A shorter period than this may lead to unnecessary expenditure of public funds on disparity or availability studies, while a period much longer than this runs the risk of a court, in a constitutional challenge to a DBE Program, finding that the data placed into evidence are "stale."

[187] *See supra,* Tables 7–10.

[188] Samples must typically be stratified by at least race, gender, and industry group.

subcontracting data to the consultant in a timely manner. Delay on the part of one agency can easily slow the study for all. Large differences between agencies in the state of their subcontract records can have a similar impact. Potential partners are advised to investigate these differences before agreeing to collaborate on a study.

Another tip when conducting multi-agency studies is to appoint a single person to manage the study on behalf of all participating agencies, as opposed to having a separate study manager at each agency. A single project manager can more easily streamline communications with the consultant and with personnel at each agency.

Only one state DOT has directly collaborated with other government entities to conduct its study, which included the state's largest city and the state's railroad authority. Other departments reported that it was not feasible for political or administrative reasons to collaborate with other governments. For example, one Ninth Circuit state DOT with an existing availability study conducted extensive outreach to the state's largest city, county, and airport and transit agencies to help pay for additional elements of disparity analyses, but was unable to reach an agreement.[189]

Multi-Agency State Studies

Some state DOTs have participated in statewide studies that included all or most other state agencies. This has the advantage of sharing costs among numerous state departments. However, it is critical in such statewide studies to ensure that the special requirements of Part 26 are met, such as the need to determine the agency's spending with DBEs through race-neutral measures and the need to consider federally assisted spending separately. A separate report for the state DOT is also recommended.

As with partnering for multi-jurisdictional studies, the state DOT must consider the likely increase in the time to conduct a multi-agency study and the diffusion of focus against the savings to the department. Several statewide studies that we reviewed for possible inclusion in this report were rejected because the statistical analyses of the state DOT did not include or did not identify its federally assisted contracts.

Model Study Scope of Work

We recommend that RFPs require the proposers to fully explain their approach to all components described in this report. Proposals should provide a complete, detailed methodology that reflects a thorough understanding of the case law and presents sound economic analyses that will meet strict scrutiny and the regulatory requirements.

For availability studies, the following major elements should be included:

- An empirical assessment of the appropriate geographic market relevant to an agency's contracting activity;
- An empirical assessment of the appropriate product markets relevant to an agency's contracting activity;
- An estimate of the fraction of businesses within the agency's geographic and product markets that are owned by DBEs (*i.e.,* "availability");
- To the extent necessary to implement Step 2, econometric analyses of DBEs' success relative to non-DBEs' (*e.g.,* in business formation rates and in business owner earnings), and holding nondiscriminatory factors constant, in the market area surrounding the agency in question (*i.e.,* "private sector disparity ratios");
- To the extent necessary to implement Step 2, econometric analysis of DBEs' access to capital and credit relative to non-DBEs', holding balance sheet and creditworthiness information constant; and
- Qualitative and/or quantitative analysis of the effectiveness of race-neutral measures to address low DBE participation in public contracting.

For disparity studies, the following major elements should be included:

- A legal review discussing *Croson, Adarand,* and subsequent case law and their impact;
- An empirical assessment of the appropriate geographic market relevant to an agency's contracting activity;
- An empirical assessment of the appropriate product markets relevant to an agency's contracting activity;
- An estimate of the fraction of businesses within the agency's geographic and product markets that are owned by DBEs (*i.e.,* "availability");
- An estimate of the percentage of all prime contract and subcontract dollars earned by DBEs (*i.e.,* "public sector utilization");
- A statistical comparison of public sector utilization to availability (*i.e.,* "public sector disparity ratios");
- Econometric analyses of DBEs' success, relative to non-DBEs' (*e.g.,* in business formation rates and in business owner earnings), and holding nondiscriminatory factors constant, in the market area surrounding the agency in question (*i.e.,* "private sector disparity ratios");
- Econometric analysis of DBEs' access to capital and credit relative to non-DBEs', holding balance sheet and creditworthiness information constant;

[189] Neither the airport nor the transit agency has conducted studies to date. They continue to implement all race-neutral DBE Programs.

- Qualitative evidence from DBEs and non-DBEs concerning experiences doing business or attempting to do business in the relevant marketplace, including experiences of institutionalized discrimination and/or individual disparate treatment, gathered through surveys, personal interviews, and/or public hearings (*i.e.,* "anecdotal evidence");
- Qualitative and/or quantitative analysis of the effectiveness of race-neutral measures to address low DBE participation in public contracting; and
- Review of existing policies and procedures related to DBE participation, with recommendations for changes/revisions designed to improve the effectiveness of the program and increase legal compliance.

Additionally, both types of studies should be supervised by professional social scientists (*e.g.,* economists and/or statisticians) who can be qualified as expert trial witnesses under the exacting standards of the Federal Rules of Evidence to testify about the study's data, methods, and findings.

Tips for a Successful DBE Disparity or Availability Study RFP Process

Drafting the RFP Document

- Immediately and directly involve state DOT legal counsel in all phases of the RFP process, from drafting the RFP to selecting the consultant. We recommend that state DOTs consider placing the procurement and conduct of the study under the supervision of a senior attorney in the legal department. Not only will this ensure that critical legal support is provided throughout the process but also the attorney-client privilege may attach to many communications. A senior attorney is recommended because of the complex and complicated nature of the legal and administrative issues involved.
- Develop a study team, whose members should be comprised of the following agency functions:
  – Law,
  – Purchasing and/or contract administration,
  – Public works/engineering or equivalent,
  – Finance/accounts payable or equivalent,
  – Information technology,
  – M/W/DBE program administration, and
  – Communications and/or external affairs.

This team may be responsible for evaluating proposals, as well as overseeing the study process. Additional state DOT personnel may be included. We caution against including persons external to the agency, such as representatives of contractor groups or community organizations, because of the highly specialized nature of the study and the perception of possible bias or conflicts of interest.

- Keep the RFP simple. Ask for the proposers' best professional judgment, supported by the case law, of what constitutes a defensible study.
- Do not commission a study unless sufficient funds are available to fund it properly. A poorly funded study will be of little or no value in supporting a state DOT DBE Program and could, in fact, do actual harm.[190]
- Do not separate the conduct of the study into "phases." Many study approaches are integrated. An "availability" phase is not readily separable from a "disparity" phase, as both share many common elements (building project database, relevant market determination, etc.). Moreover, important types of statistical testing are done through regression analysis where disparities and their determining factors are assessed simultaneously. Asking for a "disparity" phase and an "if there is a disparity, determine the causes of the disparity" phase therefore requires a separation that is not possible with regression analysis. DBE directors who used this approach strongly recommended against it because it just increased the time to engage the consultant and complete the study with no benefit to the study process or product.
- Allow at least 12 months for the study to be completed. Allow more time in the case of multi-agency studies. The most time-consuming component is usually the collection of adequate contract and subcontract data. Unless there is active litigation, quality is more important than speed.
- Do not mandate regular face-to-face meetings. They are costly and time consuming, and with the technologies available, usually unnecessary. Requiring such meetings will increase the cost and the time required to perform a study.
- Put all required attachments in one place in the RFP and include a complete list of all attachments required in the proposal.
- Make the current DBE Program (and any programs for non-federal-aid contracts) available electronically.
- Provide a due date for questions, compile all questions and answers, and email them to all who submitted questions. To ensure that answers are provided in sufficient time to address proposers' concerns, allow at least one week between the provision of answers and the proposal due date.
- Include information in the RFP about the number of and dollar value of relevant agency contracts. Provide information regarding the format and availability of the contract data. Include as much information as possible regarding the number, dollar amounts, and types of contracts, as well as the availability (hard copy, electronic, etc.) of the contract data for prime contractors and subcontractors.

[190] *See W. H. Scott Construction Co., Inc. v. City of Jackson, Mississippi,* 199 F.3d 206 (5th Cir. 1999) (City was not free to ignore the results of its disparity study).

- If a DBE goal is set for the study, ensure that it reflects a realistic assessment of the amount of work likely to be done by a local DBE that lacks direct study experience. Provide a list of relevant potential DBE subcontractors if the UCP Directory is not easily searchable.
- We advise against limiting pages in the proposal. The issues about study methods are complex and do not lend themselves well to overly truncated presentations. The state DOT will be served better by receiving more information rather than less about the approach and the experts.
- Ask for and check consultant references. Contact agencies for which studies were conducted that are not listed as references.
- Request at least one sample study and have the state DOT legal counsel review it for legal sufficiency.
- Do not separate the process of procuring the study into phases. Do not first require a Statement of Qualifications and then later require a Proposal. In every instance we reviewed that used this approach, the information requested of the bidders was, in general, the same in both documents. Requiring what amounts to double proposals is time consuming and costly.
- Proofread the RFP. Many questions and problems will be eliminated with careful proofreading from the perspective of a proposer, including incorrect information, such as for the time frame for study and period for study performance; unnecessary requirements, such as attachments and information that are obviously for construction or engineering projects; and serious redundancy, such as requiring the same information be provided in more than one place in the proposal. This will also reduce the state DOT's burden of responding to questions and evaluating proposals.

Conducting the RFP Process

- Directly notify the relatively small pool of consultants that performs disparity studies of the issuance of the RFP. It is not reasonable to expect consultants to register with every agency or search hundreds of public websites every day. Failure to disseminate the RFP will reduce the competition and breadth of choices for the state DOT.
- Establish the due date for proposals on a Wednesday, Thursday, or Friday. Proposals will be submitted from consultants all over the country. This necessitates the use of overnight delivery services. Because unforeseen circumstances may prevent packages from being delivered overnight, prudence counsels that the proposal be shipped two business days before the due date. If the due date is a Monday or Tuesday, this can essentially eliminate three days from the time the consultant has to work on preparing its best offer.
- Proposals should be due after 2:00 p.m. local time. This will lead to fewer problems with overnight delivery services.
- Provide at least four weeks from the date of issuance for the response.
- Include face-to-face interviews as part of the evaluation process for finalists. Not only is the state DOT hiring a study consultant but also potentially an expert witness for litigation. Face-to-face interviews permit the state DOT and its lawyers to evaluate the consultant's ability to explain the study data, methods, and findings and the team member's experience and demeanor for litigation.
- If you plan to conduct interviews, propose an anticipated timeline in the RFP and do your best to stick to it. This will help avoid scheduling difficulties later on.
- If changes or amendments to RFP must be made within one week before the due date for proposals, then change the due date of the RFP. Give proposers sufficient time to revise their submissions.
- Do not impose a mandatory pre-proposal meeting attendance requirement. Written questions and answers are the most effective way to address proposers' concerns.
- If state procurement and records laws permit, make evaluation documents available to bidders after the final selection without filing Freedom of Information Act or similar requests. Doing this in a timely manner benefits the DOT because material errors have been discovered regarding the evaluation and award process once the evaluation documents were made available to a bidder. Avoiding this type of situation is in the state DOT's best interest.

APPENDIX A

Importance of Comprehensive Subcontract Data Collection

Introduction

Twenty years after *Croson,* many public agencies with race-conscious subcontracting programs (including state DOTs) still do not systematically collect and maintain adequate subcontracting data. Although state DOTs maintain records on their DBE subcontracting, many do not maintain comparable records regarding non-DBE subcontracting. Although non-DBE subcontract data are not necessary to produce the standard types of DBE utilization reports requested by U.S.DOT or the DOT's executive leadership, which include, for example, only that share of construction dollars awarded during a given time to DBEs, such data are critical to producing a high-quality and legally defensible availability or disparity study.

Non-DBE Subcontract Data Is Just as Important as DBE Subcontract Data

In contrast to such limited reporting, a high-quality disparity or availability study, among other things, should document the share of all construction dollars awarded *by detailed industry* during a given period. In addition, a disparity study should detail the share of dollars in each detailed industry awarded to DBEs. Several courts have warned defendants about the use of overly aggregated statistical comparisons in disparity studies because such aggregation can provide misleading results.[191] This phenomenon is known as Simpson's Paradox. Since many industries are only represented in state DOT projects through subcontracting, knowledge of non-DBE as well as DBE subcontract awards is imperative when building a project database for use in a disparity or availability study.

An example may illustrate the point. Consider the construction contract shown in Table A1, below. The overall value of the contract is $12 million. The total value of the DBE subcontracts is $1 million and the total DBE share is therefore 8.3%. For a disparity study, however, the consultant would also want to know the dollar share accounted for by each NAICS code and the DBE share for each code. The former is needed in order to calculate properly weighted availability estimates. The latter is needed in order to calculate utilization and disparity statistics. These NAICS shares are shown in the last six rows of Table A1. This exercise should be repeated for each contract in the project database.

Some studies have ignored the problem of missing subcontract data. For example, one study states bluntly:

> The utilization analysis of [M/WBEs] . . . does not include their utilization as sub-contractors or sub-consultants. . . . [We were] unable to secure sub-contracting/sub-consulting dollars from the actual contract files during the data collection effort, simply because the contract files do not contain the data relative to sub-contracting or subconsulting activities. . . . This . . . is striking in that . . . sub-contracting opportunities are often where much of the utilization of M/WBEs is found.

Another study states:

> The data made available to [us] . . . contain primarily reports of subcontracts involving DBE participation, as the overall percentage of subcontracting (less than 8 percent) is significantly lower

[191] *See Engineering Contractors Association v. Metropolitan Dade County,* 943 F. Supp. 1546, 1560 (S.D. Fla. 1996) ("The MRD study presents . . . data aggregated for all capital construction contracts (i.e., SIC 15, 16 and 17 together) and disaggregated by SIC category. . . . The Court will focus primarily on statistical analyses of the disaggregated data because these data are more likely to reflect the realities of competition in the construction industry. Firms that build hospitals (SIC 15) do not compete for County contracts with firms that lay asphalt (SIC 16) or firms that install plumbing (SIC 17), therefore comparisons between these disparate entities would not produce a reliable portrait of County contracting trends."). Simpson's Paradox has also been used to criticize combining highway districts together into statewide statistics. *See Phillips & Jordan, Inc. v. Watts,* 13 F. Supp. 2d 1308, 1315 (N. D. Fla. 1998); *Thompson Building and Wrecking Co. v. Augusta,* 2007 U.S. Dist. LEXIS 27127, at * 8 (S.D. Geo. March 14, 2007) (criticizing combining MBE statistics with WBE statistics).

Table A1. Subcontract data collection example.

Contractor Type	Bid Package Dollar Amount	NAICS	DBE
Prime	$9,500,000	23621	
Subcontractor	$750,000	23621	Yes
Subcontractor	$300,000	23621	
Subcontractor	$50,000	23731	
Subcontractor	$50,000	23731	
Subcontractor	$200,000	23731	
Subcontractor	$100,000	23731	Yes
Subcontractor	$30,000	23811	
Subcontractor	$700,000	23821	
Subcontractor	$140,000	23821	Yes
Subcontractor	$10,000	23899	Yes
Subcontractor	$60,000	23899	
Subcontractor	$160,000	33599	
TOTAL	$12,000,000		

NAICS	Dollar Share	DBE Share
23621	87.6%	7.1%
23731	3.3%	25.0%
23811	0.2%	0.0%
23821	7.0%	16.7%
23899	0.6%	14.3%
33599	1.3%	0.0%

than subcontracting for most state Departments of Transportation (between 40 and 45 percent).

And, another states:

[D]ata were missing [pertaining] to subcontract awards to Non-DBEs. This study disaggregated all contracting activity by prime and subcontracting categories. As such, it would have been helpful to have information on attainments by Non-DBE subcontractors.

In the first study, no subcontract data were available from the client. In the second and third studies, the only data available from the client were for prime contracts that happened to have DBE subcontractors. While it is apparent that all three studies recognized the importance of capturing complete subcontracting activity data, the problem remained unaddressed in the final reports. Any statistical conclusions resulting from such methods may be rejected by the courts since

the DBE program operates through the use of race-conscious contract goals for subcontracting. A subcontracting program requires subcontracting proof. In our view, disparity or availability studies that ignore missing subcontract data are unlikely to withstand strict scrutiny.

Therefore, agencies must educate themselves before commissioning a study regarding their own data limitations and ensure that the data collection method to be implemented satisfactorily addressed the issue of missing subcontract data and that a realistic allocation of resources is included in the study budget to address the issue.

Subcontract Data Allow Detailed Industry Statistics

As illustrated by Table A1, without complete subcontract data it is not possible to carry out statistical analyses by detailed industry categories. For state DOTs, one of the most important uses of detailed industry statistics is to provide dollar-weighted estimates of DBE availability.[192]

As shown above in the sample contract in Table A1, far more dollars were expected to be spent in NAICS 23621 than in NAICS 23821 or 23811. Consequently, to set an overall DBE goal for this particular contract, the state DOT would weight DBE availability in NAICS 23621 more heavily than availability in NAICS 28321 or 23811. Exactly how much weight to give each detailed industry availability estimate would be determined by the proportional distribution of dollars across each relevant NAICS industry.

Another, simpler example appears in the U.S.DOT's DBE Program guidance: "if 90% of your contract dollars will be spent on heavy construction and 10% on trucking, you should weight your calculation of the relative availability of firms by the same percentages."[193]

Despite some court rulings warning against the dangers of Simpson's Paradox with respect to over-aggregation by industry, a substantial share of studies still fail to employ detailed industry weights. Of the 28 state DOTs that have performed or are currently performing a disparity or availability study, only three of the eight consultants involved used detailed industry data—*i.e.,* three-digit NAICS/two-digit SIC or higher—to construct weighted availability estimates.[194]

Weighted DBE availability estimates are important because they allow state DOTs to meet the requirement that their annual DBE goals be narrowly tailored to their specific contracting circumstances. Weighted estimates are further important because narrow tailoring also requires DBE goals be set on a contract-by-contract basis.[195] For example, a new road construction or a highway maintenance contract may have very different opportunities for DBE participation than an underground tunnel project. To set those goals, the agency needs to have reliable estimates of DBE availability for all detailed industry categories that may be involved in a project. State DOTs should require such detailed data be included and ensure that sufficient resources are allocated to the study to create it.

Methods for Collecting Subcontract Data in Anticipation of Future Studies

Compensating for missing subcontract data is one of the main factors affecting the cost of high-quality disparity and availability studies. One of the most important ways to reduce costs of future studies is to systematically collect and maintain complete subcontract data.

The most effective and least burdensome method is to require prime contractors and consultants to submit, either as part of their bid packages or at some other point prior to the agency issuing a Notice to Proceed, a standardized form listing all proposed first-tier subcontracts, both DBEs and non-DBEs. This form should clearly identify the prime contract and prime contractor and should include, at a minimum, the following information:

- Full business name of the subcontractor;
- Subcontractor street address, city, state, and zip code;
- Subcontractor telephone number;
- Subcontractor contact person and title;
- Anticipated dollar amount of the subcontract;
- Short description of the services to be performed and/or goods to be supplied; and
- Race and gender of subcontractor ownership, if known.

Additionally, the prime contractor should be periodically required during contract performance to certify that no material changes have been made to the proposed roster of subcontractors or subcontract amounts.[196] If change orders have been issued to any subcontractors, if new subcontractors have been added, or if original subcontractors have been dropped, then this should be noted and the pertinent details provided. At the final pay application, the prime contractor

[192]Detailed industry statistics are also important in calculations of utilization and disparity in disparity studies.

[193]U.S.DOT, OSDBU (n.d., Section II.F).

[194]Two of these three consultants, however, could not be evaluated because their studies are not yet complete and they have no other completed studies on record.

[195]49 C.F.R § 26.51(d) and (e); *see also* Chapter Two, Review of Existing Studies, *supra.*

[196]This could be done at each pay application or each quarter.

should be required to certify the final amounts actually paid to each subcontractor.[197]

Beyond this, the state DOT may wish to consider working with its IT personnel or engage an outside consultant to develop methods to maintain this data electronically for general program management use. The collected information can be integrated into existing data collection systems, or alternately, there are several specialized software products on the market designed to facilitate this process for DOTs and other public agencies.

Methods for Addressing Missing Subcontract Data for Current Studies

Obtain Missing Data Directly from Prime Contractors and Consultants

If the state DOT has not collected and maintained this data, it will be necessary to either request the information directly from each relevant prime contractor or consultant or reconstruct the required information by other means. If all of the necessary subcontract data have not been maintained, it will probably not be cost-effective to recreate it all. It may be more feasible to recreate the missing subcontract information for a statistically representative sample of prime contracts. It is critical to ensure that the samples are properly drawn by trained social scientists.

Once a sample is selected, the required subcontract information must be requested directly from the prime contractors. State contracts usually include audit provisions allowing the state to obtain this information from the prime contractor. This is very useful not only for conducting studies but also for program monitoring, so we suggest that all state DOT contracts include such provisions in the standard terms and conditions for construction and consulting contracts. Records retention requirements should apply for at least five years.

