IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NEW YORK

| | |
|---|---|
| UNITED STATES OF AMERICA,<br><br>PLAINTIFF,<br><br>AND THE VULCAN SOCIETY, INC., ET AL.,<br><br>PLAINTIFFS-INTERVENORS,<br><br>V.<br><br>CITY OF NEW YORK, ET AL.,<br><br>DEFENDANTS. | CIV. ACTION NO. 07-CV-2067 (NGG)(RLM)<br><br>SERVED JANUARY 30, 2009 |

**PLAINTIFF UNITED STATES' MEMORANDUM OF LAW**
**IN SUPPORT OF MOTION FOR PARTIAL SUMMARY JUDGMENT**

## TABLE OF CONTENTS

## INDEX TO TABLES

# TABLE OF AUTHORITIES

## I. FEDERAL CASES

## II. FEDERAL STATUTES



## III. FEDERAL REGULATIONS



## IV. FEDERAL RULES

**PLAINTIFF UNITED STATES' MEMORANDUM OF LAW IN SUPPORT OF MOTION FOR PARTIAL SUMMARY JUDGMENT**

## I. INTRODUCTION AND NATURE OF THE DISPUTE

Plaintiff United States respectfully submits this memorandum of law in support of its motion for partial summary judgment. In its Complaint, the United States alleges that Defendant City of New York (the "City") has violated Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e et seq. ("Title VII"), by using four employment practices that have resulted in an unlawful disparate impact upon black and Hispanic candidates for the position of entry-level firefighter in the City's Fire Department (the "FDNY"). Specifically, the challenged practices are the City's use, as part of its open competitive firefighter selection processes,[1] of: (1) Written Exam 7029 as a pass/fail screening device with a cutoff score of 84.705; (2) rank-order processing and selection of candidates from the Exam 7029 eligibility list based on a combination of their scores on Written Exam 7029 and the physical performance test the City used for both Exam 7029 and Exam 2043 (the "PPT"); (3) Written Exam 2043 as a pass/fail screening device with a cutoff score of 70; and (4) rank-order processing and selection of candidates from the Exam 2043 eligibility list based on a combination of their scores on Written Exam 2043 and the PPT. The United States' motion requests that the Court enter summary judgment in favor of the United States with respect to the prima facie case because the uncontested facts establish that each of the challenged practices has resulted in a disparate impact upon black and Hispanic candidates within the meaning of Title VII.

---

[1] The steps in the City's selection processes, including each of the challenged practices, are explained in more detail in Section II of this memorandum. The City calls its selection processes "Examinations," although each consists of several components, including a written examination and a physical test. To avoid confusion, the United States refers to the selection processes at issue as "Exam 7029" and "Exam 2043" and refers to their respective written examination components as "Written Exam 7029" and "Written Exam 2043."

In order to establish a prima facie case with respect to each of the practices, the United States must prove by a preponderance of the evidence that the practice has caused a disparate impact on the basis of race/national origin. 42 U.S.C. § 2000e-2(k)(1)(A)(ii); Robinson v. Metro-North Commuter R.R., 267 F.3d 147, 160 (2d Cir. 2001). As one might expect, "statistical proof almost always occupies center stage in a prima facie showing of a disparate impact claim." Robinson, 267 F.3d at 160. Thus, the facts that entitle the United States to partial summary judgment are established primarily by the reports and deposition testimony of the United States' statistical expert, Bernard R. Siskin, Ph.D. Based on his statistical analysis of the data provided by the City, Dr. Siskin concluded that each of the four challenged practices resulted in a disparate impact upon both black and Hispanic candidates.[2] Pl. Facts, ¶¶ 82, 90, 98, 106, 114, 123, 134, 147.

The City has admitted that the employment practices at issue have resulted in statistically significant disparities between the pass rates and ranks on the eligibility lists of black and white candidates, as well as Hispanic and white candidates. Pl. Facts, ¶¶ 53-54, 84, 93, 101, 109, 116, 126, 135, 148. The City also does not dispute the accuracy of Dr. Siskin's calculations showing that, but for the disparities: (1) 1,060 additional black and Hispanic candidates would have been considered for appointment as FDNY firefighters; (2) an estimated 293 additional black and Hispanic candidates would have been appointed as FDNY firefighters; and (3) 249 black and Hispanic FDNY firefighters who were appointed – about 39% of those appointed from the

---

[2] Dr. Siskin's findings were not surprising. Both the City's and the United States' experts testified that, based on their experience with examinations such as Written Exams 7029 and 2043, they would expect the City's use of the written examinations at issue to result in disparate impact. Plaintiff United States' Statement of Undisputed Facts ("Pl. Facts"), ¶ 78.

examinations at issue in this case – would have been appointed earlier. Id., ¶¶ 77, 86-88, 95-97, 103-107, 111-113, 122, 132, 145-146, 157-158. Indeed, one of the City's own expert witnesses, Dr. Philip Bobko, testified in deposition that two of the challenged practices (pass/fail use of Written Exam 7029 and rank-order selection/processing for Exam 7029) resulted in a disparate impact upon blacks. Id., ¶¶ 79-80. For those two practices, there is no question that, as the City apparently concedes, the United States has established a prima facie case for blacks. Id., ¶ 81. The City's experts, Dr. Bobko and Dr. F. Mark Schemmer, have refused to state any opinion with respect to the disparate impact of the same two practices upon Hispanics. Id., ¶¶ 91, 124. Similarly, the City's experts testified that they cannot say whether the other two challenged practices (pass/fail use of Written Exam 2043 and rank-order selection/processing for Exam 2043) had a disparate impact upon either blacks or Hispanics. Id., ¶¶ 99, 107, 133.

