

## PUBLIC SCHOOL HIRING TRENDS AND TEACHER SHORTAGE AREAS FOR 2013–14

### Introduction and Shortage Areas

Each year in the fall, the CSDE surveys certified educational positions to ascertain:

- the number of certified staff actively employed;
- the number of teaching and administrative vacancies that existed before the start of the school year;
- the quantity and quality of applications received for those vacancies; and
- the vacancies that remained after the start of school.

In Fall 2012, survey participants included:

- public school districts (166 local educational agencies; 17 charter schools; six regional educational service centers [RESCs]; three endowed and incorporated academies; Connecticut Technical High School System; and State Departments of Corrections, Children and Families, and Developmental Services); and
- 50 state-approved private special education programs.

Results from this survey were used to determine the shortage areas for the 2013–14 school year (see text box on the right). Eight of the 10 shortage areas for 2013–14 are also shortage areas in 2012–13. Home Economic PK–12 and Technology Education PK–12 will be new shortage areas in 2013–14. The CSDE also recognizes Mathematics and Science as shortage areas for 2013–14 based upon the federally identified high-needs fields in schools that serve low-income students.

*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 use the shortage area designations to rehire retired teachers and administrators who are not subject to earnings limits.*

### Teacher Shortage Areas for the 2013–14 School Year:

- Bilingual Education, PK–12
- Comprehensive Special Education, K–12
- Hearing Impaired, PK–12
- Home Economics, PK–12
- Intermediate Administrator
- Remedial Reading and Language Arts, 1–12
- School Library and Media Specialist
- Speech and Language Pathologist
- Technology Education, PK–12
- World Languages, 7–12
- Mathematics\*
- Science (Biology, Chemistry, Earth Science, General Science and Physics)\*

*\* Designated as shortage areas based on the federally identified high-needs fields in schools that serve low-income students.*

### Statewide Employment Trends — Public School Districts

The total number of certified positions statewide increased minimally (0.4 percent) from 2011–12 to 2012–13 (see table 1). The total number of available certified positions (or vacancies) prior to the start of the school year increased significantly (24.9 percent) from 3,267 positions in 2011–12 to 4,080 in 2012–13. Given the relative stability in total certified positions from 2011–12 to 2012–13, this increase in the percentage of vacancies seems to be largely the result of personnel turnover. The number of public LEAs without any available positions fell from 14 in 2011–12 to just four in the 2012–13 school year.

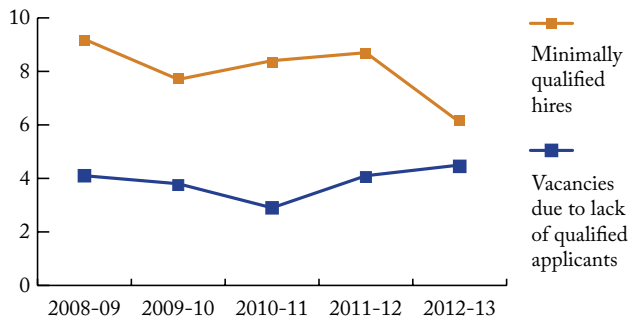
TABLE 1: Public School Hiring Trends — Statewide

School Year	Total Certified Positions	Available Positions LEAs Sought to Fill	Percentage of Available Positions that Were Part time	Available Positions as Percentage of Total Positions	Percentage of Available Positions Filled by Oct. 1	Available Positions Not Filled by Oct. 1	Available Positions Not Filled by Oct.1 Due to Lack of Qualified Applicants	Median Applicants per Available Position
2012–13	52,404	4,080	9.0%	7.8%	92.8%	294	182	24
2011–12	52,181	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
Change 2011–12 to 2012–13	0.4%	24.9%	-	-	-	14.0%	35.8%	-4.0%
Change 2008–09 to 2012–13	-1.9%	-10.0%	-	-	-	9.3%	-2.7%	50.0%

The percentage of available positions as a share of total positions (7.8 percent) and the rate at which available positions were filled (92.8 percent) reached their highest levels in four years. The median number of appropriately certified applicants per position was 24 in 2012–13, substantially greater than five years ago.<sup>1</sup>

“Minimally qualified” hires<sup>2</sup> — those selected from small applicant pools whose quality had been rated poorly by districts — declined to its lowest percentage in the last five years (figure 1). Conversely, the percentage of available positions that remained vacant due to the lack of qualified applicants increased slightly to a five year high (4.5 percent).

