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6 **Anticipating our Future: Measuring Overconcentration in DBE Compliance**  
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**Abstract**

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Many U.S. Department of Transportation (“DOT”) programs are designed to rectify the underrepresentation of women and minorities among recipients of federal funding. Ironically, in order for there to be an underrepresentation in some areas, there must be an overrepresentation (or overconcentration) in other areas. This reality points to a need for policy makers and decision makers to be more precise regarding how "overconcentration" is measured and what can or cannot be done to remedy overconcentration.

This paper focuses largely on the first of these two problems: precision in the measurement of overrepresentation versus underrepresentation as indicators of concentration in the marketplace.

This measure of overconcentration is illustrated in the recent litigation against the Minnesota Department of Transportation. Additional research is needed to sort out the policy mechanisms available for decision makers to remedy underrepresentation without creating overconcentration.

## 1        **Anticipating our Future: Measuring Overconcentration in DBE Programs**

### 2 3        **LEGAL BACKGROUND**

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5        All recipients of federal-aid highway funding are mandated to examine the use of federal  
6 funds to “ensure nondiscrimination in the award and administration of Department of  
7 Transportation (“DOT”)-assisted contracts; to create a level playing field on which  
8 Disadvantaged Business Enterprises (“DBE”) can compete fairly for DOT-assisted contracts; to  
9 ensure that the Department's DBE program is narrowly tailored in accordance with applicable  
10 law; and to help remove barriers to the participation of DBEs in DOT-assisted contracts”,  
11 among other objectives.<sup>i</sup>

12        Race-conscious programs such as the DBE program are reviewed with strict scrutiny; that  
13 is to say, the program must achieve a compelling government interest that is narrowly tailored.  
14 For purposes of constitutional challenge, states and their agencies are entitled to adopt federal  
15 government's compelling interest in the federal transportation bill and its implementing  
16 regulations.<sup>ii</sup> In the Eighth Circuit, *Sherbrooke Turf, Inc. v. Minnesota Dept. of Transp.*, 345 F.3d  
17 964 (8th Cir. 2003), the court rejected the contention that the record before Congress needed to  
18 include strong evidence of race discrimination in Minnesota and Nebraska in order to justify a  
19 compelling government interest.<sup>iii</sup> Rather, the court held that, “When the program is federal, the  
20 inquiry is (at least usually) national in scope. If Congress or the federal agency acted for a proper  
21 purpose and with a strong basis in the evidence, the program has the requisite compelling  
22 government interest nationwide, even if the evidence did not come from or apply to every State  
23 or locale in the Nation.”<sup>iv</sup> Therefore, a compelling government interest is adopted by the current  
24 transportation funding act and its implementing legislation.

25        Thus, the discussion turns to whether the program is narrowly tailored to achieve the  
26 state's compelling government interest. In an effort for the DBE program to be narrowly tailored,  
27 embedded in 49 C.F.R. 26 is the concept of overconcentration. Overconcentration is a novel  
28 concept, developed by the legislature to, in essence, assure that the DBE program did not  
29 overstep its narrow tailoring requisite beyond rectifying effects of past discrimination. “Non-  
30 DBE firms are also protected by §26.33, which directs recipients to take appropriate steps to  
31 address areas of overconcentration of DBE firms in certain types of work that could unduly  
32 burden non-DBE firms seeking the same type of work.”<sup>v</sup> The federal regulations address the  
33 necessary steps a recipient takes to address overconcentration of DBEs in certain types of work,  
34 saying that,

35  
36        “(a) If you determine that DBE firms are so overconcentrated in a certain type of  
37 work as to unduly burden the opportunity of non-DBE firms to participate in this  
38 type of work, you must devise appropriate measures to address this  
39 overconcentration.

40  
41        (b) These measures may include the use of incentives, technical assistance,  
42 business development programs, mentor-protégé programs, and other appropriate  
43 measures designed to assist DBEs in performing work outside of the specific field  
44 in which you have determined that non-DBEs are unduly burdened. You may also  
45 consider varying your use of contract goals, to the extent consistent with § 26.51,  
46 to ensure that non-DBEs are not unfairly prevented from competing for  
47 subcontracts.

1  
2 (c) You must obtain the approval of the concerned DOT operating administration  
3 for your determination of overconcentration and the measures you devise to  
4 address it. Once approved, the measures become part of your DBE program.”