Below is sample language from an actual contract:

"AUDIT RIGHT AND RETENTION OF RECORDS

AGENCY shall have the right, upon reasonable advanced notice and during ordinary business hours, to audit the books, records, and accounts of CONTRACTOR and its subcontractors that are related to this Project. CONTRACTOR and its subcontractors shall keep such books, records, and accounts as may be necessary in order to record complete and correct entries related to the Project. All books, records, and accounts of CONTRACTOR and its subcontractors shall be kept in written form, or in a form capable of conversion into written form within a reasonable time, and upon request to do so, CONTRACTOR or its subcontractor, as applicable, shall make same available at no cost to AGENCY in written form.

CONTRACTOR and its subcontractors shall preserve and make available, at reasonable times for examination and audit by AGENCY, all financial records, supporting documents, statistical records, and any other documents pertinent to this Agreement for the required retention period of the ____ Public Records Act, Chapter ____, ____ Statutes, as may be amended from time to time, if applicable, or, if the ____ Public Records Act is not applicable, for a minimum period of five (5) years after termination of this Agreement. If any audit has been initiated and audit findings have not been resolved at the end of the retention period or three (3) years, whichever is longer, the books, records, and accounts shall be retained until resolution of the audit findings. If the ____ Public Records Act is determined by AGENCY to be applicable to CONTRACTOR and its subcontractors' records, CONTRACTOR and its subcontractors shall comply with all requirements thereof; however, no confidentiality or non-disclosure requirement of either federal or state law shall be violated by CONTRACTOR or its subcontractors. Any incomplete or incorrect entry in such books, records, and accounts shall be a basis for CONTRACTOR disallowance and recovery of any payment upon such entry.

CONTRACTOR shall, by written contract, require its subcontractors to agree to the requirements and obligations of this Section."

Prime contractors are more likely to comply if the data request includes a letter from the Governor, the Director of Transportation, or other senior official explaining the importance of the data collection effort to the state and encouraging prime contractors to cooperate. Follow-up telephone calls must be made to nonresponsive prime contractors, and they are most effective when they are made by the state. This is because the state has a pre-existing and in many cases an ongoing relationship with the prime contractor while the disparity or availability consultant does not. While the initial round of follow up can be made by the consultant if necessary, increasingly higher-level state DOT personnel must become involved for those prime contractors who fail to provide the requested information. Even under the best of circumstances, this entire process can be costly and time-consuming. The necessary staff resources to conduct this follow up should be planned for by the state if it is considering commissioning a disparity or availability study and knows that it will need to supplement its existing subcontract record.

The combination of contract audit provisions, a letter, and follow-up communications will typically achieve a response rate accounting for 75% or more of the contract dollars in the sample. Extreme cases have required more stringent methods, such as auditing the prime contractor's books or withholding progress payments on current work, to achieve cooperation.

Finally, the longer the time from award, the more difficult it will typically be for the prime contractor to provide the

[197] If the state DOT makes local assistance grants to other public entities in the state, and the contracts funded with such grants are subject to the DBE Program then local recipients should be required to collect and maintain the same level of prime contract and subcontract data as the state DOT.

requested information. In our experience, response rates for contracts that are more than 5 years old are substantially lower than those for more recent projects. Where this sampling method must be employed, a study period longer than 5 years may not be feasible or supportable, and is probably not necessary.

Impute Missing Data Using Bid Tabulations, Pay Items, or Similar Records

If subcontract data are missing and obtaining the information directly from the prime contractors is not feasible, it is still possible to create a proxy for the missing information using bid tabulations, pay items, or similar records. However, these methods do not allow for the empirical determination of the geographic market area and are therefore inferior to and less defensible[198] than obtaining data directly from the prime contractors. Moreover, this approach is problematic for disparity studies because of the uncertainty introduced into utilization and disparity statistics.

We have constructed such proxies for two clients, using somewhat different methods based on the data that were available.

Case 1: Representative Bid Tabulations. In collaboration with engineering staff from a major metropolitan transit agency, we first identified the major types of contracts that were undertaken in a typical year: (1) building construction, (2) heavy elevated construction, and (3) signal construction. Next, the agency provided detailed cost estimates associated with nine upcoming representative construction projects—three building projects, three elevated heavy construction projects, and three signal construction projects. We then worked with agency engineering staff to assign detailed industry codes to each major task and task dollars associated with each upcoming project.

In this manner, it was possible to produce the necessary detailed industry estimates of DBE availability for use in setting contract goals and the overall dollar-weighted DBE availability estimates for use in annual goal setting.

Case 2: Complete Pay Items. To determine the product dimension of the large state DOT's construction contracting, we worked with agency staff to identify all construction contracts awarded during the study period. The agency then provided detailed pay item-level cost estimates for each contract. Ultimately, more than 3,000 contracts consisting of almost 135,000 separate pay items and totaling almost $2.5 billion were included in the study.

We matched each pay item number with its associated section from the agency's *Standard Specifications.* Once all pay item numbers were linked with a specific section, we calculated a dollar-based weight to apply to each section. These weights were based on adjusted dollar amounts (*i.e.,* original award amounts plus all change order amounts). Next, we assigned detailed industry codes to each section of the specification manual. Each section could be assigned multiple detailed industry codes, depending on that section's scope of work. For sections assigned more than one detailed industry code, a second set of weights was applied to reflect the importance of each industry code in dollar terms within the section. These secondary weights were assigned with reference to published construction estimating standards.[199]

As a check on the appropriateness of our assignment of detailed industry codes, we asked agency staff to review our selections, and we refined them further based on staff input. For example, we eliminated several industries that agency staff understood to have negligible opportunities for prime contracting or subcontracting. Input from agency staff resulted in several consolidations or expansions of our original industry code assignments.

In this manner, as with the bid tabulation method, it was possible to produce the necessary detailed industry estimates of DBE availability and the overall dollar-weighted DBE availability estimates for use in annual goal setting.

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[198] *Cf.* 49 C.F.R § 26.45(b), requiring that the recipient's goal reflect its market, not the national goal.

[199] *See e.g.,* Richardson Engineering Services, Inc. (2000).

APPENDIX B

Understanding "Capacity"

Large and adverse statistical disparities between minority-owned or women-owned businesses and nonminority male-owned businesses have been documented in numerous research studies and reports since *Croson.*[200] Business outcomes, however, can be influenced by multiple factors, and it is important in disparity studies to examine the likelihood of whether discrimination is an important contributing factor to observed gross disparities.

One traditional way that the linkage between statistical disparities and discrimination has been established is through the introduction of anecdotal or qualitative evidence. If the thrust of such anecdotal evidence is consistent with the disparities observed, the case for the linkage is strengthened.

Another traditional way that the linkage between statistical disparities and discrimination has been established is to consider the size of the observed disparities. That is, the larger the disparity, the less likely it becomes that nondiscriminatory factors can account for the entire difference. It is this straightforward observation that underpins the Equal Employment Opportunity Commission's long-standing "four-fifths rule" for triggering employment discrimination investigations.[201]

Some critics of race-conscious contracting programs and some courts have criticized the validity of the use of the four-fifths rule in combination with anecdotal evidence on grounds that the availability measure in the disparity statistic does not factor in "capacity" or, stated another way, because availability statistics may include firms that are not "qualified, willing, and able" to perform the work. One critic has called this "the most common disparity study fallacy."[202] For several reasons, such criticisms are unwarranted and unscientific.

First, it is helpful to consider an extreme example where discrimination has prevented the emergence of any minority-owned firms. Suppose that racial discrimination was ingrained in the state highway construction market. As a result, few minority construction employees are given the opportunity to gain managerial experience in the business; minorities who do end up starting construction firms are denied the opportunity to work as subcontractors for nonminority prime contractors; and nonminority prime contractors place pressure on unions not to work with minority firms and on bonding companies and banks to prevent minority-owned construction firms from securing bonding and capital. In this example, discrimination has essentially prevented the emergence of a minority highway construction industry with "capacity." Excluding firms based on their "capacity" in a discriminatory market would preclude a government agency from doing anything to rectify the continuing support of such a system with public dollars. There is no recognition that discrimination has prevented the emergence of "qualified, willing, and able" minority firms. Without such firms, there can be no statistical disparity, and without a statistical disparity there can be no remedy. The government is not so helpless in the face of the current effects of discrimination, however.

Now, one might argue that this result is correct. The state should try to prevent the discriminatory impediments, and by doing so it will stimulate the formation of qualified, willing, and able firms. Of course, that ignores the logic of affirmative action. If injunctive relief could always remedy discrimination, affirmative action would never be necessary. Affirmative action is used as a tool for minimizing discrimination against minorities and women without having to regulate decisions at every step along the line.

Second, terms such as "capacity," "qualifications," and "ability" are not well defined in any statistical sense. Should "capacity" be defined as revenues, employment size, or certain bonding limits? Does "qualified" or "able" mean possession of a business license, or certain amounts or types of training or work

[200] *See* Enchautegui, et al. 1996.

[201] The four-fifths rule says that any disparity ratios less than or equal to 0.8 (on a scale of zero to one, zero being perfect disparity and one being perfect parity) indicate the presence of discrimination. See 29 C. F. R. § 1607.4(d).

[202] La Noue 1994, p. 490.

experience? How is a government agency supposed to obtain information about such factors for subcontractors? Also, does the meaning of these terms differ from industry to industry or state to state?

Third, in dynamic business environments, and especially in the construction sector, such "qualifications" can be obtained relatively easily. It is well known that small construction companies can expand rapidly as needs arise by hiring workers and renting equipment. Many general contractors subcontract the majority of a project. Subcontracting is one important source of this elasticity, as has been noted by several academic studies. Bourdon and Levitt, for example, in their study of construction labor markets, observed that:

> "One of the unique aspects of the construction industry is the prevalence of subcontracting. Construction projects are undertaken by a multitude of firms assembled for brief periods of time on a site then disbanded. General contractors can undertake projects of considerable scale without large amounts of direct labor or fixed capital; subcontractors can start with one or two employees and bid only on particularly highly specialized contracts."[203]

Eccles also noted the importance of subcontracting in construction.[204] He found that subcontracting could be explained as a response to uncertainty and complexity. He also found that the larger the project the more subcontracting and the more extensive the market the more subcontracting. Dowall and Barone draw a similar conclusion regarding the use of subcontractors.[205]

Academic studies have also found that, absent discrimination, entry into the construction industry is not difficult. Bourdon and Levitt attribute this to subcontracting opportunities.[206] Eccles observes that entry is easy based on the large number of small firms and that capital requirements for fixed assets are small.[207] Gould, who followed the careers of six construction contractors, also demonstrates ease of entry.[208] He also notes that there is movement between small and large firms not only via subcontracting, but also by experienced staff at larger firms leaving to form smaller new firms. Dowall and Barone, based on a survey of construction firms, note that there is "considerable diversification into other types of construction activities."[209]

The construction market is dynamic, facing boom and bust periods. In response, the "capacity" and "qualifications" of firms in this sector remain highly elastic. Firms grow quickly when demand increases and shrink quickly when demand decreases. Therefore, focusing on the "capacity" of businesses in terms of employment, revenue, bonding capacity, number of trucks, and so forth is wrong as a matter of economics and can potentially obscure the existence of discrimination. To see this, consider using revenue as the measure of qualifications. Revenues simply measure the value of contracts that firms are receiving. If minority-owned and women-owned businesses are subject to marketplace discrimination, their revenues will be smaller than nonminority male-owned businesses because they will be less successful at obtaining work. Using revenues as a measure of DBE availability in contracting is like using pay as a measure of qualifications in an equal-pay case. Revenue, like pay, measures the extent to which a firm has succeeded in the marketplace—it does not measure the ability to succeed.

Fourth, suppose for the sake of argument that DBE availability should be based on detailed "qualifications" or "capacity" measures like bonding capacity, working capital, years of experience, and other items. Where would one obtain the data? The critics do not tell us and neither do the courts. In the *Concrete Works* trial, for example, a plaintiff's expert complained that the availability measures proffered by the defendant's expert, which controlled for detailed industry affiliation and geographic location, nevertheless did not contain the detailed information on firm "qualifications" that he believed were necessary for a proper analysis.[210] However, plaintiff presented no data whatsoever on any detailed qualifications of firms or their owners, the share of minority-owned firms that have achieved a particular bonding capacity, the average amount of capital equipment, amount of working capital, success on previous jobs, or any other possible metric of qualifications. Such information does not exist and would be difficult if not impossible to collect in any systematic fashion. Indeed, plaintiff's expert admitted this in his deposition: "[t]here isn't data in any database that tells you what all those qualifications could be."[211] To the best of our knowledge, no plaintiff's expert has ever introduced statistical evidence demonstrating that accounting for "qualifications" or "capacity" explains away large and statistically significant disparities facing minority-owned or women-owned firms.

Fifth, although it is true that some disparity studies have not controlled for factors such as "capacity" or "qualifications" or "willingness," it is not necessarily their obligation to do so. Although *Croson* provides little guidance on this matter, using a disparity study to consider whether there is a *prima facie* case of disparate impact against certain groups follows a long-established pattern in employment discrimi-

[203] Bourdon and Levitt, 1980.
[204] Eccles, 1981.
[205] Dowall and Barone, 1993.
[206] Bourdon and Levitt, 1980.
[207] Eccles, 1981.
[208] Gould, 1980.
[209] Dowall and Barone, 1993.
[210] La Noue, 1998a, pp. 31–37.
[211] La Noue, 1998b, p. 140.

nation litigation.[212] For example, by demonstrating that gross statistical disparities facing a given group of minority business owners were both large and statistically significant, the burden of proof shifts to the plaintiff, who must then demonstrate that the gross disparities in evidence diminish substantially in size or statistical significance (or both) once other influential factors that are *unlikely to be correlated with discrimination* have been accounted for.[213] As we have already argued, most of these other factors are strongly correlated with discrimination. Moreover, in those cases where plaintiff's experts have had the opportunity and the incentive to counter defendant's disparity statistics with their own statistics regarding "capacity" and "qualifications," they have failed to do so because such data do not exist.

Sixth, even in cases where "qualification"-type factors have been controlled for in statistical analyses, results consistent with business discrimination are still typically observed. For example, as we noted above, Denver demonstrated that large and statistically significant differences in commercial loan denial rates between minority and nonminority firms were evident even when detailed balance sheet and creditworthiness measures were held constant.[214] Similarly, economists using the decennial census microdata have demonstrated that statistically significant disparities in business formation and business owner earnings between minorities and nonminorities remain even after controlling for a host of factors available in the data, including educational achievement, labor market experience, marital status, locational mobility, number of workers in the family, number of children, immigrant status, disability status, veteran status, interest and dividend income, labor market attachment, industry, geographic location, and local labor market variables such as the unemployment rate, population growth rate, government employment rate, and per capita income.[215]

Noted labor economist and former U.S. Secretary of Labor Ray Marshall, in partnership with former Federal Reserve Board Governor Andrew Brimmer, conducted one of the first post-*Croson* disparity studies for the City of Atlanta in 1990. Marshall summarizes well the arguments against using the outcomes of discrimination to measure "capacity":[216]

> The problem of establishing statistical proof of whether or not minority contractors are "qualified, willing and able" is particularly challenging. *Croson* provides limited guidance on this question. . . . Unfortunately, this lack of guidance has made it possible for courts and opponents of [race-conscious contracting] programs to argue that the failure to produce perfect statistical evidence—i.e., timely and highly specific, and methodologies that control for everything except discrimination—invalidates these programs despite the fact that the most reliable statistics and the most appropriate methodologies confirm the persistence of discrimination. Our evidence for Atlanta suggests that even highly qualified black contractors are disadvantaged relative to similarly situated white contractors. . . . It also is hard to know how to define the qualifications of businesses in dynamic markets where expertise can be purchased in the open market and where "virtual" companies are increasingly common. Once contractors are able to obtain contracts, they usually are able to expand their capacity.
>
> In a dynamic business environment, it would be difficult to argue, as some critics have, that qualifications are determined mainly by size. . . . Moreover, as the Tenth Circuit Court of Appeals observed in *Adarand VII,* there is no credible evidence that minority contractors who have been hired under [race-conscious contracting] programs have lacked adequate qualifications.
>
> Nevertheless, analyses of available data for business owners that enable personal characteristics and other factors to be controlled for [generate results that are] compatible with racial exclusion. There therefore is no credible evidence that the large disparities in the utilization of minority contractors can be explained by the lack of qualifications or the unwillingness to contract. Indeed, strong historical, anecdotal and survey evidence . . . demonstrates that minority contractors are more willing than white males to contract with governmental entities, even though they recognize that public contracting is less desirable than the mainstream private sector, where their opportunities are greatly restricted. The greater participation of minorities and women is compatible with the concept of "crowding," mentioned earlier. This is all the more reason not to use participation in these sectors as a measure of discrimination and why broader market areas are more appropriate.

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

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

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[212] *See* Connolly, et al., 2001, chs. 2–3.

[213] In the present context, factors that are uncorrelated with discrimination are referred to as *exogenous* variables. Factors that are correlated with discrimination are referred to as *endogenous* variables. Only exogenous variables should be included as explanatory factors in a statistical model testing for disparities.

[214] *See* Chapter Two, Review of Existing Studies.

[215] *E.g.,* Wainwright, 2000, pp. 85–135.

[216] Marshall, 2002, pp. 81–82

APPENDIX C

Legal Standards for Race-Conscious Government Contracting Programs

The project to develop the National Model Disparity Study and Request for Proposals for state DOTs seeks to address the evidentiary tests created by the federal courts that govern the DBE Program for federally assisted transportation contracts.[217] It is in response to these strictures that disparity studies for public contracts were first conducted. It is therefore crucial to canvass the state of the law to develop national guidelines for the examination of evidence of discrimination in the market for federally assisted transportation contracts.

Specifically, we "prepare[d] an analysis of the federal DBE goal-setting regulations and case law in all federal circuits considering challenges to the constitutionality of the U.S. Disadvantaged Business Program. Identify common themes and key distinguishing factors in state DOT DBE programs that influenced the court ruling on constitutionality."[218]

What follows is our detailed analysis of the case law and regulations relevant to the development of a disparity study model, with the focus on evidentiary issues. We begin with a review of the outlines of strict constitutional scrutiny as applied to public contracts, then discuss the particular cases that have construed how those outlines apply to the DBE program and its implementing regulations under 49 C.F.R. Part 26.

Strict Scrutiny Standard

Since the initial application of strict constitutional scrutiny almost 20 years ago to race-conscious public contracting programs, federal appellate and district courts have developed parameters for establishing a government's compelling interest in remedying discrimination and evaluating whether the remedies adopted to address that discrimination are narrowly tailored. This area of constitutional law is complex and constantly shifting, and cases are usually quite fact bound. The following are the evidentiary tests that state DOTs must consider in evaluating their responses to judicial opinions, as well as to the mandates of Part 26.

City of Richmond v. J.A. Croson Co.[219]

City of Richmond v. J.A. Croson Co. established the broad constitutional contours of permissible race-based public contracting programs. Reversing long-established law, the Supreme Court for the first time extended the highest level of judicial examination from measures designed to limit the rights and opportunities of racial and ethnic minorities to legislation that benefits these historic victims of discrimination. Strict scrutiny requires that a government entity prove both its "compelling interest" in remedying identified discrimination based upon a "strong basis in 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 Richmond's Minority Business Enterprise Plan that required prime contractors awarded city construction contracts to subcontract at least 30% of the project to Minority Business Enterprises (MBEs). A business located anywhere in the country that was at least 51% owned and controlled by "Black, Spanish-speaking, Oriental, Indian, Eskimo, or Aleut" citizens was eligible to participate. The plan was adopted after a public hearing at which no direct evidence was presented that the city had discriminated on the basis of race in awarding contracts or that its prime contractors had discriminated against minority subcontractors. The only evidence before the city council was: (a) Richmond's population was 50% black, yet less than 1% of its prime construction contracts had been awarded to minority businesses; (b) local

[217] 49 C.F.R. Part 26.

[218] Task 1, Scope of Work and Associated Tasks.

[219] 488 U.S. 469 (1989).

contractors' associations were virtually all white; (c) the city attorney's opinion that the plan was constitutional; and (d) general statements describing widespread racial discrimination in the local, Virginia, and national construction industries.

The plaintiff had submitted the single bid to furnish and install specified plumbing fixtures in the City jail. It was unable to meet the 30% set aside because there were no minority suppliers either interested in or able to submit a timely quote in response to *Croson's* request for quotations, in part because the supplier for one of the two designated fixture companies had already quoted directly to Croson. Twenty-one days after bid opening, an MBE submitted a quote for one of the manufacturers that was significantly higher than the prime contractor had used to estimate its bid and higher than quotes received from non-MBEs; it also was not an authorized supplier. Richmond refused to grant a waiver or to increase the contract price to reflect the costs of using the MBE.[220] Croson sued.

