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Projecting the need for California school administrators over 2010/11–2017/18: the effects of projected retirement and projected changes in student enrollment over two-year increments

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REL West received a request to build on the report *School-site administrators: A California county and regional perspective on labor market trends* by disaggregating the results into two-year increments.

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Summary

This technical brief projects the need for new school-site administrators (principals and vice-principals) in California by region in two-year increments over 2010/11–2017/18. It builds on an earlier Regional Educational Laboratory West report that projected the aggregate need for school administrators over 2008/09–2017/18 based on projected retirement and projected changes in student enrollment (White, Fong, and Makkonen 2010). Both studies divide the state into 11 regions, and both report projected demand for local administrators as a change from the 2007/08 baseline workforce. By disaggregating the study period into two-year increments, this brief provides more specific data for education organizations—particularly the Association of California School Administrators and the California County Superintendents Educational Services Association—to more accurately target workforce planning and training programs for new school-site administrators.

This technical brief addresses three research questions:

- By region, what percentage of 2007/08 school-site administrators are projected to retire in each two-year period over 2010/11–2017/18?
- By region, how many new school-site administrators (as a percentage of the 2007/08 school-site administrator workforce) will be needed to offset projected changes in student enrollment for each two-year period over 2010/11–2017/18?
- By region, how many new school-site administrators (as a percentage of the 2007/08 school-site administrator workforce) will be needed due to the combination of projected retirement and projected changes in student enrollment for each two-year period over 2010/11–2017/18?

Key findings include:

- *Regional needs based on projected retirement.* The Central Coast region has the highest projected administrator retirement rates over the four two-year periods in the study; for each two-year period, either Inland Empire or South San Joaquin Central Valley is projected to have the lowest. Inland Empire's retirement rate is projected to remain at 4.7–4.8 percent from 2010/11–2011/12 to 2016/17–2017/18; all other regions are expected to trend downward.
- *Regional needs based on projected changes in student enrollment.* Due to projected student enrollment growth, and assuming no change in ratios of students to administrators,

many regions are expected to face an increasing need for administrators in each two-year period. Inland Empire is expected to have the most enrollment-driven growth compared with its 2007/08 school-site administrator workforce; South Coast is expected to need fewer administrators based on enrollment patterns.

- *Regional needs based on combined retirement- and student enrollment–driven demand.* The Bay Area is the only region in which combined retirement- and student enrollment–driven demand for school-site administrators is projected to fall over time. In all other regions, the need is expected to grow—particularly in Inland Empire, which can expect to need 42.2 percent more administrators over 2010/11–2017/18 than in 2007/08. South Coast is expected to have, overall, the state's lowest projected need (17.4 percent).

  Across regions, more combined need for school-site administrators is projected for the second half of the study period (2014/15–2017/18); however, data for those years are subject to greater error because long-term projections are less certain. For the first two-year period (2010/11–2011/12), 9 of 11 regions are projected to need to add 7.2–9.1 percent of their 2007/08 school-site administrator workforce due to retirement and changes in student enrollment.

Technical brief

Why this brief?

School-site administrators—principals and vice-principals—have a key role in developing and maintaining effective schools with high student achievement (see, for instance, Leithwood et al. 2004). Education agencies and other organizations engaged in administrator workforce planning and training need to understand demographic trends related to this workforce.

This technical brief projects the regional need for California school-site administrators in two-year increments over 2010/11–2017/18. It builds on a Regional Educational Laboratory West report, *School-site administrators: A California county and regional perspective on labor market trends* (White, Fong, and Makkonen 2010), that projected the aggregate need for school administrators over 2008/09–2017/18 based on projected retirement and projected changes in student enrollment.[1]

Because school administrator labor markets tend to be local (Martin 2003; Boyd et al. 2005), and because experienced public school principals changing schools most often do so within the same district (Gates et al. 2003), examining local data is necessary to identify how administrator need differs across the state. Understanding county and regional trends is important in ensuring an adequate supply of principals and vice-principals for California schools.

There have been few comprehensive studies of California's administrator labor market. And there is an "urgent and basic need" for a more thorough understanding of the status of the state's education leadership, including by aggregating existing information on the school administrator workforce (Center for the Future of Teaching and Learning 2009, p. 10). White, Fong, and Makkonen (2010) was a first step in generating that understanding. This brief advances the effort. Both studies divide the state into 11 regions and compare the expected demand for local administrators with the 2007/08 local administrator workforce. White, Fong, and Makkonen (2010), covering 2008/09–2017/18, reported their results as 10-year cumulative figures. After the report was published, two key education leadership groups—the Association of California School Administrators and the California County Superintendents Educational Services Association—expressed interest in how the projected need was distributed across that 10-year period. These groups believed that shorter term projections could inform measures to more accurately target training and support programs for new school-site administrators.

This brief responds to that need by breaking down results into two-year increments.[2] Because the first two-year period (2008/09–2009/10) of the original study has already passed,[3] this brief reports results for the two-year periods spanning 2010/11–2017/18. In doing so, it addresses three research questions:

- By region, what percentage of 2007/08 school-site administrators are projected to retire in each two-year period over 2010/11–2017/18?
- By region, how many new school-site administrators (as a percentage of the 2007/08 school-site administrator workforce) will be needed to offset projected changes in student enrollment for each two-year period over 2010/11–2017/18?
- By region, how many new school-site administrators (as a percentage of the 2007/08 school-site administrator workforce) will be needed due to the combination of projected retirement and projected changes in student enrollment for each two-year period over 2010/11–2017/18?

This study projects need for administrators based solely on projections of retirement- and student enrollment–driven demand. But these two factors are not the only ones influencing the school administrator labor market. Nonretirement attrition, transfer, and promotion; incoming administrator supply; and compensation and working conditions are also at play. Because complete data on many of these factors were unavailable, the full picture of administrator need is not presented here.

Box 1 describes the data sources and briefly explains the methods.

BOX 1

Data sources and methodology

This technical brief uses the same data as White, Fong, and Makkonen (2010). These data sources and the methods for combining them are described below.[1]

Data for projecting student enrollment. Created and made available by the California Department of Finance (2008), these data include annual enrollment for 1974/75–2007/08 and projected enrollment for 2008/09—2017/18. To project student enrollment, the Department of Finance used a cohort survival projection technique drawing on historical enrollment trends, migration trends, county demographic data, and survey results from selected school districts. Birth data were used to project the number of students entering kindergarten and grade 1.

Data for projecting administrator retirement. Data used to project administrator retirement were obtained by special request from the California State Teachers' Retirement System (CalSTRS) and the California Department of Education Personnel Assignment Information Form (PAIF). CalSTRS, serving most certificated school staff in California, maintains a database on its members' retirement patterns. Members include school-site administrators and other education workers, such as school teachers. For this study, 14 years (1994/95–2007/08) of data were obtained from CalSTRS. For each county, the dataset includes the number of members, retiring members, and new members by age group (under 25, 25–30, 31–35, 36–40, 41–45, individual ages from 46 through 70, and 71 and older). The PAIF dataset counts school-site administrators for each county and age group over 2003/04–2007/08. Because the CalSTRS dataset includes all school system members, it cannot distinguish the school-site administrators. The PAIF dataset was used to identify the number of school-site administrators in 2007/08, and CalSTRS retirement and entry rates by age group and county were applied to those administrator counts.