**FIGURE 1:**  
Percentage of Available Positions Remaining Vacant Due to Lack of Qualified Applicants, and Percent of All Minimally Qualified Hires, 2008–09 to 2012–13



**Local Employment Trends — Public School Districts**

To examine local employment trends, the districts were grouped as follows (table 2):

- **Educational (ED) Reform Districts** — 10 districts with the lowest performance statewide. They are Bridgeport, East Hartford, Hartford, Meriden, New Britain, New Haven, New London, Norwich, Waterbury and Windham.
- **Alliance Districts** — 30 districts with the lowest performance. In addition to the 10 ED Reform Districts,

it also includes Ansonia, Bloomfield, Bristol, Danbury, Derby, East Haven, East Windsor, Hamden, Killingly, Manchester, Middletown, Naugatuck, Norwalk, Putnam, Stamford, Vernon, West Haven, Winchester, Windsor and Windsor Locks.

- **All Other LEAs** — All remaining local and regional school districts and Endowed and Incorporated Academies;
- **RESCs**;
- **Public Charter Schools**; and
- **State School Districts** which includes the Connecticut Technical High School System, Unified District #1 (Department of Corrections), Unified District #2 (Department of Children and Families) and Unified District #3 (Department of Developmental Services).

The 30 Alliance Districts (including the 10 ED Reform Districts) reveal minor declines in the total number of certified positions, while RESCs, charter schools, and state school districts reflect substantial increases (see table 2).

Though the 10 ED Reform Districts had slightly fewer total positions than in the prior year (-0.5 percent), they experienced a tremendous increase in the number of available positions (50.7 percent). This suggests significant personnel turnover in those districts.

State School Districts, Public Charter Schools, and RESCs had the lowest median of appropriately certified applicants per available position while All Other LEAs and the Alliance Districts (excluding the ED Reform Districts) had the highest. Public Charter Schools and Other LEAs filled the highest percentages of their available positions. State School Districts had significantly fewer applicants per positions and staffed only 56.8 percent of their available positions.

Public Charter Schools (1.8 percent) and Other LEAs (2.9 percent) had the lowest percentage of available positions that remained vacant due to the lack of qualified applicants, while State Districts (12.6 percent) and the ED Reform Districts (6.6 per-

**TABLE 2: Public School Districts Hiring Statistics By District Categories, 2012–13**

Districts	Total Certified Positions	Change in Total Positions, 2011–12 to 2012–13	Available Positions LEAs Sought to Fill for 2012–13 School Year	Change in Available Positions, 2011–12 to 2012–13	Percentage of Available Positions that were Part time	Percentage of Available Positions Filled by October 1	Available Positions Not Filled by October 1	Median Applications per Available Position
ED Reform	10,149	-0.5%	945	50.7%	3.1%	92.7%	69	21
Alliance (excluding ED Reform)	8,956	-0.6%	652	14.2%	3.5%	90.6%	61	26
Other LEAs	29,564	0.3%	2,019	17.4%	13.1%	95.1%	98	26
RESCs	1,563	9.8%	190	43.9%	9.5%	93.2%	13	18
Public Charters	592	4.6%	163	28.3%	6.7%	96.9%	5	12.5
State School Districts	1,580	4.2%	111	23.3%	20.7%	56.8%	48	10

cent) had the highest percentages (see figure 2). Public Charter Schools (17.1 percent) and RESCs (7.3 percent) had the highest percentage of “minimally qualified” hires while the ED Reform Districts (3.1 percent) and State Districts (4.8 percent) had the lowest (figure 2).

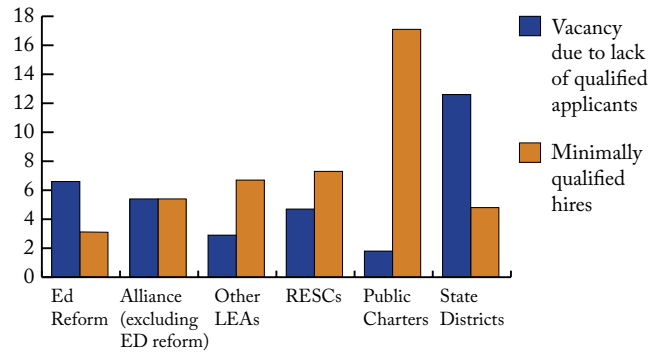
Among districts in the Other LEAs category, the smallest rural districts<sup>3</sup> had a 3.5 percent net drop in total positions and only a 3.2 percent increase in available positions. They also had a low number of median applicants (17) and a lower percentage of available positions that were staffed (91.2 percent).

**State-approved Non-public Special Education Programs**

Consistent with the public school system, state-approved non-public special education programs also had more available positions than in the previous school year, while total positions remained about the same (table 3).<sup>4</sup> There were also fewer programs that did not have any available positions (18 compared with 22 in 2011–12). Despite their increased number of available positions, the non-public special education programs staffed only 66.1 percent of them, which was substantially below the 2011–12 school year (84.0 percent) and even further below the rate at which public LEAs filled their 2012–13 vacancies (92.8 percent). Compared with public LEAs, non-public special education programs had a higher percentage of available positions

that remained vacant due to the lack of qualified applicants (22.3 percent versus 4.5 percent) and had more “minimally qualified” hires (23 percent versus 6.1 percent). They also received fewer applications per available position than public LEAs in such key areas as special education (12 versus 43.5), intermediate administration (5 versus 25.5) and speech and language pathology (2 versus 6). Available positions were also a higher percentage of total positions in state-approved non-public special education programs than in public LEAs (11.8 percent versus 7.8 percent).

**FIGURE 2:**  
Percentage of Available Positions Remaining Vacant Due to Lack of Qualified Applicants and Minimally Qualified Hires as a Percentage of All Hires by Reform District Categories, 2012–13



**TABLE 3: State-Approved Non-Public Special Education Programs, 2008–09 to 2012–13**

School Year	Total Certified Positions	Available Positions Programs Sought to Fill	Percentage of Available Positions that were Part time	Available Positions as Percentage of Total Positions	Percentage of Available Positions Filled by Oct. 1	Available Positions Not Filled by Oct. 1	Available Positions Not Filled by Oct. 1 Due to Lack of Qualified Applicants	Median Applicants per Available Position
2012–13	954	112	8.0%	11.7%	66.1%	38	25	6
2011–12	962	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, 2012–13**

Service Area	Available Positions LEAs Sought to Fill for 2012–13 School Year	Available Positions Not Filled by October 1	Median Applicants per Available Position	Service Area	Available Positions LEAs Sought to Fill for 2012–13 School Year	Available Positions Not Filled by October 1	Median Applicants per Available Position
Licensed Physical Therapist Assistant	3	0	2	Regular Program Paraprofessional	26	3	27.5
Licensed Occupational Therapist	7	1	4	Special Education Paraprofessional	146	15	38
Licensed Occupational Therapist Assistant	1	0	2	English as a Second Language (ESL)/Bilingual Paraprofessional	1	0	1
Pre-kindergarten Paraprofessional	15	3	29	Other Program Paraprofessional	23	5	25
Kindergarten Paraprofessional	2	0	30	<b>TOTALS</b>	<b>224</b>	<b>27</b>	<b>19</b>

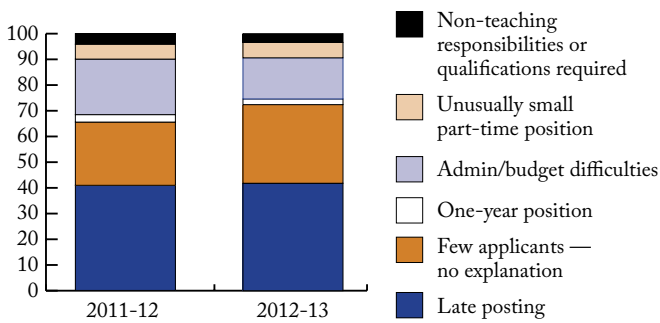
### Public School Non-certified Special Services

The number of available, non-certified special services positions that LEAs sought to fill declined 11 percent from 251 to 224 over the last two school years (table 4).<sup>5</sup> A few key areas that had fewer available positions were Kindergarten paraprofessionals (15 to 2) and Special Education paraprofessionals (170 to 146). The number of licensed paraprofessional and therapist positions that were available for the 2012–13 school year (224) was considerably lower than the number that was available six years ago (367). Public LEAs filled 87.9 percent of available, non-certified special services positions for the 2012–13 school year, which was lower than the previous school year (92.4 percent).

### Accounting for October Vacancies

Public school LEAs reported that 62 percent of all positions that remained vacant on October 1, 2012, were due to the lack of qualified candidates, which was an increase from the previous year (52 percent). Districts with October vacancies most frequently cited late postings as a key that affected the size and quality of their applicant pools (figure 3). The percentage of districts

**FIGURE 3:**  
Factors Affecting the Size and Quality of Applicant Pools for Positions that Remained Vacant on October 1, 2011, and October 1, 2012

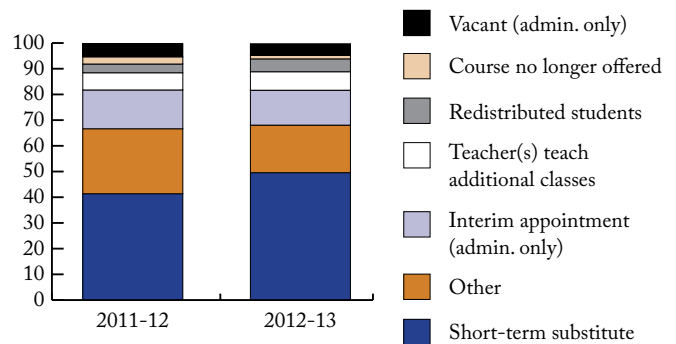


that cited local administrative or budgetary difficulties as barriers to attracting appropriately certified applicants declined from 21.6 percent to 16 percent.

### LEA Responses to October Vacancies

Increasingly, public LEAs have responded to October vacancies with the use of short-term substitutes (figure 4). For the 2012–13 school year, short-term substitutes filled nearly half of all October vacancies. LEAs were also more likely to distribute students among other classes than in the prior school year and less likely to cancel courses.

**FIGURE 4:**  
LEA Responses to October Vacancies, 2011–12 and 2012–13



### Shortage Areas, 2013–14

Collectively, the 10 designated shortage areas accounted for 28.3 percent of total positions. While five of the shortage areas had increases in their number of total positions, all of them had more available positions for the 2012–13 school year than in the prior year. This suggests that the increases in available positions across the shortage areas result from a combination of net growth in new positions and personnel turnover.

**TABLE 5: Designated Shortage Areas for the 2013–14 School Year Based on 2012 Fall Hiring Survey Results**

Endorsement Type	Shortage Area Rank	Total Positions	Change in Total Positions, 2011–12 to 2012–13	Available Positions LEAs Sought to Fill for 2012–13 School Year	Change in Available Positions, 2011–12 to 2012–13	Percentage of Available Positions Filled by Oct. 1	Available Positions Not Filled Due to Lack of Qualified Applicants	Median Applications per Available Position
Bilingual Education, PK–12	1	343	6.9%	33	83.3%	54.5%	42.4%	3
Speech & Language Pathologist	2	1,153	-0.3%	117	6.4%	85.5%	12.8%	5
World Languages, 7–12	3	1,910	-1.2%	222	4.2%	88.3%	9.5%	10
School Library Media Specialist	4	766	-0.8%	54	3.8%	72.2%	24.1%	10
Home Economics, PK–12	5	348	-4.9%	34	88.9%	70.6%	23.5%	6
Hearing Impaired, PK–12	6	133	5.6%	16	14.3%	81.3%	18.7%	2.5
Remedial Reading and Language Arts, 1–12	7	714	9.5%	88	20.5%	88.6%	10.2%	12
Comprehensive Special Education, K–12	8	6,373	2.1%	532	41.1%	90.0%	7.1%	33
Intermediate Administrator	9	2,797	0.9%	327	41.6%	86.9%	4.9%	25
Technology Education, PK–12	10	554	-0.9%	42	23.5%	88.1%	11.9%	11



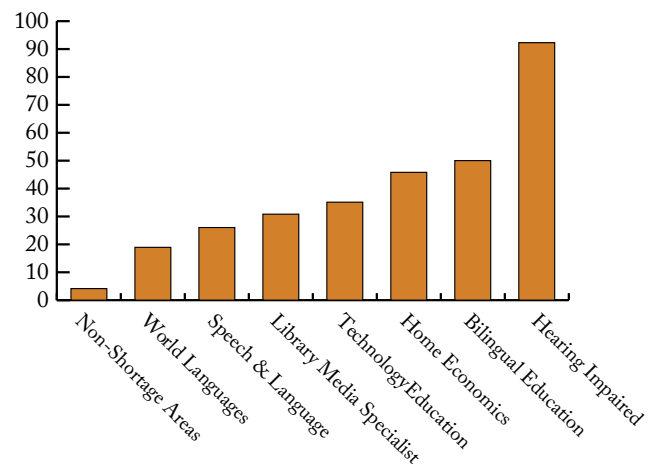
Although the shortage areas were only 34.6 percent of available positions that LEAs sought to fill, they accounted for 58.6 percent of all October 1 vacancies and 68.3 percent of those vacancies due to the lack of qualified applicants. The number of positions that remained vacant due to the lack of qualified applicants was the most critical factor used to identify shortage areas (appendix A). All the shortage areas had higher percentages of vacancies due to the lack of qualified applicants than that for the state as a whole (4.5 percent). These types of vacancies were prevalent in Bilingual Education (42.4 percent), School Library Media Specialist (24.1 percent), and Home Economics (23.5 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 (2.5), Bilingual Education (3), Speech and Language Pathologist (5), Home Economics (6), World Languages, 7–12 (10), School Library Media Specialist (10) were well below the statewide median (24). They were strikingly lower than the median number of applicants in such non-shortage areas as Elementary, K–6 (167); History and Social Studies (79); and English, 7–12 (59).

A third factor for identifying shortage areas was the number of first or renewed Connecticut certificates per available position, as fewer certificates issued means fewer potential applicants. The shortage areas accounted for only 25.1 percent of all first Connecticut certificates that were issued or renewed. The median for all certification areas was just under one new certificate or renewal per available position. With the exception of Intermediate Administrators, the shortage areas were all below this.

The fourth factor used to identify shortage areas was the use of Durational Shortage Area Permits (DSAPs) during the

**FIGURE 5:**  
Minimally Qualified Hires as a Percentage of All Hires in Selected Shortage Areas, 2012–13



2011–12 school year. The shortage areas accounted for most of the positions that were staffed under DSAP (73.5 percent). LEAs employed them most frequently in shortage areas such as Special Education (12), Intermediate Administrator (7) and Bilingual Education (5).