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

> [A] state or local subdivision . . . has the authority to eradicate the effects of private discrimination within its own legislative jurisdiction. . . . [Richmond] can use its spending powers to remedy private discrimination, if it identifies that discrimination with the particularity required by the Fourteenth Amendment. . . . [I]f the City could show that it had essentially become a "passive participant" in a system of racial exclusion . . . [it] could take affirmative steps to dismantle such a system.[221]

Strict scrutiny of race-based remedies is required to determine whether racial classifications are in fact motivated by either notions of racial inferiority or blatant racial politics. This highest level of judicial review "smokes out" illegitimate uses of race by ensuring that the legislative body is pursuing a goal important enough to warrant use of a highly suspect tool.[222] It further ensures that the means chosen "fit" this compelling goal so closely that there is little or no possibility that the motive for the classification was illegitimate racial prejudice or stereotype. The Court made clear that strict scrutiny seeks to expose racial stigma; racial classifications are said to create racial hostility if they are based on notions of racial inferiority.[223]

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

> [w]hile there is no doubt that the sorry history of both private and public discrimination in this country has contributed to a lack of opportunities for black entrepreneurs, this observation, standing alone, cannot justify a rigid racial quota in the awarding of public contracts in Richmond, Virginia. . . . [A]n amorphous claim that there has been past discrimination in a particular industry cannot justify the use of an unyielding racial quota. It is sheer speculation how many minority firms there would be in Richmond absent past societal discrimination.[224]

Richmond's evidence was found to be lacking in every respect. The city could not rely upon the disparity between its utilization of MBE prime contractors and Richmond's minority population because not all minority persons would be qualified to perform construction projects; general population representation is irrelevant. No data were presented about the availability of MBEs in either the relevant marketplace or their utilization as subcontractors on city projects. Justice O'Connor speculated that the extremely low membership of minority firms 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.

> 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."[225]

Richmond could not rely upon Congress' determination that there has been nationwide discrimination in the construction industry. Congress recognized that the scope of the problem varies from market to market, and a local govern-

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[220] *Id.* at 481–83.

[221] *Id.* at 491–92.

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

[223] 488 U.S. at 493.

[224] *Id.* at 499.

[225] *Id.* at 510.

ment is further constrained by the Fourteenth Amendment's Equal Protection Clause.[226]

The foregoing analysis was applied only to blacks. The Court then emphasized that there was "absolutely no evidence" against other nonwhites. "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."[227]

Having found that Richmond had not presented evidence in support of its compelling interest in remedying discrimination—the first prong of strict scrutiny—the Court went on to make two observations about the narrowness of the remedy—the second prong of strict scrutiny. First, Richmond had not considered race-neutral means to increase MBE participation. Second, the 30% quota had no basis in evidence, and was applied regardless of whether the individual MBE had suffered discrimination.[228] Further, Justice O'Connor rejected the argument that individualized consideration of plan eligibility is too administratively burdensome.

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

> Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the City of Richmond had evidence before it that non-minority contractors were systematically excluding minority businesses from subcontracting opportunities, it could take action to end the discriminatory exclusion. Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discriminatory exclusion could arise. Under such circumstances, the City could act to dismantle the closed business system by taking appropriate measures against those who discriminate based on race or other illegitimate criteria. In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion. . . . Moreover, evidence of a pattern of individual discriminatory acts can, if supported by appropriate statistical proof, lend support to a local government's determination that broader remedial relief is justified.[229]

While much has been written about *Croson,* it is worth stressing in the context of the Model Study inquiry 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.[230] 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. The "city has not ascertained how many minority enterprises are present in the local construction industry 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."[231]

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.[232]

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

> . . . it 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 (0.67%). There were no statistics presented regarding number of minority-owned contractors in the Richmond area, *Croson,* 488 U.S. at 499, and the Supreme Court was concerned with the gross generality of the statistics used in justifying the Richmond program. There is no indication that the statistical analysis performed by [the consultant] in the present case, which does contain statistics regarding minority contractors in New York City, is not sufficient as a matter of law under *Croson.*[233]

Further, Richmond made no attempt to narrowly tailor a goal for the procurement at issue that reflected the reality of

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[226]*Id.* at 504; *but see Adarand v. Peña,* 515 U.S. 200 (1995) (*Adarand III*) (applying strict scrutiny to Congressional race-conscious contracting measures) (discussed *infra*).

[227]488 U.S. at 510.

[228]*See Grutter,* 539 U.S. at 336–337 (quotas are not permitted; race must be used in a flexible, nonmechanical way).

[229]488 U.S. at 509 (citations omitted).

[230]*Id.* at 502.

[231]*Id.* at 510.

[232]*See, e.g., Northern Contracting, Inc. v. Illinois Department of Transportation,* 473 F.3d 715, 723 (7th Cir. 2007) (*Northern Contracting III*).

[233]*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 of Colorado, Inc. v. City and County of Denver* 36 F.3d 1513, 1528 (10th Cir. 1994) (*Concrete Works II*) (City may rely on "data reflecting the number of MBEs and WBEs in the marketplace to defeat the challenger's summary judgment motion").

the project. Arbitrary quotas, and the unyielding application of those quotas, did not support the stated objective of ensuring equal access to city contracting opportunities. The *Croson* Court said nothing about the constitutionality of flexible subcontracting goals based upon the availability of MBEs to perform the scopes of the contract in the government's local marketplace. The federal DBE Program, as discussed below, avoids these pitfalls. Part 26 "provides for a flexible system of contracting goals that contrasts sharply with the rigid quotas invalidated in *Croson.*"[234]

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 does not, as Justice O'Connor stressed, have to be an impossible test that no proof can meet. Strict scrutiny need not be "fatal in fact."[235]

Preferences for Women

Courts usually review gender-based government decision making under "intermediate scrutiny," which requires that gender-based classifications be supported by an "exceedingly persuasive justification" and be "substantially related" to the objective. Whether affirmative action procurement programs that benefit women are subject to the lesser constitutional standard of "intermediate scrutiny" has yet to be settled by the Supreme Court.[236] Most courts have applied intermediate scrutiny to local program preferences for women,[237] and then evaluated the female preference under that standard.[238] This may be a distinction without meaningful difference, as only one post-*Croson* court has upheld gender-based provisions while striking down race-based measures.[239] Further, as observed by the Seventh Circuit Court of Appeals, applying intermediate scrutiny to gender "creates the paradox that a public agency may provide stronger remedies for sex discrimination than for race discrimination; it is difficult to see what sense that makes."[240]

In any event, courts reviewing the constitutionality of the DBE program have applied strict scrutiny to the gender-based preference.[241] The Ninth Circuit noted that "intermediate scrutiny would not yield a different result than that obtained under strict scrutiny's more stringent standard."[242] Therefore, state DOTs would be wise to meet the rigors of strict scrutiny for gender preferences.

Establishing a "Strong Basis in Evidence" for Local Race-Conscious Contracting Programs

The *Croson* Court's guidance regarding the type of evidence necessary to support a race-conscious contracting program gave rise to the "disparity study." Dozens of cities, states, and other local entities engaged consultants to conduct studies to provide statistical and anecdotal evidence of discrimination against MBEs and WBEs. These studies used various approaches to estimating the availability of "ready, willing, and able" MBEs and WBEs; determining the entity's utilization of such firms as prime contractors and subcontractors on its projects; analyzing whether there was a large and statistically significant disparity between availability and utilization; and gathering anecdotal information about the experiences of MBEs and WBEs on public and private contracts.

Despite millions of dollars spent on such analyses, the results were often econometrically unsound,[243] politically motivated,[244] and legally inadequate. For nearly 15 years after *Croson,* the fed-

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

[235]*See Adarand III,* 515 U.S. at 237.

[236]*Cf. United States v. Virginia,* 518 U.S. 515 (1996) (applying standard of "exceedingly persuasive justification" in striking down Virginia Military Institute's males only admissions policy); *Northern Contracting III,* 473 F.3d at 720 ("IDOT does not argue for a more permissive standard for its gender-based initiatives and therefore we will apply strict scrutiny to the entire program.").

[237]*See, e.g., Associated Utility Contractors of Maryland, Inc. v. Mayor and City Council of Baltimore,* 83 F.Supp.2d 613, 620 (D. Md. 2000) (*Baltimore I*); *but see Brunet v. City of Columbus,* 1 F.3d 390, 404 (6th Cir. 1993), *cert. denied sub nom Brunet v. Tucker,* 510 U.S. 1164 (1994) (applying strict scrutiny).

[238]*See, e.g., Northern Contracting, Inc. v. Illinois Department of Transportation,* 2004 U.S. Dist. LEXIS, 3226, *44 (N.D. Ill., Mar. 3, 2004) (*Northern Contracting I*) (women's status as presumptively socially disadvantaged passes intermediate scrutiny); *W.H. Scott Construction Co., Inc. v. City of Jackson, Mississippi,* 199 F.3d 206, 215 n.9 (5th Cir. 1999); *Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County,* 122 F.3d 895, 907–910 (11th Cir. 1997) (*Engineering Contractors II*); *Concrete Works IV,* 36 F.3d at 1519; *Contractors Association of Eastern Pennsylvania v. City of Philadelphia,* 6 F.3d 990. 1009 (3rd Cir. 1993) (*Philadelphia II*); *Coral Construction Co. v. King County,* 941 F.2d. 910, 930–31 (9th Cir. 1991); *H.B. Rowe, Inc. v. Tippett,* 2008 U.S. Dist. Lexis 100569, *25 (E.D. N.C. 2008).

[239]*Coral Construction,* 941 F.2d at 932 (applying intermediate scrutiny); *cf. Western States,* 407 F.3d. at 991 n.6 (no need to conduct a separate analysis of sex-based classifications under intermediate scrutiny because it would not yield a different result from strict scrutiny); *F. Buddie Contracting Ltd., v. Cuyahoga Community College District,* 31 F.Supp.2d. 571, 584 n.18 (N.D. Oh. 1998) ("If Plain-tiff had made the requisite showing of imminent harm this Court is convinced that . . . CCC's FBE program would likewise fail [as did the MBE program].").

[240]*Builders Association of Greater Chicago v. County of Cook,* 256 F.3d 642, 644 (7th Cir. 2001) (*Cook II*).

[241]*Adarand Constructors, Inc. v. Slater,* 228 F.3d 1147, 1163 (10th Cir. 2000) (*Adarand VII*), *cert. granted,* 532 U.S. 941, *then dismissed as improvidently granted,* 534 U.S. 103 (2001) (applying a compelling interest analysis); *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation,* 345 F.3d. 964, 969 (8th Cir. 2003), *cert. denied,* 541 U.S. 1041 (2004) (same); *Northern Contracting, Inc. v. Illinois Department of Transportation,* 473 F.3d 715, 720 (7th Cir. 2007) (*Northern Contracting III*) (same).

[242]*Western States,* 407 F.3d at 990 n.6.

[243]"Econometrics is the field of economics that concerns itself with the application of statistical inference to the empirical measurement of relationships postulated by economic theory." (p. 1), Greene, William H. 1997. Econometric Analysis, 3rd ed. Upper Saddle River, New Jersey: Prentice Hall.

[244]*See, e.g., Associated General Contractors of America v. City of Columbus,* 936 F. Supp. 1363, 1431–33 (S.D. Ohio 1996) ("political pressure played a role in the city's adoption" of the M/WBE program and the study consultants).

eral courts had struck down almost every local M/WBE program for lacking sufficient evidence of discrimination and often adopting insufficiently narrowly tailored remedies.[245]

Loss of race-conscious remedies led to almost immediate and drastic reductions in the participation of M/WBEs as public subcontractors. For example, the City of Richmond's minority business participation plummeted 93% within the first year after *Croson* enjoined its program.[246] Dramatic declines in minority business utilization also occurred in Atlanta (60%);[247] Fulton County, Georgia (90%);[248] Philadelphia (97%);[249] Hillsborough County, Florida (99%);[250] Tampa (99%);[251] San Jose, California (80%);[252] Cook County, Illinois (70%);[253] and Elyria, Ohio (a suburb of Cleveland) (98%).[254] Large declines were reported as well by officials in Detroit,[255] Columbus,[256] and Washington, D.C.[257]

Similar decreases were observed when DBE utilization mandated on federally assisted transportation projects was compared to M/WBE utilization in the same state on state funded transportation projects without race-conscious goals. Data from 1996 for Arizona, Arkansas, Connecticut, Delaware, Louisiana, Michigan, Missouri, Nebraska, Oregon, and Rhode Island, for example, showed that DBE participation on Federal-aid contracts was several times higher than M/WBE participation on state-funded contracts in the same state. It was 11 times higher in Michigan; over 13 times higher in Delaware; and over 120 times higher in Rhode Island.[258]

Whatever the weaknesses in the disparity studies, it became clear that, absent government intervention, ready, willing, and able minority- and women-owned firms were excluded from subcontracting opportunities on government projects. Even the use by agencies of race-neutral measures such as technical assistance, increased outreach, and "unbundling" large projects failed to ensure equal access to contracting opportunities without DBE goals.[259]

A different approach was clearly necessary if such dramatic declines in public contracting participation by minorities and women were to be forestalled. In 1999, a sea change occurred in the way the issue of contracting affirmative action was approached by its proponents.

First, the U.S.DOT revised its DBE Program in 1998 to address strict scrutiny as required by the Supreme Court in *Adarand v. Peña.*[260] Second, in 1997, a local government finally employed an improved disparity study method, which we refer to as the "law and economics approach," to defend against a challenge to the constitutionality of its M/WBE Program. The City and County of Denver's Program defense relied primarily on expert reports and testimony derived from an economic model of business discrimination.[261] Denver recognized that the proper inquiry is not only whether disparities remain despite the operation of its affirmative action program (a statistical question to which many disparity studies, then and now, continue to limit themselves) but also whether disparities remain when remedial intervention is *not* present in the marketplace, as reflected by M/WBE participation on contracts *without* affirmative action goals in the public sector, the private sector, or both.

The results of this improved approach to conducting disparity research and defending challenges to race-conscious contracting programs have been dramatic for local programs. Denver's M/WBE Program was upheld by the Tenth Court of Appeals, and the Supreme Court declined review.[262] The City of Chicago's M/WBE Program for local construction contracts was also held to meet compelling interest using this framework.[263]

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[245]*See, e.g., Associated General Contractors of Ohio, Inc. v. Drabik,* 214 F.3d 730 (6th Cir. 2000); *Associated General Contractors of Maryland, Inc. v. Mayor of Baltimore,* 83 F.Supp.2d 613 (D. Md. 2000) (*Baltimore I*); *Contractors Association of Eastern Pennsylvania, Inc. v. City of Philadelphia,* 91 F.3d 586 (3d Cir. 1996) (*Philadelphia II*); *Engineering Contractors Association of South Florida,* Inc. v. *Metro. Dade County,* 122 F.3d 895 (11th Cir. 1997) (*Engineering Contractors II*); *O'Donnell Construction Co. v. District of Columbia,* 963 F.2d 420 (D.C. Cir. 1992); *W.H. Scott Construction Co. v. City of Jackson,* 199 F.3d 206 (5th Cir. 1999); *Webster v. Fulton County,* 51 F.Supp.2d 1354 (N.D. Ga. 1999), *aff'd,* 218 F.3d 1267 (11th Cir. 2000).

[246]Brimmer and Marshall Economic Consultants, Inc. June 1990. *Public Policy and Promotion of Minority Economic Development: City of Atlanta and Fulton County, Georgia: Part I.* Washington, D.C., p. 10.

[247]*Id.*

[248]*Id.* at 10–11.

[249]United States Commission on Minority Business Development. 1992, *Final Report* (Washington, D.C.: U.S. Government Printing Office), at 99.

[250]*Id.*

[251]*Id.*

[252]*Id.*

[253]Expert Report, *Builders Association of Greater Chicago* v. *City of Chicago, et al.,* No. 96C 1122 (June 2003).

[254]Jon Wainwright telephone interview with L. Johnson, City of Elyria Office of Contract Compliance, Feb. 27, 1998.

[255]———. Telephone interviews with K. Dones-Carter and D. Teeter, City Council Research Department, City of Detroit Feb. 27, 1998.

[256]———. Telephone interview with M. Carter, City of Columbus Equal Business Opportunity Commission, Feb. 27, 1998.

[257]———. Telephone interview with B. Kim, Staff Attorney, Maryland Department of Transportation, concerning the Washington Suburban Sanitary Commission, Feb. 27, 1998.

[258]———. Telephone interview with Attorney D. Goldberg, Office of General Counsel, U.S. Department of Transportation, February 28, 1998; and Statement of Nancy E. McFadden, General Counsel, U.S. Department of Transportation, before the Subcommittee on Constitution, Federalism, and Property Rights of the U.S. Senate Committee on the Judiciary. Sept. 30, 1997, at 2.

[259]*See, e.g.,* NERA Economic Consulting. 2006b. *Race, Sex, and Business Enterprise: Evidence from the State of Maryland (Final Report),* Chapter IX.

[260]515 U.S. 200 (1995) (applying strict scrutiny to federal legislation).

[261]Denver had commissioned disparity studies in 1990, 1991, 1995, and 1997.

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

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

The *Denver* and *Chicago* decisions provide the most detailed analysis of the evidence necessary to establish that the government would be a passive participant in a discriminatory marketplace in the absence of race-based remedies. Particularly in light of the Ninth Circuit's opinion in *Western States,* these decisions provide important guidance to state DOTs in determining what evidence is relevant to whether DBEs experience discrimination in their marketplaces such that race-conscious subcontracting goals are needed to level the playing field for DBEs.

Concrete Works, Inc. v. City and County of Denver. Denver's local program had been challenged several years earlier,[264] and the trial was held in February 1999. Denver adopted an ordinance in 1990 that provided for annual goals of 16% for MBEs and 12% for WBEs in construction contracts, and 10% for both MBEs and WBEs in professional design and construction services contracts. Bidders were to meet contract-specific goals or make good faith efforts to do so. The city revised the program in 1996 and 1998, reducing the annual goals for both MBEs and WBEs in construction contracts to 10% and prohibiting M/WBE prime contractors from counting self-performed work toward the goals. After conducting surveys and hearings, Denver extended the program and increased the goals in 1998.

At trial, Denver introduced evidence of its contracting activities dating back to the early 1970s. This consisted of reports of federal investigations into the utilization and experiences of local MBEs and of the City's early affirmative action efforts. M/WBE participation dramatically increased when the city adopted its first MBE ordinance in 1984.

To comply with *Croson,* the city commissioned a study to assess the propriety of the program. The 1990 study found large disparities between the availability and utilization of M/WBEs on city projects without goals. It likewise found large disparities on private sector projects without goals. Interviews and testimony revealed continuing efforts by white male contractors to circumvent the goals. After reviewing the statistical and anecdotal evidence, the city adopted the 1990 Ordinance. A 1991 study of goods, services, and remodeling industries also found large disparities for city contracts not subject to goals.

When the Tenth Circuit reversed and remanded for trial in *Concrete Works II,* the city commissioned another study. The 1995 study used U.S. Census Bureau data to determine MBE and WBE availability and utilization in the construction and design industries in the Denver Metropolitan Statistical Area (MSA). It calculated separate disparity indices for firms with and without employees. Census data were also used to examine average revenues per employee and rates of self-employment. Disparities in self-employment rates persisted even after holding education and length of work experience constant. A telephone survey to determine the availability and utilization of M/WBEs in the Denver MSA showed large disparities in the construction and professional design industries. The 1995 study included discussion of a 1993 study for the Denver Housing Authority which found disparities for M/WBEs in some areas in some years, including those when it implemented an affirmative action program, and a 1992 study for the Regional Transportation District that found large disparities for both prime and subcontracting in the Denver marketplace. Based upon this evidence, the city enacted the 1996 Ordinance.

In 1997, Denver commissioned another study to examine whether discrimination limited the opportunities of M/WBEs in construction projects of the type undertaken by the city. The court found this Study used a "more sophisticated" method[265] to calculate availability by: (1) specifically determining the city's geographic and procurement marketplace; (2) using Dun & Bradstreet's *Marketplace* data to obtain the total number of available firms and numerous directories to determine the number of M/WBEs; (3) conducting surveys to adjust for possible misclassification of the race and gender of firms; and (4) presenting a final result of weighted averages of availability for each racial group and women for both prime and subcontracts.

The 1997 study then compared M/WBE availability and utilization in the Colorado construction industry. It also examined 1987 Census data from the Survey of Minority-Owned Business and the Survey of Women-Owned Businesses, the most current then available. All comparisons yielded large and statistically significant disparities. The 1997 study also found that the potential availability of M/WBEs, as measured by the rates at which similarly situated white males form businesses, was significantly greater than their actual availability. The study next examined whether minorities and women in the construction industry earned less than white males with similar characteristics. Large and statistically significant disparities were found for all groups except Asian Americans. A mail survey was conducted to obtain anecdotal evidence of the experiences of MBEs and WBEs and non-M/WBEs in the construction industry. Again, with the exception of Asian Americans, minorities,

[264]Plaintiff Concrete Works of Colorado, Inc. (CWC), a construction firm owned by a white male, sued the City in 1992, alleging that it had been denied three contracts for failure to meet the goals or to make good faith efforts and seeking injunctive relief and money damages. The district court granted the City's motion for summary judgment. *Concrete Works of Colorado, Inc.* v. *City & County of Denver,* 823 F.Supp. 821 (D. Colo. 1993) (*Concrete Works I*). The Tenth Circuit reversed, holding that genuine issues of material fact precluded summary judgment. *Concrete Works of Colorado, Inc.* v. *City & County of Denver,* 36 F.3d 1513 (10th Cir. 1994) (*Concrete Works II*). The district court, after a bench trial, held the ordinance to be unconstitutional. *Concrete Works of Colorado, Inc. v. City & County of Denver,* 86 F.Supp. 2d 1042 (D. Colo. 2000) (*Concrete Works III*). Denver appealed.