Analytic method for projecting administrator retirement. Projected county-level administrator retirement was derived using retirement rates for 2003/04–2007/08 for each county and age group. A five-year rate, rather than an annual rate or a rate for the entire period, was used because it provides a window large enough to see time trends but small enough to avoid including data that may be obsolete (see table A1 in appendix A). To project future retirement, the actual number of school-site administrators in 2007/08 was taken from the PAIF dataset, and the numbers of entering and retiring administrators were projected for each year over 2008/09–2017/18. A proportion of the administrators in 2007/08 is projected to retire at the end of that year. Then, new administrators are projected to enter the field at the beginning of 2008/09, based on historical rates of administrators entering the workforce as a proportion of projected student enrollment. Next, a proportion of 2008/09 administrators is projected to retire at the end of that year. This process continues for each school year through 2017/18. Projection methods are described more fully in appendix A.

Analytic method for projecting administrator need due to changes in student enrollment. To project demand for administrators due to changes in student enrollment, one- and five-year student–administrator ratios were calculated for each county using

BOX 1 (CONTINUED)

Data sources and methodology

data from the California Department of Finance student enrollment dataset and the PAIF dataset. One-year ratios were based on the 2007/08 school year, five-year ratios on 2003/04–2007/08. The one- and five-year ratios for each county are in table A2 in appendix A. Five-year ratios were used because they are less likely to produce an anomaly than ratios calculated annually. Annual projected student enrollment data from the California Department of Finance were used to calculate changes in projected student enrollment for each two-year period (from the end of 2009/10 to the end of 2011/12 and so on). The projected change in student enrollment for each two-year period was then divided by the five-year student–administrator ratio.

Analytic method for projecting administrator need due to combined retirement- and student enrollment–driven demand. To calculate combined demand due to administrator retirement and changes in student enrollment, the totals from the two sets of calculations were summed. For example, if 50 administrators in a region were expected to retire in 2010/11 and 50 were expected to retire in 2011/12, and if the region had 1,000 administrators in 2007/08, 10 percent of the 2007/08 administrator workforce would be projected to retire during 2010/11–2011/12. Similarly, if in the same region projected student enrollment growth in 2010/11 and 2011/12 was expected to require 50 additional administrators, the administrator workforce would need to grow another 10 percent during 2010/11–2011/12. The combined projected demand for 2010/11–2011/12 would thus be 20 percent (10 percent + 10 percent).

This brief uses the same assumptions as White, Fong, and Makkonen (2010):

- For projected need based on administrator retirement, CalSTRS members and K–12 administrators of the same age in a given county retire and enter the workforce at the same rate, and all other factors not directly controlled in these analyses remain constant.
- For projected need based on student enrollment growth, counties will maintain the student–administrator ratios of 2003/04–2007/08.
- For projected need based on the two trends combined, administrator retirement and changes in student enrollment are independent.

If these assumptions are incorrect, the projections could understate or overstate the need for administrators. Moreover, all projections are subject to error, and the chance for error increases over time because longer term projections are less certain. In addition, although discussion of the projections in this brief involves comparing regions, some projected variation could be due to projection error.

Note

1. The primary analysis for this study was completed in White, Fong, and Makkonen (2010). See its appendix A for a more detailed description of the data sources and analytic methods.

Findings

This technical brief groups California's 58 counties into the same 11 regions (map 1) developed for an earlier analysis of California teacher demand (White and Fong 2008).[4] Results are presented in percentages to focus on a single metric and avoid overemphasizing the regions with the largest student enrollments. Using percentages also makes it easier to consider a region's future needs compared with its 2007/08 workforce and helps convey the effect of changes in need for new administrators across counties or regions that might differ in their capacity to address such needs.

The findings are derived by dividing the number of future administrators expected to be needed by the number of school-site

MAP 1

Regional categories of California counties

Source: Regions developed for White and Fong (2008). The Central Valley regions are based on Johnson and Hayes (2004); the Inland Empire region is based on Downs (2005).

administrators in the 2007/08 workforce in each region (see box 1). So that local education agencies can view local trends, county-level results for each primary analysis are presented in appendix B.

By region, what percentage of 2007/08 school-site administrators are projected to retire in each two-year period over 2010/11–2017/18?

The projected retirement rates vary from 4.7 percent to 8.8 percent across California regions over the four two-year study periods (table 1; see table B1 in appendix B for results by county). The Central Coast region (Monterey, San Benito, San Luis Obispo, and Santa Barbara counties) is projected to have the highest retirement rates over each two-year period; either Inland Empire (Riverside and San Bernardino counties) or South San Joaquin Central Valley (Fresno, Kern, Kings, Madera, and Tulare counties) is projected to have the lowest.

In 10 of 11 regions, school-site administrator retirement is projected to decline over time (figure 1). The rural East Inland region (Alpine, Amador, Calaveras, Inyo, Mariposa,

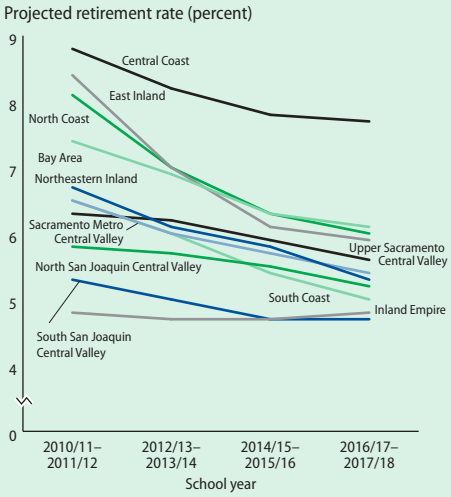
TABLE 1

Projected percentage change from 2007/08 in school-site administrator retirement, in two-year increments by region

Region (number of school-site administrators, 2007/08)	2010/11–2011/12	2012/13–2013/14	2014/15–2015/16	2016/17–2017/18	Total
Bay Area (2,624)	7.4	6.9	6.3	6.1	26.7
Central Coast (482)	8.8	8.2	7.8	7.7	32.5
East Inland (101)	8.4	7.0	6.1	5.9	27.4
Inland Empire (1,678)	4.8	4.7	4.7	4.8	19.0
North Coast (188)	8.1	7.0	6.3	6.0	27.4
North San Joaquin Central Valley (750)	5.8	5.7	5.5	5.2	22.2
Northeastern Inland (112)	6.7	6.1	5.8	5.3	23.9
Sacramento Metro Central Valley (936)	6.5	6.0	5.7	5.4	23.6
South Coast (6,013)	6.5	6.0	5.4	5.0	22.9
South San Joaquin Central Valley (1,198)	5.3	5.0	4.7	4.7	19.7
Upper Sacramento Central Valley (392)	6.3	6.2	5.9	5.6	24.0

Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

FIGURE 1
Percentage of 2007/08 school-site administrators projected to retire, in two-year increments by region



Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

Mono, and Tuolumne counties) shows the greatest projected decline in retirement, from 8.4 percent in 2010/11–2011/12 to 5.9 percent in 2016/17–2017/18. Inland Empire, stable at 4.7–4.8 percent from 2010/11–2011/12 to 2016/17–2017/18, is the only region not expected to trend downward over time.