5  
6 49 C.F.R. 26.33  
7

8 Because of allegations of overconcentration, the Department of Transportation was asked  
9 to comment on the issue after the passage of § 26.33. The DOT defines overconcentration as the  
10 existence of so many DBEs in certain fields of highway construction work (e.g., guardrail,  
11 fencing, landscaping, traffic control, and striping) that non-DBEs are frozen out of the  
12 opportunity to work. Broad discretion is given to the states to create a mechanism for calculation  
13 and to adjust for overconcentration. While recipients would have to obtain DOT approval of  
14 determinations of overconcentration and measures for dealing with them, the Department does  
15 not prescribe any specific mechanisms for doing so.<sup>vi</sup>

16 It could be argued that because such discretion is given to the recipients without specific  
17 guidance for creating a method to calculate overconcentration from DOT, that recipients struggle  
18 to identify and address overconcentration. In a study of 125 state’s goals submission proposals  
19 surveyed by George R. La Noue, only Rhode Island DOT performed such a study and found  
20 overconcentration.<sup>vii</sup> Rhode Island found that “DBE firms are so over concentrated in a certain  
21 type of work ... as to unduly burden the opportunity of non-DBE firms or allow contracting  
22 opportunities for other DBEs in other available disciplines to participate in this type of work....”  
23 In FY 2005, 34.9% of Rhode Island’s total DBE contract dollars went to guardrail contracts and  
24 16.2% to landscaping. Consequently, the overall state goal was adjusted downward by 3%.<sup>viii</sup> No  
25 court case was ever brought in connection to overconcentration in Rhode Island.

26 Currently, no calculation to prove overconcentration has been approved or examined by  
27 the courts. Courts generally analyzing DBE programs have upheld the programs’  
28 constitutionality when considering overconcentration claims brought by the plaintiffs. *In re*  
29 *Sherbrooke Sodding Co.*, 17 F. Supp. 2d 1026, 1036 (D. Minn. 1998) the court contemplated the  
30 constitutionality of MnDOT’s DBE program and found that an undue burden fell on the plaintiff,  
31 a specialty contractor engaged in non-capital intensive operations. Overconcentration was  
32 necessarily implied but was not specially defined by the court, nor was empirical support  
33 analyzed in the opinion. As a result of the findings, the court issued a permanent injunction and  
34 the DBE program was suspended in 1999. However, the DBE program was re-instituted in 2000  
35 after Congress passed the Transportation Equity Act for the 21st Century (“TEA-21”). DOT then  
36 promulgated the new implementing regulations in 49 C.F.R. pt. 26.<sup>ix</sup> Minnesota’s current DBE  
37 program was upheld as constitutional under similar equal protection claims.<sup>x</sup> The current DBE  
38 program has never been overturned as unconstitutional using an overconcentration theory and,  
39 therefore, overconcentration has not been defined with any specificity.

## 40 41 **ALTERNATIVE MEASURES OF CONCENTRATION**

### 42 43 **Market Concentration** 44

45 In this section, two alternative concepts of industry concentration are discussed: market  
46 concentration measures and other measures related to racial/gender segregation. The first

1 relevant concept is market concentration based on the size distribution of firms that participate in  
2 a specific economic activity.

3 First, the issue becomes how to measure size, which has alternative indicators such as  
4 value-added, sales, employment, or assets. Curry and George (1983)<sup>xi</sup> argue that the correct  
5 technical measure of the importance of a firm's activities is usually its net output (sales revenue  
6 less the cost of inputs), but, for analysis of firms within the same market, a sales measure would  
7 be preferable because value-added depends on the degree of vertical integration. There are  
8 certain problems with some of the other indicators, such as employment because it understates  
9 the importance of capital-intensive firms, or assets because valuation depends on accounting  
10 conventions. In this report, sales (contracting) figures are used when analyzing firm size.

11 A second preliminary issue is how to define the relevant industry for the analysis. The  
12 industry is usually defined as a group of firms producing goods or services that are regarded as  
13 substitutes by buyers and sellers. For the purposes of this report, the four industry definitions  
14 described below will be used.

15 Market concentration can be measured through several options for concentration indices.  
16 In general, these concentration indices have some desirable properties, such as being independent  
17 of the size of the industry (i.e., relevant here is the firm share), increased concentration if the  
18 share of any firm grows at the expense of a smaller firm (principle of transfers), reduced  
19 concentration after the entry of new firms below some arbitrary significant size, among others  
20 (Hall and Tideman, 1967; Hanna and Kay, 1977)<sup>xii</sup>. The literature on the field has not resolved  
21 the question on which index is "best" (Curry and George, 1983; Bailey and Boyle, 1971)<sup>xiii</sup>. As  
22 Curry and George (1983) argue, the complex characteristics of any industry make it unlikely that  
23 one measure will be superior in every circumstance, so it is better to use more than one measure  
24 of concentration where data availability allows for this. Furthermore, Bailey and Boyle (1971)  
25 indicate that the different measures of concentration emphasize aspects of the size distribution of  
26 firms that seem more important for each case (such as the relative dispersion of firm sizes, the  
27 number of firms in the industry, the size of the largest firms, etc.).

28 Among the different concentration indices, two of the most widely used are the k-firm  
29 concentration ratio and the Hirschman-Herfindahl index (HHI.) The k-firm concentration ratio is  
30 defined as the cumulative share of the kth firm in the industry or  $CRK = \sum_{i=1}^K s_i$ . Typically, the  
31 value of k used for the analysis lies between 3 and 8 firms. The Hirschman-Herfindahl index is  
32 defined as the sum of the squared values of firms' shares or  $HHI = \sum_{i=1}^N (s_i)^2$ . The value of the  
33 HHI ranges between 10,000 for a pure monopoly to a number approaching to zero. The HHI is a  
34 criterion defined in the Horizontal Merger Guidelines (2010)<sup>xiv</sup> used by the Federal Trade  
35 Commission for purposes of competition policy. The Horizontal Merger Guidelines (2010)  
36 indicate that markets are generally classified as un-concentrated for HHI below 1500, moderately  
37 concentrated for HHI between 1500 and 2500, and highly concentrated for HHI above 2500. For  
38 the purposes of this article, both the CR4 and the HHI concentration ratios will be used.

39

#### 40 **Racial/Gender Segregation**

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42 The second relevant idea is the measurement of racial/gender segregation. The  
43 segregation indices measure the relative concentration of groups (by race, ethnicity, gender, etc.)  
44 in certain categories/outcomes (occupation, education, or other characteristics). There is no

1 “perfect” segregation index; instead each has different properties and incorporates different value  
 2 judgments about the nature of segregation (Allen and Vignoles, 2007)<sup>xv</sup>. Similar to the market  
 3 concentration indices, the measures of racial/gender segregation have some desirable properties,  
 4 such as scale or composition (to proportional increases in one of the groups), a principle of  
 5 transfers (movement of one individual from category/outcome  $j$  to category/outcome  $i$ ),  
 6 organizational equivalence (the index is unaffected by changes in the number of  
 7 categories/outcomes, if these are divided proportionally), as well as symmetry between groups  
 8 and types (Hutchens, 2004; Gorard and Taylor, 2002)<sup>xvi</sup>.

9 In the case of racial/gender segregation, this report will consider the Duncan index of  
 10 dissimilarity, which is defined by Duncan and Duncan (1955)<sup>xvii</sup> as:

$$11 \quad D_{f m} = \frac{1}{2} \sum_{i=1}^N \left| \frac{m_i}{m} - \frac{f_i}{f} \right|$$

12  
 13 In the formula,  $m_i/m$  and  $f_i/f$  represent the proportion from groups "m" and "f" in the  
 14 category/outcome. The Duncan index of dissimilarity is calculated across all  
 15 categories/outcomes. The interpretation of the Duncan index is as the proportion or percentage in  
 16 each group which has to be reallocated to give the same distribution as in the other group. This  
 17 measure provides an alternative to determine how much more concentrated is a certain group  
 18 with respect to others in some industries: when  $D=0$  there is no segregation and when  $D=1$  there  
 19 is complete segregation between categories. In this context, values of the Duncan index of  
 20 dissimilarity higher than 0.6 are usually considered as evidence of high segregation (for example,  
 21 Massey and Denton, 1989)<sup>xviii</sup>

## 22 23 **Disproportionality Ratios (Representation Ratios)**

24  
 25 Common in the literature on racial disproportionality (in the child welfare system or in  
 26 the criminal justice system) as well as in the literature on underrepresentation of women and  
 27 minorities in higher education, is the concept of disproportionality (or representation) ratios.<sup>xix</sup>

28 Consider the share of firms in the  $j$ th industry held by the  $k$ th group,  $s_j^k$ . The  $k$ th group's  
 29 share of firms across all industries is given by:  $s^k$ . The disproportionality ratio is given by:

$$30 \quad \delta_j^k = \frac{s_j^k}{s^k}$$

31  
 32 where  $j$  denotes the relevant sub-industry,  $k$  denotes group membership, and  $s$  is the share of  
 33 firms (or dollars or contracts) in the sub-industry or overall industry. A disproportionate  
 34 representation occurs when the disproportionality ratio exceeds one. If a  $k$ th group firm  
 35 represents 10 percent of the  $j$ th sub-industry but only 5 percent of the overall market, then its  
 36 share in the  $j$ th submarket is twice that of its expected share.  
 37

38 This measure of disproportionality (or representation) is equivalent to the ratio of the  
 39 probability that a  $k$ th group firm is in the  $j$ th industry to the probability that any firm is in the  $j$ th  
 40 industry:  
 41

$$\delta_j^k = \frac{p_j^k}{p_j}$$

If the  $k$ th group's probability of being in the  $j$ th market is .10 while the overall probability of being in the  $j$ th market is .05, then a  $k$ th group firm is twice as likely to be found in the  $j$ th market as all firms. This measure of disproportionality or representation is easily measured and is quickly interpreted. Important limitations, however, include possible invariance with respect to the size of the market, the number of firms in the market, and the number of submarkets. So, for example, the same disproportionality ratio could be calculated when there 1,000 firms competing in a market as when there are only 10 firms competing in the market. Thus, the disproportionality ratio is not a good measure of market competition. However, it can capture the salient features of what is relevant to US DOT regulations regarding "overconcentration" of DBEs.

### GEYER V. MNDOT ILLUSTRATION

In the case of *Geyer v. MnDOT et al*, the Plaintiffs made allegations that DBE participation was overconcentrated in certain areas of construction work. This is because there were allegedly no DBEs capable of performing work in certain areas of the construction industry and the goals set by MnDOT in those areas were too high. The Plaintiffs allege that general contractors were then forced to "overuse" DBEs in a few subspecialty areas and non-DBEs were disproportionately turned down by general contractors because they had no other way to obtain DBE participation. 49 C.F.R § 26.33 requires MnDOT to address the issue of overconcentration in the DBE program. The Plaintiffs allege that to the extent MnDOT could have done something to address overconcentration of DBEs, it did nothing and overconcentration resulted. Overconcentration was not defined in specificity by the Plaintiff in their pleadings.

### Data from Geyer Case

In order to measure concentration and overconcentration in an industry, the industry must first be defined. The standard method of defining an industry is to use North American Industrial Classification (NAICS) codes. In its authorizing regulations, the U.S. Department of Transportation requires to recipients of federal funding to adopt NAICs codes.<sup>xx</sup>

There is no definitive NAICs code for the Work Zone, Traffic Safety and Signaling industry in which Geyer contracts. Geyer itself reported three different NAICs codes: 561990, All Other Support Services, in its contract file with MnDOT; 532299, All Other Consumer Goods Rental, in its listing with Dun and Bradstreet; and 238210, Electrical Contractors and Other Wiring Installation Contractors, in Geyer's discovery responses. Geyer named Safety Signs and TransSignal as its competitors in its discovery responses. Other competitors named in the course of litigation included Highway Technologies, Inc., Interstate Traffic Signs Inc., Northstar Safety and 3D Specialties. These firms report NAICs codes of 334290 (Other Communications Equipment), 423610 (Electric Equip & Wiring Merchant Whls), 532490 (Other Machine Rental & Leasing) and 488490 (Other Support Activities for Road Transportation).

Thus, four industry definitions were created. Industry Definition 1 is the union of all of these NAICs codes; Industry Definition excludes the NAICS code 237310, a core construction activity; Industry Definition 3 is only NAICS codes declared by Geyer (from any source) are included.; and Industry Definition 4 is more restrictive and considers only NAICS code 238210.

**Concentration Indices as Applied to MnDOT**

As discussed above, there are three alternative concepts of industry concentration: market concentration measures, measures related to racial/gender segregation, and measures of disproportionality or representation. We compute all three measures in the instance of MnDOT.

First, as measures of market concentration both the Hirschman-Herfindahl and the CR4 indices are presented. Given the available data, which includes all contracting between FY07-08 and FY 10-11 across all industries, market concentration was calculated using total firm sub-contract dollars and total firm sub-contract awards. An important data limitation that allowed only for the presentation of calculations for the overall market and not for the specific industries in the case is that NAICS codes correspond to the firm and in order to do industry-specific calculations data with NAICS for the contract/project are required. The indices were estimated using data at the 6-digits NAICS code level and only for the main NAICS for each firm. In Table 1 the values of the HHI and CR4 for both outcomes analyzed are presented. Results show evidence of relatively small concentration of contracting for MnDOT. In short, the market is deemed to be a highly competitive market with many firms.

**TABLE 1: Market Concentration Measures**

	Total sub-contract dollars	Total sub-contract awards
HHI	111.66	69.49
CR4	13.63%	9.97%

Source: Firm level data, calculated using Minnesota Department of Transportation (MnDOT) contracting information.

Second, as a measure used in racial/gender segregation analysis, the Duncan dissimilarity index based on firm level data was calculated. In this case, two separate calculations were performed: one using only the primary NAICS code and the other using multiple NAICS codes. In both cases, 6-digits NAICS codes and only sub-contractor firms were included. This index was estimated for all industries in MnDOT contracting, as an indicator of segregation of DBE firms in certain industries (relative to non-DBE firms). In Table 2 the values of the Duncan index are presented. The evidence does not suggest that there is a substantial concentration of DBEs in across industries relative to non-DBE firms. An index close to one would indicate that DBEs are exclusively concentrated in some industries while non-DBEs are found in other industries, consistent with a notion of highly segregated industries. An index close to zero would indicate that DBEs were nearly equally distributed across all industries, and thus that there is no concentration of DBEs in any industry.

**TABLE 2: Duncan Dissimilarity Index**

	Only primary NAICS	Multiple NAICS
Duncan index	0.477	0.439
No. of categories	143	164



No. of observations	738	888
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Source: Firm level data, calculated using Minnesota Department of Transportation (MnDOT) contracting information.

Table 2 shows that the market in which MnDOT contracts is neither segregated nor completely desegregated. The values estimated are lower than .5 suggesting that on the continuum from perfect segregation to equal distribution, the market is closer to equality of distribution of firms.

Table 3 reports the final measure of concentration using disproportionality or representation ratios. The disproportionality ratios were computed from information on availability and utilization of DBEs in the four different definitions of the Work Zone Traffic Safety Control Industries.

**TABLE 3: Disproportionality Ratios in the MnDOT Work Zone Traffic Safety Control Industries**

Industry Definition	Disproportionality in Utilization (Federal Contracts Only)				Disproportionality in Availability - MAIN NAICS					Disproportionality in Availability - NAICS LEVEL				
	Prime Contractors	Prime Contract Dollars	Subcontractor	Subcontract Dollars	Bidders List a/	DBE List	Dun and Bradstreet	Vendors List	Average of Availability Methods	Bidders List b/	DBE List	Dun and Bradstreet	Vendors List	Average of Availability Methods
1	0.64	0.57	0.80	0.83	0.76	1.55	0.47	0.69	0.87	0.80	1.49	0.56	0.71	0.89
2	2.84	0.82	1.12	2.04	0.88	1.26	0.45	0.88	0.87	0.95	1.13	0.54	0.83	0.86
3	0.00	0.00	0.70	2.02	0.91	1.19	0.29	0.78	0.79	0.93	0.80	0.41	0.69	0.70
4	0.00	0.00	0.78	2.03	1.04	1.40	1.48	0.84	1.19	0.99	0.91	1.35	0.74	1.00

Technical Report, Table 9, 10 and 11

a/ (#DBE/#Firms)Industry Definition One, Bidders Method / (#DBE/Firms) Minnesota, Bidders Method. MAIN NAICS

b/ (#DBE/#Firms)Industry Definition One, Bidders Method / (#DBE/Firms) Minnesota, Bidders Method. NAICS LEVEL

Disproportionality ratios are computed for utilization of DBEs among prime contractors, prime contract dollars, subcontractors and subcontractor dollars. The disproportionality ratios are less than one in 11 of the 16 calculations relating to utilization. In one of the instances where the disproportionality is greater than one for utilization, the value is 1.12, or approximately equal to one when rounded to the nearest whole number. In the case of utilization among prime contractors the disproportionality ratio is 2.84 but there is no disproportionality in the prime contract dollars awarded. In the remaining three instances of disproportionality ratios greater than one, the disproportionality occurs in subcontract awards, but not for the broadest definition of the industry. Only in the most restricted definitions of the industry is there disproportionality in utilization of DBEs and then the disproportionality ratio equals about two, hardly large enough to substantiate a claim of “overconcentration” of DBEs.

Table 3 also reports disproportionality ratios for availability. Four methods of availability are used to compute the disproportionality ratios. One is the bidders’ list method that computes the share of bidders who are DBEs. Another is the DBE list method that computes the ratio of the number of certified DBEs to the number of firms in the same industries in the same zip codes. Another is the Dun and Bradstreet method that computes the share of women- and minority-owned firms in the same zip codes for a given industry. A final method is the vendors’ list method that computes the share of certified DBEs among all firms that have bid on MnDOT contracts, have received contracts, or are listed among firms willing and able to contract with

1 MnDOT. The vendors' list includes both subcontractors and prime contractors. In addition to the  
2 individual methods, the average across the four methods is reported.

3 The four methods of computing availability rates are undertaken under two different  
4 assumptions about the treatment of NAICs codes. One method is to count each firm only once  
5 for its primary NAICs code. The major flaw in this method is that it ignores the fact that  
6 businesses can and do perform in more than one industry and exclusion of additional NAICs  
7 codes listed can amount to a serious underestimate of the availability in an industry. A second  
8 method is to count a firm for each of the NAICs codes it lists. The apparent concern about this  
9 method is that it appears to count firms multiple times. But, it does so in both the numerator and  
10 the denominator, and there is no reason to believe that DBEs are more or less likely to have  
11 multiple NAICs codes than non-DBEs.

12 In 30 out of the 40 cells (4 Industry definitions x 5 methods of measuring availability x 2  
13 assumptions about NAICs codes) the disproportionality ratios are less than or equal to one. In the  
14 10 cells where the disproportionality ratios exceed one, they range from 1.04 to 1.55. In all of  
15 the cases where the availability disproportionality ratio exceeds one the method used to compute  
16 the availability is the DBE list method or the industry definition is the most restrictive way of  
17 measuring the relevant sub-industry. The DBE list method, unlike the other methods where the  
18 denominators and numerators for calculating the availability rates come from the same data  
19 source, uses two different data sources for the numerator and denominator. The numerator is  
20 measured from the certified DBE list; the denominator comes from the Zip Code Business  
21 Patterns (ZBP) data, which includes firms that may not be willing, able or qualified to undertake  
22 contracting opportunities with MnDOT. The numerator in this disparity ratio is very small. The  
23 denominator is even smaller, producing a disproportionality ratio slightly greater than one.

24 Given the relatively small disproportionality ratios and the abundance of  
25 disproportionality ratios that are less than one, there is no consistent evidence of over  
26 concentration in the Work Zone Traffic Safety Control Industry in which MnDOT contracts.  
27 But, how big must a disproportionality ratio be in order to signal overconcentration? One  
28 instance where a state DOT was accused of goal setting in overconcentrated industries concerns  
29 Rhode Island. The Wilkins Center initiated a Freedom of Information Act Request (FOIA) for  
30 DBE goal submittals of state departments of transportation to the U.S. Department of  
31 Transportation which produced submittals of DBE goals and goal attainment for 2000-2010.  
32 The Rhode Island DBE goals were 10 percent and 11 percent for 2008 and 2009. Attainment for  
33 the quarters reported was 21 percent and 37 percent for the two years. Attainment rates that far  
34 exceed federally reviewed and approved DBE goal rates necessarily raise questions about the a)  
35 setting of the original goals and/or b) the methods used to attain the goals. Rhode Island DOT  
36 may be unusual in the sense that its attainment far exceeded its stated goals.