[265]321 F.3d at 966.

and women with similar characteristics experienced much greater difficulties than did their white male counterparts. A follow-up telephone survey indicated that the disparities were even greater than first indicated. Based upon the 1997 study, the city enacted the 1998 Ordinance.

At trial, the city also introduced additional, comprehensive anecdotal evidence. M/WBEs testified that they experienced difficulties in prequalifying for private sector jobs; their low bids were rejected; they were paid more slowly than non-M/WBEs; they were charged more for materials than non-M/WBEs; they were often required to do additional work not required of white males; and there were barriers to joining trade unions and associations. There was extensive testimony detailing the difficulties M/WBEs suffered in obtaining lines of credit. The "most poignant" testimony involved blatant harassment suffered at work sites, including physical assaults. The trial court found for the plaintiff.

The Tenth Circuit reversed and directed the entry of judgment for Denver. The district court's legal framework "mis-state[d] controlling precedent and Denver's burden at trial."[266]

The government need not prove that the statistical inferences of discrimination are "correct." Strong evidence supporting the government's determination that remedial action is necessary need not be "irrefutable or definitive" proof of discrimination. Statistical evidence creating inferences of discriminatory motivations is sufficient and therefore evidence of marketplace discrimination can be used to meet strict scrutiny.[267] It is the plaintiff who must prove by a preponderance of the evidence that such proof does not support those inferences.

Croson does not require that each group included in the ordinance suffer equally from discrimination. In contrast to Richmond, Denver introduced evidence of bias against each group; that is sufficient.[268]

Nor must Denver demonstrate that the "ordinances will *change* discriminatory practices and policies" in the local marketplace; such a test would be "illogical" because firms could defeat the remedial efforts simply by refusing to cease discriminating.[269]

Next, a municipality need not prove that "private firms directly engaged in any discrimination in which Denver passively participates do so intentionally, with the purpose of disadvantaging minorities and women. . . . Denver's only burden was to introduce evidence which raised the inference of discriminatory exclusion in the local construction industry and link its spending to that discrimination. . . . Denver was under no burden to identify any specific practice or policy that resulted in discrimination. Neither was Denver required to demonstrate that the purpose of any such practice or policy was to disadvantage women or minorities. To impose such a burden on a municipality would be tantamount to requiring proof of discrimination and would eviscerate any reliance the municipality could place on statistical studies and anecdotal evidence."[270] Similarly, the trial court was wrong to reject the statistical evidence because such evidence cannot identify the individuals responsible for the discrimination.[271]

Contrary to the district court's conclusion, the burden of compliance need not be placed only upon those firms directly responsible for the discrimination. The proper focus is whether the burden on third parties is "too intrusive" or "unacceptable."[272]

Croson's admonition that "mere societal" discrimination is not enough to meet strict scrutiny[273] does not apply where the government presents evidence of discrimination in the industry targeted by the program. "If such evidence is presented, it is immaterial for constitutional purposes whether the industry discrimination springs from widespread discriminatory attitudes shared by society or is the product of policies, practices, and attitudes unique to the industry. . . . The genesis of the identified discrimination is irrelevant." The trial court was wrong to require Denver to "show the existence of specific discriminatory policies and that those policies were more than a reflection of societal discrimination."[274]

The court further rejected the notion that a municipality must prove that it is itself guilty of discrimination to meet its burden. Denver can show its compelling interest by "evidence of private discrimination in the local construction industry coupled with evidence that it has become a passive participant in that discrimination . . . [by] linking its spending practices to the private discrimination."[275] Denver further linked its award of public dollars to discriminatory conduct through the testimony of M/WBEs that identified general contractors who used them on City projects with M/WBE goals but refused to use them on private projects without goals.

The court then turned to the evidence of discrimination against M/WBEs in the market for commercial credit. The lending discrimination studies and business formation 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

[266] *Id.* at 970.
[267] *Id.* at 975.
[268] *Id.* at 976.
[269] *Id.* at 973 (emphasis in the original).
[270] *Id.* at 971.
[271] *Id.* at 973.
[272] *Id.*
[273] *See* 488 U.S. at 497.
[274] 321 F.3d at 976.
[275] *Id.* at 977.

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."[276] Plaintiff failed to present evidence to rebut the lending discrimination data, instead resting on its belief that such evidence is irrelevant. Contrary to the trial court's ruling, the business formation studies were not flawed because they did not control for "quality of education," "culture" and "religion." Plaintiff failed not only to define such vague terms but also to conduct its own study controlling for these factors or to produce expert testimony that to do so would eliminate the disparities.[277]

The district court also erred in rejecting the disparity studies because it did not control for firm size, area of specialization, and whether the firm had bid on city projects. The circuit court agreed with Denver's experts that while it may be true that M/WBEs are smaller in general than white male firms, most construction firms are small and can expand and contract to meet their bidding opportunities. Importantly, Denver established that size and experience are not race- and gender-neutral variables: "M/WBE construction firms are generally smaller and less experienced *because* of discrimination."[278] Further, plaintiff failed to conduct any study showing that the disparities disappear when such variables are held constant. Likewise, it presented no evidence that controlling for firm specialization explained the disparities. "Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract.*"[279]

That M/WBEs were overutilized on city projects with goals goes only to the weight of the evidence because it reflects the effects of a remedial program. Denver presented evidence that goals and nongoals projects were similar in purpose and scope and that the same pool of contractors worked on both types. "Particularly persuasive" was evidence that M/WBE participation declined significantly when the program was amended in 1989. The "utilization of M/WBEs on City projects has been affected by the affirmative action programs that have been in place in one form or another since 1977. Thus, the non-goals data is the better indicator of discrimination in public contracting" and supports the position that discrimination existed before the enactment of the ordinances.[280]

There is no requirement that anecdotal testimony be verified. "Denver was not required to present corroborating evidence and CWC 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."[281] This "failure" of the legislative body to somehow verify testimony had been a favorite shibboleth of plaintiffs in other cases.[282]

Finally, as for the narrow tailoring requirement of strict scrutiny, the court held that because plaintiff had waived its claim that the ordinances were not narrowly tailored at an earlier stage in this litigation, the district court's holding in *Concrete Works I* that the ordinances satisfy the other prong of strict scrutiny was affirmed.

Builders Association of Greater Chicago v. City of Chicago. After more than seven years of pretrial motions and discovery and almost seven weeks of trial, the federal district court found that the City of Chicago proved its compelling interest in remedying identified discrimination against black-, Hispanic- and women-owned construction firms.[283] The court relied in large part on the statistical analysis that was similar to that upheld in *Concrete Works.* However, the program as implemented in 2003, which had not been reviewed since its inception in 1990, was not sufficiently narrowly tailored to meet strict constitutional scrutiny. The court stayed the final order against operation of the Program for construction contracts for six months to permit the city to review the ruling and adopt a new program.

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

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

The Builders Association of Greater Chicago challenged this ordinance in 1996. A similar suit was filed against Cook

[276] *Id.*
[277] *Id.* at 979.
[278] *Id.* at 983 (emphasis in the original).
[279] *Id.* at 987–88 (emphasis in the original).
[280] *Id.*
[281] *Id.* at 989.
[282] *See, e.g., Builders Association of Greater Chicago v. County of Cook,* 123 F.Supp.2d 1087 (N.D. Ill. 2000) (*BAGC v. Cook*).
[283] *Builders Association of Greater Chicago v. City of Chicago,* 298 F. Supp.2d 725 (N.D. Ill. 2003).

County's Program, which was declared unconstitutional in 2000.[284]

The court held that the playing field for minorities and women in the Chicago area construction industry was still not level. That does not mean, however, that speculation about the greater number of M/WBEs that did exist in the absence of discrimination is sufficient to support a current race-based remedy. At the same time, that there was perhaps overutilization of M/WBEs on city projects was not sufficient to abandon remedial efforts, as that result is "skewed by the program itself."

The city presented a great amount of statistical evidence. Despite the plaintiff's attacks about over-aggregation and disaggregation of data and which firms were included in the analyses, "a reasonably clear picture of the Chicago construction industry emerged. . . . While the size of the disparities was disputed, it is evident that minority firms, even after adjustment for size, earn less and work less, and have less sales compared to other businesses."

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

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

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

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

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

Narrowly Tailoring a Race-Conscious Program

Even if a jurisdiction has a strong basis in evidence to believe that race-based measures are needed to remedy identified discrimination, the program must be narrowly tailored to that evidence. The courts have repeatedly examined the following factors in determining whether race-based remedies are narrowly tailored to achieve their purpose:

- The efficacy of race-neutral remedies at overcoming identified discrimination;
- The relationship of numerical benchmarks for government spending to the availability of minority- and women-owned firms and to subcontracting goal-setting procedures;
- The flexibility of the program requirements, including the provision for good-faith efforts to meet goals and contract specific goal-setting procedures;
- The congruence between the remedies adopted and the beneficiaries of those remedies;
- Any adverse impact of the relief on third parties; and
- The duration of the program.[285]

[284] *BAGC v. Cook.* In contrast to the City of Chicago, Cook County presented very little statistical evidence and none directed toward establishing M/WBE availability, utilization, economy-wide evidence of disparities, or other proof beyond anecdotal testimony.

[285] *United States v. Paradise,* 480 U.S. 149, 171 (1987); *see also Sherbrooke,* 345 F.3d at 971–972; *Drabik,* 214 F.3d at 737–738.

The Fourth Circuit Court of Appeals has described the narrow tailoring requirements as follows:

> The preferences may remain in effect only so long as necessary to remedy the discrimination at which they are aimed; they may not take on a life of their own. The numerical goals must be waivable if qualified minority applications are scarce, and such goals must bear a reasonable relation to minority percentages in the relevant qualified labor pool, not in the population as a whole. Finally, the preferences may not supplant race-neutral alternatives for remedying the same discrimination.[286]

It is imperative that remedies not operate as fixed quotas.[287] Firms that fail to meet the subcontracting goals but make good faith efforts to do so must be eligible for contract awards.[288] Further, firms that meet the goals cannot be favored over those who made good-faith efforts. In *Croson,* the Court refers approvingly to the contract-by-contract waivers used in the U.S.DOT's DBE Program.[289] This feature has been central to the holding that the DBE Program meets the narrow tailoring requirement.[290]

The over- or under-inclusiveness of those persons to be included in the program is an additional consideration, and goes to whether the remedies truly target the evil identified.[291] The "fit" between the problem and the remedy manifests in three ways—which groups to include, how to define those groups, and which persons will be eligible to be included within those groups.

First, the determination of presumptive social disadvantage of each racial and ethnic group must be based upon the evidence.[292] In striking down the District of Columbia's MBE program, the court noted that there were no "findings with respect to discrimination in the construction industry against Hispanic Americans, Asian Americans, Pacific Islander Americans, or Native Americans, all of whom are included in the Act's definition of 'minority.' "[293] The "random inclusion" of groups that may never have experienced discrimination in the entity's marketplace may indicate impermissible "racial politics."[294] Similarly, the Seventh Circuit, in striking down Cook County's program, remarked that a "state or local government that has discriminated just against blacks may not by way of remedy discriminate in favor of blacks and Asian Americans and women."[295]

However, at least one court has held that some quantum of evidence of discrimination for each group is sufficient. The Tenth Circuit held that *Croson* does not require that each group included in the ordinance suffer equally from discrimination.[296]

Next, the level of specificity at which to define beneficiaries must be addressed. Approaches range from a single goal like the DBE Program that includes all racial and ethnic minorities and white women[297] to separate goals for each minority group and women.[298] Ohio's Program was specifically faulted for lumping together all "minorities," with the court questioning the legitimacy of forcing black contractors to share relief with recent Asian immigrants.[299]

Third, program remedies should be limited to those firms that have a nexus to the harms sought to be ameliorated. Some courts have held that state and local programs must provide proof that the individual owner of a firm seeking to benefit from the program has suffered discrimination.[300]

Failure to make "neutral" changes to contracting and procurement policies and procedures that disadvantage all small businesses may result in a finding that the program unduly burdens non-M/W/DBEs.[301] However, "innocent" parties can

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[286]*Maryland Troopers Association, Inc. v. Evans,* 993 F.2d 1072, 1076–77 (4th Cir. 1993) (citations omitted).

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

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

[289]488 U.S. at 508; *see also Adarand VII,* 228 F.3d at 1181.

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

[291]*Association for Fairness in Business, Inc. v. New Jersey,* 82 F.Supp.2d 353, 360 (D.N.J. 2000).

[292]*Contractors Association of Eastern Pennsylvania v. City of Philadelphia,* 6 F.3d 990, 1007 (3rd Cir. 1993) (*Philadelphia II*) (strict scrutiny requires data for each minority group; data was insufficient to include Hispanics, Asians or Pacific Islanders or Native Americans); *cf. Northeastern Florida Chapter of the AGC v. Jacksonville,* 508 U.S. 656, 660–661 (1993) (new ordinance narrowed to blacks and women).

[293]*O'Donnell, v. District of Columbia,* 963 F.2d at 427.

[294]*Webster,* 51 F.Supp.2d at 1380–1381.

[295]*BAGC v. Cook County,* 256 F.3d at 646 (no evidence of discrimination against any group other than Blacks).

[296]*Concrete Work IV,* 321 F.3d at 9761.

[297]*See* 49 C.F.R. §26.45(h) (overall goal must not be subdivided into group-specific goals).

[298]*See Engineering Contractors II,* 122 F.3d at 900 (separate goals for blacks, Hispanics and women).

[299]*Associated General Contractors of Ohio v. Drabik,* 214 F.3d 730, 737 (6th Cir. 2000) (*Drabik II*); *see also Western States,* 407 F.3d at 998 ("We have previously expressed similar concerns about the haphazard inclusion of minority groups in affirmative action programs ostensibly designed to remedy the effects of discrimination.").

[300]*See, e.g., Drabik I,* 50 F.Supp.2d at 766 (no "consideration given to whether the particular MBE seeking a racial preference has suffered from the effects of past discrimination by the state or prime contractors."); *Main Line Paving Co., Inc. v. Board of Education,* 725 F.Supp. 1349, 1362 (E.D. Penn. 1989) ("program contains no provisions to identify those who were victims of past discrimination and to limit the program's benefits to them").

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

be made to share some of the burden of the remedy for eradicating racial discrimination.[302]

Race-based programs must have duration limits.[303] A race-based remedy must "not last longer than the discriminatory effects it is designed to eliminate."[304] "Narrow tailoring also implies some sensitivity to the possibility that a program might someday have satisfied its purposes."[305] One of the factors leading to the court's holding that the City of Chicago's M/WBE Program was no longer narrowly tailored was the lack of a sunset provision.[306] As recently reiterated by the Eleventh Circuit Court of Appeals, the "unlimited duration of the [District's] racial goals also demonstrates a lack of narrow tailoring. . . . While the District's effort to avoid unintentional discrimination should certainly be ongoing, its reliance on racial classifications should not."[307] In contrast, the U.S.DOT DBE Program's periodic review by Congress has been repeatedly held to provide adequate durational limits.[308]

This means that affirmative action programs must be regularly reviewed to ensure that a strong basis in evidence remains to use the highly suspect tool of race in government decision making. Very old studies will not suffice to support current programs.[309] The City of Augusta, Georgia's program failed to meet strict scrutiny, because "the [M/WBE] Program is still in place 13 years after the [Disparity] Study was compiled without any further investigation into the underlying reasons for creating a program, and without any sunset or expiration provision."[310] Likewise, Chicago's program was based on 14-year-old information, which while it supported the program adopted in 1990, no longer was sufficient standing alone to justify the city's efforts in 1994.[311] How old is too old is not definitively answered,[312] but state DOTs would be wise to analyze data at least once every five or six years.

Burdens of Production and Proof

Unlike most legal challenges, the state DOT in an *Adarand* challenge has the initial burden of producing a "strong basis in evidence" in support of its DBE Program. That is, the government has the burden to put forth evidence of its compelling interest in employing race and gender as decision-making factors.[313] However, 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.[314] A plaintiff "cannot meet its burden of proof through conjecture and unsupported criticism of [the government's] evidence."[315] For example, in the challenge to the Minnesota and Nebraska DBE Programs, "plaintiffs[316] presented evidence that the data was susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE Program is unconstitutional on this ground."[317]

Likewise, in rejecting cross motions for summary judgment, the court in the challenge to the City of Memphis' local M/WBE Program, held that:

> Defendant has produced a study which concludes that the City discriminated in the award of construction contracts. An enormous amount of data was analyzed and organized into the final

[302] *Concrete Works IV,* 321 F.3d at 973; *Wygant v. Jackson Board of Education,* 476 U.S. 267, 280–281 (1986); *Adarand VII,* 228 F.3 at 1183 ("While there appears to be no serious burden on prime contractors, who are obviously compensated for any additional burden occasioned by the employment of DBE subcontractors, at the margin, some non-DBE subcontractors such as *Adarand* will be deprived of business opportunities"); *cf. Northern Contracting, Inc. v. Illinois Department of Transportation,* 2005 U.S. Dist. LEXIS 19868, *5 (Sept. 8, 2005) (*Northern Contracting II*) ("Plaintiff has presented little evidence that it [sic] has suffered anything more than minimal revenue losses due to the program."); *Western States,* 407 F.3d at 995.

[303] *Drabik I,* 50 F.Supp.2d at 766 (S.D. Ohio 1999) ("The 1980 MBE Act is unlimited in duration. . . . There is no evidence that, at any time during the nearly two decades the Act has been in effect, the General Assembly has ever reconsidered whether a compelling state interest exists which would justify the continuation of a race-based remedy.").

[304] 515 U.S. at 238.

[305] *Drabik II,* 214 F.3d at 737.

[306] *BAGC v. Chicago,* 298 F.Supp.2d at 739; *see also O'Donnell,* 963 F.2d at 428 (the District "reenacted the law in 1980 and deleted the sunset provision. Fifteen years have now passed since the District put its minority contracting program into effect. The District has not suggested that an end is in sight."). *Webster,* 51 F. Supp. 2d at 1382 (telling disqualifier was that the County had been implementing a "quota" program since 1979 with no contemplation of program expiration).

[307] *Virdi v. DeKalb County School District,* 2005 U.S. App. LEXIS 11203. At *18 11th Cir. June 13, 2005; *see also Thompson Building Wrecking Co., Inc. v. City of Augusta, Georgia,* 2007 U.S. Dist. LEXIS 27127, 9 (S.D. Ga. 2007).

[308] *See Western States,* 407 F.3d at 995; *H.B. Rowe,* 2008 U.S. Dist. Lexis at *27 (state M/WBE program is reviewed every 5 years).

[309] *See id.* (old evidence was insufficient); *Baltimore I,* 83 F.Supp.2d at 620 (10-year-old evidence to justify 1999 goals is equivalent to no evidence); *Drabik I.*

[310] *Thompson. v. Augusta,* at *9.

[311] *BAGC v. Chicago,* 298 F.Supp.2d at 739.

[312] *See, e.g., Drabik I,* 50 F.Supp.2d at 745, 750 ("A program of race-based benefits cannot be supported by evidence of discrimination which is now over twenty years old. . . . The state conceded that it had no additional evidence of discrimination against minority contractors, and admitted that during the nearly two decades the Act has been in effect, it has made no effort to determine whether there is a continuing need for a race-based remedy."); *Brunet,* 1 F.3d at 409 (14-year-old evidence of discrimination "too remote to support a compelling governmental interest.").

[313] *See, e.g., Phillips & Jordan, Inc. v. Watts,* 13 F.Supp.2d 1308, 1313 (N.D. Fla. 1998).

[314] *Rothe Development Corporation v. U.S. Department of Defense,* 262 F.3d 1306, 1317 (Fed. Cir. 2001) (*Rothe V*); *Adarand VII,* 228 F.3d at 1166; *see also Scott,* 199 F.3d at 219, *Philadelphia III,* 91 F.3d at 597.

[315] *Concrete Works IV,* 321 F.3d at 989; *see also H.B. Rowe,* 2008 U.S. Dist. Lexis at *27.

[316] The plaintiffs in both cases were represented by the same counsel and attempted to rely upon the same consultant.