By region, how many new school-site administrators will be needed to offset projected changes in student enrollment for each two-year period over 2010/11–2017/18?

Based solely on student enrollment growth, 6 of the 11 regions are expected to have a positive need for administrators and need more administrators in each successive two-year period: Inland Empire, South San Joaquin Central Valley, Sacramento Metro Central Valley, North San Joaquin Central Valley, Upper Sacramento Central Valley, and Central Coast (table 2; see table B2 in appendix B for results by county). Inland Empire is expected to have the greatest growth in enrollment-driven need compared with its 2007/08 school-site administrator workforce

TABLE 2
Projected percentage change from 2007/08 in the need for school-site administrators based on projected changes in student enrollment, in two-year increments by region

Region (number of school-site administrators, 2007/08)	2010/11–2011/12	2012/13–2013/14	2014/15–2015/16	2016/17–2017/18	Total
Bay Area (2,624)	–0.2	0.1	0.3	0.3	0.5
Central Coast (482)	0.3	1.0	1.5	1.6	4.4
East Inland (101)	–0.8	0.8	2.3	4.0	6.3
Inland Empire (1,678)	3.8	4.9	6.5	8.1	23.3
North Coast (188)	–0.3	0.4	1.8	2.6	4.5
North San Joaquin Central Valley (750)	1.8	2.4	3.7	4.9	12.8
Northeastern Inland (112)	–2.8	–0.7	0.6	2.0	–0.9
Sacramento Metro Central Valley (936)	2.2	2.9	3.8	4.3	13.2
South Coast (6,013)	–2.5	–2.0	–1.0	–0.1	–5.6
South San Joaquin Central Valley (1,198)	2.9	4.1	5.0	5.5	17.5
Upper Sacramento Central Valley (392)	1.7	2.4	3.9	4.6	12.6

Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

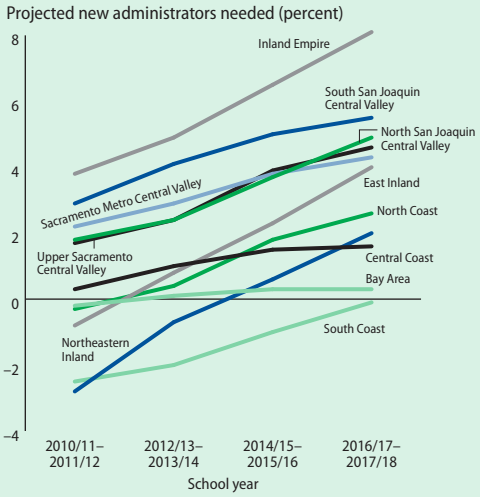
(figure 2). South Coast, with a projected decline in student enrollment, can expect the largest loss of administrators, though this loss is projected to drop over time (–2.5 percent to –0.1 percent). The Bay Area, also projected to need fewer administrators based on changes in student enrollment in 2010/11–2011/12 (–0.2 percent), is projected to experience an enrollment-driven need over the entire study period of between –0.2 percent and 0.3 percent of its 2007/08 workforce in each two-year timeframe.

By region, how many new school-site administrators will be needed due to combined retirement- and student enrollment–driven demand for each two-year period over 2010/11–2017/18?

Based on the combination of projected administrator retirement and changes in student enrollment, each region is expected to experience additional need for administrators (relative to the 2007/08 workforce) in each of the four time periods. These increased demands are projected to range from 3.9 percent (Northeastern Island, 2010/11–2011/12) to 12.8 percent (Inland Empire, 2016/17–2017/18; table 3; see table B3 in appendix B for results by county). Statewide, the need is expected to grow from 6.3 percent in 2010/11–2011/12 to 7.5 percent in 2016/17–2017/18 (figure 3). The Bay Area is the only region where demand for new administrators due to combined retirement and changes in student enrollment—though remaining greater than in 2007/08—is projected to decline over the entire period, from 7.2 percent in 2010/11–2011/12 to 6.4 percent in 2016/17–2017/18.

FIGURE 2

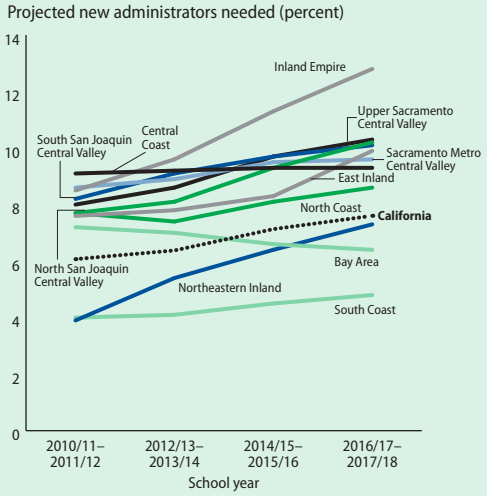
Percentage of 2007/08 school-site administrators projected to be needed to offset projected changes in student enrollment, in two-year increments by region



Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

FIGURE 3

Percentage of 2007/08 school-site administrators projected to be needed due to combined projected administrator retirement and projected changes in student enrollment, in two-year increments by region



Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

TABLE 3

Projected percentage change from 2007/08 in the need for school-site administrators based on combined projected administrator retirement and projected changes in student enrollment, in two-year increments by region

Region (number of school-site administrators, 2007/08)	2010/11–2011/12	2012/13–2013/14	2014/15–2015/16	2016/17–2017/18	Total
Bay Area (2,624)	7.2	7.0	6.6	6.4	27.2
Central Coast (482)	9.1	9.2	9.3	9.3	36.9
East Inland (101)	7.6	7.8	8.3	9.9	33.6
Inland Empire (1,678)	8.5	9.6	11.3	12.8	42.2
North Coast (188)	7.7	7.4	8.1	8.6	31.8
North San Joaquin Central Valley (750)	7.7	8.1	9.3	10.2	35.3
Northeastern Inland (112)	3.9	5.4	6.4	7.3	23.0
Sacramento Metro Central Valley (936)	8.6	8.9	9.5	9.6	36.6
South Coast (6,013)	4.0	4.1	4.5	4.8	17.4
South San Joaquin Central Valley (1,198)	8.2	9.1	9.7	10.1	37.1
Upper Sacramento Central Valley (392)	8.0	8.6	9.7	10.3	36.6

Note: The values in tables 1 and 2 may not sum to those in this table because of rounding.

Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

Inland Empire shows the most growth in combined need for new school-site administrators, with an aggregate retirement- and student enrollment–driven demand of 42.2 percent more administrators over 2010/11–2017/18 than in 2007/08. South Coast, despite a projected rise in retirement- and student enrollment–driven need for administrators over each two-year period, has the state's lowest total projected need due to its declining enrollment (17.4 percent).

Appendix A Methods

Adapted from appendix A of White, Fong, and Makkonen (2010), the report from which the overall results were derived, this appendix describes in detail how administrator retirement was projected. See that appendix for more details.

A five-year, age-specific retirement rate was first calculated for all 58 counties in California:

$$r_a = \sum_{t=2003/04}^{2007/08} R_{a,t} \Big/ \sum_{t=2003/04}^{2007/08} N_{a,t}$$

$$a = 30, 31, ..., 70, 71 \text{ and over} \qquad (1)$$

where r_a is the five-year retirement rate for administrators of age a, $R_{a,t}$ is the number of retirements of administrators age a in year t, and $N_{a,t}$ is the actual number of administrators of age a in year t. A five-year rate, rather than an annual rate or a rate for the entire period, was used because it provides a window large enough to see time trends but small enough to avoid relying on data that may be obsolete (table A1 at the end of this appendix).

Next, the number of new administrators ($\hat{F}_{a,t}$) of a given age who will enter the workforce was projected, based on historical rates of administrators entering the workforce as a proportion of projected student enrollment (table A2 at the end of this appendix). The calculation of $\hat{F}_{a,t}$ is as follows:

$$\hat{F}_{a,t} = [\sum_{t=2003/04}^{2007/08} Y_{a,t} \Big/ \sum_{t=2003/04}^{2007/08} \text{Student Enrollment}_t] * \text{Student Ênrollment}_t$$

$$a = 30, 31, ..., 70, 71 \text{ and over} \qquad (2)$$

where $Y_{a,t}$ is the number of new administrators age a in year t, *Student Enrollment*$_t$ is the actual student enrollment in year t for prior years, and *Student Ênrollment*$_t$ is the projected student enrollment in year t for future years. The assumption is that the ratio of administrators to student enrollment remains unchanged.

The projected number of administrators of a given age for a given future year was calculated as follows:

$$\hat{E}_{a,t} = \hat{N}_{a-1,t-1} - \hat{N}_{a-1,t-1}(r_{a-1}) + \hat{F}_{a,t},$$

$$a = 30, 31, ..., 70, 71 \text{ and over}$$

$$t = 2008/09, 2009/10, ..., 2017/18 \qquad (3)$$

where $\hat{E}_{a,t}$ is the projected number of administrators age a to be observed in year t, $\hat{N}$ is the projected number of administrators, and $\hat{F}_{a,t}$ is the projected number of new administrators of age a in year t.

Because equation 3 neglects several factors that affect how many administrators are observed working in a given year, an adjustment rate was calculated to account for such factors as nonretirement attrition, administrators who return to the field after an absence of at least one year, and teachers or other certificated staff already in the California State Teachers' Retirement System (CalSTRS) who transfer to administrator positions. For nonretirement attrition, administrators who leave the workforce for reasons other than retirement would not be observed working in the following year, although they would have been expected to be observed since the data are unable to identify that they had left. (The CalSTRS dataset is cross-sectional.) The adjustment rate accounts for historical levels of attrition for a given age and county and adjusts for other factors influencing how many administrators are observed working in a given year. (See appendix A of White, Fong, and Makkonen 2010 for further discussion.)

The adjustment rate is calculated as follows:

$$Adjustment\_rate_a = \sum_{t=2003/04}^{2007/08} N_{a,t} \Big/ \sum_{t=2003/04}^{2007/08} \hat{E}_{a,t},$$

$$a = 30, 31, ..., 70, 71 \text{ and over} \qquad (4)$$

Broadly, the adjustment rate divides the historical number of administrators observed working in a given previous year by the number of administrators expected to be observed working that year, based on the number of administrators who retired the previous year and the number of administrators who entered that year. With the adjustment rate added to the projection model, the projected number of administrators of a given age in a given year is calculated as follows:

$$\hat{N}_{a,t} = [(\hat{N}_{a-1,t-1} - \hat{N}_{a-1,t-1}(r_{a-1}))]^{*}Adjustment\_rate_{a-1} + \hat{F}_{a,t},$$

$$a = 30, 31, \ldots, 70, 71 \text{ and over},$$

$$t = 2008/09, 2009/10, \ldots, 2017/18. \quad (5)$$

In projecting administrators, the order of events is as follows: there are a certain number of administrators in year *t*. The next year, new administrators enter the workforce, followed by retiring members exiting the workforce. As shown in equation (5), a certain number of administrators exist in year *t;* then some of them retire. Next, the number of remaining administrators is adjusted by the adjustment rate for the current year *t*. Finally, some administrators enter the workforce in the following school year *t*+1.[5] Projecting the number of retirements is thus iterative: how many administrators working in a future year is projected, and then the historical retirement rate is applied to determine how many of those administrators are projected to retire. The process continues through 2017/18.

TABLE A1

1-, 5-, and 12-year retirement rates for school-site administrators of all ages as of 2007/08, by county (percent)

County	1-year rate	5-year average rate	12-year average rate	County	1-year rate	5-year average rate	12-year average rate
Alameda	3.2	3.1	2.6	Orange	2.7	2.5	2.3
Alpine	5.7	2.5	1.7	Placer	2.6	2.0	1.8
Amador	5.6	3.0	2.4	Plumas	4.4	4.2	2.9
Butte	3.3	2.8	2.3	Riverside	2.0	1.7	1.5
Calaveras	4.8	3.9	2.9	Sacramento	3.3	2.7	2.3
Colusa	0.7	2.0	1.8	San Benito	1.6	2.2	1.8
Contra Costa	3.1	2.9	2.5	San Bernardino	2.3	2.0	1.7
Del Norte	3.9	3.4	2.6	San Diego	2.7	2.4	2.1
El Dorado	3.4	2.9	2.2	San Francisco	2.7	2.9	2.9
Fresno	2.8	2.2	1.8	San Joaquin	2.7	2.5	2.1
Glenn	6.0	2.8	2.6	San Luis Obispo	3.8	2.7	2.1
Humboldt	4.2	3.4	2.8	San Mateo	2.5	2.8	2.7
Imperial	2.1	2.2	1.9	Santa Barbara	3.7	2.7	2.4
Inyo	3.4	3.9	3.1	Santa Clara	3.2	3.2	3.0
Kern	2.2	2.2	2.0	Santa Cruz	3.5	3.1	2.5
Kings	2.6	2.5	2.1	Shasta	2.8	3.1	2.6
Lake	3.5	3.2	2.4	Sierra	2.0	4.4	3.3
Lassen	4.4	3.3	2.4	Siskiyou	5.8	5.6	3.7
Los Angeles	2.4	2.4	2.1	Solano	2.9	3.2	2.3
Madera	2.9	2.8	2.2	Sonoma	3.6	3.5	2.7
Marin	2.6	2.8	2.9	Stanislaus	2.9	2.5	2.0
Mariposa	5.0	3.9	3.0	Sutter	2.5	2.9	2.3
Mendocino	5.5	4.5	3.3	Tehama	2.7	3.3	2.7
Merced	1.9	2.1	1.9	Trinity	3.7	5.4	3.9
Modoc	3.7	3.0	2.8	Tulare	2.4	2.7	2.1
Mono	3.5	4.3	2.7	Tuolumne	3.5	4.3	3.3
Monterey	3.1	3.5	2.5	Ventura	2.6	2.6	2.2
Napa	2.1	2.4	2.5	Yolo	3.8	2.8	2.2
Nevada	4.9	3.9	2.6	Yuba	2.2	3.2	2.8

