# DATA BULLETIN 

Bureau of Data Collection, Research and Evaluation

## DESIGNATION OF TEACHER SHORTAGE AREAS FOR THE 2012-13 SCHOOL YEAR <br> (Fall Hiring Report)

Results from the 2011 Fall Hiring Survey revealed little change in the number of total and available positions that the Local Education Agencies (LEAs) sought to staff for the 2011-12 school year, in comparison with the prior year. However, these stagnant overall figures obscure some more negative local trends as, for example, the number of available positions dropped sharply in the larger urban districts and total positions declined slightly. Fourteen public LEAs and nearly half of all state-approved private special education programs had no available positions. Furthermore, the percentage of districts that noted that their local budgetary and administrative difficulties negatively affected their ability to staff their available positions nearly tripled. Eight of the 10 shortage areas identified by the 2011 Fall Hiring Survey were also shortage areas in the prior year. New shortage areas included Hearing Impaired, PK-12, and School and Library Media Specialists.

The Fall Hiring Survey is an annual collection of information, primarily concerning certified educational positions, designed to track employment trends and identify teacher shortage areas. Results from the 2011 Fall Hiring Survey were used to determine the shortage areas for the 2012-13 school year. Teachers and administrators in shortage areas may qualify for federal student loan deferral or forgiveness and may also be eligible for mortgage assistance through the Connecticut Housing Finance Authority (CHFA). School districts may utilize the shortage area designations to rehire retired teachers and administrators who are not subject to earnings limits. Fall Hiring Survey participants in 2011 included the 166 public school districts, 17 charter schools, six regional educational service centers (RESCs), the three endowed and incorporated academies, the

Teacher Shortage Areas for the 2012-13 School Year (based upon 2011 Fall Hiring Survey results):

- Bilingual Education, PK-12
- Comprehensive Special Education, K-12
- Hearing Impaired, PK-12
- Intermediate Administrator
- Mathematics, 7-12
- Remedial Reading and Language Arts, 1-12
- School Library and Media Specialist
- Science, 7-12
- Speech and Language Pathologist
- World Languages, 7-12

Connecticut Technical High School System, the Connecticut Departments of Corrections, Children and Families, and Developmental Services, and 50 state-approved, non-public special education programs.

## Public School Employment Trends, School Years 2007-08 to 2011-12

Static public school employment figures reflected the continuing weak economy and resultant strained local and state education budgets. There was very little change in the total number of certified positions ( -0.2 percent), available positions ( 0.2 percent) and the rate at which available positions were filled ( -0.5 percentage points: Table 1). Consequently, the numbers of total certified and available positions remained below those from the 2007-08 school year, which was the beginning of the most recent recession. Fourteen public LEAs (7 percent) did not have any available positions and this was a slight increase from thirteen in the previous year.

Table 1: Public School Hiring, School Years 2007-08 to 2011-12

| School Year | Total Certified Positions | Available <br> Positions LEAs Sought to Fill | Percent of Available Positions that were Part-time | Available Positions as Percent of Total Positions | Percent of Available Positions Filled by Oct. 1 | Available <br> Positions <br> Not Filled <br> by Oct. 1 | Available Positions Not Filled by October 1 Due to Lack of Qualified Applicants | Median Applicants per Available Position |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2011-12 | 52,126 | 3,267 | 10.4\% | 6.3\% | 92.1\% | 258 | 134 | 25 |
| 2010-11 | 52,208 | 3,260 | 10.4\% | 6.2\% | 92.6\% | 241 | 95 | 23 |
| 2009-10 | 52,718 | 2,957 | 10.9\% | 5.6\% | 91.4\% | 255 | 112 | 20 |
| 2008-09 | 53,427 | 4,533 | 8.1\% | 8.5\% | 94.1\% | 269 | 187 | 16 |
| 2007-08 | 53,129 | 4,793 | 8.2\% | 9.0\% | 92.0\% | 382 | 263 | 15 |
| Change 2010-11 to 2011-12 | -0.2\% | 0.2\% | - | - | - | 7.1\% | 41.1\% | 8.7\% |
| Change 2007-08 to 2011-12 | -1.9\% | -31.8\% | - | - | - | -32.5\% | -49.1\% | 66.7\% |