[317] *Sherbrooke,* 345 F.3d at 970

> disparity study, including data about the non-WMBE and WMBE contractors in the City. In producing the study, Defendant introduces evidence which raises the inference of discriminatory exclusion in the local construction industry and links its public spending to that discrimination. . . . In a case such as this, the party opposing the use of a remedial race classification must introduce credible, particularized evidence to rebut the City's initial showing of the existence of a compelling interest.[318]

Therefore, it is not enough for a challenger to criticize the government's evidence; it must carry its "ultimate burden of persuading the court that the [government entity's] evidence did not support an inference of prior discrimination and thus a remedial purpose."[319]

Standard of Appellate Review

With one exception, the circuits that have directly addressed the question have held that the proper standard of review of a facial challenge to the constitutionality of government race-based decision making is *de novo* review.[320] The DBE Program has been reviewed under this test.[321] The Eleventh Circuit, however, treated the district court's determination of the constitutionality of the local legislation as factual findings and therefore applied the "clearly erroneous" standard.[322]

Strict Scrutiny as Applied to the Disadvantaged Business Enterprise Program

We now turn to the application of strict scrutiny to the U.S.DOT DBE Program. In *Adarand v. Peña,*[323] the Court extended the analysis of strict scrutiny under the Due Process Clause of the Fourteenth Amendment to federal enactments. It overruled existing case law that held federal racial classifications to be subject to a less rigorous standard than strict scrutiny.[324] Just as in the local government context, when evaluating federal legislation and regulations:

> [t]he strict scrutiny test involves two questions. The first is whether the interest cited by the government as its reason for injecting the consideration of race into the application of law is sufficiently compelling to overcome the suspicion that racial characteristics ought to be irrelevant so far as treatment by the government is concerned. The second is whether the government has narrowly tailored its use of race, so that race-based classifications are applied only to the extent absolutely required to reach the proffered interest. The strict scrutiny test is thus a recognition that while classifications based on race may be appropriate in certain limited legislative endeavors, such enactments must be carefully justified and meticulously applied so that race is determinative of the outcome in only the very narrow circumstances to which it is truly relevant.[325]

In the wake of *Adarand,* Congress reviewed and revised the DBE Program statute[326] and implementing regulations[327] for Federal-aid contracts in the transportation industry. To date, every court that has considered the issue has found the regulations to be facially constitutional.[328]

We note that a recent decision from the Federal Circuit Court of Appeals struck down the Department of Defense (DOD) Program for Small Disadvantaged Businesses (SDBs).[329] The program set an overall annual goal of 5% for DOD contracting with SDBs. The court held that Section 1207,[330] which among other race-conscious remedies provides a 10% bid preference to SDBs, violates strict scrutiny because Congress did not have a "strong basis in evidence" before it in 2006, upon which to conclude that the DOD was a passive participant in racial discrimination in relevant markets across the country. The six local disparity studies upon which DOD primarily relied did not meet the compelling interest prong, and in any event were not "before" Congress when it reenacted the program in 2006.

The opinion mostly restates the current strict scrutiny standards and reaffirms that with proper evidence, the federal government can adopt a race-conscious program to remedy

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[318] *West Tennessee Chapter of Associated Builders and Contractors, Inc. v. City of Memphis,* 302 F.Supp.2d 860, 864 (W.D. Tenn. 2004).

[319] *Wygant,* 476 U.S. at 293.

[320] *See, e.g., Philadelphia III,* 91 F.3d at 596 (whether a strong basis in evidence exists is a question of law); *Scott. v. Jackson,* 199 F.3d at 211 ("we review the court's findings of fact for clear error; its conclusions of law are reviewable de novo"); *Drabik II,* 214 F.3d at 734 ("The constitutionality of a statute is a question of law, reviewable de novo."); *Northern Contracting III,* 473 F.3d at 720 ("we review the district court's legal conclusion that IDOT's program is constitutional de novo and its factual determinations for clear error"); *Adarand VII,* 228 F.3d at 1161; *Rothe V,* 262 F.3d at 1316.

[321] *Northern Contracting III,* 473 F.3d at 720 ("we review the district court's legal conclusion that IDOT's program is constitutional de novo and its factual determinations for clear error"); *cf. Sherbrooke,* 345 F.3d at 970 (court took a "hard look at the evidence").

[322] *Engineering Contractors II,* 122 F.3d at 903–04.

[323] 515 U.S. 200 (1995) (*Adarand III*).

[324] *Fullilove v. Klutznick,* 448 U.S. 448 (1980).

[325] *Adarand Constructors IV,* 965 F. Supp. at 1569–1570; *see also Adarand III,* 515 U.S. at 227.

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

[327] 49 C.F.R. Part 26.

[328] *Adarand Constructors, Inc. v. Slater,* 228 F.3d 1147 (10th Cir. 2000) (*Adarand VII*), *cert. granted then dismissed as improvidently granted,* 532 U.S. 941, 534 U.S. 103 (2001); *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation,* 345 F.3d. 964 (8th Cir. 2003), *cert. denied,* 541 U.S. 1041 (2004); *Northern Contracting, Inc. v. Illinois Department of Transportation,* 2004 U.S. Dist. LEXIS 3226 at *64 (N.D. Ill., Mar. 3, 2004) (*Northern Contracting I*); *Western States Paving Co., Inc. v. Washington Department of Transportation,* 407 F.3d 983, 993 (9th Cir. 2005), cert. denied, 126 S.Ct. 1332 (2006).

[329] *Rothe Development Corporation v. U.S. Department of Defense,* 545 F.3d 1023 (Fed. Cir. 2008) (*Rothe VII*).

[330] 10 U.S.C. § 2323.

identified discrimination that is supported by a strong basis in evidence. Since this is the standard that governs the DBE Program, *Rothe VII* does not implicate or undermine *Adarand VII, Sherbrooke, Western States,* or *Northern Contracting.* The opinion barely mentions those cases, let alone suggests that their reasoning or results are wrong. Since DOD did not rely on the evidence Congress relied upon in adopting Part 26, the court did not consider that record. Of particular relevance to our project is that the court opined that there is no fixed time limit on the relevance of data; an agency should use the "most recent available data."[331] Further, regression analysis is a proper tool.[332] It noted that the six local government studies proffered by DOD were the major evidence relied upon and questioned their approaches to availability and "capacity." The court noted "that a minority-owned firm's capacity and qualifications may themselves be affected by discrimination."[333] The opinion pointedly made no blanket pronouncements about methodologies or what evidence would suffice to support Congress' legislation for DOD. There was almost no consideration of narrow tailoring, which of course is the focus for state DOTs.

Congress Established its Compelling Interest in Remedying Discrimination

All courts agree that the first prong of strict scrutiny is satisfied by the Congressional record that forms the basis for the DBE program. "In light of the substantial body of statistical and anecdotal material considered at the time of TEA-21's enactment, Congress had a strong basis in evidence for concluding that—in at least some parts of the country—discrimination within the transportation contracting industry hinders minorities' ability to compete for federally funded contracts."[334] Congress' conclusion that the effects of widespread race discrimination in the construction industry must be redressed is supported by the record.

> [T]he evidence presented by the government in the present case 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.[335]

Relevant evidence included:

- Disparities between the earnings of minority-owned firms and similarly situated white-owned firms;
- Disparities in commercial loan denial rates between black business owners compared to similarly situated white business owners;
- The large and rapid decline in minorities' participation in the construction industry when affirmative action programs were struck down or abandoned; and
- Various types of overt and institutional discrimination by prime contractors, trade unions, business networks, suppliers, and sureties against minority contractors.[336]

The Eighth Circuit Court of Appeals took a "hard look" at the evidence 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.[337]

The Tenth Circuit specifically rejected the idea that in enacting the DBE Program, Congress must make specific findings on every possible ethnic subgroup that might be subject to discrimination.

> [B]ecause of the unreliability of racial and ethnic categories and the fact that discrimination commonly occurs based on much broader racial classifications, extrapolating findings of discrimination against Native Americans, Asian-Pacific Americans, and Asian-Americans to include Aleuts, Samoans, and Bhutanese, respectively, is more a question of nomenclature than of narrow tailoring. The Constitution does not erect a barrier to the government's effort to combat discrimination based on broad racial classifications that might prevent it from enumerating particular ethnic origins falling within such classifications.[338]

[331] 545 F.3d at 1039.
[332] *Id.* at 1043.
[333] *Id.* at 1045.
[334] *Western States,* 407 F.3d at 993; *see also Sherbrooke Turf,* 345 F.3d. at 969; *Adarand VII,* 228 F.3d at 1176; *Northern Contracting III,* 473 F.3d at 721.
[335] *Adarand VII,* 228 F.3d at 1167–68.
[336] *Western States,* 407 F.3d at 992–93.
[337] *Sherbrooke Turf,* 345 F.3d. at 970; *see also Adarand VII,* 228 F.3d at 1175 (Plaintiff has not met its burden "of introducing credible, particularized evidence to rebut the government's initial showing of the existence of a compelling interest in remedying the nationwide effects of past and present discrimination in the federal construction procurement subcontracting market.").
[338] *Adarand VII,* 228 F.3d at 1185–86.

It is important to note that courts have recognized that evidence beyond the results of the DBE Program is probative of whether a recipient would be a passive participant in discrimination without affirmative action measures. "Furthermore, we may consider public and private discrimination not only in the specific area of government procurement contracts but also in the construction industry generally; thus, any findings Congress has made as to the entire construction industry are relevant."[339]

DBE Regulations are Facially Narrowly Tailored

Next, the regulations meet the second prong of strict scrutiny. Unlike the prior program,[340] Part 26 is facially narrowly tailored because:

- The overall goal must be based upon demonstrable evidence of the number of DBEs ready, willing, and able to participate on the recipient's federally assisted contracts.
- The goal may be adjusted to reflect the availability of DBEs but for the effects of the DBE Program and of discrimination.
- The recipient must meet the maximum feasible portion of the goal through race-neutral measures as well as estimate that portion of the goal it predicts will be met through such measures.
- The use of quotas and set-asides is limited only to those situations where there is no other remedy.
- The goals are to be adjusted during the year to remain narrowly tailored.
- Absent bad-faith administration of the program, a recipient cannot be penalized for not meeting its goal.
- The presumption of social disadvantage for racial and ethnic minorities and women is rebuttable, "wealthy minority owners and wealthy minority firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage."[341]
- Anyone can challenge the disadvantage of any firm.[342]
- Each firm's owner is regularly reviewed to ensure that his or her economic disadvantage has not exceeded the personal net worth limit.[343]
- Exemptions and waivers from any or all Program requirements are available.

These elements have led the courts to conclude that the DBE Program meets the second prong of strict scrutiny. First, the regulations place strong emphasis on the use of race-neutral means to achieve minority and women participation. Relying upon *Grutter v. Bollinger,* the Eighth Circuit held that while "[n]arrow tailoring does not require the exhaustion of every conceivable race-neutral alternative . . . it does require serious, good faith consideration of workable race-neutral alternatives."[344]

The DBE Program is also flexible. Eligibility is limited to small firms owned by persons whose net worth is less than $750,000. There are built-in Program time limits, and the state DOT may terminate the use of any race-conscious measures if it meets its annual overall goal through race-neutral means for two consecutive years. Moreover, the authorizing legislation is subject to Congressional reauthorization that will ensure periodic public debate.

Next, the goals are tied to the relevant market. "Though the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson.*"[345]

Finally, Congress has taken significant steps to minimize the race-conscious nature of the program. "[W]ealthy minority owners and wealthy minority-owned firms are excluded, and certification is available to persons who are not presumptively [socially] disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor."[346] Nonminority males are not unduly burdened by the Program. "Implementation of the race-conscious contracting goals for which TEA-21 provides will inevitably result in bids submitted by non-DBE firms being rejected in favor of higher bids from DBEs. Although this places a very real burden on non-DBE firms, this fact alone does not invalidate TEA-21. If it did, all affirmative action programs would be unconstitutional because of the burden upon non-minorities."[347]

Challenges to the DBE program require more than vague attacks or unsupported speculation about other possible outcomes and methodologies for narrow tailoring. While plaintiff:

> presented evidence attacking the reliability of [the Availability Study's] data, 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 progresses, as the DOT regulations require.[348]

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[339] *Id.* at 1166–67.
[340] 49 C.F.R. Part 23.
[341] *Sherbrooke Turf,* 345 F.3d. at 973.
[342] 49 C.F.R. §26.87.
[343] *See Adarand VII,* 228 F.3d at 1186–87 ("The current regulations more precisely identify the proper minority recipients of DBE certification by periodically rescreening for economic disadvantage all candidates for such certification.").
[344] *Sherbrooke Turf,* 345 F.3d. at 972.
[345] *Id.*
[346] *Id.* at 973.
[347] *Western States,* 407 F.3d at 995.
[348] *Id.*

Finally, a plaintiff cannot use a challenge to a state's implementation of the federal DBE Program under narrow tailoring as a collateral attack on the regulation's compelling interest. "[A]ppellants cannot protest the federal program by claiming the state's implementation of it is unconstitutional."[349]

State DOTs' Implementation of Part 26 Must be Narrowly Tailored

Part 26 requires that state DOTs narrowly tailor their DBE efforts to the evidence of discrimination in their marketplace. Especially in the context of considering options to respond to the demands of narrow tailoring, it is important to focus upon the overall objective of the DBE program "to achieve a 'level playing field' for DBEs seeking to participate in federal-aid transportation contracting. To reach a level playing field, recipients need to examine their programs and their markets and determine the amount of participation they would expect DBEs to achieve in the absence of discrimination and the effects of past discrimination."[350]

Among the objectives of the regulations is "help to remove barriers to the participation of DBEs in DOT-assisted contracts" and to "assist the development of firms that can compete successfully in the marketplace outside the DBE program."[351] A goal-setting methodology that takes into account these objectives meets not only the letter of the regulations but also the remedial objectives and spirit of the statute. It is not enough to merely replicate the outcomes of the discriminatory marketplace Congress seeks to eliminate.

The 1999 revisions to the DBE Program prescribe narrowly tailored methods for setting annual DBE goals to achieve a level playing field for DBEs.[352] 49 C.F.R. § 26.45 provides:

(a) You must set an overall goal for DBE participation in your DOT-assisted contracts.
(b) Your overall goal must be based on demonstrable evidence of the availability of ready, willing and able DBEs relative to all businesses ready, willing and able to participate on your DOT-assisted contracts (hereafter, the "relative availability of DBEs"). The goal must reflect your determination of the level of DBE participation you would expect absent the effects of discrimination. You cannot simply rely on either the 10 percent national goal, your previous overall goal or past DBE participation rates in your program without reference to the relative availability of DBEs in your market.

Step 1 Analysis: Estimation of DBE Availability

The process to set the overall annual DBE goal is divided into two steps:

(c) Step 1. You must begin your goal-setting process by determining a base figure for the relative availability of DBEs. The following are examples of approaches that you may take toward determining a base figure. These examples are provided as a starting point for your goal setting process. Any percentage figure derived from one of these examples should be considered a basis from which you begin when examining all evidence available in your jurisdiction. These examples are not intended as an exhaustive list. Other methods or combinations of methods to determine a base figure may be used, subject to approval by the concerned operating administration.
  (1) Use DBE Directories and Census Bureau Data. Determine the number of ready, willing, and able DBEs in your market from your DBE directory. Using the Census Bureau's County Business Pattern (CBP) database, determine the number of all ready, willing, and able businesses available in your market that perform work in the same SIC codes.[353] Divide the number of DBEs by the number of all businesses to derive a base figure for the relative availability of DBEs in your market.
  (2) Use a bidders list. Determine the number of DBEs that have bid or quoted on your DOT-assisted prime contracts or subcontracts in the previous year. Determine the number of all businesses that have bid or quoted on prime or subcontracts in the same time period. Divide the number of DBE bidders and quoters by the number for all businesses to derive a base figure for the relative availability of DBEs in your market.
  (3) Use data from a disparity study. Use a percentage figure derived from data in a valid, applicable disparity study.
  (4) Use the goal of another DOT recipient. If another DOT recipient in the same, or substantially similar, market has set an overall goal in compliance with this rule, you may use that goal as a base figure for your goal.
  (5) Alternative methods. Subject to the approval of the DOT operating administration, you may use other methods to determine a base figure for your overall goal. Any methodology you choose must be based on demonstrable evidence of local market conditions

[349] *Harrison & Burrowes,* 981 F.2d at 57, relying on *Milwaukee County Pavers Ass'n v. Fiedler,* 922 F.2d 419, 424 (7th Cir. 1991), *cert. denied,* 500 U.S. 954 (1991).
[350] 64 Fed. Reg. 5108.
[351] 49 C.F.R. §26.1.
[352] *Adarand VII,* 228 F.3d at 1182 ("The process by which recipients of federal transportation funding set aspirational goals is now much more rigorous [than the prior Part 23].").
[353] *See* www.census.gov/epcd/cbp/view/cbpview.html for information about the CBP database.

and be designed to ultimately attain a goal that is rationally related to the relative availability of DBEs in your market.

The commentary stresses the examples provided embody principles rather than rules "recipients are free to adopt in their entirety or to use as guidelines for how to devise their own measurement."[354] This flexible approach allows each recipient to use "the best data available."[355] As noted in the discussion about using example 1—dividing the DBE directory over *County Business Patterns* data—"[a]ny recipient that believes it has available to it better sources of local data from which to make a similar calculation for its base figure is encouraged to use them."[356]

As discussed in Chapter 2, the bidders list approach has been commonly used by state DOTs to estimate the Step 1 base figure. However, those courts that have addressed this approach directly have pointed out that lists can be either under-inclusive or over-inclusive. Bidders lists may be under-inclusive because they do not cast a broad net in the geographic market of the agency,[357] and are possibly tainted by the effects of discrimination.[358] To the extent that minority- and women-owned firms have been encouraged to apply for the lists, such firms may be overrepresented and thus the lists are over-inclusive.[359] Further, bidders lists rarely capture full data on subcontractors, who bid to the prime contractor not the agency. As noted in the commentary to Part 26, "[w]e realize that identifying subcontractors, particularly non-DBEs and all subcontractors that were unsuccessful in their attempts to obtain contracts, may well be a difficult task for many recipients."[360]

Step 2 Analysis: Examining Evidence of Disparities in DBE Opportunities

After the state DOT has estimated its Step 1 base figure of DBE availability, it must estimate the level of DBE availability in a discrimination free market, that is, DBE availability "but for" discrimination.

Step 2. Once you have calculated a base figure, you must examine all of the evidence available in your jurisdiction to determine what adjustment, if any, is needed to the base figure in order to arrive at your overall goal.

(1) There are many types of evidence that must be considered when adjusting the base figure. These include:
  (i) The current capacity of DBEs to perform work in your DOT-assisted contracting program, as measured by the volume of work DBEs have performed in recent years;
  (ii) Evidence from disparity studies conducted anywhere within your jurisdiction, to the extent it is not already accounted for in your base figure; and
  (iii) If your base figure is the goal of another recipient, you must adjust it for differences in your local market and your contracting program.

(2) You may also consider available evidence from related fields that affect the opportunities for DBEs to form, grow, and compete. These include, but are not limited to:
  (i) Statistical disparities in the ability of DBEs to get the financing, bonding and insurance required to participate in your program;
  (ii) Data on employment, self-employment, education, training, and union apprenticeship programs, to the extent you can relate it to the opportunities for DBEs to perform in your program.

(3) If you attempt to make an adjustment to your base figure to account for the continuing effects of past discrimination (often called the "but for" factor) or the effects of an ongoing DBE Program, the adjustment must be based on demonstrable evidence that is logically and directly related to the effect for which the adjustment is sought.[361]

The case law is very sparse regarding the elements of the "but for" determination. The *Western States* opinion does not address it, and IDOT determined not to make a Step 2 adjustment since the Step 1 base figure was the "plausible lower bound estimate" of DBE availability. The Eight Circuit in *Sherbrooke* noted without further comment that "[b]ased upon [the Availability Study's] analysis of business formation statistics, NERA next estimated that the number of participating minority owned businesses would be 34 percent higher in a race-neutral market. Therefore, NERA adjusted its DBE availability figure from 11.4 to 11.6 percent."[362] In considering whether Part 26 has a strong basis in evidence, the Tenth Circuit commented that while data showing that discriminatory

[354] 64 Fed. Reg. 5109.
[355] *Id.*
[356] *Id.* at 5110.
[357] *Associated General Contractors of America v. City of Columbus,* 936 F. Supp. 1363, 1389 (S.D. Oh. 1996) ("This [list] is only a small fraction of the total number of construction firms in the Columbus MSA, as shown by U.S. Census Bureau data.").
[358] *Philadelphia III,* 91 F.3d at 604 ("if there has been discrimination in City contracting, it is to be expected that black firms may be discouraged from applying, and the low numbers may tend to corroborate the existence of discrimination rather than belie it.").
[359] *AGC v. Columbus,* 936 F.Supp. at 1389 (City actively recruited MBEs but not majority-owned firms to register and the set aside program provided an incentive for them to do so).
[360] 64 Fed. Reg. 5104–05.
[361] 49 C.F.R. § 26.45(d).
[362] 345 F.3d at 973.

factors discourage both the formation and utilization of minority firms was significant, "[o]f course, it would be 'sheer speculation' to even attempt to attach a particular figure to the hypothetical number of minority enterprises that would exist without discriminatory barriers to minority DBE formation. [citation omitted] However, the existence of evidence indicating that the number of minority DBEs would be significantly (but unquantifiably) higher but for such barriers is nevertheless relevant to the assessment of whether a disparity is sufficiently significant to give rise to an inference of discriminatory exclusion."[363]

We therefore look to cases construing state and local M/WBE Programs for guidance on the types of evidence that are relevant to whether discrimination continues to affect the Step 1 base figure.