Source: Authors' analysis based on data obtained by special request from the California State Teachers' Retirement System for 1994/95–2007/08 and the California Department of Education's Personnel Assignment Information Form dataset for 2003/04–2007/08.

TABLE A2

One-year and five-year student–administrator ratios in California, by county

County	One-year ratio (2007/08)	Five-year ratio (2003/04–2007/08)	County	One-year ratio (2007/08)	Five-year ratio (2003/04–2007/08)
Alameda	356.7	393.3	Orange	496.4	510.1
Alpine	127.0	171.8	Placer	398.2	414.2
Amador	289.3	314.6	Plumas	220.1	207.7
Butte	349.8	342.6	Riverside	517.4	537.6
Calaveras	250.0	262.4	Sacramento	391.9	405.0
Colusa	266.7	255.3	San Benito	317.7	361.8
Contra Costa	393.9	419.3	San Bernardino	494.0	517.6
Del Norte	266.0	331.0	San Diego	436.2	457.2
El Dorado	369.5	377.7	San Francisco	302.2	331.8
Fresno	467.6	489.1	San Joaquin	391.1	417.7
Glenn	228.2	229.4	San Luis Obispo	381.4	387.8
Humboldt	246.8	253.9	San Mateo	421.7	396.1
Imperial	417.5	396.5	Santa Barbara	391.9	411.6
Inyo	225.5	260.4	Santa Clara	438.2	431.7
Kern	468.0	495.6	Santa Cruz	312.5	339.9
Kings	362.5	354.1	Shasta	287.3	307.6
Lake	288.4	295.0	Sierra	165.7	179.1
Lassen	270.2	308.4	Siskiyou	202.4	177.6
Los Angeles	475.2	488.6	Solano	437.6	422.0
Madera	326.2	372.6	Sonoma	357.7	363.6
Marin	312.4	320.4	Stanislaus	436.6	455.8
Mariposa	210.3	212.7	Sutter	316.1	351.0
Mendocino	272.3	265.8	Tehama	290.9	298.6
Merced	363.4	385.1	Trinity	171.4	139.8
Modoc	274.9	244.8	Tulare	386.7	391.2
Mono	241.3	249.4	Tuolumne	287.0	309.0
Monterey	377.2	393.3	Ventura	447.8	452.3
Napa	427.8	393.0	Yolo	351.3	369.6
Nevada	360.8	337.3	Yuba	253.7	286.1

Source: Authors' analysis based on data from California Department of Finance (2008) and by special request from the California Department of Education's 2003/04–2007/08 Personnel Assignment Information Form dataset.

Appendix B County-level results

This appendix provides county-level results for each primary analysis.

TABLE B1

Projected change from 2007/08 in school-site administrator retirement, in two-year increments by region and county

Region (number of school-site administrators, 2007/08) and county	2010/11–2011/12 percent (number)	2012/13–2013/14 percent (number)	2014/15–2015/16 percent (number)	2016/17–2017/18 percent (number)
Bay Area (2,624)	7.4 (193)	6.9 (180)	6.3 (165)	6.1 (159)
Alameda	6.6 (39)	6.1 (36)	5.5 (33)	5.2 (31)
Contra Costa	7.2 (31)	6.5 (28)	6.1 (26)	5.9 (25)
Marin	7.1 (7)	7.1 (7)	6.0 (6)	5.3 (5)
Napa	5.9 (3)	6.3 (3)	6.3 (3)	6.6 (3)
San Francisco	6.7 (12)	5.6 (10)	5.0 (9)	4.4 (8)
San Mateo	6.2 (13)	5.4 (11)	5.1 (11)	4.5 (9)
Santa Clara	7.4 (44)	6.8 (40)	6.1 (36)	5.7 (34)
Santa Cruz	13.3 (16)	15.4 (19)	15.0 (18)	16.0 (20)
Solano	5.8 (9)	5.2 (8)	5.4 (8)	5.7 (9)
Sonoma	9.8 (19)	9.0 (18)	7.6 (15)	7.4 (15)
Central Coast (482)	8.8 (42)	8.2 (39)	7.8 (38)	7.7 (37)
Monterey	8.7 (16)	8.0 (15)	7.5 (14)	7.4 (14)
San Benito	8.0 (3)	7.1 (3)	6.9 (3)	6.5 (2)
San Luis Obispo	6.7 (6)	6.1 (6)	5.9 (5)	5.7 (5)
Santa Barbara	10.2 (17)	9.8 (16)	9.4 (16)	9.2 (16)
East Inland (101)	8.4 (9)	7.0 (7)	6.1 (6)	5.9 (6)
Alpine	20.6 (0)	17.2 (0)	8.4 (0)	4.5 (0)
Amador	7.6 (1)	6.1 (1)	5.0 (1)	5.6 (1)
Calaveras	5.8 (2)	5.3 (1)	5.6 (2)	6.0 (2)
Inyo	6.4 (1)	4.9 (1)	5.4 (1)	6.3 (1)
Mariposa	10.0 (1)	8.3 (1)	6.9 (1)	5.6 (1)
Mono	10.5 (1)	6.1 (0)	4.3 (0)	3.1 (0)
Tuolumne	11.0 (3)	9.9 (2)	7.6 (2)	6.9 (2)
Inland Empire (1,678)	4.8 (80)	4.7 (80)	4.7 (79)	4.8 (80)
Riverside	4.9 (40)	5.0 (40)	5.2 (42)	5.5 (44)
San Bernardino	4.7 (41)	4.5 (39)	4.3 (37)	4.1 (35)
North Coast (188)	8.1 (15)	7.0 (13)	6.3 (12)	6.0 (11)
Del Norte	5.1 (1)	4.3 (1)	3.8 (1)	4.6 (1)
Humboldt	8.2 (6)	7.1 (5)	6.4 (5)	5.6 (4)
Lake	9.0 (3)	7.7 (3)	7.2 (2)	7.9 (3)
Mendocino	8.9 (4)	7.6 (4)	6.3 (3)	5.7 (3)
Trinity	5.2 (1)	5.5 (1)	7.2 (1)	7.1 (1)