Counsel for the City conceded, during a conference with the Court on November 20, 2008, that whether the United States has established a prima facie case should be resolved on summary judgment. See App. Z to Pl. Facts, at pp. 11-12. Because the City's experts do not dispute the existence of statistically significant disparities or the accuracy of Dr. Siskin's calculations, the issue to be decided by the Court is whether the uncontested facts establish that the challenged practices resulted in a disparate impact upon blacks and Hispanics within the meaning of Title VII. As explained below, it is clear that the City's admissions and the other uncontested facts are sufficient to establish that each of the four challenged practices did result in such an impact. Accordingly, the Court should grant summary judgment in favor of the United States with respect to its prima facie case.

## II. FACTUAL BACKGROUND

### A. Representation of Blacks and Hispanics in the FDNY

It has long been apparent that, despite the City's large black and Hispanic populations,[3] the vast majority of FDNY firefighters are white. According to documents produced by the City, as of October 12, 2007, there were 8,998 firefighters in the FDNY. Pl. Facts, ¶ 8. Only 3.37% of those FDNY firefighters were black, and only 6.72% of them were Hispanic. Id. Similarly, the City's documents indicate that, as of that date, there were 11,699 individuals in all uniformed ranks in the FDNY. Id. Only 2.90% were black, and 5.73% were Hispanic. Id.

Between 1999 and 2008, the City used two open competitive examination processes, Exam 7029 and Exam 2043, to screen and select candidates for appointment as entry-level firefighters. Id., ¶ 9. The City began administering Written Exam 7029 in February 1999. Id., ¶ 17. The City began appointing firefighters from the Exam 7029 eligibility list in February 2001, and had appointed over 3,200 firefighters from Exam 7029 by November 2004, when the list expired. Id., ¶¶ 11, 44-45. Only 3.2% (104) of the candidates appointed were black. Id., ¶ 11. Only 8.5% (274) of them were Hispanic. Id. Similarly, the City began administering Written Exam 2043 in December 2002 and began appointing firefighters from the Exam 2043 eligibility list in May 2004. Id., ¶¶ 20, 46. As of November 15, 2007, the City had appointed over 2,100 firefighters from Exam 2043. Id., ¶ 12. Only 3.7% (80) of the candidates appointed

---

[3] Based on the 2002 Annual Report on Social Indicators of the City's Department of Planning, the population of the City at the time of the report was 25% black and 27% Hispanic. Pl. Facts, ¶ 7.

from Exam 2043 were black, and only 8.7% (187) were Hispanic.[4] Id.

**B. The Exam 7029 and 2043 Selection Processes**

In order to pass Written Exam 7029 and be allowed to take the PPT, a candidate had to score at least 84.705 on the examination. Id., ¶¶ 24, 27. In order to pass Written Exam 2043 and be allowed to take the PPT, a candidate had to score above 70. Id., ¶¶ 25, 27. For both Exam 7029 and Exam 2043, the City placed the candidates who passed the written examination and the PPT (and submitted the required filing fee) on an eligibility list. Id., ¶¶ 28-29. The City assigned each candidate on the Exam 7029 or 2043 eligibility list a list number based on a combination of the candidate's scores on the written examination and PPT, plus any applicable bonus points for residency, veteran status and/or legacy status. Id., ¶¶ 30-31. Candidates were ranked on the Exam 7029 or 2043 eligibility list according to their list numbers. Id.[5]

The FDNY's Candidate Investigation Division ("CID") conducted the processing and investigation of candidates from the eligibility lists to determine whether they met the requirements for appointment. Id., ¶ 36. CID began the processing by sending candidates various forms and inviting them for intake interviews based upon their ranks on the eligibility list, beginning with the highest-ranked candidates. Id., ¶ 37. CID did not assign a candidate's

---

[4] The total hiring figure is based upon a document produced by the City's Department of Citywide Administrative Services ("DCAS"), dated November 15, 2007. Id., ¶ 12, App. H. That document reported 79 black and 186 Hispanic candidates hired. Id. Dr. Siskin's analyses indicated that 80 black and 187 Hispanic candidates were hired. Pl. Facts, ¶ 12, App. G. For purposes of this memorandum, the United States has used Dr. Siskin's figures because they are more favorable to the City.

[5] Candidates who had the same score after the written examination and PPT scores were combined and any applicable bonus points were added were ranked on the eligibility list based upon the last five digits of their social security numbers. Id., ¶ 32.

background investigation to an investigator until the candidate had completed an intake interview and CID believed the candidate's list number/rank would be reached for possible appointment to the next academy class. Id., ¶¶ 38-39. Thus, the earliest date on which a candidate could move forward in the selection process was based upon his rank on the eligibility list.

To be appointed from the Exam 7029 or Exam 2043 eligibility list, a candidate had to appear on a certification list, meet all requirements for appointment set forth in the relevant notice of examination and pass a medical and psychological examination. Id., ¶ 35. Each certification list consisted of candidates drawn in rank order from the eligibility list, beginning with the highest-ranking candidate who had not withdrawn from consideration or become ineligible. Id., ¶ 40. Thus, the earliest date on which a candidate could be certified for possible appointment was based upon his rank on the eligibility list.

The City appointed candidates from certification lists drawn from the Exam 7029 or Exam 2043 eligibility list in rank order from among those candidates on the certification list who had completed the investigation process and been determined to be qualified at the time a new academy class was being filled. Id., ¶ 42. If the rank of a candidate on the Exam 7029 or 2043 eligibility list had not been reached by the time the last appointment to a given academy class was made (i.e., if all candidates appointed to the class from the eligibility list were ranked higher), the candidate was not appointed at that time even if he had completed all steps in the selection process and been found qualified. Id., ¶ 43. Thus, the earliest date on which a candidate could be appointed depended upon his rank on the eligibility list.

## III. APPLICABLE LAW

### A. Summary Judgment Standard

The Court should enter summary judgment "if the pleadings, the discovery and disclosure materials on file, and any affidavits show that there is no genuine issue as to any material fact and that the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). The moving party bears the burden of proving that no material issue of fact is in dispute. See Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 586 n.10 (1986). The opposing party then "must come forward with 'specific facts showing that there is a genuine issue for trial.'" Id. at 587 (quoting Fed. R. Civ. P. 56(e)). This does not mean that summary judgment is prohibited "whenever the nonmoving party brings forward any evidence, however slight, in its favor." LaMarch v. Tishman Speyer Properties, 2006 WL 2265086 *2 (E.D.N.Y. 2006); see also Anderson v. Liberty Lobby, 477 U.S. 242, 249 (1986); Rothenberger v. New York City Police Dep't, 2008 WL 2435563, at *6 (E.D.N.Y. 2008). Rather, a "material fact is one that would 'affect the outcome of the suit under the governing law,' and a dispute about a genuine issue of material fact occurs if the evidence is such that 'a reasonable [factfinder] could return a verdict for the nonmoving party.'" Zelnik v. Fashion Inst. of Tech., 464 F.3d 217, 224 (2d Cir. 2006) (quoting Anderson v. Liberty Lobby, 477 U.S. at 248); R.B. Ventures, Ltd. v. Shane, 112 F.3d 54, 57 (2d Cir. 1997); Rothenberger, 2008 WL 2435563 at *6. Finally, where, as here, "a case involves mixed questions of fact and law and the only disputes relate to the legal significance of undisputed facts, the controversy collapses into a question of law suitable" for summary judgment. United States v. Pacific Northwest Elec., Inc., 2003 WL 24573548, *2 (D. Idaho 2003); Union Sch. Dist. v. Smith, 15 F.3d 1519, 1523 (9th Cir. 1994); Graham v. City of

Chicago, 828 F. Supp. 576, 583 (N.D. Ill. 1993).

**B. Standard for Prima Facie Case of Disparate Impact Under Title VII**

As articulated by the Supreme Court in Griggs v. Duke Power Co., 401 U.S. 424, 431 (1971), Title VII prohibits employment practices which, although "fair in form" are "discriminatory in operation." Thus, Title VII requires "the removal of employment obstacles, not required by business necessity, which create built-in headwinds and freeze out protected groups from job opportunities." Robinson, 267 F.3d at 160. Unlike disparate treatment claims, disparate impact claims are concerned with whether employment practices that "were not intended to discriminate have nevertheless had a disparate effect on the protected group." Id.

The burdens of proof in a disparate impact case are set forth in Section 703(k) of Title VII, as amended by Congress in 1991, 42 U.S.C. § 2000e-2(k). To establish a prima facie violation, the United States must demonstrate by a preponderance of the evidence that each of the challenged practices caused a disparate impact upon black or Hispanic candidates. 42 U.S.C. § 2000e-2(k)(1)(A)(i). The burden of proof then will shift to the City, which must attempt to prove that its use of each of the challenged practices was "job related for the position in question and consistent with business necessity." Id.

To establish a prima facie case of disparate impact, a plaintiff must: (1) identify an employment practice; (2) demonstrate that a disparity exists; and (3) establish a causal relationship between the two. Robinson, 267 F.3d at 160. Once the challenged practice is identified, statistical evidence typically is used to establish that the practice caused a disparity. See Watson v. Fort Worth Bank & Trust Co., 487 U.S. 977, 987 (1988); Robinson, 267 F.3d at 160. The statistical calculations commonly used in Title VII disparate impact cases are

sometimes referred to as "standard deviation analyses." See, e.g., United States v. City of Yonkers, 609 F. Supp. 1281, 1286-1287 (S.D.N.Y. 1984). Standard deviation analyses can be used to express disparities – e.g., the difference between the pass rate of white candidates and the pass rate of black candidates on an examination – as a number of standard deviations. Guardians Ass'n of New York City Police Dep't v. Civil Serv. Comm'n of the City of New York, 630 F.2d 79, 86 n.4 (2d Cir. 1980), cert. denied, 452 U.S. 940 (1981); Smith v. Xerox Corp., 196 F.3d 358, 365-66 (2d Cir. 1999), overruled on other grounds, Meachem v. Knolls Atomic Power Lab., 461 F.3d 134 (2d Cir. 2006). The number of standard deviations corresponds to the likelihood that a disparity as large as the one observed would occur by chance. Guardians, 630 F.2d at 86 n.4. The likelihood that a disparity that is equivalent to two or more standard deviations would occur by chance is approximately 5%, while the likelihood that a disparity that is equivalent to three or more standard deviations would occur by chance is less than 1%. Id. As the Second Circuit has explained, in cases such as this involving large samples, if the disparity "is greater than two or three standard deviations, a prima facie case is established." Id. at 86 (quoting Castaneda v. Partida, 430 U.S. 482, 496 n.17 (1977), internal quotations omitted). See also Hazelwood Sch. Dist. v. United States, 433 U.S. 299, 308, n.14 (1977); Int'l Bhd. of Teamsters v. United States, 431 U.S. 324, 340 n.20 (1977); Malave v. Potter, 320 F.3d 321, 327 (2d Cir. 2003); Smith v. Xerox Corp., 196 F.3d at 366; United States v. New York City Bd. of Educ., 487 F. Supp. 2d 220, 224 (E.D.N.Y. 2007).

## IV. ARGUMENT

As stated previously, the United States' expert, Dr. Bernard Siskin, conducted statistical analyses to determine whether each of the challenged practices resulted in a disparate impact. As

set forth below, the results of Dr. Siskin's analyses clearly establish that each of the challenged practices resulted in a disparate impact upon both black and Hispanic candidates.[6] Indeed, under the law in this Circuit, Dr. Siskin's results are much more than is needed to establish a prima facie case of disparate impact. Guardians, 630 F.2d at 86; Malave, 320 F.3d at 327; Smith v. Xerox Corp., 196 F.3d at 366; United States v. New York City Bd. of Educ., 487 F. Supp. 2d at 224.

**A. The City's Pass/Fail Use of Written Exam 7029 Resulted in Disparate Impact.**

The impact of the City's pass/fail use of Written Exam 7029 with a cutoff score of 84.705 is summarized in Table 1, below. As the City has admitted, both black and Hispanic candidates passed Written Exam 7029 at a statistically significantly lower rate than white candidates. Pl. Facts, ¶¶ 53-54, 84, 93. The disparity between the black and white pass rates is equivalent to 33.90 units of standard deviation. Id., ¶ 85. The disparity between the Hispanic and white pass rates is equivalent to 17.41 units of standard deviation. Id., ¶ 94. The probability that either disparity would occur by chance is less than one in 4.5 million billion – or, as Dr. Siskin characterized it, "infinitesimal." Id., ¶¶ 85, 94.

---

[6] As noted previously, both the City's and the United States' experts testified that, based on their experience with other examinations, they would expect the City's use of Written Exams 7029 and 2043 to result in disparate impact. Pl. Facts, ¶ 78. Such testimony further supports the United States' prima facie case. See Pietras v. Bd. of Fire Comm'rs of the Farmingville Fire Dist., 180 F.3d 468, 475 (2d Cir. 1999).

**Table 1**
**Impact of the Pass/Fail Use of Written Exam 7029**

| | Disparity in Standard Deviations | Shortfall of Exam Passers | Estimated Hiring Shortfall | Adverse Impact Ratio[7] |
|---|---|---|---|---|
| Blacks | 33.90 | 519 | 114 | 67.0% |
| Hispanics | 17.41 | 282 | 62 | 85.3% |

In terms of practical effect, as shown in Table 1, 519 more black candidates – almost three quarters of all black candidates who failed Written Exam 7029 – would have passed it had the City's pass/fail use of Written Exam 7029 not had a disparate impact. Id., ¶¶ 86-87. An estimated 114 of those additional black passers would have been appointed, more than doubling the number of black firefighters appointed from Exam 7029. Id., ¶ 88. The effect these additional black firefighters would have had on the racial composition of the FDNY is apparent. As of October 2007, the FDNY had only 303 black firefighters. Id., ¶ 8. Thus, 114 additional black firefighters would have been an increase of approximately 38%. Similarly, 282 more Hispanic candidates – or well over half of all Hispanic candidates who failed Written Exam 7029 – would have passed it, absent the disparity between the white and Hispanic pass rates. Id., ¶¶ 95-96. An estimated 62 additional Hispanic firefighters would have been appointed, increasing by approximately 10% the number of Hispanic firefighters in the FDNY. Id., ¶¶ 8, 97.

**B. The City's Pass/Fail Use of Written Exam 2043 Resulted in Disparate Impact.**

Table 2, below, summarizes the impact of the City's pass/fail use of Written Exam 2043 with a cutoff score of 70. Again, as the City has admitted, black and Hispanic candidates passed the written examination at statistically significantly lower rates than white candidates. Id., ¶¶ 53-

[7] In Tables 1 and 2, figures in the column "Adverse Impact Ratio" are equal to the black or Hispanic pass rate divided by the white pass rate. For Table 1, see Pl. Facts, ¶¶ 83, 92.

54, 101, 109. The disparity between the black and white pass rates on Written Exam 2043 is equivalent to 21.84 standard deviations, while the disparity between the Hispanic and white pass rates is equivalent to 10.46 standard deviations. Id., ¶¶ 102, 110. Again, the probability that either disparity would occur by chance is virtually zero – less than one in 4.5 million billion. Id.

**Table 2**
**Impact of the Pass/Fail Use of Written Exam 2043**

| | Disparity in Standard Deviations | Shortfall of Exam Passers | Estimated Hiring Shortfall | Adverse Impact Ratio[8] |
|---|---|---|---|---|
| Blacks | 21.84 | 165 | 30 | 87.8% |
| Hispanics | 10.46 | 94 | 17 | 95.5% |

In terms of practical effect, Table 2 shows that 165 more black candidates – almost four fifths of the black candidates who failed Written Exam 2043 – would have passed it absent the disparity between the black and white pass rates. Id., ¶¶ 103-104. Similarly, absent the disparity between Hispanic and white pass rates, 94 more Hispanics – over three fifths of the Hispanic candidates who failed Written Exam 2043 – would have passed it. Id., ¶¶ 111-112. As of the date of the data provided by the City, an estimated 30 additional blacks and 17 additional Hispanics would have been appointed. Id., ¶¶ 105, 113.

### C. The City's Rank-Order Processing/Selection of Candidates from Exam 7029 Resulted in Disparate Impact.

As shown in Table 3, below, black candidates were under-represented among the higher ranks and over-represented among lower ranks on the Exam 7029 eligibility list. Id., ¶¶ 114-121. Indeed, the City admits that blacks, on average, were ranked statistically significantly lower than whites. Id., ¶¶ 53-54, 115-116. The disparity is equivalent to 6.48 standard deviations. Id.,

[8] See Pl. Facts, ¶¶ 100, 108.

¶ 117. The probability of such a disparity occurring by chance is less than one in 11 billion. Id. This clustering of blacks at the bottom of the eligibility list is illustrated by documents produced by DCAS. According to the documents, only 10.1% of the black candidates on the list were in the top 20% of the list, while 53.8% of them were in the bottom 40%, and 29.2% of them were in the bottom 20% of the list. Id., ¶ 120; see also, id. ¶¶ 118-119.

**Table 3**
**Impact of Rank-Order Processing/Selection**
**from the Exam 7029 Eligibility List**

| | Disparity in Standard Deviations | Percent in Top 20% of List | Percent in Bottom 40% of List | Percent in Bottom 20% of List | Black or Hispanic Firefighters Hired Late | Lost Years of FDNY Wages & Seniority |
|---|---|---|---|---|---|---|
| Blacks | 6.48 | 10.1% | 53.8% | 29.2% | 68 | 20 |
| Hispanics | 4.57 | 14.3% | 47.8% | 36.3% | 86 | 23 |

As Table 3 shows, Hispanic candidates also were under-represented among the higher ranks and over-represented among the lower ranks on the Exam 7029 eligibility list. Id., ¶¶ 123-131. The City admits that, on average, Hispanic candidates were ranked statistically significantly lower than white candidates. Id., ¶¶ 53-54, 125-126. In fact, the disparity is equivalent to 4.57 units of standard deviation. Id., ¶ 127. The probability of such a disparity occurring by chance is less than one in 204,000. Id. According to documents produced by DCAS, only 14.3% of the Hispanics on the Exam 7029 eligibility list were in the top 20% of the list, while 47.8% of them were in the bottom 40%, and 27.3% of them were in the bottom 20%. Id., ¶ 130; see also, id., ¶¶ 128-129.