Much of the discussion in the case law on local programs has revolved around what type of evidence is sufficiently "strong" to establish the continuing existence and effects of economic discrimination against minorities resulting in diminished opportunities to do business with the government. Proof of the disparate impacts of economic factors on M/W/DBEs and the disparate treatment of such firms by actors critical to success is necessary to meet strict scrutiny. Discrimination must be shown using statistics and economic models to examine the effects of systems or markets on different groups, as well as by evidence of personal experiences with discriminatory conduct, policies or systems.[364] Specific evidence of discrimination or its absence may be direct or circumstantial, and should include economic factors and opportunities in the private sector affecting the success of M/W/DBEs.[365] This framework is similar to that of the required and suggested Step 2 analysis.

Judicial Review of DBE Goal Setting Under Part 26

To develop a model disparity or availability study for state DOTs, it is critical to understand the cases reviewing the application of Part 26 by state DOTs. We review these cases in the order they were decided.[366]

Northern Contracting, Inc. v. Illinois Department of Transportation

Most recently, the Seventh Circuit Court of Appeals affirmed the district court's trial verdict that the IDOT's application of Part 26 was narrowly tailored.[367] IDOT had a compelling interest in remedying discrimination in the marketplace for federally funded highway contracts, and its FFY 2005 DBE Plan was narrowly tailored to that interest and in conformance with the DBE Program regulations.

Having affirmed that the regulations pass constitutional muster, the court turned to whether IDOT met its constitutional and regulatory burdens under Part 26. The court reviewed the Availability Study of DBEs in the state's construction and design marketplaces, and evidence of discrimination against minority and women construction firms in the Illinois area, upon which IDOT relied in developing its DBE goals.

The IDOT availability study included a "custom census" designed to provide an accurate calculation of the current relative availability of DBEs, employing a seven-step analysis that:

- Created a database of representative IDOT projects;
- Identified the appropriate geographic market for IDOT's contracting activity;
- Identified the appropriate product market for IDOT's contracting activity;
- Counted all businesses in those relevant markets;
- Identified minority-owned and women-owned businesses in those markets;
- Verified the ownership status of minority-owned and women-owned businesses; and
- Verified the ownership status of all other firms.

The IDOT Availability Study estimated that DBEs comprised 22.77% of IDOT's available firms.[368] The IDOT Study next examined whether and to what extent there are disparities between the rates at which DBEs form businesses relative to similarly situated White men, as well as disparities in the relative earnings of those businesses. The presence of large and statistically significant disparities allowed an inference of discrimination to be made. Controlling for numerous variables such as the owner's age, education, and the like, the study found that in a race- and gender-neutral marketplace the availability of DBEs would be approximately

[363] *Adarand VII,* 228 F.3d at 1174. As discussed above in Chapter 2, a high-quality disparity study can now go farther than this and actually provide a quantitative estimate of how much higher DBE availability would be in a race-neutral marketplace. *See* Chapter 2, Economy-Wide Disparity Analysis, *supra.*

[364] *Adarand VII,* 228 F.3d at 1166 ("statistical and anecdotal evidence are appropriate"). The study's adjustment reflected the impact of discrimination on Black-owned firms.

[365] *Id.*

[366] *Adarand VII* did not review whether Colorado DOT's application of Part 26 was narrowly tailored because the plaintiff did not litigate that issue before the Tenth Circuit.

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

[368] This baseline figure of DBE availability is the "Step 1" estimate U.S.DOT grant recipients must make pursuant to 49 C.F.R. §26.45.

20.8% higher, yielding a "Step 2" estimate of DBE availability "but for" discrimination of 27.51%.

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

- An Availability Study conducted for Metra, the Chicago commuter rail agency, designed to meet Part 26;
- Expert reports relied upon by an earlier trial court in finding that the City of Chicago had a compelling interest in its minority and women business program for construction contracts;[369]
- Expert reports and anecdotal testimony presented to the Chicago City Council in support of the city's revised M/WBE Program ordinance in 2004;
- Anecdotal evidence gathered at IDOT's public hearings on the DBE Program;
- Data on DBE involvement in construction projects in markets without DBE goals;
- DBE utilization by the Illinois State Toll Highway Authority, which does not receive federal funding. "[T]hough the Tollway has a DBE goal of 15 percent, this goal is completely voluntary—the average DBE usage rate in 2002 and 2003 was 1.6%;"[370] and
- IDOT's "zero goal" experiment, where DBEs received approximately 1.5% of the total value of the contracts. This was designed to test the results of "race-neutral" contracting policies, that is, the utilization of DBEs on contracts without goals, which several courts have held to be highly relevant and probative of the continuing need for race-conscious remedies.

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

> The stark disparity in DBE participation rates on goals and non-goals contracts, when combined with the statistical and anecdotal evidence of discrimination in the relevant marketplaces, indicates that IDOT's 2005 DBE goal represents a "plausible lower-bound estimate" of DBE participation in the absence of discrimination. . . . Plaintiff presented no persuasive evidence contravening the conclusions of IDOT's studies, or explaining the disparate usage of DBEs on goals and non-goals contracts. . . . IDOT's proffered evidence of discrimination against DBEs was not limited to alleged discrimination by prime contractors in the award of subcontracts. IDOT also presented evidence that discrimination in the bonding, insurance, and financing markets erected barriers to DBE formation and prosperity. Such discrimination inhibits the ability of DBEs to bid on prime contracts, thus allowing the discrimination to indirectly seep into the award of prime contracts, which are otherwise awarded on a race- and gender-neutral basis. This indirect discrimination is sufficient to establish a compelling governmental interest in a DBE program . . . Having established the existence of such discrimination, a governmental entity "has a compelling interest in assuring that public dollars, drawn from the tax contributions of all citizens, do not serve to finance the evil of private prejudice."[371]

Of particular importance for the present study, a key component of the plaintiff's appeal of the lower court's ruling was that IDOT miscalculated the availability of DBEs by relying on the "custom census" approach rather than simply counting the certified DBEs among IDOT bidders, prequalified contractors, and registered subcontractors. During the trial the data, methods, and findings of IDOT's Availability Study were subjected to intense scrutiny. The court of appeals rejected the plaintiff's argument, noting:

> The gravamen of NCI's first noncompliance argument is that IDOT miscalculated the number of DBEs that were 'ready, willing, and able' by utilizing the NERA custom census instead of a simple count of the number of registered and prequalified DBEs under Illinois Law. But as the district court correctly observed, NCI has pointed to nothing in the federal regulations indicating that a recipient must so narrowly define the scope of ready, willing, and available firms. The NERA custom census reflects an attempt by IDOT to arrive at more accurate numbers than would be possible through use of just the list. Indeed, the method used here by NERA is the very methodology that was used by the Minnesota Department of Transportation in the unsuccessful challenge to its program in *Sherbrooke. We agree with the district court that the remedial nature of the federal scheme militates in favor of a method of DBE availability calculation that casts a broader net.* This conclusion is bolstered by guidance offered by USDOT on its website, where it suggests that recipients might supplement their DBE directories, for goal-setting purposes. . . . We are unpersuaded that NCI has demonstrated any noncompliance with 49 C.F.R. § 26.45(b).[372]

The "custom census" approach, which was also used by Mn/DOT in the *Sherbrooke* case, Denver in the *Concrete Works* case, and Chicago in the *BAGC* case, is the only measure of DBE or M/WBE availability that has survived strict scrutiny review at trial and on appeal.[373]

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

[370] *Northern Contracting III,* 473 F.3d at 719.

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

[372] *Northern Contracting III,* 473 F.3d at 723 (citations omitted) (emphasis added).

[373] The Eighth circuit did not address the availability method used by the study for the Nebraska Department of Roads.

Sherbrooke Turf, Inc. v. Minnesota Department of Transportation

Mn/DOT's implementation of Part 26, based on an availability study, was held to be constitutional.[374] After holding that Congress had ample evidence of discrimination against DBEs in the market for Federal-aid transportation contracts, the Eighth Circuit noted:

> Following promulgation of the current DOT regulations, MnDOT commissioned . . . [a] study [of] the highway contracting market in Minnesota. . . . Based on NERA's study, MnDOT adopted an overall goal of 11.6 percent DBE participation for federally assisted highway projects in fiscal year 2001. MnDOT predicted that it would need to meet nine percent of that overall goal through race- and gender-conscious means, based on the fact that DBE participation in state highway contracts dropped from 10.25 percent in 1998 to 2.25 percent in 1999, when its previous DBE program was suspended by the district court's injunction in *Sherbrooke.* . . . Sherbrooke presented evidence attacking the reliability of the data NERA used in determining its recommended overall goal. But Sherbrooke failed to establish that better data was [sic] available or that MnDOT 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 MnDOT's conclusion that a substantial portion of its 2001 overall goal could not be met with race-neutral measures. . . . On this record, we agree with the district court that the revised DBE program serves a compelling government interest and is narrowly tailored, on its face and as applied in Minnesota.[375]

In *Sherbrooke's* companion case, the Nebraska Department of Roads (NDOR) DBE goal based on an availability study[376] was upheld. "Having carefully reviewed the trial record, we conclude that Gross Seed, like Sherbrooke, failed to prove that the revised DBE program is not narrowly tailored as applied in Nebraska."[377]

Western States Paving Co., Inc. v. Washington State Department of Transportation

The Ninth Circuit Court of Appeals held while the DBE Program's legislation and regulations satisfy strict constitutional scrutiny on their face, Washington State Department of Transportation's (WSDOT's) FFY 2000 implementation of the regulations was not sufficiently narrowly tailored.[378]

In reversing the district court on the as applied challenge, the court agreed with the analysis in *Sherbrooke* that although a recipient need not demonstrate an independent compelling interest for its DBE Program, it is necessary to undertake an "as applied" inquiry into whether the state's program is narrowly tailored to its marketplace. While both sides and the court agreed that WSDOT's program complied with Part 26, the court rejected the state's position that its "DBE program is constitutional because it comports with the federal statute and regulations."[379] A recipient independently must meet the narrow tailoring requirement. "To the extent the federal government delegates this tailoring function, a State's implementation becomes critically relevant to a reviewing court's strict scrutiny."[380] The Ninth Circuit was persuaded by U.S.DOT'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."[381] Grantees must proffer evidence of discrimination to apply race-conscious measures to meet the annual goal, apparently in addition to meeting the mandates of Part 26.

Not only must WSDOT prove that discrimination has current effects in its market but also that such discrimination must have affected all of the presumptively socially disadvantaged groups included in Part 26.[382] "We have previously expressed similar concerns abut the haphazard inclusion of minority groups in affirmative action programs ostensibly designed to remedy the effects of discrimination. . . . [E]ach of the principal minority groups benefited by Washington's DBE program . . . must have suffered discrimination within the State."[383]

The court rejected WSDOT's approved goal-setting methodology that closely tracked the Sample Program[384] developed by U.S.DOT. "Both Minnesota and Nebraska had hired outside consulting firms to conduct statistical analyses of the availability and capacity of DBEs in their local markets, and the Eighth Circuit relied upon those studies to hold that the States' DBE programs independently satisfied strict scrutiny's narrow tailoring requirement."[385] In contrast, WSDOT had chosen option 1 in § 26.45(c) to determine its Step 1 base figure of DBE availability: divide the number of certified DBEs by the total

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[374]NERA Economic Consulting. September 2005. "Race, Sex, and Business Enterprise: Evidence from the State of Minnesota."

[375]*Sherbrooke,* 345 F.3d. at 973–74. The consultant provided expert deposition testimony regarding the data, methods, and findings of its study during the district court proceedings.

[376]MGT of America, Inc., September 2000, "Availability and Goal Setting Study."

[377]*Sherbrooke,* at 974. The court did not opine on the method used to calculate availability for the NDOR, which was a bidders list approach at "capacity" adjustment.

[378]407 F.3d 983 (9th Cir. 2005).

[379]*Id.* at 996.

[380]*Id.* at 997, citing *Sherbrooke.*

[381]407 F.3d at 998.

[382]The opinion recognizes in the discussion of Congress' narrow tailoring that Part 26 does not permit disaggregated goals by race, ethnicity and gender. *Id.* at 990.

[383]407 F.3d at 998–99.

[384]*See* http://osdbuweb.dot.gov/documents/pdf/dbe/SampleDB.pdf. (viewed 12 December 2008).

[385]407 F.3d at 997.

number of establishments in the Census Bureau's *County Business Patterns* database. In Step 2, it followed the U.S.DOT's guidance and adjusted the base figure of 11.17% to 14%, based upon the average of the Step 1 estimate averaged with the median (18%) of prior years' DBE participation;[386] there was no explanation of how this figure reflected expected DBE availability in a race-neutral market. WSDOT did not have evidence upon which to make an adjustment for discriminatory barriers in obtaining bonding and financing or for the effects of past or present discrimination because it lacked statistical studies of such discrimination. WSDOT then projected that it would achieve the 14% goal through 9% DBE participation from race-neutral means, based upon its utilization on state-funded contracts without goals, and 5% DBE participation from race-conscious subcontracting goals.

Lacking other statistical evidence of discrimination, the state could only rely upon the gap between its estimate of 14% and the 9% DBE participation on contracts without affirmative action remedies. However, the court held that this 14% figure reflects the effects of the DBE Program, and thus is not indicative of DBE utilization in a race-neutral market. "Indeed, even in States in which there has never been discrimination, the proportion of work that DBEs receive on contracts that lack affirmative action requirements will be lower than the share that they obtain on contracts that include such measures because minority preferences afford DBEs a competitive advantage."[387]

Therefore, the only figure upon which WSDOT can "plausibly rely to demonstrate discrimination is the disparity between the proportion of DBE firms in the state (11.17%) and the percentage of contracting funds awarded to DBEs on race-neutral contracts (9%). This oversimplified statistical evidence is entitled to little weight, however, because it does not account for factors that may affect the relative capacity of DBEs to undertake contracting work."[388] According to the Ninth Circuit, that DBEs may be smaller, less experienced, and more expensive than non-DBEs may explain the difference. To the extent that this "small disparity has any probative value, it is insufficient, standing alone, to establish the existence of discrimination against DBEs."[389] What is necessary is statistical significance.[390]

The state did not rely upon any anecdotal evidence of discrimination in Washington's transportation marketplace in setting its goal. According to the Ninth Circuit, the affidavits required from applicants for DBE certification attesting that they have suffered discrimination established no more than general assertions of societal bias.[391]

"The record is therefore devoid of any relevant evidence suggesting that minorities currently suffer- or have ever suffered-discrimination in the Washington transportation contracting industry. . . . The 'exact connection' between means and ends that is a prerequisite to the use of racial classifications is demonstrably absent from Washington's DBE program."[392] WSDOT's program failed to meet strict scrutiny.

How much evidence of discrimination in a recipient's jurisdiction is necessary is uncertain. While the regulations are constitutional, a grantee must still go beyond their terms to prove that discrimination requires a race-conscious goal. The court somewhat collapses the compelling interest requirement of "strong evidence" of discrimination with the requirement that the remedy be narrowly tailored to that evidence. The regulations the court holds to be constitutional explicitly disavow the need for grantees to conduct disparity studies, yet it demands evidence that closely resembles a disparity study. It also seems to confuse the setting of an overall agency goal—the expected DBE participation in a discrimination-free market—with the means used to achieve that goal—the use of race-conscious subcontracting goals. Even if a recipient concluded that its market was fully fair and open, that does not mean that it would not set a goal, only that it would not employ race-based measures to meet it. The constitutionally acceptable regulations provide for just such an outcome.

Perhaps this merely illustrates that when a party presents no evidence and no expert testimony, the court then lacks guidance on the correct economic and legal analysis of discrimination. As a result, the Ninth Circuit made several serious errors:

- Contrary to the court's assertion that a state is "required" to adjust its base figure of DBE availability to account for the effects of discrimination, only consideration of such an adjustment is mandated.[393]
- Factors affecting the competitiveness of DBEs, such as firm revenues, length of time in operation, bonding capacity, etc., are infected by discrimination. As previously discussed,

[386] *Tips for Goal Setting in the Disadvantaged Business Enterprise (DBE) Program,* http://osdbuweb.dot.gov/business/dbe/tips.cfm ("[C]alculate your median past participation percentage and use that figure to adjust your Step One Base Figure by taking the average of your median past participation figure and your Step One Base Figure.").

[387] 407 F.3d at 1000.

[388] *Id.*

[389] *Id.* at 1001.

[390] We note that the court is wrong in its characterization of the disparity as "small." In fact, this disparity is 0.8, which would be considered "large" pursuant to, for example, the Equal Employment Opportunity Commission's four-fifths rule. *See* 29 C.F.R. § 1607.4(d).

[391] 407 F.3d at 1002.

[392] *Id.*

[393] The court incorrectly states that grantees *must* apply a Step 2 analysis. 407 F.3d at 989 ("Under Step two, a State is required to adjust this base figure upwards or downwards to reflect the proven capacity of DBEs to perform work (as measured by the volume of work allocated to DBEs in recent years) and evidence of discrimination against DBEs obtained from statistical disparity studies."); *cf.* 49 C.F.R. §26.45(d)(3) ("If you *attempt* to make an adjustment to your base figure to account for the continuing effects of past discrimination (often called the "but for" factor) or the effects of an ongoing DBE program, the adjustment must be based on demonstrable evidence that is directly and logically related to the effect for which the adjustment is sought.") (emphasis added).

DBEs may be smaller, newer, and otherwise less competitive because of the very discrimination sought to be remedied by the adoption of the program. It is simply wrong to use the outcomes of discrimination as the measure of a race-neutral market.[394]

- The disparity between the estimated 11.17% DBE availability and the actual 9% utilization of DBEs on contracts without goals is not "small." In fact, this disparity is 0.8, which would be considered "large," or "substantively significant," or "constitutionally significant" pursuant to, for example, the Equal Employment Opportunity Commission's four-fifths rule.[395]

Given the Ninth's Circuit's reliance on *Sherbrooke,* what WSDOT lacked was the type of expert statistical evidence presented by Mn/DOT in support of its program.[396,397] The Mn/DOT Availability Study provided a comprehensive, market-wide estimate of DBE availability weighted by the geographic and products markets in which Mn/DOT did business. This addresses the Ninth Circuit's concern that DBEs may not be located where WSDOT's prime contractors awarded subcontracts. The study further provided a detailed Step 2 analysis of statistical disparities in DBEs' formation and earnings relative to similarly situated non-DBEs and summarized the anecdotal evidence extant in that jurisdiction. Thus, the *Sherbrooke* court reviewed ample targeted evidence of DBEs' availability to perform on Mn/DOT's contracts and subcontracts as well as evidence of the discriminatory barriers those firms face in pursuing those contracts and subcontracts.

Western States implies that when a recipient determines that not all the enumerated groups have suffered discrimination in its market, it must petition U.S.DOT for a waiver of the prohibition against separate goals for racial and ethnic minorities and white women. Waivers to remove some racial or ethnic groups or white women from credit toward meeting DBE contract goals have been filed by at least two state DOTs. The court's concern about the application of TEA-21's "laundry list" of racial and ethnic minorities to particular markets suggests that serious consideration must be given to a waiver petition to permit the use of subcontracting goals that exclude DBEs owned by members of minority groups for which insufficient evidence is found of discrimination from DBE goal credit.[398]

At a minimum, *Western States* counsels that Ninth Circuit state DOTs must significantly customize their goals to withstand strict scrutiny. It is not enough to plug the Step 1 availability estimate into a formula without consideration of the effects of discrimination on the analysis. While the opinion affirms that the Step 2 adjustment is the appropriate point at which to undertake this inquiry, a conceptually rigorous model must be applied. That does not mean that an adjustment is always warranted or supportable, but there must be evidence and discussion of discrimination in the goal setting submission. The court's analysis also casts doubt on the value of using the recipient's past levels of DBE utilization as a measure of the availability of DBEs "but for" discrimination. In any event, any adjustment undertaken must be statistically valid. It must be a quantifiable representation of the qualitative judgment that the ongoing effects of past or current discrimination either do or do not continue to impede DBEs' full and fair access to the recipient's market.

If WSDOT had presented a *Sherbrooke*-type study and proffered expert testimony in support of its analysis, the court may very well have approved the program. Whether additional evidence of discrimination should be included in a disparity study for Ninth Circuit state DOTs is not clear. While the court suggests disparity study evidence is required, it also clearly relied upon cases where such evidence was not presented. The Ninth Circuit's misreading of a previous Seventh Circuit case[399] led it to reject the proposition that meeting the requirements of a constitutional federal mandate by a recipient is sufficient. Perhaps the Seventh Circuit's clarification, discussed below, of this misreading will affect the outcome of a future challenge to a Ninth Circuit grantee's program.

Additional Evidence of Discrimination

Past Utilization of DBEs on State DOT Contracts

Past utilization of DBEs on department contracts is useful in suggesting a "floor" of the availability of DBEs in that the award of prime contracts and subcontracts without doubt means the DBEs are "ready, willing and able." Utilization can also form the basis for an analysis of whether there remain statistically significant disparities between the availability of

[394] *See, e.g., Concrete Works VII,* 321 F.3d at 981, 983 ("M/WBE construction firms are generally smaller and less experienced because of discrimination. . . . Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract.*") (emphasis in the original).

[395] 29 C.F.R. § 1607.4(d).