A final shortage area indicator was the prevalence of “minimally qualified hires” (see endnote 2). Although only 32.5 percent of all new hires occurred in the shortage areas, they accounted for 58.3 percent of minimally qualified hires. Each of the shortage areas had a higher percentage of minimally qualified hires than for the non-shortage areas together (4.1 percent) and they were a significant percentage of new hires for several shortage areas (figure 5).

## Endnotes

- 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 (10 versus 26). 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.
- Minimally qualified hires are those hired from an applicant pool of fewer than 20, which also received the poorest quality rating from LEAs. 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.
- The smallest rural districts are members of District Reference Group E. For more information, please see [http://sdeportal.ct.gov/Cedar/Files/Pdf/Reports/db\\_drg\\_06\\_2006.pdf](http://sdeportal.ct.gov/Cedar/Files/Pdf/Reports/db_drg_06_2006.pdf).
- 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, so their data were not included with the public school figures (table 1 and figures 1–4). Their data are, however, included in determining shortage areas.
- Non-certified, special services data were not included in any analysis and are presented only in table 4.

## For Further Information, Contact:

### Federal Perkins Loan Deferment/Forgiveness

U.S. Department of Education  
1-800-433-3243 and <http://studentaid.ed.gov/repay-loans/forgiveness-cancellation/charts/teacher>

### Teachers' Mortgage Assistance Program

Connecticut Housing Finance Authority (CHFA)  
860-721-9501 or 860-571-4390 and <http://www.chfa.org>

### Teacher Certification

CSDE Bureau of Certification Helpline  
860-713-6969 and <http://www.sde.ct.gov/sde/cwp/view.asp?a=2613&Q=321230>

### Teacher Retirement/Rehiring of Retired Teachers

Teachers' Retirement Board  
860-241-8402 or 1-800-504-1102 and <http://www.ct.gov/trb/site/default.asp>

### Fall Hiring Survey Data and Analysis

CSDE Bureau of Data Collection, Research and Evaluation, 860-713-6856 or [michael.sabados@ct.gov](mailto:michael.sabados@ct.gov)

TABLE 6: 2012–13 Hiring Statistics by Endorsement

Endorsement	Available Positions that LEAs Sought to Fill for 2012–13	October 1 Vacancies Due to Lack of Qualified Applicants	Dura-tional Shortage Area Permits	Temporary Author-ization for Minor Assign-ments	Minimally Qualified Hires	Median Appli-cants	First CT Certificates and Renewals	Median Applicant Quality Rating	Shortage Rank
Agriculture, PK–12	3	0	0	0	2	5	3	1	38
Art, PK–12	88	2	0	0	3	32.5	73	4	23
Bilingual, PK–12	33	14	5	0	9	3	3	1	1
Blind, PK–12	5	0	0	0	2	1.5	1	1	30
Business, 7–12	29	1	0	0	3	15	39	2	26
Comprehensive Special Education, K–12	532	38	12	0	6	33	317	3	8
Cooperative Work Education/Diversified	3	0	0	0	0	4	0	3.5	40
Department Chairperson	4	2	1	0	1	3	22	1	16
Elementary, K–6	809	9	0	0	2	167	1118	5	19
English, 7–12	287	1	0	1	8	59	277	3	29
English, Middle School	19	0	0	0	0	86	14	3	51
External Diploma Program/Noncredit Mandated Program	1	0	0	0	0	14	60	4	48
Health Occupations — Comprehensive High School	4	1	0	0	2	2	4	1	21
Health Occupations — CTHSS	5	0	0	0	0	20	3	2	46
Health, PK–12	41	1	0	3	2	26	56	3	31
Hearing Impaired, PK–12	16	3	0	0	12	2.5	6	1	6
High School Diploma Program	2	0	0	0	0	14	43	4	47
History and Social Studies, 7–12	179	1	0	0	4	79	268	4	35
History and Social Studies, Middle School	9	0	0	0	1	38	14	3	50
Home Economics, PK–12	34	8	0	0	11	6	5	1	5
Integrated Early Childhood/Spec. ED, Birth–K	14	0	0	0	3	32.5	11	2	41
Integrated Early Childhood/Spec. ED, Nursery–K–Elem. 1–3	67	1	1	0	1	24	82	4	34
Intermediate Administrator	327	16	7	0	15	25	545	3	9
Marketing Education, 7–12	1	0	0	0	0	8	3	2	44
Mathematics, 7–12	319	12	0	0	8	28	178	3	12
Mathematics, Middle School	33	2	0	0	3	35	9	3	20
Music, PK–12	134	5	0	0	6	27	98	3	14
Non-English Speaking Adults	2	0	0	0	0	7	37	4	44
Occupational Subject, CTHSS	20	3	1	0	0	40	25	2	24
Partially Sighted, PK–12	4	1	0	0	1	2	1	1	22
Physical Education, PK–12	99	1	1	0	2	37	121	3	32
Practical Nurse Education Instruction	3	2	0	0	1	10	2	1	18
Reading and Language Arts Consultant	27	2	0	0	5	15	24	2	15
Remedial Reading and Language Arts, 1–12	88	9	0	0	10	12	12	2	7
School Business Administrator	9	2	0	0	0	16	38	4	27
School Counselor	87	1	0	0	0	50.5	168	4	42
School Library Media Specialist	54	13	0	0	12	10	26	2	4
School Nurse Teacher	2	0	0	0	1	54	0	2.5	49
School Psychologist	65	0	0	0	2	20.5	88	3	43
School Social Worker	52	2	0	0	2	28	93	3	25
Science, 7–12	231	8	1	2	27	17	185	2	11
Science, Middle School	28	0	0	0	4	17	2	3	36
Speech and Language Pathologist	117	15	0	0	26	5	66	2	2
Superintendent	20	1	0	0	1	18	51	4	37
Technology Education, PK–12	42	5	0	0	13	11	23	2	10
TESOL, PK–12	30	3	1	0	5	11	34	2	13
Trade & Industrial Occupations–Comprehensive High School	12	1	0	0	3	5.5	4	2	17
Unique Subject Area Endorsement	1	0	3	0	0	3	9	4	32
Vocational Agriculture, 7–12	3	0	0	0	2	7	3	1	39
World Language Instructor, Elementary	22	1	0	0	1	13	7	2	28
World Languages, 7–12	222	21	1	0	37	10	95	2	3

### Appendix A: Shortage Area Methodology

The Connecticut State Department of Education’s 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 2012, 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, 7–12; 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 Connecticut 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 10 shortage areas.

TABLE 7: Factors Used for Calculations 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 shortage of available, qualified candidates. Teachers working under a DSAP must hold a bachelor’s degree, have 12 semester hours in the subject area being taught and meet the state’s basic skills testing requirement. DSAPs are issued for a year and may be conditionally reissued for an additional two years.
First issued or renewed Connecticut certificates per position	The number of people receiving or renewing Connecticut certificates between October 1, 2011, and September 30, 2012, divided by the total number of available positions in each endorsement area.
Long-term substitutes	Individuals serving in the employ of a board of education in the same assignment for more than 40 school days.
Median number of appropriately credentialed applicants per available position	Median is the middle number in a distribution (e.g., the number of applicants per position for which half of all available positions had more applicants and half had fewer applicants).
Minimally qualified hires	Those hired from an applicant pool of fewer than 20, which also received the lowest quality rating from the LEA (“Few or no minimally qualified applicants”).
October vacancies due to the lack of qualified applicants	Positions that LEAs sought to fill for the 2012–13 school year but could not because they had no available qualified applicants.
Temporary Authorizations for Minor Assignments (TAMAs)	Issued by the CSDE to districts that cannot find an appropriately credentialed applicant with certification in the subject area of the minor assignment. The minor assignments supplement a primary assignment. Teachers working under a TAMA must be certified in another area and have 12 semester hours of credit in the subject being taught. TAMAs are issued for a year and may be conditionally reissued for an additional year.