While the number of available positions declined over the last five years, the median number of appropriately certified applicants per position increased sharply from 15 to 25 . As a consequence of these and other factors, the percentage of available positions that remained vacant due to the lack of qualified applicants steadily declined from 2007 to 2010, but surprisingly increased in 2011 (Figure 1). ${ }^{1}$ Similarly, the percent of "minimally qualified" hires, those selected from small applicant pools whose quality had been rated poorly by districts, declined from 2007 through 2009, but has increased slightly over the last two years. ${ }^{2}$

## Figure 1: Percent of Available Positions Remaining Vacant Due to Lack of Qualified Applicants and Percent of All Minimally Qualified Hires,



## Local Hiring Trends

To examine local hiring trends, the 2011 Fall Hiring Survey Results were analyzed utilizing District Reference Groups (DRGs), a classification system that groups school districts based upon community and student socio-demographic characteristics. ${ }^{3}$ This revealed significant differences, particularly between the suburban districts with high socioeconomic status (SES) and the moderate- to larger-sized urban districts. For example, the total number of certified positions declined in the moderate-sized (DRG G) and largest urban districts (DRG I), while they increased in the wealthiest suburban districts (DRGs A and B: Table 2). Similarly, larger urban districts (DRGs H and I: Table 2) had fewer available positions, while the wealthiest suburban districts (DRGs A and B) experienced moderate growth. Part-time positions were a much larger share of available positions in the wealthier districts (DRGs A, B and C) and the smallest rural districts (DRG E), than in the moderate to larger districts (DRGs G, H and I). The small rural districts (DRG E) had the lowest median of appropriately certified applicants per available position while the wealthiest suburban districts (DRG A) had the highest.

Continuing the pattern, suburban districts with higher SES filled more of their available positions (DRGs A and B) than the larger urban districts (DRGs H and I). Notably, it was the smaller suburban districts with moderate SES (DRG F) that staffed the lowest percent of their available positions (86.4 percent). Compared with 2010, most DRGs filled their available positions at about the same rate and the only significant exceptions were increases by the moderate-sized urban districts with modest SES (DRG G: 5.8 percentage points), and moderate suburban districts with higher SES (DRG D: 3 percentage points). Suburban districts with higher SES had the lowest percentage of available positions that remained vacant, due to the lack of qualified applicants (DRGs A, B and D: all less than 3 percent), while the largest urban districts had the highest (DRG I: 8.9 percent - See Figure 2). Smaller suburban districts with moderate SES (DRG F) had the highest percent of minimally qualified hires (11.8 percent - See Figure 2).

Table 2: Hiring Statistics by District Reference Groups, 2011-12

| DRG | Total Certified Positions | Change in <br> Total <br> Positions, 2010 to 2011 | Available <br> Positions LEAs Sought to Fill for 2010-11 School Year | Change in Available Positions, 2010 to 2011 | Percent of Available Positions that were Part-time | Percent of Available Positions Filled by October 1 | Available Positions Not Filled by October 1 | Median Applications per Available Position |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A | 2,974 | 0.7\% | 185 | 5.1\% | 12.4\% | 96.2\% | 7 | 32.5 |
| B | 8,976 | 0.4\% | 544 | 4.2\% | 15.6\% | 96.9\% | 17 | 23 |
| C | 3,710 | 0.1\% | 233 | 15.3\% | 19.3\% | 92.3\% | 18 | 22 |
| D | 7,617 | -1.0\% | 412 | 2.5\% | 11.7\% | 96.1\% | 16 | 29 |
| E | 2,510 | 1.9\% | 154 | -0.6\% | 14.9\% | 94.2\% | 9 | 20 |
| F | 2,652 | -0.2\% | 118 | 0.9\% | 11.9\% | 86.4\% | 16 | 21 |
| G | 6,051 | -0.7\% | 378 | 39.5\% | 8.2\% | 94.7\% | 20 | 29 |
| H | 5,806 | 0.2\% | 342 | -19.9\% | 4.1\% | 92.7\% | 25 | 25 |
| I | 8,537 | -0.6\% | 552 | -16.7\% | 2.7\% | 90.0\% | 55 | 23.5 |
| NA* | 4,449 | 2.4\% | 443 | 2.3\% | 12.0\% | 79.7\% | 90 | 13 |

[^0]Figure 2: Percent of Available Positions that
Remained Vacant, Due to a Lack of Qualified
Applicants and Minimally Qualified Hires, as a Percent of All Hires by DRG, 2011-12


## State-approved, Non-public Special Education Programs

The continuing fragile economy also affected the stateapproved, non-public special education programs. Among these 50 programs, nearly half (22) did not have any available certified positions that they sought to fill for the

2011-12 school year, which was an increase from 18 programs in the prior school year. ${ }^{4}$ While the number of total positions increased slightly with the addition of some new programs, available positions fell to their lowest level in four years (Table 3). Furthermore, the percent of available positions that were part-time posts also nearly doubled from 7.4 percent to 13.8 percent. In comparison with public LEAs, non-public special education programs filled a lower percentage of their available positions ( 84.0 percent versus 92.1 percent), had a higher percentage of available positions that remained vacant due to the lack of qualified applicants ( 12.8 percent versus 4.1 percent) and had more "minimally qualified" hires (13.9 percent versus 8.7 percent). Available positions were also a higher percentage of total positions in state-approved, nonpublic special education programs than in public LEAs (9.8 percent versus 6.2 percent).

## Public-school, Non-certified Special Services

The number of available, non-certified special services positions that LEAs sought to fill remained static with 251 for the 2011-12 school year compared with 248 for the prior year (Table 4). ${ }^{5}$ The current number of available positions is considerably lower than the number that was available five years ago (367). Public LEAs filled 92.4 percent of available, non-certified special services positions.

Table 3: State-approved, Non-public Special Education Programs, 2008-09 to 2011-12

| School Year | Total <br> Certified <br> Positions | Available <br> Positions LEAs <br> Sought to Fill | Percent of Available Positions that were Part-time | Available Positions as a Percent of Total Positions | Percent of Available Positions Filled by October 1 | Available Positions Not Filled by October 1 | Available Positions Not Filled by October 1 Due to Lack of Qualified Applicants | Median Applications per Available Position |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2011-12 | 955 | 94 | 13.8\% | 9.8\% | 84.0\% | 15 | 12 | 5 |
| 2010-11 | 900 | 108 | 7.4\% | 12.0\% | 82.4\% | 19 | 9 | 6 |
| 2009-10 | 904 | 111 | 10.8\% | 12.3\% | 80.2\% | 22 | 14 | 5 |
| 2008-09 | 857 | 110 | 4.5\% | 12.8\% | 75.5\% | 27 | 20 | 3.5 |

Table 4: Public-school, Non-certified Special Services, 2011-12

|  | Available Positions <br> LEAs Sought to <br> Fill for 2010-11 <br> School Year | Available <br> Positions Not <br> Filled by <br> October 1 | Median <br> Applicants per <br> Available <br> Position |
| :--- | ---: | ---: | ---: |
| Service Area | 2 | 0 | 4 |
| Licensed Physical Therapist | 3 | 0 | 11.5 |
| Licensed Occupational Therapist | 11 | 1 | 30 |
| Pre-kindergarten Paraprofessional | 15 | 0 | 65.5 |
| Kindergarten Paraprofessional | 34 | 4 | 19 |
| Regular Program Paraprofessional | 170 | 13 | 33 |
| Special Education Paraprofessional | 2 |  | 10 |
| English as a Second Language <br> (ESL)/Bilingual Paraprofessional | 14 | 1 | 10.5 |
| Other Program Paraprofessional |  |  | 0 |

## Accounting for October Vacancies

Public school LEAs reported that 52 percent of all positions, which remained vacant on October 1, were due to the lack of qualified candidates. This was a significant increase from 39 percent in the previous year and is particularly surprising, as the median number of applicants per available position increased during this time. Districts with October vacancies most frequently cited late postings as a key factor that affected the size and quality of their applicant pools (Figure 3). However, this percentage declined in comparison with 2010 as did the percentage that cited one-year positions as a factor. Conversely, the percentage of districts that cited local administrative or budgetary difficulties nearly tripled from 7.6 percent in 2010 to 21.6 percent in 2011.

Figure 3: Factors Affecting the Size and Quality of Applicant Pools for Positions that Remained Vacant on October 1, 2010, and October 1, 2011


## LEA Responses to October Vacancies

Over the last two years, public LEAs' most common response to October vacancies was the use of short-term substitutes (Figure 4). Furthermore, the use of short-term
substitutes increased in 2011. Additionally, LEAs left more administrative positions vacant. Conversely, they were less likely to cancel courses, redistribute students among other classes or require teachers to teach additional classes.

Figure 4: LEA Responses to October Vacancies, 2010-11 and 2011-12


## Shortage Areas, 2012-13

Connecticut's shortage areas have remained fairly consistent over the last five years. Based upon the 2011 Fall Hiring Survey, the only new shortage areas for the 2012-13 school year will be School Library Media Specialist and Hearing Impaired, PK-12. Collectively, the shortage areas accounted for 38.2 percent of total positions and 44.4 percent of available positions that LEAs sought to fill. They were 52.8 percent of all vacancies and 65.1 percent of vacancies due to the lack of qualified applicants. The shortage areas accounted for only 32 percent of all first Connecticut certificates that were issued or renewed, but most of the positions were staffed under Durational Shortage Area Permits (DSAPs: 70.1 percent) and long-term substitutes ( 54.8 percent). They were also 60.9 percent of minimally qualified hires. Among the

Table 5: Designated Shortage Areas for the 2012-13 School Year Based upon 2011 Fall Hiring Survey Results


shortage areas, total Bilingual Education positions and available positions declined precipitously. Conversely, total positions increased significantly for Mathematics, 7-12, and World Languages, 7-12 (Table 5). Although total Science, 7-12, positions declined slightly, the number of available positions sharply increased suggesting that there was significant personnel turnover.

The number of positions that remained vacant due to the lack of qualified applicants was the most critical factor used to identify shortage areas (Appendix A). With the exceptions of Comprehensive Special Education, K-12, and Mathematics, 7-12, all of the shortage areas had higher percentages of vacancies, due to the lack of qualified applicants, than that for the state as a whole ( 4.3 percent). These types of vacancies were prevalent in Bilingual Education (44.4 percent), Hearing Impaired, PK-12 (35.7 percent), School Library Media Specialist (13.5 percent), and Speech and Language Pathology (12.7 percent).

A second important factor in the identification of shortage areas was the median number of appropriately certified applicants per available position. Median applicants for Hearing Impaired, PK-12 (4.5), Speech and Language Pathologist (6), Bilingual Education (8), World Languages, 7-12 (8), School Library Media Specialist (11.5), and Remedial Reading and Language Arts positions (12) were well below the statewide median (25). They were strikingly lower than the median number of applicants in such nonshortage areas as Elementary, K-6 (178), History and Social Studies (72.5) and English, 7-12 (53).

A third factor for identifying shortage areas was the number of first or renewed Connecticut certificates per available position. Fewer certificates issued meant fewer potential applicants. The median by certification area was 1.2 new certificates or renewals per available position. With the exceptions of Comprehensive Special Education, K-12, and Intermediate Administrator, however, most of the shortage areas averaged less than one renewal per available position.

The fourth factor used to identify shortage areas was the use of long-term substitutes and DSAPs during the 2010-11 school year. On average, there were four DSAPs and three long-term substitutes per endorsement type; however, LEAs employed them more frequently in shortage areas such as Intermediate Administrator (32 DSAPs), World Languages (18 and 25 respectively), Special Education (28 and 19), Science, 7-12 (11 DSAPs), Math, 7-12 (8 and 8) and Bilingual Education (13 and 6).

A final shortage indicator was the prevalence of "minimally qualified hires (See Footnote 2)." They were a significant percentage of new hires for several shortage areas (Figure 5).

Figure 5: Minimally Qualified Hires as a Percentage of All Hires in Selected Shortage Areas, 2011-12


## Footnotes

${ }^{1}$ In the distribution of applicants for available positions, the median is the middle value, meaning that half of all available positions had more applicants while half had fewer. Positions remaining vacant had fewer median applicants than those that were filled (18 versus 25). The median varies by endorsement but the overall median is intended to provide a general indicator. See Table 6 for the median number of applicants per position by endorsement.

2"Minimally qualified hires" are those hired from an applicant pool of fewer than 20 , which also received the poorest quality rating from LEAs ("few or no 'minimally qualified' candidates").
${ }^{3}$ For more on DRGs, including DRG membership, see http://sdeportal.ct.gov/Cedar/Files/Pdf/Reports/db_drg_06_2006.pdf.
${ }^{4}$ State-approved, non-public special education programs are private facilities that have applied to and received approval from the Connecticut State Department of Education (CSDE) to provide special education services to public school students upon the request of public school districts. They are required to participate in the Fall Hiring Survey. However, they are private entities and so their data were not included with the public school figures (Table 1 and Figures 1 through 4). Their data are, however, included in the determination of shortage areas.
${ }^{5}$ Non-certified, special services data were not included in any analysis and are only presented in Table 4.

## For Further Information Contact:

| Subject | Contact | Contact Information |
| :--- | :--- | :--- |
| Federal Perkins Loan <br> Deferment/Forgiveness | U.S. Department of Education | $1-800-433-3243$ and <br> http://studentaid.ed.gov/PORTALSWebApp/students/ <br> english/cancelstaff.jp |
| Teachers' Mortgage Assistance <br> Program | Connecticut Housing Finance Authority <br> (CHFA) | $860-721-9501$ or $860-571-3502$ and http://www.chfa.org |
| Teacher Certification | CSDE Bureau of Certification Helpline | $860-713-6969$ and <br> http://www.sde.ct.gov/sde/cwp/view.asp?a=2613\&Q $=321$ |
| Teacher Retirement/Rehiring of <br> Retired Teachers | $\underline{\underline{230}}$ |  |
| Fall Hiring Survey Data and <br> Analysis | CSDE Bureau of Data Collection, Research <br> and Evaluation | $\underline{\text { http://www.ct.gov/trb/site/default.asp }}$ |

Table 6: 2011-12 Hiring Statistics by Endorsement

| Endorsement | Available Positions that LEAs Sought to Fill for 2011-12 | October 1 <br> Vacancies <br> Due to Lack of Qualified Applicants | Durational Shortage Area Permits | Temporary Authorization for Minor Assignments | Minimally Qualified Hires | Median Applicants | First CT <br> Certificates and Renewals | Median <br> Applicant <br> Quality <br> Rating ${ }^{1}$ | Shortage Rank |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Agriculture, PK-12 | 3 | 0 | 0 | 0 | 0 | 11 | 7 | 4 | 43 |
| Art, PK-12 | 61 | 6 | 1 | 0 | 2 | 30.5 | 97 | 3 | 18 |
| Bilingual, PK-12 | 18 | 8 | 13 | 0 | 6 | 8 | 5 | 1 | 3 |
| Blind, PK-12 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 31 |
| Business, 7-12 | 24 | 1 | 0 | 0 | 0 | 29 | 31 | 4 | 34 |
| Comprehensive Special Education, K-12 | 377 | 12 | 28 | 0 | 11 | 31 | 452 | 3 | 7 |
| Cooperative Work Education/Diversified | 4 | 0 | 1 | 0 | 1 | 4.5 | 1 | 2 | 30 |
| Department Chairperson | 7 | 1 | 12 | 0 | 1 | 3 | 18 | 2 | 14 |
| Elementary, K-6 | 649 | 7 | 1 | 0 | 2 | 178 | 1324 | 5 | 17 |
| English, 7-12 | 232 | 2 | 3 | 3 | 4 | 53 | 316 | 4 | 24 |
| English, Middle School | 33 | 1 | 2 | 0 | 9 | 33 | 24 | 3 | 27 |
| External Diploma Program/Noncredit Mandated Program | 1 | 0 | 0 | 0 | 0 | 14 | 58 | 4 | 46 |
| Health Occupations - VT Schools | 4 | 4 | 0 | 0 | 0 | 16 | 3 | 1 | 25 |
| Health, PK-12 | 49 | 0 | 1 | 3 | 2 | 39 | 47 | 4 | 41 |
| Hearing Impaired, PK-12 | 14 | 5 | 0 | 0 | 5 | 4.5 | 9 | 1.5 | 9 |
| High School Diploma Program | 8 | 5 | 0 | 0 | 0 | 10 | 208 | 2.5 | 22 |
| History and Social Studies, 7-12 | 147 | 1 | 0 | 4 | 6 | 72.5 | 298 | 4 | 29 |
| History and Social Studies, Middle School | 8 | 0 | 0 | 1 | 0 | 96.5 | 23 | 4.5 | 48 |
| Home Economics, PK-12 | 18 | 1 | 1 | 0 | 9 | 6 | 10 | 1 | 16 |
| Integrated Early Childhood/Spec. Ed, Birth-K | 12 | 0 | 2 | 0 | 5 | 17 | 13 | 1.5 | 33 |
| Integrated Early Childhood/Spec. Ed, Nursery-KElem. 1-3 | 43 | 0 | 1 | 0 | 3 | 20 | 106 | 4 | 40 |
| Intermediate Administrator | 231 | 12 | 32 | 0 | 13 | 24 | 494 | 3 | 6 |
| Mathematics, 7-12 | 233 | 9 | 8 | 1 | 8 | 36 | 216 | 3 | 10 |
| Mathematics, Middle School | 39 | 3 | 2 | 0 | 13 | 19 | 41 | 2 | 12 |
| Music, PK-12 | 97 | 4 | 1 | 0 | 9 | 25 | 107 | 3 | 15 |
| Occupational Subject, VT School | 34 | 2 | 0 | 0 | 6 | 16 | 49 | 1 | 23 |
| Partially Sighted, PK-12 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 31 |
| Physical Education, PK-12 | 79 | 0 | 0 | 0 | 3 | 40 | 137 | 4 | 45 |
| Practical Nurse Education Instruction | 4 | 0 | 0 | 0 | 0 | 7 | 3 | 2 | 37 |
| Reading and Language Arts Consultant | 18 | 3 | 0 | 0 | 4 | 8 | 38 | 2 | 19 |
| Remedial Reading and Language Arts, 1-12 | 73 | 5 | 2 | 0 | 16 | 12 | 23 | 2 | 8 |
| School Business Administrator | 7 | 0 | 0 | 0 | 0 | 15 | 38 | 2 | 47 |
| School Counselor | 93 | 0 | 3 | 0 | 5 | 40 | 161 | 4 | 42 |
| School Library Media Specialist | 52 | 7 | 12 | 0 | 7 | 11.5 | 33 | 2 | 4 |
| School Nurse Teacher | 5 | 0 | 0 | 0 | 0 | 11 | 2 | 2 | 39 |
| School Psychologist | 72 | 0 | 0 | 0 | 5 | 20 | 82 | 3 | 38 |
| School Social Worker | 46 | 2 | 0 | 0 | 1 | 14 | 111 | 3 | 26 |
| Science, 7-12 | 239 | 12 | 3 | 5 | 22 | 19 | 228 | 2 | 5 |
| Science, Middle School | 28 | 0 | 11 | 1 | 2 | 22 | 19 | 3 | 36 |
| Speech and Language Pathologist | 110 | 14 | 0 | 0 | 40 | 6 | 75 | 2 | 1 |
| Superintendent | 18 | 1 | 0 | 0 | 0 | 7 | 42 | 4 | 28 |
| Technology Education, PK-12 | 34 | 1 | 3 | 0 | 10 | 11 | 28 | 2 | 20 |
| TESOL, PK-12 | 34 | 3 | 5 | 0 | 5 | 12 | 31 | 2 | 11 |
| Trade and Industrial Occupations - Comprehensive High School | 4 | 0 | 0 | 0 | 3 | 7 | 15 | 1 | 34 |
| Unique Subject Area Endorsement | 9 | 3 | 5 | 0 | 3 | 10 | 11 | 1.5 | 13 |
| Vocational Agriculture, 7-12 | 1 | 0 | 0 | 0 | 0 | 11 | 4 | 4 | 44 |
| World Language Instructor, Elementary | 8 | 1 | 6 | 0 | 1 | 5 | 33 | 2 | 21 |
| World Languages, 7-12 | 213 | 15 | 18 | 2 | 54 | 8 | 130 | 2 | 1 |

${ }^{1}$ Applicant Pool Ratings: 1) Few or no minimally qualified applicants; 2) Some acceptable applicants; 3) Many acceptable applicants; 4) Some high-quality applicants; and 5) Many high-quality applicants.

## Appendix A: Shortage Area Methodology

The Connecticut State Department of Education's (CSDE) Bureau of Data Collection, Research and Evaluation and the Bureau of Educator Standards and Certification collaborated to develop a methodology to identify teacher shortage areas that incorporate several significant factors (Table 7). Data for this analysis are from the Bureau of Teacher Certification's Connecticut Educator Certification System and the Fall Hiring Survey, an annual employment survey covering the current school year. In 2011, Fall Hiring Survey participants included 166 public school districts, 17 charter schools, six regional educational service centers (RESCs), the three endowed and incorporated academies, 50 state-approved, non-public special education programs, the Connecticut Technical High School System and the Connecticut Departments of Correction, Children and Families, and Developmental Services.

Endorsements for which positions were available in the current school year are included in the shortage area analysis. An "available position" is one for which an LEA actively sought internal and external applicants in response to a position announcement and/or reviewed applications from existing files. There are, however, four areas for which the individual endorsements are aggregated into general categories: World Languages, 7-12 (French, 7-12; German, 712; Italian, 7-12; Latin, 7-12; Russian, 7-12; Spanish, 7-12; and Other World Languages, 7-12); Science, 7-12 (Biology, 7-12; Chemistry, 7-12; Physics, 7-12; Earth Science, 7-12; and General Science, 7-12); Science, Middle School (Biology, Middle School; Chemistry, Middle School; Physics, Middle

School; Earth Science, Middle School; General Science, Middle School; and Integrated Science, Middle School); and Intermediate Administrator (Principal, Assistant/Vice Principal; Subject Area Supervisor, District Level; Program Director/Curriculum Coordinator, School Level; and Assistant/Deputy/Associate Superintendent).

For the Fall Hiring Survey, LEAs may report up to two endorsements per available position (e.g., Mathematics, 7-12, and Physics, 7-12). When there are multiple endorsements per position, each endorsement is counted as a separate position for calculating the shortage area scores (e.g., a position requiring Mathematics, 7-12, and Physics 7-12, endorsements is treated as one Mathematics 7-12 position and one Physics $7-12$ position). This is only done for calculating the shortage areas and not for any other analysis presented in this Bulletin.

The first step in identifying shortage areas is assigning ranks to each endorsement, from least to most severe, for each of the following four factors: number of vacancies due to the lack of qualified candidates; median number of applicants per position; number of first CT certificates and renewals divided by the number of available positions; and the sum of DSAPs, long-term substitutes, minimally qualified hires and Temporary Authorizations for Minor Assignments (TAMAs). These four ranks are placed in the CSDE's formula to produce a shortage score for each endorsement. Finally, these shortage scores are ranked to identify the top ten shortage areas.

Table 7: Factors Used for Calculation of Shortage Area Scores

| Factor | Description |
| :--- | :--- |
| Durational Shortage Area Permits (DSAP) | Issued by the CSDE to LEAs so they may staff positions for which there was a <br> shortage of available, qualified candidates. Teachers working under a DSAP must <br> hold a bachelor's degree, have 12 semester hours in the subject area being taught <br> and meet the state's basic skills testing requirement. DSAPs are issued for a year <br> and may be conditionally reissued for an additional two years. |
| First issued or renewed Connecticut <br> certificates per position | The number of people receiving or renewing Connecticut certificates between <br> October 1, 2010, and September 30, 2011, divided by the total number of available <br> positions in each endorsement area. |
| Long-term substitutes | Individuals serving in the employ of a board of education in the same assignment <br> for more than 40 school days. |
| Median number of appropriately <br> credentialed applicants per available <br> position | Median is the middle number in a distribution (e.g., the number of applicants per <br> position for which half of all available positions had more applicants and half had <br> fewer applicants). |
| Minimally qualified hires | Those hired from an applicant pool of fewer than 20, which also received the <br> lowest quality rating from the LEA ("Few or no minimally qualified applicants"). |
| October vacancies due to the lack of <br> qualified applicants | Positions that LEAs sought to fill for the 2011-12 school year but could not <br> because they had no available qualified applicants. |
| Temporary Authorizations for Minor <br> Assignments (TAMAs) | Issued by the CSDE to districts which cannot find an appropriately credentialed <br> applicant with certification in the subject area of the minor assignment. The minor <br> assignments supplement a primary assignment. Teachers working under a TAMA <br> must be certified in another area and have 12 semester hours of credit in the subject <br> being taught. TAMAs are issued for a year and may be conditionally reissued for <br> an additional year. |


[^0]:    *Includes the Connecticut Technical High School System, Unified School Districts, charter schools, RESCs and state-approved private special education programs.