[396] "Both Minnesota and Nebraska had hired outside consulting firms to conduct statistical analyses of the availability and capacity of DBEs in their local markets, and the Eighth Circuit relied upon those studies to hold that the states' DBE Programs independently satisfied strict scrutiny's narrow tailoring requirement." 407 F.3d at 997.

[397] To its credit, WSDOT had commissioned such a study during the litigation, which formed the basis for its FFY 2006, 2007, and 2008 DBE goal submissions.

[398] 407 F.3d at 998 ("We have previously expressed similar concerns about the haphazard inclusion of minority groups in affirmative action programs ostensibly designed to remedy the effects of discrimination. . . . The overly inclusive designation of benefited minority groups was a 'red flag' that the legislation is not narrowly tailored.").

[399] *Milwaukee County Pavers Ass'n v. Fiedler,* 922 F.2d 419, 424 (7th Cir. 1991), *cert. denied,* 500 U.S. 954 (1991).

minority- and women-owned firms and the utilization of such firms in the department's contracting activities. "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."[400]

This is known as the "disparity index" or "disparity ratio." This index is calculated by dividing the utilization of M/W/DBEs by the availability of M/W/DBEs. Courts have looked to disparity indices in determining whether *Croson's* evidentiary foundation is satisfied.[401] An index less than 100% indicates that a given group is being utilized less than would be expected based on its availability.

The government need not prove that the statistical inferences of discrimination are "correct." For example, in upholding Denver's M/WBE Program, the Tenth Circuit noted that strong evidence supporting Denver's determination that remedial action was necessary need not have been based upon "irrefutable or definitive" proof of discrimination. Statistical evidence creating inferences of discriminatory motivations was sufficient and therefore evidence of marketplace discrimination was properly used to meet strict scrutiny. It is the plaintiff who must prove by a preponderance of the evidence that such proof does not support those inferences.[402]

That DBEs are utilized on the agency's contracts at greater percentages than the Step 1 headcount does not end the inquiry into whether discrimination still creates barriers to equal contracting opportunities. Where the government has been implementing affirmative action remedies like the longstanding U.S.DOT DBE Program, DBE utilization reflects those efforts; it does not signal the end of discrimination. In denying the plaintiff's motion for summary judgment against the IDOT's program, the court was "convinced that the relatively high (or appropriately high) level of DBE participation on goals contracts has resulted not from a lack of discrimination, but from the success of IDOT's DBE Program. . . . Plaintiff presented no persuasive evidence contravening the conclusions of IDOT's studies."[403]

Likewise, the Tenth Circuit held that Denver's overutilization of M/WBEs on city projects with goals went only to the weight of the evidence because it reflected the effects of a remedial program. Denver presented evidence that goals and nongoals projects were similar in purpose and scope and that the same pool of contractors worked on both types. "Particularly persuasive" was evidence that M/WBE participation declined significantly when the program was amended in 1989. The "utilization of M/WBEs on City projects has been affected by the affirmative action programs that have been in place in one form or another since 1977. Thus, the non-goals data is [sic] the better indicator of discrimination in public contracting" and supports the position that discrimination was present before the enactment of the ordinances.[404]

While § 26.45(d) clearly defines "capacity" as past utilization, some agencies have added a gloss of "capacity analysis" to lower the Step 1 base figure.[405] They note that DBEs are often smaller and newer than established white male-owned businesses[406] and may lack the qualifications needed for DOT work (prior DOT track record, high bonding capacity, ownership or long term leases of equipment, existing union agreements, etc.). The agency therefore lowers the remedial goal to reflect the "real world" effects of discrimination.[407]

The Ninth Circuit has further confused the issue by rejecting the only type of "capacity" marker required to be considered by the regulations it held to be constitutional: past state DOT DBE utilization. WSDOT argued that DBE capacity should reflect the relationship between its Step 1 availability estimate and its past utilization. The court, however, held that was "no evidence of discrimination" because utilization was affected by the imposition of DBE contract goals.[408]

DBE "Capacity"

Some cases have stated that DBE "capacity," usually as measured by firm size, number of contracts awarded, etc., must be controlled for to determine availability. For example, the Ninth Circuit rejected the disparity between DBE availability and WSDOT's utilization because the availability measure did not statistically control for "factors that may affect the relative capacity of DBEs to undertake contracting work. Indeed, the fact that DBEs constitute 11.17% of the Washington market does not establish that they are able to perform 11.17% of the

[400] *Croson,* 488 U.S. at 509; *see Webster,* 51 F.Supp.2d at 1363, 1375.

[401] *Scott,* 199 F.3d at 218; *Concrete Works II,* 36 F.3d at 1526–1527; *O'Donnell v. District of Columbia,* 963 F.2d at 426; *Cone Corp. v. Hillsborough County,* 908 F.2d 908, 916 (11th Cir. 1990), *cert. denied,* 498 U.S. 983 (1990).

[402] *Concrete Works IV,* 321 F.3d at 971.

[403] *Northern Contracting II,* 2004 U.S. Dist. Lexis at *81.

[404] *Concrete Works IV,* 321 F.3d at 987–88; *see also Western States,* 407 F.3d at 992; *Hershell Gill Consulting Engineers, Inc. v. Miami-Dade County, Florida,* 333 F.Supp.2d 1305, 1318 (S.D. Fla. 2004) ("[The court] will keep the potential effect of the MWBE programs in mind when analyzing the evidence presented by the County").

[405] *But cf. Western States,* 407 F.3d at 1000 (rejecting WSDOT's upward capacity adjustment as influenced by the operation of the program goal).

[406] *See, e.g.,* the 2002 Survey of Business Owners, Geographic Area Series: Economy-Wide Estimates of Business Ownership by Gender, Hispanic or Latino Origin, and Race: 2002 (available online at http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=D&-ds_name=SB0200A1&-_lang=en, and http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-fds_name=EC0200A1&-ds_name=SB0200CSCB01&-_lang=en.)

[407] For example, Maine DOT lowered its FFY 2008 goal by the percentage of DBEs that reported difficulties with obtaining bonding or cash flow or other business issues, based on its interpretation of § 26.45(d)(2)(i).

[408] *Western States,* 407 F.3d at 1000.

work."[409] *Rothe VII* likewise discusses the lack of capacity controls as problematic for the six local studies relied upon by DOD, although it does not refer to *Western States.*[410] Neither court addressed opinions that reject using the effects of discrimination, that is, DBEs' size and experience, as "neutral" outcomes. There is also no discussion of the effects of the program on DBE "capacity" (that is, supply) by creating more opportunities to work (that is, demand) by the application of contract goals.

Northern Contracting II and III, the most recent decisions examining the DBE program, cut through this analytical fog. The trial court accepted the testimony of IDOT's expert that capacity measures are themselves reflective of discrimination.[411] The Seventh Circuit agreed: lack of DBE "capacity" reflects the taint of discrimination; it is not an argument for limiting the cure. Size, longevity, bonding limits, past bidding history, etc. have been affected and reduced by the discrimination the legislation seeks to cure, and therefore cannot be used to dilute the remedy. The court agreed with IDOT that "such discrimination indirectly affects the ability of DBEs to compete for prime contracts, despite the fact that they are awarded solely on the basis of low bid, cannot be doubted."[412] Proper statistical analysis should not control for the variables affected by the behavior sought to be isolated.

As recognized by the Tenth Circuit in the Denver case, while there was:

> uncontroverted evidence that M/WBEs are generally smaller and less experienced than majority firms . . . M/WBE construction firms are generally smaller and less experienced *because* of discrimination. In addition, Denver's expert . . . testified that discrimination by banks or bonding companies would reduce a firm's revenue and the number of employees it could hire. . . . Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract.* . . . Based on the uncontroverted evidence presented at trial, we conclude that the district court did not give sufficient weight to Denver's disparity studies because of its erroneous conclusion that the studies failed to adequately control for size and experience. Denver is permitted to make assumptions about capacity and qualification of M/WBEs to perform construction services if it can support those assumptions. The assumptions made in this case are consistent with the evidence presented at trial and support the City's position that a firm's size does not affect its qualifications, willingness, or ability to perform construction services and that the smaller size and lesser experience of M/WBEs are, themselves, the result of industry discrimination.[413]

Moreover, the construction industry—by far the most common target of M/W/DBE challenges—is particularly elastic, such that any firm's "capacity" today is not its "capacity" tomorrow, as the award of new contracts, the completion of existing projects, and the ability to employ temporary workers and rent equipment make the ability to perform a contract impossible to determine. "At trial, Denver introduced evidence that the median number of employees of all construction firms in the Denver MSA is three and presented testimony that even firms with few permanent employees can perform large, public contracts by hiring additional employees or subcontractors and renting equipment."[414] In fact, at least one court has noted that the plaintiff in the case was a "small firm whose only employee other than the owner is the secretary."[415]

If WSDOT and DOD had presented expert testimony on proper statistical modeling, the elasticity of the construction industry, and business formation and earnings and credit market disparities, in conjunction with anecdotal testimony,[416] then perhaps those programs would likewise have met strict scrutiny.

Unremediated Markets Data

It is critical to measure the participation of minority- and women-owned firms in the absence of affirmative action goals, if such evidence is available. Evidence of race and gender discrimination in relevant "unremediated"[417] markets provides an important indicator of what level of actual DBE participation can be expected in the absence of government-mandated affirmative efforts to contract with M/W/DBEs.[418] For example, in finding that Congress had strong evidence of discrimination in the construction industry, the Tenth Circuit noted that:

> The government presents powerful evidence that "[a]ll too often, contracting remains a closed network, with prime contractors maintaining long-standing relationships with subcontractors

[409] *Id.*

[410] 545 F.3d at 1043.

[411] *Northern Contracting II,* 2004 U.S. Dist. Lexis at *76 ("IDOT presented an array of statistical studies concluding that DBEs face disproportionate hurdles in the credit, insurance, and bonding markets.").

[412] *Id.* at *77.

[413] *Concrete Works IV,* 321 F.3d at 981, 983.

[414] *Id.*

[415] *North Shore v. City of New York,* 1998 U.S. Dist. Lexis 6785 at *25 ("plaintiff North Shore is a small firm whose only employee other than the owner is a secretary. It, however, has bid on projects worth over $1 million, including the [contract] which is at issue in this litigation").

[416] *Concrete Works IV,* 321 F.3d at 981 (anecdotal testimony about discrimination bolstered the statistical evidence); *Northern Contracting II,* 2004 U.S. Dist. Lexis at *76 ("The results of these [statistical] studies were consistent with the testimony of DBE owners.").

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

[418] *See, e.g., Western States,* 407 F.3d at 992 (Congress properly considered evidence of the "significant drop in racial minorities' participation in the construction industry" after state and local governments removed affirmative action provisions); *Adarand VII,* 228 F.3d at 1186 (evidence included "studies of local subcontracting markets after the removal of affirmative action programs"); *H.B. Rowe, Inc. v. Tippett,* 2008 U.S. Dist. LEXIS 100569, * 25 (E.D. N.C. 2008) ("evidence relied upon by the legislature demonstrated a dramatic decline in the utilization of MBEs during the program's suspension").

> with whom they prefer to work. Because minority owned firms are new entrants to most markets, the existence and proliferation of these relationships locks them out of subcontracting opportunities. As a result, minority-owned firms are seldom or never invited to bid for subcontracts on projects that do not contain affirmative action requirements."[419]

The courts are clear that the government has a compelling interest in not financing the evil of private prejudice with public dollars.[420] If DBE utilization is below availability in unremediated markets, an inference of discrimination may be supportable. The virtual disappearance of M/W/DBE participation after programs have been enjoined or abandoned strongly indicates substantial barriers to minority subcontractors, "raising the specter of racial discrimination."[421] This analysis addresses whether the government has been and continues to be a "passive participant" in such discrimination, in the absence of affirmative action remedies.[422]

The results of nongoals contracts can help to demonstrate that, but for the interposition of remedial affirmative action measures, discrimination would lead to disparities in government contracting. The "dramatic decline in the use of M/W/DBEs when an affirmative action program is terminated, and the paucity of use of such firms when no affirmative action program was ever initiated," was proof of the government's compelling interest in employing race- and gender-conscious measures.[423] Evidence of unremediated markets "sharpens the picture of local market conditions for MBEs and WBEs."[424]

Economy-Wide Utilization of DBEs

In addition to data for other governments' utilization of DBEs in the absence of affirmative remedies, courts have held that evidence of discriminatory barriers in the private sector or economy-wide activities is relevant.

> [T]he evidence presented by the government in the present case 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.[425]

Thus, if DBEs are suffering discrimination in the private markets, the government has an interest in ensuring that it ameliorates this pattern to the best of its abilities in its own contacting activities. In holding that the City of New Haven's M/WBE Program lacked a sufficient evidentiary basis, the court noted that:

> [w]hat is lacking is information which would suggest that a reasonable level of minority contract awards would not continue, absent a set aside. For example, statistics or other evidence might show that a level of private contracts commensurate with the number of MBEs/WBEs available and able to do the work are not and/or will not be awarded to them now or in the future. By producing evidence that MBEs and WBEs attempted to win private contracts and were systematically rejected despite their bids having been the lowest, the city might have shown that discrimination exists and, thus, that the need for a set aside existed. There was some evidence that in 1987–88 WBEs and MBEs received only 17% and 27%, respectively, of their income from private contracts. Though it has not been shown if private contracts exceed, in dollar amount, public contracts, MBEs and WBEs would not seem to be getting contracts from the private sector in any proportion close to the percentage of their participation in public contracts. Without set asides, it could then be argued that contractors on public contracts will award subcontracts more closely following patterns of private subcontract awards in private contracts, i.e., at a lower rate to MBEs and WBEs, perhaps so low as to constitute the requisite disparity. Such a practice, and likelihood in the future, however, is not established in the record.[426]

Economy-wide evidence has consisted of various types. Barriers to the formation of DBE subcontractors have included the following:

- Exclusion from "good old boy" networks, often the result of several generations of family participation in the industry;
- Barriers to union membership; and
- Race-based denial of access to start-up and working capital.[427]

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[419] *Adarand VII,* 228 F.3d at 1170 (quoting *The Compelling Interest,* 61 Fed. Reg, 26,058, nn.98–99).

[420] *See, e.g., Drabik,* 214 F.3d at 734–735.

[421] *Adarand VII,* 228 F.3d at 1174; *cf. AGC v. New Haven,* 791 F.Supp. at 947 ("The record does not reflect whether the existing MBEs and WBEs will be able to attract and obtain business on the basis of relevant competitive criteria, such as price, quality, reliability, without being excluded on the basis of discrimination. What is lacking is the information which would suggest that a reasonable level of minority contract awards would not continue, absent a set aside.").

[422] *See also Philadelphia III,* 91 F.3d at 599–601.

[423] *BAGC v. Chicago,* 298 F. Supp.2d at 737; *see also Concrete Works IV,* 321 F.3d at 987–988.

[424] *Concrete Works II,* 36 F.3d at 1529.

[425] *Adarand VII,* 228 F.3d at 1167–68.

[426] *AGC v. New Haven,* 791 F.Supp at 947.

[427] *Id,* at 1168–70, n.13 (While "[l]ending discrimination alone of course does not justify action in the construction market . . . discrimination, which is already unlawful under federal law, supports the assertion that the formation, as well as utilization, of minority-owned construction enterprises has been impeded.").

Barriers to competition by existing DBEs have included the following:

- Nonsolicitation of DBEs in the absence of DBE goals;
- Bid shopping of DBE quotes to non-DBEs;
- Industry domination by "informal, racially exclusionary business networks";
- Discrimination by surety bonding companies; and
- Price and delivery discrimination by suppliers.[428]

Anecdotal Evidence

Anecdotal evidence of experiences with discrimination in contracting opportunities, including testimony from other governments' studies and programs, is relevant since it goes to the question of whether observed statistical disparities are due to discrimination and not to some other nondiscriminatory cause or causes.[429] Testimony about discrimination by prime contractors, unions, bonding companies, suppliers and lenders has been found relevant regarding barriers both to minority subcontractors' business formation and to their success on governmental projects.[430] 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."[431] Anecdotal proof "may bring cold numbers convincingly to life."[432] "[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."[433]

There is no requirement that anecdotal testimony be verified. "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."[434]

[428]*Id.* at 1170–72.
[429]*Webster,* 51 F.Supp.2d at 1363, 1379.
[430]*Adarand VII,* 228 F.3d at 1168–1172; *see also AGC v. Coalition for Economic Equity,* 950 F.2d at 1415.
[431]*Concrete Works II,* 36 F.3d at 1520.
[432]*Id.* at 1521.
[433]*Engineering Contractors II,* 122 F.3d at 926.
[434]*Concrete Works IV,* 321 F.3d at 989.

Additional Elements of Narrowly Tailored DBE Goal Setting

Definition of State DOT's Marketplace

Part 26 directs grantees to set goals based on the "relative availability of DBEs in your market."[435] State DOTs must therefore apply economic principles to empirically establish the geographic and industry dimensions of their contracting marketplace in order to ensure that the evidence is narrowly tailored. The studies relied upon by IDOT and Mn/DOT defined the geographic and industry markets as the location and industries that comprised over 80% of the contract dollars awarded.

Race- and Gender-Neutral Remedies

Race- and gender-neutral approaches are a necessary component of a defensible and effective DBE Program.[436] They must be used to the maximum feasible extent and applied in good faith.[437] Such measures include unbundling of contracts into smaller units, providing technical support, and addressing issues of financing, bonding, and insurance important to all small and emerging businesses.[438] 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 recipients without resort to using race or gender in their decision making. Further, governments have a duty to ferret out and punish discrimination against minorities and women by their contractors, staff, lenders, bonding companies, or others.[439] Enforcement of anti-discrimination legislation is another race-neutral approach that has been implemented.[440]

Collecting data is another necessary race-neutral measure. Agencies should track the utilization of M/W/DBEs as a measure of their success in the bidding process, including as subcontractors.[441] Part 26 goes further in mandating the creation and maintenance of a "bidder's list, consisting of all firms bidding on prime contracts and bidding or quoting

[435]49 CFR §26.45(b).
[436]*Croson,* 488 U.S. at 507 (Richmond considered no alternatives to race-based quota); *Drabik,* 214 F.3d at 738; *Philadelphia III,* 91 F.3d at 609 (city's failure to consider race-neutral alternatives was particularly telling); *Webster,* 51 F. Supp.2d at 1380 (for over 20 years county never seriously considered race-neutral remedies).
[437]*See* 49 C.F.R. § 26.51(a).
[438]49 C.F.R. § 26.51(b).
[439]*Croson,* 488 U.S. at 503 n.3; *Webster,* 51 F.Supp.2d at 1380.
[440]*Associated General Contractors of California, Inc. v. Coalition for Economic Equity,* 950 F.2d 1401, 1417 (9th Cir. 1991) (San Francisco "continues to make efforts to enforce the anti-discrimination ordinance").
[441]*See, e.g., Virdi,* 2005 U.S. App. LEXIS 11203 at n.8 (11th Cir. June 13, 2005).

on subcontracts . . . [including] (1) Firm name; (2) Firm address; (3) Firm's status as a DBE or non-DBE; (4) The age of the firm; and (5) The annual gross receipts of the firm."[442]

However, strict scrutiny does not require that every race-neutral approach must be implemented and then proven ineffective before race-conscious remedies may be utilized.[443] While an entity must give good faith consideration to race-neutral alternatives, "strict scrutiny does not require exhaustion of every possible such alternative . . . however irrational, costly, unreasonable, and unlikely to succeed such alternative might be. . . . [s]ome degree of practicality is subsumed in the exhaustion requirement."[444]

Annual and Contract Goal Setting

Numerical goals or benchmarks for M/W/DBE participation must be substantially related to the availability of such firms in the relevant market.[445]

One unanswered question is whether goals or benchmarks for overall agency contracting may be set higher than estimates of actual current availability. To freeze the goals at current head counts would set the results of discrimination—depressed M/W/DBE availability—as the marker of the elimination of discrimination. It therefore should be reasonable for the government to seek to attempt to level the racial playing field by setting targets somewhat higher than current headcount. For example, 49 C.F.R. Part 26 requires grant recipients to determine the availability of DBEs in their marketplaces absent the presence of discrimination.[446] In upholding the DBE regulations, the Tenth Circuit stated that:

> because Congress has evidence that the effects of past discrimination have excluded minorities from the construction industry and that the number of available minority subcontractors reflects that discrimination, the *existing* percentage of minority-owned businesses is not necessarily an absolute cap on the percentage that a remedial program might legitimately seek to achieve. Absolute proportionality to overall demographics is an unreasonable goal. However, *Croson* does not prohibit setting an aspirational goal above the current percentage of minority-owned businesses that is substantially below the percentage of minority persons in the population as a whole. This aspirational goal is reasonably construed as narrowly tailored to remedy past discrimination that has resulted in homogenous ownership within the industry. It is reasonable to conclude that allocating more than 95% of all federal contracts to enterprises owned by non-minority persons, or more than 90% of federal transportation contracts to enterprises owned by non-minority males, is in and of itself a form of passive participation in discrimination that Congress is entitled to seek to avoid. *See Croson,* 488 U.S. at 492 (Op. of O'Connor, J.).[447]

At least one court has recognized that goal setting is not an absolute science. In holding the DBE regulations to be narrowly tailored, the Eighth Circuit noted that "[t]hough the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson.*"[448] On the other hand, "sheer speculation" cannot form the basis for an enforceable measure.[449]

A related issue is whether goals can be set to reflect the expected availability "but for" the continued effects of discrimination. The DBE regulations direct recipients to consider making this adjustment to the baseline "headcount" of DBEs, to reflect the results of a level playing field for DBEs. This embodies the fundamental remedial purpose of the program: "[u]ntil that future day when national aspiration and national reality converge, the [Supreme] Court has made clear that under certain circumstances the federal government may use race-conscious means to remedy the effects of historical and present-day racial discrimination."[450]

In addition to the overall aspirational goals for their annual aggregate spending, state DOTs must set subcontracting goals for specific projects based upon the availability of DBEs to perform the anticipated scopes of subcontracting.[451] As provided in Part 26, goals should reflect the particulars of the contract, not reiterate annual aggregate targets.[452] For example, in considering a challenge to the City of Baltimore's M/WBE Program, the court noted that the new ordinance, in contrast to an earlier program struck down as unconstitutional, specifically required that goals be set on a contract-by-contract and craft-by-craft basis.[453] Not only is contract-specific goal setting probably necessary to ensure flexibility,[454] but also setting goals that reflect the reality of the scopes of work of the job instead of overall agency spending targets reduces the need to conduct good faith efforts reviews because the goal will reflect the realities of actual subcontractable scopes of work as well as the temptation to create "front" companies and sham participation.