As shown in Table 3, the practical impact of the City's rank-order processing/selection from the Exam 7029 eligibility list was that, on average, blacks and Hispanics waited longer than

whites to be reached for possible appointment. Id., ¶¶ 122, 132. An estimated 68 black and 86 Hispanic firefighters appointed from Exam 7029 were appointed later than they would have been absent the disparities in ranks. Id. Combined, these firefighters lost a total of approximately 43 years of FDNY wages and seniority. Id.

### D. The City's Rank-Order Selection/Processing of Candidates from Exam 2043 Resulted in Disparate Impact.

Tables 4(a) and 4(b), below, summarize the impact upon blacks and Hispanics of the City's rank-order processing and selection of candidates from the Exam 2043 eligibility list. Table 4(a) provides the same information for Exam 2043 as is provided in Table 3, above, for Exam 7029. Clearly, both black and Hispanic candidates again were under-represented among higher-ranked candidates and over-represented among lower-ranked candidates. Id., ¶¶ 134-140 and 147-153.

**Table 4(a)**
**Impact of Rank-Order Processing/Selection from the Exam 2043 Eligibility List**

| | Disparity in Standard Deviations | Percent in Top 20% of List | Percent in Bottom 40% of List | Percent in Bottom 20% of List | Black or Hispanic Firefighters Hired Late | Lost Years of FDNY Wages & Seniority |
|---|---|---|---|---|---|---|
| Blacks | 9.45 | 11.4% | 56.9% | 46.2% | 44 | 14 |
| Hispanics | 4.55 | 17.2% | 45.4% | 24.6% | 51 | 12 |

As with Exam 7029, one practical effect of the disparity between black and white, and Hispanic and white, ranks on the Exam 2043 eligibility list was delayed hiring. As of the date on which the City produced the data, an estimated 95 firefighters (44 blacks and 51 Hispanics) had been appointed later than they would have been absent the disparity. Id., ¶¶ 146, 158. The result was a loss of over 26 years of FDNY wages and seniority by black and Hispanic firefighters. Id.

However, while the City reached the bottom of the Exam 7029 eligibility list before it expired, the Exam 2043 eligibility list expired in May 2008 with many candidates not reached. See id., ¶¶ 47, 141, 154. In other words, many candidates had no chance of being appointed because they ranked below the lowest-ranked candidate appointed from the list. See id., ¶ 43. As shown in Table 4(b), because black candidates, on average, ranked lower than white candidates, the rate at which blacks were reached for possible appointment was statistically significantly lower than the rate at which whites were reached. Id., ¶ 141. The difference between the rates at which blacks and whites were reached is equivalent to 9.74 standard deviations. Id., ¶ 142. The corresponding disparity for Hispanics and whites also is statistically significant, equivalent to 5.04 standard deviations. Id., ¶¶ 154-155.

**Table 4(b)**
**Impact of Rank-Order Processing/Selection from the Exam 2043 Eligibility List**
**Effect on Rate at Which Candidates Were Reached for Appointment (as of October 2007)**

| | Disparity in Standard Deviations | Shortfall in Candidates Reached | Estimated Hiring Shortfall | Adverse Impact Ratio[9] |
|---|---|---|---|---|
| Blacks | 9.74 | 95 | 42 | 67.6% |
| Hispanics | 5.04 | 63 | 28 | 86.9% |

As shown in Table 4(b), an additional practical effect of the disparate impact of the City's rank-order processing/selection from the Exam 2043 eligibility list was a shortfall of black and Hispanic candidates among those who ranked high enough to be considered for appointment. Id., ¶¶ 145, 157. Absent the disparities in ranks, as of the date on which the City provided data, 95

[9] In Table 4(b), figures in the column labeled "Adverse Impact Ratio" are equal to the rate at which black or Hispanic candidates were ranked high enough to be considered for possible appointment divided by the rate at which white candidates were ranked high enough to be considered for possible appointment. See Pl. Facts, ¶¶ 143-144, 156.

more black candidates and 63 more Hispanic candidates would have been high enough on the eligibility list for possible appointment. Id. An estimated 42 of the additional black candidates and 28 of the additional Hispanic candidates would have been appointed. Id.

**E. Both Black and Hispanic Candidates Disproportionately "Effectively Failed" Written Exam 2043.**

Finally, because the City did not reach the bottom of the Exam 2043 eligibility list, Dr. Siskin also performed an "effective" pass rate analysis. As Dr. Siskin explained in his report:

> Because the City has used Written Exam 2043 on both a pass/fail basis and (in combination with PPT scores) for rank-order processing/selection and has not exhausted the Exam 2043 eligibility list, evaluating the disparate impact of the City's use of Written Exam 2043 based on a cutoff score of 70 understates the true effect of the written examination upon [black] and Hispanic candidates. Given the City's methodology for assigning ranks . . . even candidates who scored above 70 on Written Exam 2043 may not have scored high enough to be considered for appointment, regardless of their scores on the PPT. Such candidates have "effectively failed" the written examination.