37 By way of contrast, in Minnesota, DBE attainment historically has fallen short of Goals.  
38 The DBE goals for MnDOT were reported to be 12.8 percent and 15.3 percent whereas the  
39 attainment rates for those years were 4.7 percent and 2.4 percent for the quarters reported. In  
40 short, the special case of Rhode Island is one where the goals were consistently exceeded  
41 producing at least the pretext for possible excess burden to non-DBEs. The data reflects that, in  
42 Minnesota, the DBE attainment has never exceeded the US Department of Transportation  
43 approved DBE goals.

44 Although there is no guidance given for how to measure overconcentration, the language  
45 of the guidance for establishing DBE goals is suggestive of the use of availability and/or  
46 utilization as a starting point. The specific example provided by LaNoue references contract

1 dollars awarded to DBEs. This is one aspect of utilization. Then, there is another aspect of  
2 utilization and that is the number of contracts awarded to DBEs. Still another indicator of  
3 possible overconcentration comes not from utilization of DBES but availability of DBEs in the  
4 marketplace. Nonetheless, the illustration provided by LaNoue suggests that the share of DBEs  
5 in the sub-industry must be *many times* that of the share of DBEs overall. While no one has ever  
6 defined exactly what “many times” means, it seems reasonable that the excess of the DBE sub-  
7 industry share should be far more than simply one or two times that of the industry share to give  
8 meaning to overconcentration.

## 10 SUMMARY

12 This paper has identified three alternative measures of concentration that might be used to test  
13 for “overconcentration” of DBEs in programs receiving federal funding. The mandate that these  
14 programs not create a burden on non-DBEs by placing goals on projects in sub-industries where  
15 DBEs are overconcentrated begs the question of what constitutes overconcentration. The simple,  
16 tractable and easy to compute and interpret measure we propose is the disproportionality ratio (or  
17 representation ratio. We illustrate the use of this ratio in the context of allegations of  
18 overconcentration of DBEs in the Minnesota Department of Transportation’s Work Zone Traffic  
19 Safety Control Industry. We show that there is no consistent evidence of overconcentration  
20 when one considers alternative ways of defining the submarket, alternative methods of  
21 measuring availability, or alternative measures of firms. It is reassuring, in this instance, that the  
22 other conventional methods of market concentration or market segregation also produce  
23 comparable results. In short, the method we propose for measuring overconcentration offers a  
24 simple and intuitive means for managers and analysts in state and local agencies to detect  
25 whether their DBE programs are at risk because of putative overconcentration.

## 27 References

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<sup>ii</sup> 49 C.F.R. § 26.1 et seq. See *Sherbrooke Turf, Inc. v. Minnesota Dept. of Transp.*, 345 F.3d 964, 970–971 (8th Cir.2003); *Gross Seed v. United States Department of Transportation*, 345 F.3d 964 (8th Cir.2003), cert. denied. 541 U.S. 1041, 124 S.Ct. 2158, 158 L.Ed.2d 729 (2004); *Northern Contracting, Inc. v. Illinois Dept. of Transportation.*, 473 F.3d 715 (7th Cir.2007) (affirming *Milwaukee County Pavers Ass’n v. Fiedler*, 922 F.2d 419 (7th Cir.), cert. denied, 500 U.S. 954, 111 S.Ct. 2261, 114 L.Ed.2d 714 (1991); *Western States Paving Company, Inc. v. Washington State Dept. Of Transportation*, 407 F.3d 983, 997 (9th Cir.2005), cert. denied, 546 U.S. 1170, 126 S.Ct. 1332, 164 L.Ed.2d 49 (2006)).

<sup>iii</sup> *Id* at 971

<sup>iv</sup> *Id* at 971

<sup>v</sup> *Participation by Disadvantaged Business Enterprises in Department of Transportation Programs*, 64 FR 5096 (Feb. 2, 1999)

<sup>vi</sup> "DBE Program Regulatory Issuances Archives." *DBE Program Regulatory Issuances Archives*. U.S. Department of Transportation, Office of Small and Disadvantaged Business Utilization, n.d. 1 Sept. 2012

<sup>vii</sup> *Setting Goals in the Federal Disadvantaged Business Enterprise Programs*, 17 Geo. Mason U. Civ. Rts. L.J. 423, 442 (2007)

<sup>viii</sup> State of Rhode Island, *Disadvantaged Business Enterprise Program Plan*, FY 2006 11

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<sup>ix</sup> See 64 Fed.Reg. 5096 (Feb. 2, 1999)

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