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TABLE B1 (CONTINUED)

Projected change from 2007/08 in school-site administrator retirement, in two-year increments by region and county

Region (number of school-site administrators, 2007/08) and county	2010/11–2011/12 percent (number)	2012/13–2013/14 percent (number)	2014/15–2015/16 percent (number)	2016/17–2017/18 percent (number)
North San Joaquin Central Valley (750)	5.8 (44)	5.7 (43)	5.5 (42)	5.2 (39)
Merced	3.8 (6)	3.7 (6)	3.4 (5)	3.2 (5)
San Joaquin	7.0 (25)	6.9 (24)	6.7 (23)	6.1 (21)
Stanislaus	5.4 (13)	5.2 (13)	5.3 (13)	5.3 (13)
Northeastern Inland (112)	6.7 (8)	6.1 (7)	5.8 (6)	5.3 (6)
Lassen	8.3 (2)	6.3 (1)	5.5 (1)	4.3 (1)
Modoc	7.4 (1)	5.0 (0)	3.9 (0)	3.9 (0)
Nevada	4.8 (2)	5.3 (2)	6.0 (2)	5.5 (2)
Plumas	6.2 (1)	5.8 (1)	5.0 (1)	5.1 (1)
Sierra	6.9 (0)	11.7 (0)	9.7 (0)	4.9 (0)
Siskiyou	8.2 (3)	6.9 (2)	6.1 (2)	6.1 (2)
Sacramento Metro Central Valley (936)	6.5 (61)	6.0 (56)	5.7 (53)	5.4 (50)
El Dorado	9.4 (8)	8.1 (6)	6.5 (5)	5.2 (4)
Placer	8.0 (13)	7.5 (12)	6.0 (10)	4.9 (8)
Sacramento	5.6 (34)	5.3 (32)	5.5 (33)	5.5 (33)
Yolo	7.0 (6)	6.2 (5)	6.1 (5)	5.8 (5)
South Coast (6,013)	6.5 (390)	6.0 (363)	5.4 (326)	5.0 (299)
Imperial	4.9 (4)	4.8 (4)	4.4 (4)	4.8 (4)
Los Angeles	6.4 (220)	5.9 (205)	5.3 (184)	4.9 (168)
Orange	6.5 (66)	5.9 (60)	5.3 (54)	5.0 (51)
San Diego	7.2 (82)	6.9 (78)	6.2 (71)	5.6 (63)
Ventura	5.7 (18)	5.1 (16)	4.3 (14)	4.0 (13)
South San Joaquin Central Valley (1,198)	5.3 (64)	5.0 (60)	4.7 (56)	4.7 (56)
Fresno	4.8 (20)	4.5 (18)	4.0 (17)	3.9 (16)
Kern	5.1 (19)	4.9 (18)	5.1 (19)	5.4 (20)
Kings	4.6 (4)	4.0 (3)	3.7 (3)	3.7 (3)
Madera	5.3 (5)	5.1 (5)	4.8 (4)	4.6 (4)
Tulare	6.7 (16)	6.3 (15)	5.5 (14)	5.2 (13)
Upper Sacramento Central Valley (392)	6.3 (25)	6.2 (24)	5.9 (23)	5.6 (22)
Butte	6.4 (6)	6.9 (6)	6.9 (6)	7.0 (6)
Colusa	9.3 (2)	7.1 (1)	6.7 (1)	6.5 (1)
Glenn	5.2 (1)	4.6 (1)	4.9 (1)	5.4 (1)
Shasta	6.9 (7)	6.9 (7)	6.1 (6)	5.4 (5)
Sutter	5.4 (3)	5.2 (3)	5.5 (3)	5.2 (3)
Tehama	7.0 (3)	6.8 (3)	6.3 (2)	5.3 (2)
Yuba	4.9 (3)	4.7 (3)	4.4 (3)	4.5 (3)

Note: County totals may not sum to regional totals because of rounding.

Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

TABLE B2

Projected change from 2007/08 in need for school-site administrators based on projected changes in student enrollment, in two-year increments by region and county

Region (number of school-site administrators, 2007/08) and county	2010/11–2011/12 percent (number)	2012/13–2013/14 percent (number)	2014/15–2015/16 percent (number)	2016/17–2017/18 percent (number)
Bay Area (2,624)	–0.2 (–5)	0.1 (4)	0.3 (9)	0.3 (8)
Alameda	–1.1 (–7)	–0.9 (–5)	–0.6 (–4)	–0.5 (–3)
Contra Costa	0.7 (3)	0.9 (4)	1.5 (6)	1.9 (8)
Marin	0.7 (1)	2.0 (2)	1.9 (1)	0.9 (1)
Napa	1.3 (1)	2.0 (1)	4.0 (2)	4.6 (2)
San Francisco	–0.3 (–1)	0.4 (1)	0.5 (1)	0.4 (1)
San Mateo	0.1 (0)	–0.2 (–1)	–0.2 (0)	–0.8 (–2)
Santa Clara	0.3 (2)	0.3 (2)	–0.2 (–1)	–1.1 (–7)
Santa Cruz	–0.2 (0)	0.3 (0)	–0.1 (0)	0.0 (0)
Solano	–1.7 (–3)	–0.5 (–1)	1.0 (2)	2.1 (3)
Sonoma	–0.6 (–1)	0.2 (0)	1.2 (2)	2.2 (4)
Central Coast (482)	0.3 (1)	1.0 (5)	1.5 (7)	1.6 (8)
Monterey	0.9 (2)	1.4 (3)	1.7 (3)	1.6 (3)
San Benito	–2.9 (–1)	–2.0 (–1)	0.1 (0)	2.2 (1)
San Luis Obispo	0.7 (1)	1.8 (2)	2.7 (2)	3.0 (3)
Santa Barbara	0.0 (0)	0.8 (1)	0.9 (2)	0.7 (1)
East Inland (101)	–0.8 (–1)	0.8 (1)	2.3 (2)	4.0 (4)
Alpine	1.7 (0)	1.2 (0)	3.5 (0)	1.2 (0)
Amador	–3.4 (–1)	–0.2 (0)	1.4 (0)	4.3 (1)
Calaveras	1.3 (0)	2.2 (1)	3.8 (1)	5.5 (1)
Inyo	–0.9 (0)	–0.5 (0)	0.9 (0)	2.5 (0)
Mariposa	–1.1 (0)	0.0 (0)	–0.8 (0)	0.6 (0)
Mono	5.0 (0)	3.5 (0)	3.8 (0)	5.6 (0)
Tuolumne	–3.1 (–1)	0.2 (0)	2.8 (1)	4.3 (1)
Inland Empire (1,678)	3.8 (63)	4.9 (82)	6.5 (110)	8.1 (135)
Riverside	6.3 (51)	7.9 (64)	10.2 (83)	12.7 (103)
San Bernardino	1.4 (12)	2.1 (18)	3.1 (27)	3.7 (32)
North Coast (188)	–0.3 (–1)	0.4 (1)	1.8 (3)	2.6 (5)
Del Norte	1.1 (0)	2.5 (0)	4.7 (1)	5.7 (1)
Humboldt	–0.1 (0)	0.2 (0)	0.9 (1)	0.4 (0)
Lake	–0.2 (0)	1.0 (0)	2.7 (1)	4.8 (2)
Mendocino	–0.1 (0)	0.2 (0)	1.8 (1)	2.6 (1)
Trinity	–5.4 (–1)	–3.1 (0)	0.5 (0)	6.6 (1)
North San Joaquin Central Valley (750)	1.8 (14)	2.4 (18)	3.7 (28)	4.9 (37)
Merced	2.2 (4)	3.5 (5)	4.6 (7)	5.8 (9)
San Joaquin	1.7 (6)	2.0 (7)	3.4 (12)	4.6 (16)
Stanislaus	1.8 (5)	2.4 (6)	3.6 (9)	4.8 (12)

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TABLE B2 (CONTINUED)

Projected change from 2007/08 in need for school-site administrators based on projected changes in student enrollment, in two-year increments by region and county

Region (number of school-site administrators, 2007/08) and county	2010/11–2011/12 percent (number)	2012/13–2013/14 percent (number)	2014/15–2015/16 percent (number)	2016/17–2017/18 percent (number)
Northeastern Inland (112)	–2.8 (–3)	–0.7 (–1)	0.6 (1)	2.0 (2)
Lassen	–3.8 (–1)	–2.8 (–1)	–0.9 (0)	1.0 (0)
Modoc	0.8 (0)	1.7 (0)	1.5 (0)	5.1 (0)
Nevada	–4.8 (–2)	–3.2 (–1)	–1.7 (–1)	–1.1 (0)
Plumas	–5.2 (–1)	–2.5 (0)	1.0 (0)	3.1 (0)
Sierra	–2.0 (0)	1.1 (0)	5.6 (0)	6.3 (0)
Siskiyou	0.3 (0)	3.6 (1)	3.7 (1)	5.0 (2)
Sacramento Metro Central Valley (936)	2.2 (20)	2.9 (27)	3.8 (35)	4.3 (40)
El Dorado	3.6 (3)	3.3 (3)	4.6 (4)	4.9 (4)
Placer	5.2 (9)	5.9 (10)	7.0 (12)	8.6 (14)
Sacramento	1.3 (8)	2.3 (14)	3.1 (19)	3.2 (19)
Yolo	1.1 (1)	0.6 (1)	2.0 (2)	3.1 (3)
South Coast (6,013)	–2.5 (–152)	–2.0 (–118)	–1.0 (–57)	–0.1 (–9)
Imperial	2.8 (2)	3.7 (3)	4.5 (4)	5.0 (4)
Los Angeles	–3.8 (–131)	–3.1 (–107)	–1.7 (–59)	–0.5 (–19)
Orange	–2.0 (–20)	–1.8 (–18)	–1.0 (–10)	–0.5 (–5)
San Diego	0.0 (0)	0.4 (4)	0.4 (4)	0.3 (4)
Ventura	–0.9 (–3)	0.0 (0)	1.2 (4)	2.1 (7)
South San Joaquin Central Valley (1,198)	2.9 (35)	4.1 (49)	5.0 (59)	5.5 (66)
Fresno	1.4 (6)	2.9 (12)	3.7 (15)	4.3 (18)
Kern	4.3 (16)	5.3 (20)	6.5 (24)	7.0 (26)
Kings	4.7 (4)	6.1 (5)	6.2 (5)	6.2 (5)
Madera	3.3 (3)	3.2 (3)	3.1 (3)	2.8 (2)
Tulare	2.7 (7)	3.9 (10)	5.1 (12)	6.0 (15)
Upper Sacramento Central Valley (392)	1.7 (7)	2.4 (10)	3.9 (15)	4.6 (18)
Butte	0.6 (1)	1.0 (1)	2.0 (2)	2.9 (3)
Colusa	2.4 (0)	2.2 (0)	5.6 (1)	4.7 (1)
Glenn	1.7 (0)	1.9 (0)	3.0 (1)	3.7 (1)
Shasta	0.1 (0)	1.8 (2)	3.2 (3)	3.6 (4)
Sutter	6.0 (4)	6.0 (4)	6.6 (4)	6.3 (4)
Tehama	1.7 (1)	1.1 (0)	3.0 (1)	5.2 (2)
Yuba	1.4 (1)	3.3 (2)	5.3 (3)	7.4 (4)

Note: County totals may not sum to regional totals because of rounding.

Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

TABLE B3

Projected change from 2007/08 in need for school-site administrators based on combined projected administrator retirement and projected changes in student enrollment, in two-year increments by region and county

Region (number of school-site administrators, 2007/08) and county	2010/11–2011/12 percent (number)	2012/13–2013/14 percent (number)	2014/15–2015/16 percent (number)	2016/17–2017/18 percent (number)
Bay Area (2,624)	7.2 (188)	7.0 (184)	6.6 (174)	6.4 (167)
Alameda	5.5 (33)	5.2 (31)	4.9 (29)	4.7 (28)
Contra Costa	7.9 (34)	7.4 (32)	7.6 (32)	7.9 (33)
Marin	7.8 (7)	9.1 (8)	7.9 (7)	6.2 (6)
Napa	7.3 (3)	8.4 (4)	10.3 (5)	11.2 (5)
San Francisco	6.4 (12)	5.9 (11)	5.4 (10)	4.8 (9)
San Mateo	6.3 (13)	5.2 (11)	4.9 (10)	3.6 (8)
Santa Clara	7.7 (46)	7.1 (42)	5.8 (35)	4.6 (27)
Santa Cruz	13.1 (16)	15.7 (19)	14.9 (18)	16.0 (20)
Solano	4.1 (6)	4.7 (7)	6.3 (10)	7.8 (12)
Sonoma	9.2 (18)	9.1 (18)	8.8 (17)	9.6 (19)
Central Coast (482)	9.1 (44)	9.2 (44)	9.3 (45)	9.3 (45)
Monterey	9.6 (18)	9.4 (17)	9.2 (17)	9.0 (17)
San Benito	5.1 (2)	5.1 (2)	7.0 (3)	8.7 (3)
San Luis Obispo	7.4 (7)	7.9 (7)	8.6 (8)	8.8 (8)
Santa Barbara	10.2 (17)	10.5 (18)	10.4 (17)	9.9 (17)
East Inland (101)	7.6 (8)	7.8 (8)	8.3 (8)	9.9 (10)
Alpine	22.4 (0)	18.3 (0)	11.9 (0)	5.6 (0)
Amador	4.2 (1)	5.9 (1)	6.4 (1)	9.8 (2)
Calaveras	7.1 (2)	7.5 (2)	9.4 (3)	11.4 (3)
Inyo	5.5 (1)	4.4 (1)	6.2 (1)	8.7 (1)
Mariposa	8.9 (1)	8.3 (1)	6.1 (1)	6.3 (1)
Mono	15.5 (1)	9.6 (1)	8.1 (1)	8.7 (1)
Tuolumne	7.9 (2)	10.1 (3)	10.4 (3)	11.2 (3)
Inland Empire (1,678)	8.5 (143)	9.6 (162)	11.3 (189)	12.8 (215)
Riverside	11.1 (91)	12.8 (105)	15.4 (126)	18.1 (148)
San Bernardino	6.1 (53)	6.6 (57)	7.3 (63)	7.8 (67)
North Coast (188)	7.7 (15)	7.4 (14)	8.1 (15)	8.6 (16)
Del Norte	6.2 (1)	6.7 (1)	8.5 (1)	10.2 (2)
Humboldt	8.1 (6)	7.3 (6)	7.3 (6)	5.9 (5)
Lake	8.8 (3)	8.7 (3)	9.9 (3)	12.8 (4)
Mendocino	8.8 (4)	7.9 (4)	8.1 (4)	8.3 (4)
Trinity	–0.1 (0)	2.4 (0)	7.6 (1)	13.7 (2)
North San Joaquin Central Valley (750)	7.7 (58)	8.1 (61)	9.3 (69)	10.2 (76)
Merced	6.0 (9)	7.1 (11)	8.0 (13)	9.0 (14)
San Joaquin	8.7 (30)	8.9 (31)	10.0 (35)	10.8 (38)
Stanislaus	7.3 (18)	7.6 (19)	9.0 (22)	10.1 (25)

(CONTINUED)

TABLE B3 (CONTINUED)

Projected change from 2007/08 in need for school-site administrators based on combined projected administrator retirement and projected changes in student enrollment, in two-year increments by region and county

Region (number of school-site administrators, 2007/08) and county	2010/11–2011/12 percent (number)	2012/13–2013/14 percent (number)	2014/15–2015/16 percent (number)	2016/17–2017/18 percent (number)
Northeastern Inland (112)	3.9 (4)	5.4 (6)	6.4 (7)	7.3 (8)
Lassen	4.4 (1)	3.5 (1)	4.5 (1)	5.3 (1)
Modoc	8.2 (1)	6.7 (1)	5.4 (0)	9.0 (1)
Nevada	0.0 (0)	2.1 (1)	4.3 (2)	4.4 (2)
Plumas	1.0 (0)	3.3 (0)	5.9 (1)	8.2 (1)
Sierra	4.8 (0)	12.8 (0)	15.3 (0)	11.2 (0)
Siskiyou	8.6 (3)	10.5 (3)	9.7 (3)	11.1 (3)
Sacramento Metro Central Valley (936)	8.6 (81)	8.9 (83)	9.5 (89)	9.6 (90)
El Dorado	13.0 (10)	11.5 (9)	11.0 (9)	10.0 (8)
Placer	13.1 (22)	13.4 (22)	13.0 (21)	13.5 (22)
Sacramento	6.9 (42)	7.6 (46)	8.5 (52)	8.6 (52)
Yolo	8.0 (7)	6.8 (6)	8.1 (7)	8.9 (8)
South Coast (6,013)	4.0 (238)	4.1 (245)	4.5 (268)	4.8 (290)
Imperial	7.8 (7)	8.5 (7)	8.9 (8)	9.8 (9)
Los Angeles	2.6 (89)	2.8 (98)	3.6 (125)	4.3 (150)
Orange	4.5 (46)	4.1 (42)	4.3 (43)	4.6 (46)
San Diego	7.2 (82)	7.3 (83)	6.6 (75)	5.9 (67)
Ventura	4.8 (15)	5.0 (16)	5.6 (18)	6.0 (19)
South San Joaquin Central Valley (1,198)	8.2 (98)	9.1 (108)	9.7 (116)	10.1 (122)
Fresno	6.2 (26)	7.3 (30)	7.7 (32)	8.1 (33)
Kern	9.4 (35)	10.2 (38)	11.6 (43)	12.4 (46)
Kings	9.2 (7)	10.1 (8)	9.9 (8)	9.9 (8)
Madera	8.6 (8)	8.3 (7)	7.9 (7)	7.4 (7)
Tulare	9.4 (23)	10.2 (25)	10.6 (26)	11.2 (28)
Upper Sacramento Central Valley (392)	8.0 (31)	8.6 (34)	9.7 (38)	10.3 (40)
Butte	7.1 (7)	7.9 (7)	8.9 (8)	9.9 (9)
Colusa	11.7 (2)	9.2 (2)	12.4 (2)	11.2 (2)
Glenn	7.0 (2)	6.5 (2)	7.9 (2)	9.1 (2)
Shasta	7.0 (7)	8.6 (9)	9.2 (9)	9.0 (9)
Sutter	11.5 (7)	11.3 (7)	12.1 (7)	11.4 (7)
Tehama	8.7 (3)	7.8 (3)	9.4 (4)	10.4 (4)
Yuba	6.3 (4)	7.9 (5)	9.7 (6)	12.0 (7)

Note: County totals may not sum to regional totals because of rounding.

Source: Authors' analysis based on data obtained by request from the California State Teachers' Retirement System for 2003/04–2007/08 and the California Department of Education Personnel Assignment Information Form dataset.

Notes

1. For both the previous study (White, Fong, and Makkonen 2010) and this technical brief, "school-site administrators" are defined as school administrators assigned one of the following codes on the 2007/08 California Department of Education Professional Assignment Information Form (PAIF): superintendent/principal (code 0300; 2.2 percent of the administrators in this study); principal (code 0301; 57.4 percent); associate administrator, assistant administrator, or vice-principal (code 0302; 40 percent); or full-time teaching principal or superintendent (code 6003; 0.4 percent). Discussions with several people with extensive knowledge of state leadership and administration issues, including officials at the California Department of Education, confirmed that these four codes were the appropriate ones to use.
2. Each year begins July 1 and ends June 30. For example, 2010/11–2011/12 spans July 2010 through June 2012.
3. The total projected need for administrators statewide during that first two-year period (2008/09–2009/10) was 17.8 percent of the overall projected 10-year total. Regional Educational Laboratory West could not test that projection against actual data because the complete data for that period are not yet available.
4. Data were aggregated from the county to the regional level to make the figures clearer and to save space. The county-level results are in the appendixes.
5. Alternatively, the adjustment rate could have been applied to the expected number of new administrators. Equation 5 would instead be written so that $\hat{F}_{a,t}$ is in the brackets, and the adjustment rate is applied to everything within the brackets. This produces very similar results since the number of new administrators is very low among those at or near retirement ages. (For instance, in 2007/08 among 60-year-olds, new administrators accounted for 0.8 percent of all existing administrators.) The difference is further minimized given that the applied adjustment rates generally hover around 90–95 percent among near-retirement-age individuals.

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