Pl. Facts, App. G, p. 6. See also id., pp. 28-31; Pl. Facts, ¶¶ 159-161. Therefore, Dr. Siskin identified the written examination score each candidate would have had to receive to have any possibility of ranking high enough to be reached for appointment. Pl. Facts, ¶ 162. He then re-ran the analyses reflected in Table 2, using these "effective cutoff scores" instead of the nominal cutoff of 70, to identify the candidates who "effectively passed" Written Exam 2043.[10] Id. The Second Circuit has held that such an approach can be used to establish a prima facie case. See Waisome v. Port Auth. of New York and New Jersey, 948 F.2d 1370 (2d Cir. 1991). See also Dist. Council 37, AFSCME v. New York City Dep't of Parks and Rec., 113 F.3d 347, 353-54 (2d Cir. 1997); Guinyard v. City of New York, 800 F. Supp. 1083, 1089 (E.D.N.Y. 1992).

---

[10] The City's experts have not criticized the methodology Dr. Siskin used to conduct his effective cutoff score analyses.

The results of Dr. Siskin's effective pass rate analyses are shown in Table 5. The disparities between the effective pass rates of black and white candidates, and Hispanic and white candidates, on Written Exam 2043 are statistically significant, equivalent to 21.89 and 10.52 units of standard deviation, respectively. Pl. Facts, ¶¶ 164, 168.

**Table 5**
**Impact of Written Exam 2043 at Effective Cutoff**

| | Disparity in Standard Deviations | Shortfall of Effective Passers | Estimated Hiring Shortfall[11] | Adverse Impact Ratio[12] |
|---|---|---|---|---|
| Blacks | 21.89 | 401 | 70 | 59.0% |
| Hispanics | 10.52 | 242 | 45 | 83.8% |

In practical terms, the disparate impact of Written Exam 2043 effectively eliminated 401 black candidates and 242 Hispanic candidates from any possibility of appointment. Id., ¶¶ 165, 169. But for the disparity in effective pass rates, an estimated 70 additional blacks and 45 additional Hispanics would have been appointed as firefighters. Id., ¶¶ 166, 170.

### F. The City's Contention That Some of the Challenged Practices Did Not Result in Disparate Impact Upon Blacks and That None of the Challenged Practices Resulted in Disparate Impact Upon Hispanics Is Based on a Fundamental Misunderstanding of Title VII Disparate Impact Law.

Based on the report of its experts, the City apparently intends to rely on three arguments to attempt to rebut the United States' prima facie case. First, the City's experts assert that the

---

[11] The estimated hiring shortfalls presented in Table 5 show the total effect on hiring of the City's use of Written Exam 2043 as a pass/fail hurdle and for ranking. The black hiring shortfall here is slightly lower than the sum of the black hiring shortfalls shown in Table 2 (due to pass/fail use of Written Exam 2043) and Table 4(b) (due to rank-order processing/selection). This is the case because candidates were ranked based on a combination of their written examination and PPT scores, and the PPT also disadvantaged blacks slightly.

[12] Figures in the column labeled "Adverse Impact Ratio" are equal to the black or Hispanic effective pass rate divided by the white effective pass rate. See Pl. Facts, ¶¶ 163, 167.

disparities at issue are statistically significant because of the large sample sizes involved. Second, they point out that some of the disparities, although statistically significant, do not violate the 80% Rule suggested by the Uniform Guidelines on Employee Selection Procedures as a "rule of thumb" to guide federal enforcement agencies. See Watson, 487 U.S. at 995-96 n.3 (80% Rule "has been criticized on technical grounds" and "has not provided more than a rule of thumb for the courts"); EEOC v. Joint Apprenticeship Comm., 186 F.3d 110, 118 (2d Cir. 1999) (80% Rule is "merely a rule of thumb to be considered in appropriate circumstances"); Waisome, 948 F.2d at 1375-76. See also, Pl. Facts, ¶ 61. Finally, the City's experts assert that, although each of the disparities is statistically significant, the United States has not established that some of them are "practically significant." Each of the arguments is based upon a fundamental misunderstanding of Title VII disparate impact law.

**1. Large "samples" of candidates mean that the Court can be very confident that the disparities are not the result of chance.**

As Dr. Siskin explained in his November 2007 report, the results of the tests of statistical significance commonly relied upon by the courts are a function of both the absolute size of the disparity at issue and the size of the sample (i.e., the number of candidates).[13] Id., ¶ 55. Thus, it

[13] Oddly, in their January 2008 report, the City's experts take pains to explain this fact, even though Dr. Siskin already had pointed it out. Id., ¶ 55. The discussion by the City's experts is, however, misleading in two respects. First, the City's expert report suggests that the sample size in this case is unique because of the City's large population. In fact, the relevant sample size is the number of applicants. Larger samples can and do exist when, e.g., an examination is administered statewide, more than once or in a jurisdiction that attracts many applicants from elsewhere. Second, the City's experts attempt to rely on calculations Dr. Siskin performed using hypothetical smaller samples. In order to illustrate the fact that statistical significance does not depend solely on sample size, Dr. Siskin re-ran a number of his calculations using sample sizes 90% smaller than those actually at issue. There is no support for the proposition that it is appropriate to rely on such hypothetical results to determine whether a practice actually resulted in a disparate impact.

is undisputed that, for example, a disparity between pass rates of 70% and 80% may be equivalent to more than two standard deviations if the disparity occurs in a large sample, but not if it occurs in a smaller one. However, any argument that this undisputed statistical fact rebuts the United States' prima facie case reveals a fundamental misunderstanding of the reason the courts consider tests of statistical significance in the first place. In a disparate impact case, a standard deviation analysis is used to tell the court how confident it can be that the disparity observed in the sample (i.e., the group of candidates) is not due to random chance. See, e.g., Waisome, 948 F.2d at 1376 ("the more standard deviations the lower the probability the result is . . . random"); Bridgeport Guardians, Inc. v. City of Bridgeport, 933 F.2d 1140, 1143 (2d Cir. 1991), cert. denied, 502 U.S. 924 (1991) (a given pattern that can be expected to occur five times out of 100 "can reasonably be attributed to chance"); Guardians, 630 F.2d at 87 n.4 (the number of standard deviations indicates "the likelihood that this difference would have been the result of chance"); Smith v. Xerox Corp., 196 F.3d at 365 (two standard deviations indicates a 5% probability that a disparity is due to chance). See also Pl. Facts, ¶¶ 52-54. If the standard deviation analysis indicated that the observed disparity reasonably could be due to chance, then the analysis would not establish that the challenged employment practice – rather than chance – caused the disparity.

Flipping a coin to determine whether it is biased is a common illustration of why sample size affects – and should affect – the results of a test of statistical significance. See Pl. Facts, ¶ 56. Theoretically, flipping an unbiased coin should result in heads half (50%) of the time. However, because of chance, a given sample of flips will not always produce that result. For example, flipping an unbiased coin ten times could easily produce a result of 60% heads (six

heads and four tails). Therefore, a result of six heads on ten coin flips would not indicate with a reasonable degree of certainty that the coin is biased. Id. Ten flips is not a large enough sample for one to conclude that the disparity between the 60% rate at which heads came up and the 50% expected rate of heads is attributable to the coin, rather than chance. However, if the coin is flipped 1,000 times, a result of 600 heads would allow one to conclude with a high degree of certainty that the coin is biased and that the disparity between the 60% rate at which heads came up and the 50% expected rate of heads is not due to chance. Id. With a large sample, differences due to chance will balance out, so it is unlikely that the observed difference is due to chance. Thus, the fact that this case involves large numbers of candidates – large samples – simply means that the Court can be very confident that the observed black/white and Hispanic/white disparities are not due to chance. Id., ¶ 57.

**2. The City's experts agree that a disparity need not violate the 80% Rule to constitute disparate impact.**

As shown in Tables 1, 2, 4(b) and 5, above, with respect to some of the challenged practices, the ratio of the black or Hispanic pass rate to the white pass rate (the "adverse impact ratio" or "80% Rule ratio") is greater than 80%. It appears that the City will contend that, in at least some of those instances, the United States has not established a prima facie case. See Pl. Facts, App. Z at pp. 11-12. That contention also is based on a fundamental misunderstanding of Title VII law.

As discussed above, the courts in this Circuit have stated repeatedly that a disparity equivalent to two to three standard deviations is sufficient to establish a prima facie case of disparate impact. The courts have, at times, also considered whether a disparity violates the

"80% Rule" suggested as a "rule of thumb" by the Uniform Guidelines.[14] Pl. Facts, ¶ 61. The City's experts agree that a practice that produces an adverse impact ratio greater than 80% (i.e., "passes" the 80% Rule) may nonetheless result in disparate impact. Id., ¶ 62. Indeed, in their report, the City's experts quote the Uniform Guidelines as stating:

> A selection rate for any race . . . or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be . . . . Smaller differences in selection rate may nevertheless constitute adverse impact, where they are significant in both statistical and practical terms . . . .

Pl. Facts, App. R, p. 7 (quoting 29 C.F.R. § 1607.4 D (emphasis added)). Consistent with the language of the Guidelines, Dr. Schemmer, the City's expert, agreed that a rule of thumb is a rule that does not always produce the correct answer. Pl. Facts, ¶ 61. In fact, the City's other expert, Dr. Bobko, testified that with large samples, such as those present here, Dr. Siskin's standard deviation analyses are more likely than the 80% Rule to produce the right answer to the question of whether an employment practice caused a disparate impact.[15]

---

[14] To use the 80% Rule, one computes the ratio of the pass rate of one group (e.g., blacks) to the pass rate of another group (e.g., whites) and compares the ratio to 80%. Pl. Facts, ¶ 59. In the Tables above, the results of this calculation are shown in the column labeled "Adverse Impact Ratio." The parties' experts have identified a number of reasons why the 80% Rule cannot be viewed as anything other than a rough rule of thumb. For example, as the City's experts admit, the 80% Rule ignores sample size and, therefore, does not indicate the probability that an observed disparity is due to chance. Pl. Facts, ¶ 60. In addition, they agree with Dr. Siskin that there is no necessary or inherent reason why 80%, rather than, e.g., 90% or 70%, should be used as a standard. Id., ¶ 66. Moreover, the City's experts concede that the 80% Rule can only be used to assess the practical significance of pass/fail use of a selection device and not rank-ordering. Id., ¶ 67.

[15] Dr. Bobko testified that, as compared to the 80% Rule, with a large sample size, a standard deviation analysis will result in both fewer "false positives" (situations in which the test used will indicate disparate impact when there is none) and fewer "false negatives" (situations in which the test used will indicate there is no disparate impact when one exists). Id., ¶ 64.

The courts have viewed the 80% Rule and tests of statistical significance (standard deviation analyses) as alternative means of establishing disparate impact. See, e.g., United States v. New York City Bd. of Educ., 487 F. Supp. 2d 220, 224 (E.D.N.Y. 2007) (referring to "alternative" methods); U.S. v. City of Yonkers, 609 F. Supp. at 1286-1287 (same); Cuesta v. State of New York Office of Court Admin., 657 F. Supp. 1084, 1095 (S.D.N.Y. 1987) (80% Rule not "a bright line rule applicable in all situations"); Smith v. Xerox Corp., 196 F.3d 358 (2d Cir. 1999) (ADEA case referring to "alternative measure" and finding actionable disparate impact may exist with adverse impact ratio of 88.79%); EEOC v. Joint Apprenticeship Comm., 164 F.3d at 96-97 (80% Rule is "merely a rule of thumb to be considered in appropriate circumstances," and disparate impact existed with ratio greater than 80%). As stated previously, it is uncontested that the disparities at issue are equivalent to between 4.55 and 33.90 units of standard deviation. Moreover, as discussed in the following section of this Memorandum, the disparities at issue had a practically important adverse impact upon blacks and Hispanics. There is nothing in the Uniform Guidelines or the caselaw that supports the City's argument that the 80% "rule of thumb" somehow trumps this undisputed evidence of disparate impact.

**3. The disparities at issue are significant in practical terms.**

The City's experts admit that the 80% Rule is just one possible measure of practical significance. Pl. Fact, ¶ 68. As alternative measures, Dr. Siskin presented shortfall analyses and analyses regarding delayed hires. His results are presented in Tables 1-5 and discussed above. As Dr. Siskin explained, shortfalls are a method of assessing the practical effect of a disparity between two groups in terms of the number of individuals adversely affected in a real-world way. Id., ¶ 70. For example, a shortfall in examination passers is the number of additional blacks or

Hispanics who would have passed the examination but for the disparity in pass rates. Similarly, a hiring shortfall is an estimate of the additional number of blacks or Hispanics who would have been appointed if there had been no disparity in pass rates or ranks. Finally, as a measure of whether black or Hispanic candidates who were appointed were appointed later than they would have been, but for a disparity in ranks, Dr. Siskin calculated an estimated shortfall of black or Hispanic candidates in each academy class the City appointed – in other words, the number of individuals per class whose hiring was delayed. Id., ¶ 71.

Apparently, the City will contend that the substantial shortfalls and delays calculated by Dr. Siskin were of no practical importance. The report of the City's experts makes several complaints about Dr. Siskin's shortfall and delay analyses. Again, each of these complaints is based on a fundamental misunderstanding of disparate impact law. None of the criticisms rebuts the United States' evidence that each of the challenged practices resulted in disparities that are important in a very practical sense.

First, the City's experts complain that Dr. Siskin's shortfall calculations, unlike the 80% Rule, are affected by "sample size." As Dr. Bobko admitted, however, there is no method of evaluating how many people were adversely affected by a practice that would not depend on sample size. Id., ¶ 75. Clearly, how many blacks and Hispanics were affected is relevant to the question of practical significance. Indeed, it is difficult to imagine a more relevant measure of practical impact than the number of additional protected class members who would have passed an examination, been appointed, or been appointed sooner had there been no disparity.

Similarly, the City's experts complain in their report that the hiring shortfalls calculated

by Dr. Siskin are "estimates."[16] Of course, it is not possible to determine exactly how many additional black and Hispanic candidates would have been appointed absent the disparities in pass rates and ranks, because the City did not allow candidates who failed the written examination or ranked too low on the eligibility list to proceed in the hiring process. Id., ¶ 74. Moreover, the City cannot argue that Dr. Siskin overestimated the shortfalls. Dr. Bobko, the City's expert, admitted that the number of additional blacks and Hispanics who would have been appointed if the City had allowed them to proceed in the hiring process could be either higher or lower than Dr. Siskin's estimates, and that Dr. Siskin's estimates are right "in the middle." Id., ¶ 73.

Finally, the City's experts complain that Dr. Siskin's shortfall analyses are based on an "exact parity" or "perfect world" assumption. For example, Dr. Siskin explained in his report that the hiring shortfall among blacks due to the City's pass/fail use of Written Exam 7029 is the difference between the number of black candidates who actually were hired and the estimated number who would have been hired if there were no difference (parity) between the rates at which black and white candidates passed the examination. However, that is no basis for criticism. The Second Circuit has accepted "no difference" as the appropriate standard for evaluating disparate impact. For example, in Smith v. Xerox Corp., 196 F.3d at 366, the Second Circuit stated:

> This [standard deviation analysis] posits . . . that there was no disparity between the two groups compared. . . . Another way of saying that a [disparity] is statistically significant .

---

[16] Dr. Siskin's other shortfall calculations – e.g., the shortfalls in black and Hispanic written examination passers – are not estimates. They are the actual numbers of additional black and Hispanic candidates who would have passed if there had been no difference between black, Hispanic and white pass rates.

> . . is to say that the obtained result . . . varied from the expected result, i.e., no difference between the two groups compared, by two standard deviations.

(Emphasis added). Given that the Second Circuit has ratified no difference – or parity – as the touchstone when evaluating the statistical significance of a disparity, this Court must reject any assertion that it is inappropriate when evaluating the practical significance of the same disparity.

In summary, there is no question that hundreds of black and Hispanic candidates have felt the practical impact of the challenged practices. Over 1,000 additional blacks and Hispanics would have passed the written examinations but for the disparities at issue. In fact, Dr. Siskin has estimated that nearly 300 additional black and Hispanic candidates would have become FDNY firefighters absent the disparities. Those figures cannot be brushed off as having no practical significance, particularly in light of the fact that, as of October 2007, the FDNY had only about 900 black and Hispanic firefighters. In addition, about 39% of the black and Hispanic firefighters who were appointed from Exam 7029 and 2043 were appointed late due to the disparate impact of the challenged practices, resulting in a total loss of over 69 years of FDNY wages and seniority. The Court must reject any contention that the disparities at issue – all of which the City admits are statistically significant – are not practically significant as well.

## V. CONCLUSION

For the foregoing reasons, the United States respectfully requests that the Court find that the United States has established a prima facie case of disparate impact with respect to both blacks and Hispanics for all of the challenged practices and, therefore, grant the United States' Motion for Partial Summary Judgment.

Dated: January 30 2009

Respectfully submitted,

LORETTA KING
Acting Assistant Attorney General

S/

Sharon A. Seeley
Special Litigation Counsel
(202) 514-4761
Clare Geller
David N. Reese
Carolyn Weiss
Varda Hussain
Trial Attorneys
United States Department of Justice
Civil Rights Division
Employment Litigation Section
950 Pennsylvania Avenue, N.W.
Patrick Henry Building, Room 4500
Washington, D.C. 20530
Telephone: (202) 514-4761
Facsimile: (202) 514-1005

BENTON J. CAMPBELL
United States Attorney

S/

Elliot M. Schachner
David M. Eskew
Assistant United States Attorneys
Eastern District of New York
271 Cadman Plaza East
Brooklyn, New York 11201-1820
Telephone: (718) 254-6053
Facsimile: (718) 254-6479