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[442] 49 C.F.R. § 26.11(c).
[443] *Grutter,* 529 U.S. at 339.
[444] *Coral Construction,* 941 F.2d at 923.
[445] *Webster,* 51 F.Supp.2d at 1379, 1381 (statistically insignificant disparities are insufficient to support an unexplained goal of 35% M/WBE participation in county contracts); *see also Baltimore I,* 83 F.Supp.2d at 621.
[446] 49 C.F.R. § 26.45.
[447] *Adarand VII,* 228 F.3d at 1181 (emphasis in the original).
[448] *Sherbrooke,* 345 F.3d. at 972.
[449] *Adarand VII,* 228 F.3d at 1174; *See Croson,* 488 U.S. at 499.
[450] *Adarand VII,* 228 F.3d at 1155.
[451] 49 C.F.R. § 26.51(d).
[452] 49 C.F.R. § 26.51(e).
[453] *Baltimore II,* 218 F.Supp.2d at 751–52.
[454] *See Western* States, 407 F.3d at 990, 994; *Sherbrooke,* 345 F.3d at 972; *Coral Construction,* 941 F.2d at 924.

Third, program remedies should be limited to those firms that have some nexus to the harms sought to be ameliorated. Some courts have held that state and local programs must provide proof that the individual owner of a firm seeking to benefit from the program has suffered discrimination.[455]

In considering the eligibility of individual firms to participate in the remedial benefits of the DBE Program, the rebuttable presumptions of social and economic disadvantage have been central to the courts' holdings that Part 26 is narrowly tailored. "While TEA-21 creates a rebuttable presumption that members of certain racial minorities fall within that class, the presumption is rebuttable, wealthy minority owners and wealthy minority-owned firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor."[456] Moreover, anyone can challenge the disadvantage of any firm.[457] Finally, each firm's owner is regularly reviewed to ensure that his or her economic disadvantage has not exceeded the personal net worth limit.[458]

Flexibility of Contract Goals

It is imperative that remedies not operate as fixed quotas. The ability of a prime contractor that has made good faith efforts to meet a contract goal to receive a waiver has been central to the holding that the DBE Program meets the narrow tailoring requirement. State DOTs should collect data on the frequency and circumstances of waivers to ensure that its implementation of Part 26 is flexible.

Implications of *Western States*

The implications of *Western States* have been profound. All grantees in the Ninth Circuit have been directed to comply by suspending the use of subcontracting goals until the evidentiary standards are satisfied. How to meet those standards led in large part to TRB's commissioning of this Report.

U.S.DOT Guidance for Ninth Circuit Recipients

In response to *Western States,* the General Counsel of the U.S.DOT in 2005 provided guidance to Ninth Circuit grantees on how to meet the new test imposed by the opinion. After summarizing the opinion, the guidance describes the actions recipients should take regarding their next DBE goal submissions.

- "Recipients should examine the evidence they have on hand of discrimination and its effects. Does this evidence appear to address successfully the problems the 9th Circuit's decision articulated concerning the Washington State DOT DBE Program?
- If the recipient currently has sufficient evidence of discrimination or its effects, the recipient should go ahead and submit race- and gender-conscious goals where appropriate, as provided in Part 26. (This submission would include the normal race-conscious/race-neutral 'split' in overall goals.)
- If the evidence of discrimination and its effects pertains to some, but not all, of the groups that Part 26 presumes to be socially and economically disadvantaged, then these race- and gender-conscious goals should apply only to the group or groups for which the evidence is adequate.
- If necessary, the Department may entertain program waivers of Part 26's prohibition of group-specific goals in this situation.
- If the recipient does not currently have sufficient evidence of discrimination or its effects, then the recipient would submit an all race-neutral overall goal for FY 2006. The recipient's submission would include a statement concerning the absence of adequate evidence of discrimination and its effects.
- A race-neutral submission of this kind should include a description of plans to conduct a study or other appropriate evidence-gathering process to determine the existence of discrimination or its effects in the recipient's market. An action plan describing the study and time lines for its completion should also be included."

If a recipient lacks sufficient evidence of discrimination or its effects, it "should immediately begin to conduct a rigorous and valid study to determine whether there is evidence of discrimination or its effects. . . . this evidence-gathering effort [should be] completed expeditiously. . . . [A study should] be designed to determine, in a fair and valid way, whether evidence of the kind the 9th Circuit decision determined was essential to a DBE program including race-conscious elements exists."

In particular:

- "The study should ascertain the evidence for discrimination and its effects separately for each of the groups presumed by Part 26 to be disadvantaged.

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[455] *See, e.g., Drabik II,* 50 F.Supp.2d at 766 (no "consideration given to whether the particular MBE seeking a racial preference has suffered from the effects of past discrimination by the state or prime contractors."); *Main Line Paving,* 725 F.Supp. at 1362 ("program contains no provisions to identify those who were victims of past discrimination and to limit the program's benefits to them").

[456] *Sherbrooke,* 345 F.3d at 973; *see also Grutter,* 539 U.S. at 341; *Adarand VII,* 228 F.3d at 1183–1184 (personal net worth limit is element of narrow tailoring); *cf. Associated General Contractors v. City of New Haven,* 791 F.Supp. 941, 948 (D. Conn. 1992), *vacated on other grounds,* 41 F.3d 62 (2nd Cir. 1992) (definition of "disadvantage" was vague and unrelated to goal).

[457] 49 C.F.R. §26.87.

[458] *Adarand VII,* 228 F.3d at 1186–87 ("The current regulations more precisely identify the proper minority recipients of DBE certification by periodically re-screening for economic disadvantage all candidates for such certification.").

- The study should include an assessment of any anecdotal and complaint evidence of discrimination.
- Recipients may consider the kinds of evidence that are used in "Step 2" of the Part 26 goal-setting process, such as evidence of barriers in obtaining bonding and financing, and disparities in business formation and earnings.
- With respect to statistical evidence, the study should rigorously determine the effects of factors other than discrimination that may account for statistical disparities between DBE availability and participation. This is likely to require a multivariate/regression analysis.
- The study should quantify the magnitude of any differences between DBE availability and participation, or DBE participation in race-neutral and race-conscious contracts. Recipients should exercise caution in drawing conclusions about the presence of discrimination and its effects based on small differences.
- In calculating availability of DBEs, the study should not rely on numbers that may have been inflated by race-conscious programs or that may not have been narrowly tailored.
- Recipients should consider, as they plan their studies, evidence-gathering efforts that Federal courts have approved in the past. These include the studies by Minnesota and Nebraska cited in *Sherbrooke Turf* . . . [and] the Illinois evidence cited in *Northern Contracting.*"

DBE Goal Setting

While the Guidance provided the contours of the types of evidence to be analyzed, precisely what evidence a defensible study should analyze in the Ninth Circuit is not clear. If WSDOT had presented a *Sherbrooke/IDOT*-type availability study and proffered expert testimony in support of its analysis, the court may have approved the program. Whether additional evidence of discrimination of the type presented at the *Northern Contracting* trial should also be included is uncertain because while the *Western States* court suggests disparity evidence is required, it also relied upon *Sherbrooke* where such evidence was not presented. The Seventh Circuit explained the Ninth Circuit's misreading of a previous Seventh Circuit case, but the IDOT trial presented evidence of the type referred to by the Ninth Circuit, so it again is impossible to know the outcome had Illinois relied solely upon its Availability Study.

What is certain is that at a minimum, Ninth Circuit state DOTs, and perhaps all recipients, must significantly customize their goals to withstand strict scrutiny. It is not enough to plug the Step 1 availability estimate into a formula without considering the effects of discrimination. *Western States* also casts doubt on the value of using the state DOT's past levels of DBE utilization as a measure of the availability of DBEs "but for" discrimination because of the interposition of the DBE Program. While the opinion affirms that the Step 2 adjustment is the appropriate point at which to undertake this inquiry, a conceptually rigorous model must be applied. Any adjustment must be a quantifiable representation of the qualitative judgment that the ongoing effects of past or current discrimination either do or do not continue to impede DBEs' full and fair access to the recipient's market.

Western States further implies, and the U.S.DOT Guidance provides, that when a recipient determines that not all the enumerated groups have suffered discrimination in its market it must petition U.S.DOT for a waiver of the prohibition against separate goals for racial and ethnic minorities and white women. If a group is not found to suffer discrimination in the state DOT's marketplace, certified DBEs owned by such persons cannot be counted by a prime contractor toward meeting a DBE contract goal. DBE directories must be revised to provide race and gender information and clearly spell out which firms are eligible for goal credit. Waivers to remove some racial or ethnic groups or white women from credit toward meeting DBE contract goals have been filed by at least two state DOTs.

APPENDIX D

Glossary

Aggregation, aggregated: Refers to the practice of combining smaller groups into larger groups. In the present context this term is typically used in reference to the presentation of utilization, availability, or related statistics according to industry. For example, statistics presented for the "Construction" sector as a whole are more aggregated than separate statistics for "Building Construction," "Heavy Construction," and "Special Trades Construction" industries. See also "Disaggregation, disaggregated."

ADOT: Arizona Department of Transportation.

Alaska DOT&PF: Alaska Department of Transportation & Public Facilities.

ALDOT: Alabama Department of Transportation.

Anecdotal evidence: Qualitative data regarding business owners' accounts of experiences with disparate treatment and other barriers to business success.

Baseline Business Population: The underlying universe of business establishments used in an availability analysis. The denominator in a DBE availability measure.

But-for: A term that refers to a hypothetical market that is unaffected by the presence of business discrimination. Often used to describe what level of DBE availability would be expected to be observed in a perfectly race-neutral marketplace.

Caltrans: California Department of Transportation.

Capacity: This term has no single definition. See Appendix B for discussion.

CBP: The U.S. Census Bureau's *County Business Patterns* statistical data series. Additional information about the CBP is available from the Census Bureau Web site: http://www.census.gov/epcd/cbp/view/cbpview.html.

CCD: (Colorado) Center for Community Development.

CDOT: Colorado Department of Transportation.

CWC: Concrete Works of Colorado, Inc.

Constitutional Significance or **Substantive Significance:** Refers to a case where a disparity is "large." Under the EEOC's four-fifths rule, a disparity is large if it is 0.8 or less. For example, if DBE utilization in a given industry category is 8% and corresponding DBE availability is 10%, the resulting disparity ratio would be considered constitutionally or substantively significant.

Crosswalk table: A table that links Standard Industrial Classification (SIC) codes to their corresponding North American Industrial Classification System (NAICS) codes and *vice-versa.*

DBE: Disadvantaged Business Enterprise.

***De novo*:** "Anew." A *de novo* review is a completely new review of evidence held in a higher or appellate court as if the original trial court's review had never taken place.

Decennial: Refers to the census conducted every decade by the U.S. Census Bureau. The last decennial census was conducted in 2000. The next will be conducted in 2010.

Demand-side: Refers to activity on the demand-side of an economic market. For example, when state DOT's conduct bid-lettings and hire contractors, they are creating market demand. See also "Supply-side."

Dependent variable: In a regression analysis, a variable whose value is postulated to be influenced by one or more other "independent" or "exogenous" or "explanatory" variables. For example, in business owner earnings regressions, business owner earnings is the dependent variable, and other variables, such as industry, geographic location, or age are the explanatory variables. See also "Independent variable," "Exogenous variable."

Disaggregation, disaggregated: Refers to the practice of splitting larger groups into smaller groups. In the present context this term is typically used in reference to the presentation of utilization, availability, or related statistics according to industry. For example, statistics presented for "Building Construction," "Heavy Construction," and "Special Trades Construction" industries are more disaggregated than statistics for the "Construction" sector as a whole.

Disparate impact: A synonym for "disparity," often used in the employment discrimination litigation context. A disparate impact occurs when a "good" outcome for a given group occurs significantly less often than expected given that group's relative size, or when a "bad" outcome occurs significantly more often than expected.

DOD: Department of Defense.

Econometrics, econometrically: Econometrics is the field of economics that concerns itself with the application of statistical inference to the empirical measurement of relationships postulated by economic theory. See also "Regression."

Endogenous variable: A variable that is correlated with the residual in a regression analysis or equation. Endogenous variables should not be used in statistical tests for the presence of disparities. See also "Exogenous variable."

Exogenous variable: A variable that is uncorrelated with the residual in a regression analysis or equation. Exogenous variables are appropriate for use in statistical tests for the presence of disparities. See also "Endogenous variable," "Independent variable," "Dependent variable."

FDOT: Florida Department of Transportation.

FFY: Federal Fiscal Year. The Federal Fiscal Year runs from October 1 through September 30.

First-tier subcontractors: Subcontractors or suppliers hired directly by the prime contractor.

GDOT: Georgia Department of Transportation.

HDOT: Hawaii Department of Transportation.

IDOT: Illinois Department of Transportation.

Independent variable: In a regression analysis, one or more variables that are postulated to influence or explain the value of another, "dependent" variable. For example, in business owner earnings regressions, business owner earnings is the dependent variable, and other variables, such as industry, geographic location, or age are the independent or explanatory variables. See also "Dependent variable," "Exogenous variable."

ITD: Idaho Transportation Department.

MBE: Minority-Owned Business Enterprise. A business establishment that is 51% or more owned and controlled by racial or ethnic minorities (i.e., African Americans, Hispanics, Asians or Pacific Islanders, American Indians, or Alaska Natives).

Mean: A term of art in statistics, synonymous in this context with the arithmetic average. For example, the mean value of the series 1, 1, 2, 2, 2, 4, 5 is 2.43. This is derived by calculating the sum of all the values in the series (*i.e.,* 17) and dividing that sum by the number of elements in the series (*i.e.,* 7).

MDOT: Maryland Department of Transportation.

MDT: Montana Department of Transportation.

Median: A term of art in statistics, meaning the middle value of a series of numbers. For example, the median value of the series 1, 1, 2, 2, 2, 4, 5 is 2.

Microdata or micro-level data: Quantitative data rendered at the level of the individual person or business, as opposed to data rendered for groups or aggregates of individuals or businesses. For example, Dun & Bradstreet provides micro-level data on business establishments. The Census Bureau's *Survey of Business Owners* (SBO) provides grouped or aggregated data on businesses.

Misclassification: In the present context, this term refers to a situation when a listing or directory of minority-owned or women-owned firms has incorrectly classified a firm's race or gender status. For example, when a firm listed as Hispanic owned is actually African American owned, or when a firm listed as white female-owned is actually white male owned. See also "Nonclassification."

Mn/DOT: Minnesota Department of Transportation.

MoDOT: Missouri Department of Transportation.

MSA: Metropolitan Statistical Area. As defined by the federal Office of Management and Budget, an urban area that meets specified size criteria: either it has a core city of at least 50,000 inhabitants within its corporate limits, or it contains an urbanized area of at least 50,000 inhabitants and has a total population of at least 100,000.

M/WDBE: Minority- and Women-Owned Disadvantaged Business Enterprise.

NAICS: North American Industry Classification System. The standard system for classifying industry-based data in the U.S. NAICS superseded the Standard Industrial Classification (SIC) System in 1997. See also "SIC."

NCDOT: North Carolina Department of Transportation.

NDDOT: North Dakota Department of Transportation

NDOR: Nebraska Department of Roads.

NDOT: Nevada Department of Transportation.

NIGP: National Institute of Government Purchasing.

NMDOT: New Mexico Department of Transportation.

Nonclassification: In the present context, this term refers to a type of misclassification when a listing or directory has not identified firms as minority owned or women owned when, in fact, they are. See "Misclassification."

Nonresponse bias: See "Response bias."

NSSBF: National Survey of Small Business Finances.

ODOT: Oregon Department of Transportation.

One-sided statistical test, two-sided statistical test: A "two-sided" test means that one is testing the hypothesis that two values, say *u* (utilization) and *a* (availability), are equal against the alternate hypothesis that *u* is not equal to *a.* In contrast, a one-sided test means that you are testing the hypothesis that *u* and *a* are equal against the alternate hypothesis *u* is not equal to *a* in only one direction. That is, that it is either larger than *a* or smaller than *a.*

OSDBU: Office of Small and Disadvantaged Business Utilization.

PUMS: Public Use Microdata Samples.

p-value: A standard measure used to represent the level of statistical significance. It states the numerical probability that the stated relationship is due to chance alone. For example, a p-value of 0.05 or 5% indicates that the chance a given statistical difference is due purely to chance is 1-in-20. See also "Statistical Significance."

Regression, multiple regression, multivariate regression: A type of statistical analysis that examines the correlation between two variables ("regression") or three or more variables ("multiple regression" or "multivariate regression") in a mathematical model by determining the line of best fit through a series of data points. Econometric research typically employs regression analysis. See also "Econometrics."

Residual: The difference between an observed value and a value predicted by a regression. A positive residual occurs where the observed value exceeds the value computed by the regression; a negative residual is the opposite.

Response bias: Response bias can occur in survey research when the survey answers provided by respondents differ in important ways from the answers that would have been provided by those who did not respond to the survey. In survey research for disparity or availability studies, response bias can be tested by eliciting additional information from nonrespondents through supplemental survey methods.

RFP: Request for Proposal.

SBO: The U.S. Census Bureau's *Survey of Business Owners* statistical data series. Part of the 5-year *Economic Census* series. Additional information about the SBO is available from the Census Bureau Web site: http://www.census.gov/csd/sbo.

SCDOT: South Carolina Department of Transportation.

SDB: Small Disadvantaged Business.

Set-aside, set-asides: A contracting practice where certain contracts or classes of contracts are reserved for competitive bidding exclusively among a given subset of contractors, for example minority-owned and women-owned contractors.

SIC: Standard Industrial Classification System. Prior to 1997, the standard system for classifying industry-based data in the U.S. SIC was superseded by the North American Industry Classification System (NAICS). See also "NAICS."

Statistical significance: A statistical outcome or result that is unlikely to have occurred as the result of random chance alone. The greater the statistical significance, the smaller the probability that it resulted from random chance alone. See also "p-value."

Stratified: In the present context, this refers to a statistical practice where random samples are drawn within different categories or "strata," such as time period, industry sector, or DBE status.

Substantive significance or **constitutional significance:** An indication of the how large or small a given disparity is. Under the EEOC's "four-fifths" rule, a disparity ratio is substantively significant if it is 0.8 or less on a scale of 0 to 1.

Supply-side: Refers to activity on the supply-side of an economic market. For example, when new businesses are formed, other things equal, the supply of contractors to the market is increased. See also "Demand-side."

TEA-21: Transportation Equity Act for the 21st Century (1998).

TDOT: Tennessee Department of Transportation.

t-test, t-statistic, t-distribution: Often employed in disparity studies to determine the statistical significance of a particular disparity statistic. A t-test is a statistical hypothesis test based on a test statistic whose sampling distribution is a t-distribution. Various t-tests, strictly speaking, are aimed at testing hypotheses about populations with normal probability distributions. However, statistical research has shown that t-tests often provide quite adequate results for nonnormally distributed populations as well.

Two-sided statistical test, One-sided statistical test: A "two-sided" test means that one is testing the hypothesis that two values, say *u* (utilization) and *a* (availability), are equal against the alternate hypothesis that *u* is not equal to *a.* In contrast, a one-sided test means that you are testing the hypothesis that *u* and *a* are equal against the alternate hypothesis *u* is not equal to *a* in only one direction. That is, that it is either larger than *a* or smaller than *a.*

TxDOT: Texas Department of Transportation.

VDOT: Virginia Department of Transportation.

WBE: Women-Owned Business Enterprise: A business establishment that is 51% or more owned and controlled by women.

WSDOT: Washington State Department of Transportation.

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Abbreviations and acronyms used without definitions in TRB publications:

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	Air Transport Association
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation