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Center for the Transformation of Schools

California's Teacher Education Deserts:

An Overlooked & Growing Equity Challenge

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A stylized landscape illustration featuring a large yellow sun in the top left corner, casting rays across a blue sky with white clouds. Below the sun are rolling hills in shades of blue and yellow. In the foreground, there are two dark blue trees with circular canopies and a row of dark blue bushes. The overall style is flat and modern.

Contents

- 3 Acknowledgments**
- 4 Introduction**
- 5 What is a Teacher Education Desert?**
- 6 Geographic Location**
- 7 Education Attainment**
- 8 Underprepared Teachers**
- 9 Inexperienced Teachers**
- 10 Economic Landscape**
- 13 Academic Performance**
- 14 Stability Rates and Foster Students**
- 15 Recommendations**
- 16 Conclusion**
- 17 References**

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Introduction

California is experiencing a teacher shortage crisis, a pattern most prevalent for math, science, special education, and bilingual education (*Carver-Thomas et al., 2021*). **Although the shortage is widespread, the struggle to hire qualified teachers is particularly acute in some regions.**

Research suggests that teachers are more likely to complete their student teaching and secure employment close to where they received their teacher training (*Krieg et al., 2016*). Considering this research, we seek to better understand in what ways the geographic location of teacher education programs (TEPs) in California impact teacher supply and consequently regional teacher shortages.

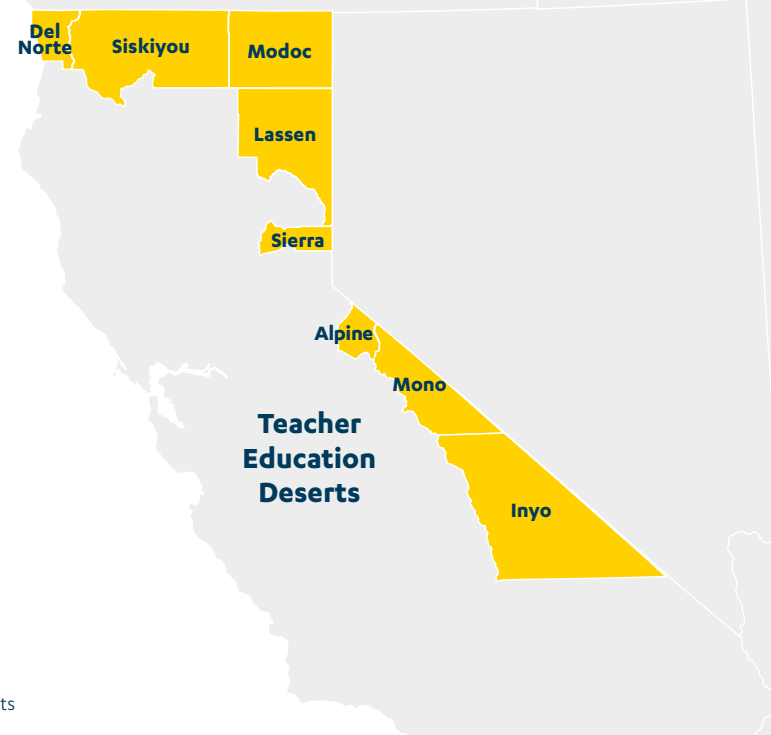
This brief profiles nine California counties that do not have a TEP within 60 miles of their central offices of education. We've classified these counties as "teacher education deserts." By highlighting factors like geographic location, economic status, and education attainment rates, this brief provides insights into the profound impact that geographic, social, and economic factors have on a county's teacher supply. Supply is measured by the quantity and quality of teachers available to fill vacant positions. Teacher supply is also a measure of our pipeline's ability to nurture and support highly skilled and experienced educators into the profession. Understanding the contextual differences between teacher education deserts and the rest of California is crucial for identifying gaps in access, unique challenges, and distinct opportunities for recruiting and retaining highly qualified teachers who reside in teacher education deserts.



What is a Teacher Education Desert?

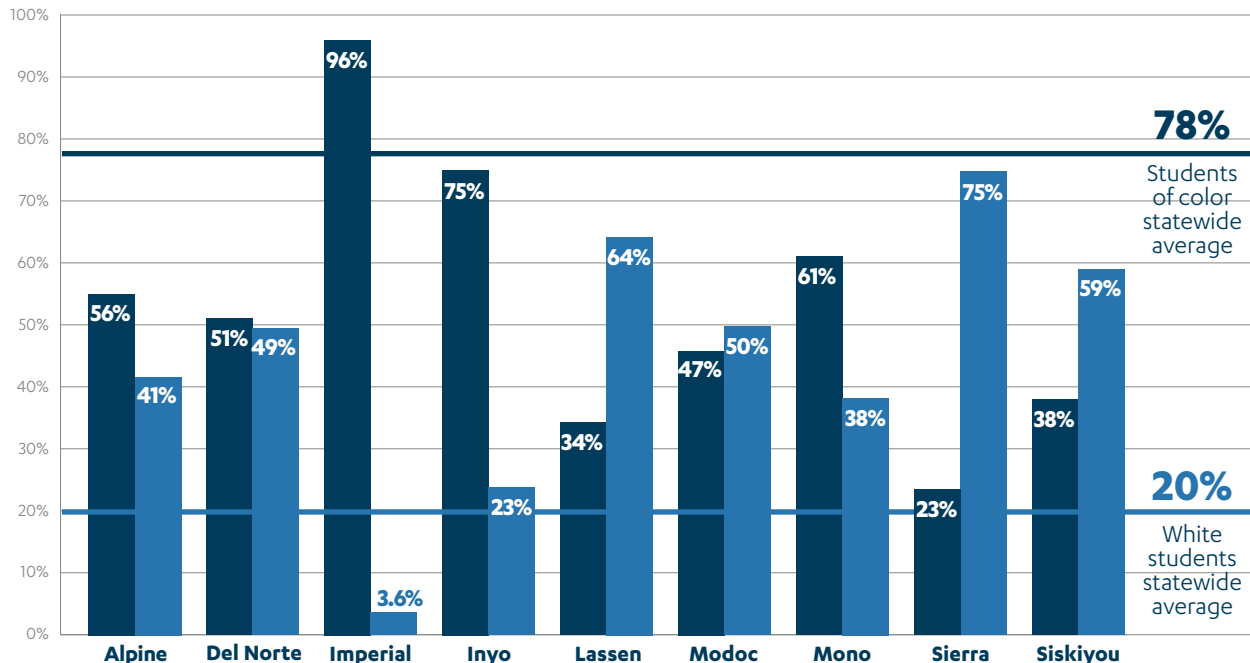
While there are over 100 TEPs in California, TEPs are not evenly distributed throughout the state. On average, there are 10 TEPs within 60 miles of a county's central office of education. For the purposes of this brief, a teacher education desert is a county that does not have a TEP within 60 miles of the county's office of education.¹

Based on these criteria, our analysis identifies nine teacher education desert counties out of the 58 counties in California: **Alpine, Del Norte, Imperial, Inyo, Lassen, Modoc, Mono, Sierra, and Siskiyou.**



Racial Composition of CA K-12 Students, 2022-23

■ Students of color ■ White students



Student Demographics

The K-12 student population for teacher education deserts exhibits substantial variability, ranging from Imperial County's 36,249 students to Alpine County's 68 students. Among teacher education deserts, the racial demographics of the K-12 student body also vary significantly. California's K-12 public schools are increasingly diverse, with 78% of students identifying as students of color, and over half identifying as Latine (*California Department of Education, 2023b*). This diversity is mirrored in Mono and Inyo counties, where Latine students also exceed half of the K-12 student population. In Imperial County, 96% of students are students of color; Alpine County has a noteworthy representation of American Indian/Alaska Native students (46%). In contrast, Lassen, Siskiyou, and Sierra counties have a predominantly White student population, while Del Norte and Modoc counties have closer to an even split, with 51% and 48% students of color, respectively.

¹ Only CTC-approved (California Commission on Teacher Credentialing) TEPs offering single subject, multiple subject, or education specialist credentials are included in the determination.

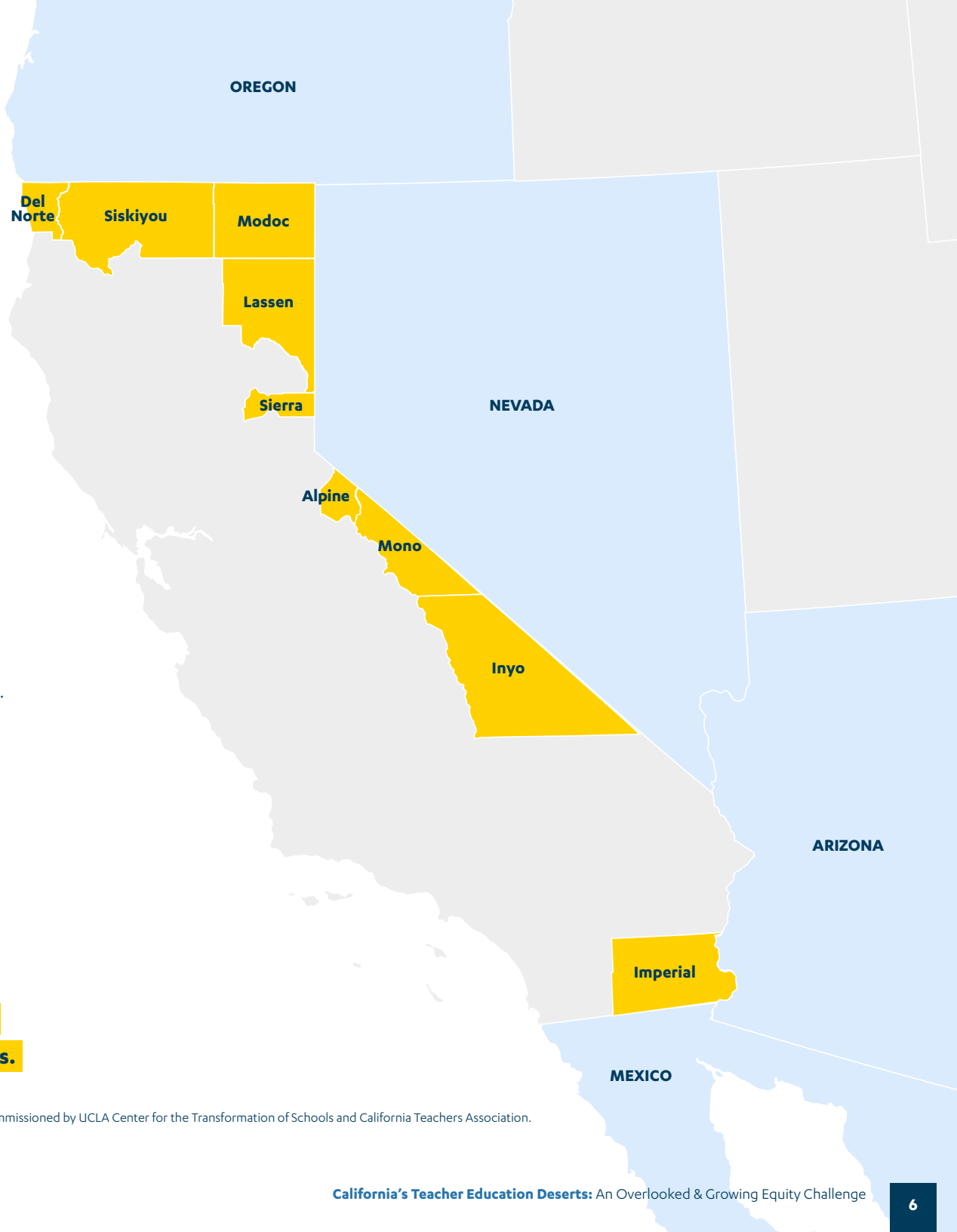
FINDING 1

Geographic Location

All nine teacher education deserts are border counties, sharing part of their border with either another state or with Mexico.

Six of the nine teacher education deserts border Nevada (Modoc, Lassen, Sierra, Alpine, Mono, and Inyo). One county, Imperial, borders both Arizona and Mexico. Research indicates that California border districts have significantly higher teacher vacancy rates compared to non-border districts (Goldhaber et al., 2018). In these areas, even the departure of a single teacher can have a substantial impact on staffing and course availability (Carver-Thomas et al., 2022). While the K-12 sector is often a substantial employer in rural communities, a combination of social and economic factors often leads to many talented young individuals being lured away from rural areas in search of more opportunities for upward mobility in urban or suburban areas (Sherman & Sage, 2011).

Additionally, all nine teacher education deserts are classified as rural counties.² Rural communities can be more politically polarized than urban communities, which can lead to conflicts over curriculum, school discipline, and other K-12 issues. Politically charged climates can create stressful and challenging work environments for teachers. A 2022 statewide survey commissioned by UCLA Center for the Transformation of Schools found that California teachers ranked “political and ideological attacks” as one of the top three reasons that they would consider leaving the profession (Hart Research Associates, 2022). Nearly 1 in 10 teachers in rural settings reported that the most dissatisfying aspects of their job involved educational decisions that were politically driven.³



Given their locations as rural border counties, teacher education deserts may experience more teacher vacancies than non-teacher education deserts and their teachers may experience lower job satisfaction due to politically charged climates.

² Rural County Representatives of California, (2023). Counties. <https://www.rccnet.org/counties>

³ Data sourced from a 2022 California Teacher Survey conducted by Hart Research Associates, commissioned by UCLA Center for the Transformation of Schools and California Teachers Association.

FINDING 2

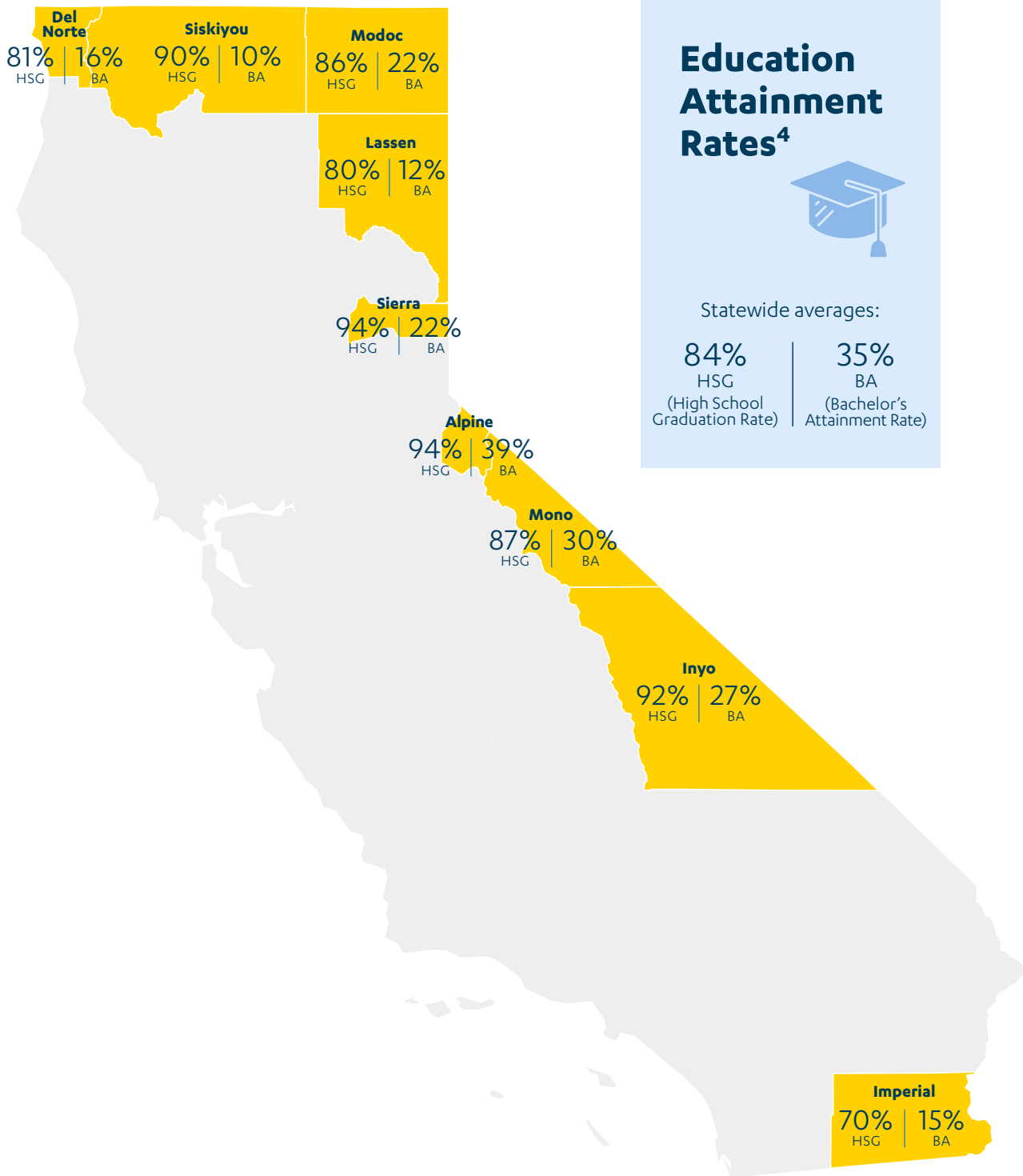
Education Attainment

There are very limited postsecondary options for high school completers in teacher education desert regions.⁴

California’s high school completion and bachelor’s degree attainment rates are 84% and 35%, respectively. Six of the nine teacher education desert counties have higher high school completion rates compared to the state average. Sierra County has the highest percentage among teacher education deserts at 94%. However, bachelor’s degree completion rates in eight of the nine teacher education deserts are lower than the state average. Lassen and Siskiyou have the lowest bachelor’s degree attainment rates at 12% and 10%, respectively. Alpine County is the one exception, at 39%. Many teacher education deserts are geographically distant from institutions of postsecondary education, and in California, teacher credentials can be obtained only post baccalaureate degree.



As a result, almost all local teacher candidates must leave their county of origin to obtain their postsecondary education before considering returning to teach in a teacher education desert.



⁴ This finding utilizes data from 2022 U.S. Census Bureau estimates.

FINDING 3

Underprepared Teachers

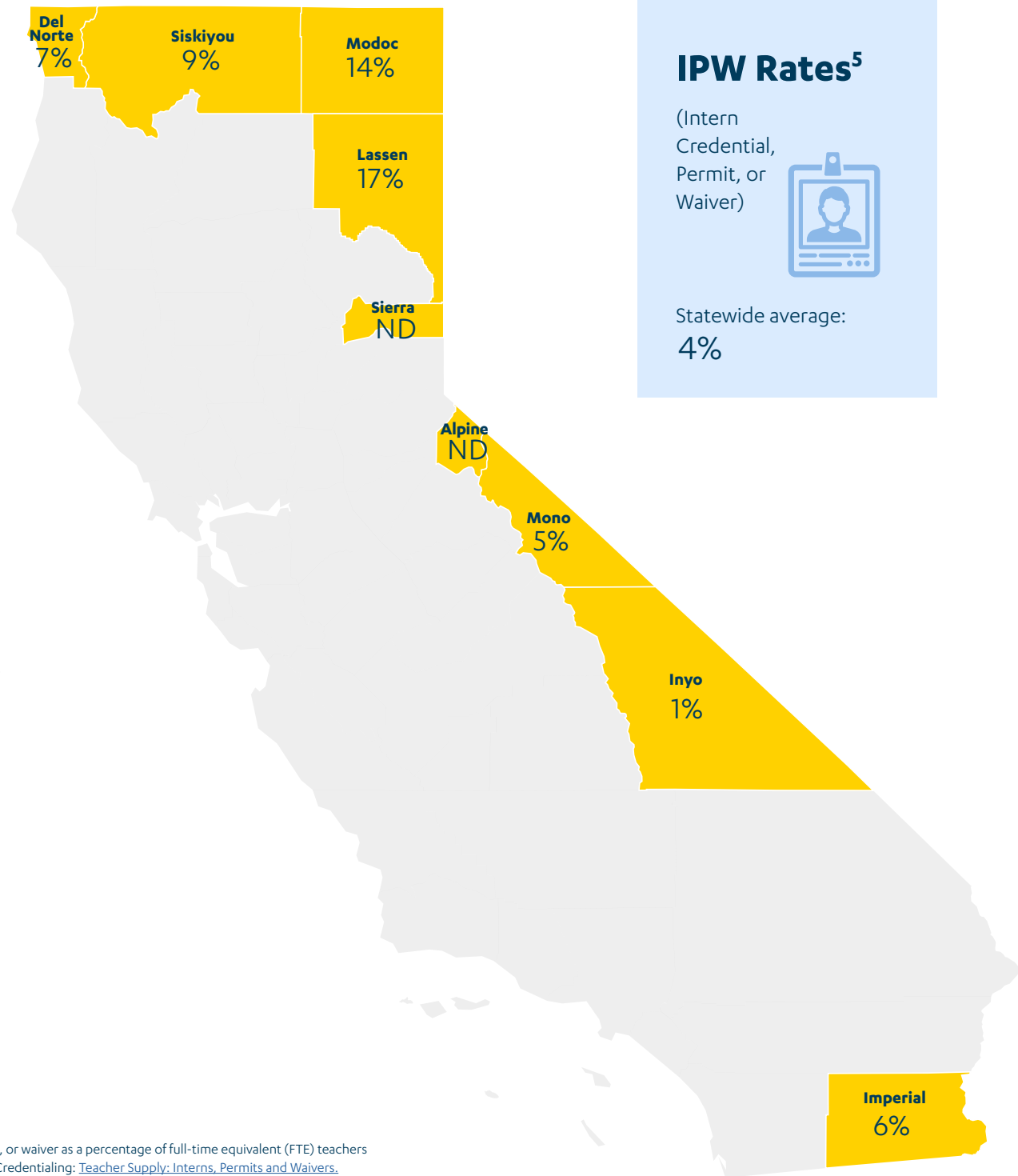
Teacher education deserts have higher rates of underprepared teachers.⁵

School districts in teacher education deserts are more likely to hire underprepared teachers. Underprepared teachers are teachers with substandard teaching credentials, either teaching on an intern credential, permit, or waiver (IPW). Historically, the state has used the number of teachers employed through IPWs as a proxy for the teacher shortage. Before districts can hire teachers with an IPW, they must prove that they cannot find a fully credentialed, fully prepared teacher to fill a vacant position. The underprepared teacher rate for California makes up 4% to 5% of the total teaching workforce. However, the majority of teacher education deserts (six out of nine) have considerably higher underprepared teacher rates. Modoc and Lassen have more than triple the rate of underprepared teachers when compared to neighboring counties that are non-teacher education deserts.

Existing research supports these findings: School districts in close proximity to TEPs generally have greater access to a pool of qualified teacher candidates, resulting in fewer staffing challenges and lower teacher vacancy rates (Goldhaber et al., 2018). Conversely, districts that are distant from TEPs are less likely to host student teachers and are more likely to hire teachers with emergency credentials (Chan et al., 2017).



High underprepared teacher rates are an indication that recruiting and hiring fully qualified educators in these areas (particularly border counties) are more challenging.



IPW Rates⁵

(Intern Credential, Permit, or Waiver)



Statewide average:
4%

⁵ The underprepared teacher rate is the number of teachers on an intern credential, permit, or waiver as a percentage of full-time equivalent (FTE) teachers in each county for the 2021-22 school year. Data is from California Commission on Teacher Credentialing: [Teacher Supply: Interns, Permits and Waivers](#).

FINDING 4

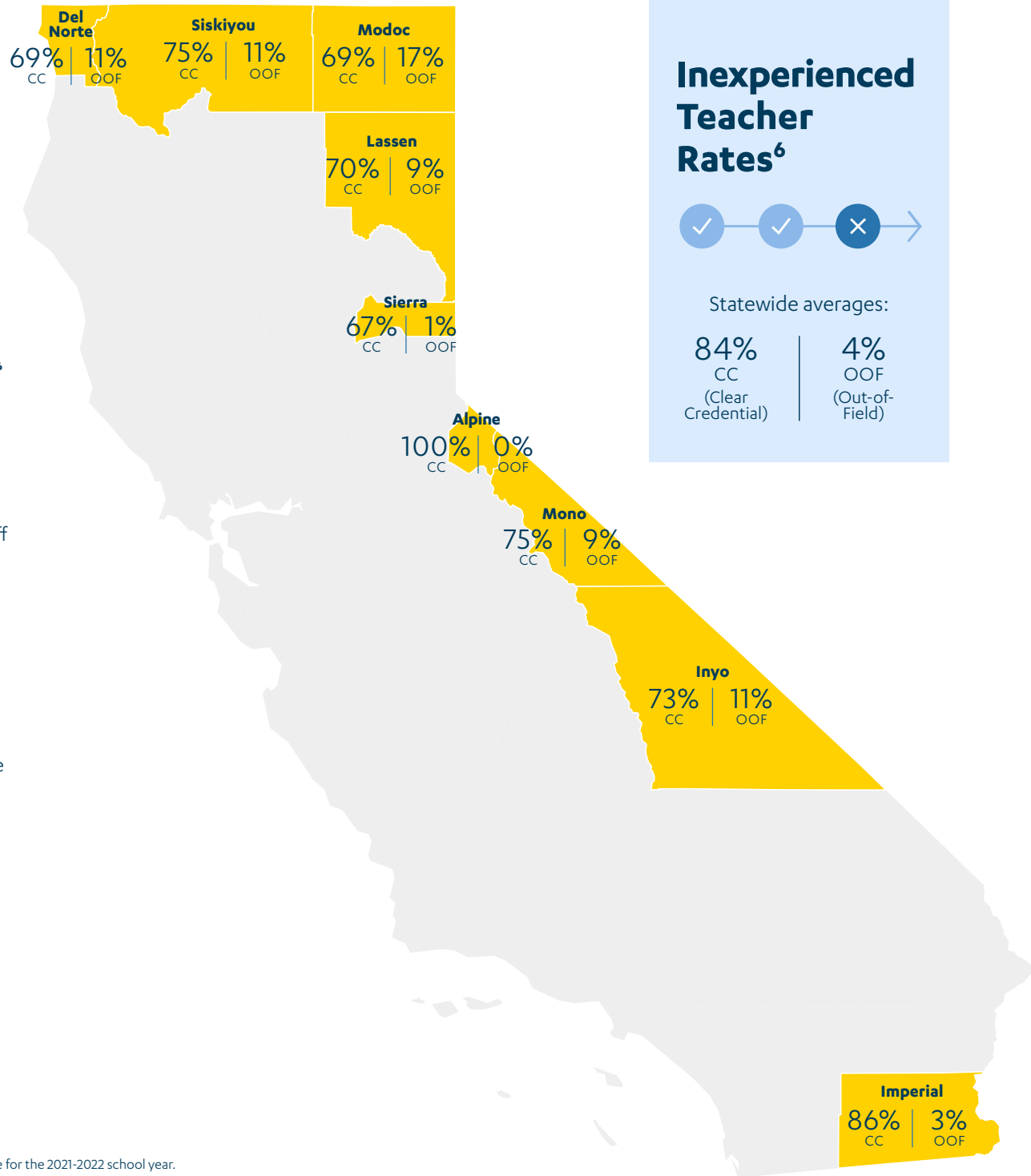
Inexperienced Teachers

Teacher education deserts have higher rates of inexperienced teachers and teachers working out of field.⁶

Approximately 84% of California’s teaching staff have cleared credentials, meaning they have completed a two-year, job-embedded support and mentoring program called Induction. With the exception of Alpine and Imperial counties, teacher education deserts have a lower percentage of teachers with cleared credentials, signifying a less-experienced teaching staff in these areas. Moreover, the majority of teacher education deserts have higher percentages of teaching assignments being filled by “out-of-field” educators, who hold a credential but are teaching courses for which they are not authorized to teach. Research suggests that rural teachers teach out of field or under emergency waivers at nearly double the rate of non-rural teachers (*Lazarus, 2003*). Teachers working out of field have increased demands, as they are more likely to create cross-subject lesson plans and will need to take multiple licensure exams to remain in these positions.



Low numbers of teachers with clear credentials and high ratios of out-of-field educators is an indication that teacher education deserts may experience higher rates of teacher burnout and turnover.



⁶ This finding utilizes data from California Department of Education’s DataQuest Database for the 2021-2022 school year.

FINDING 5

Economic Landscape

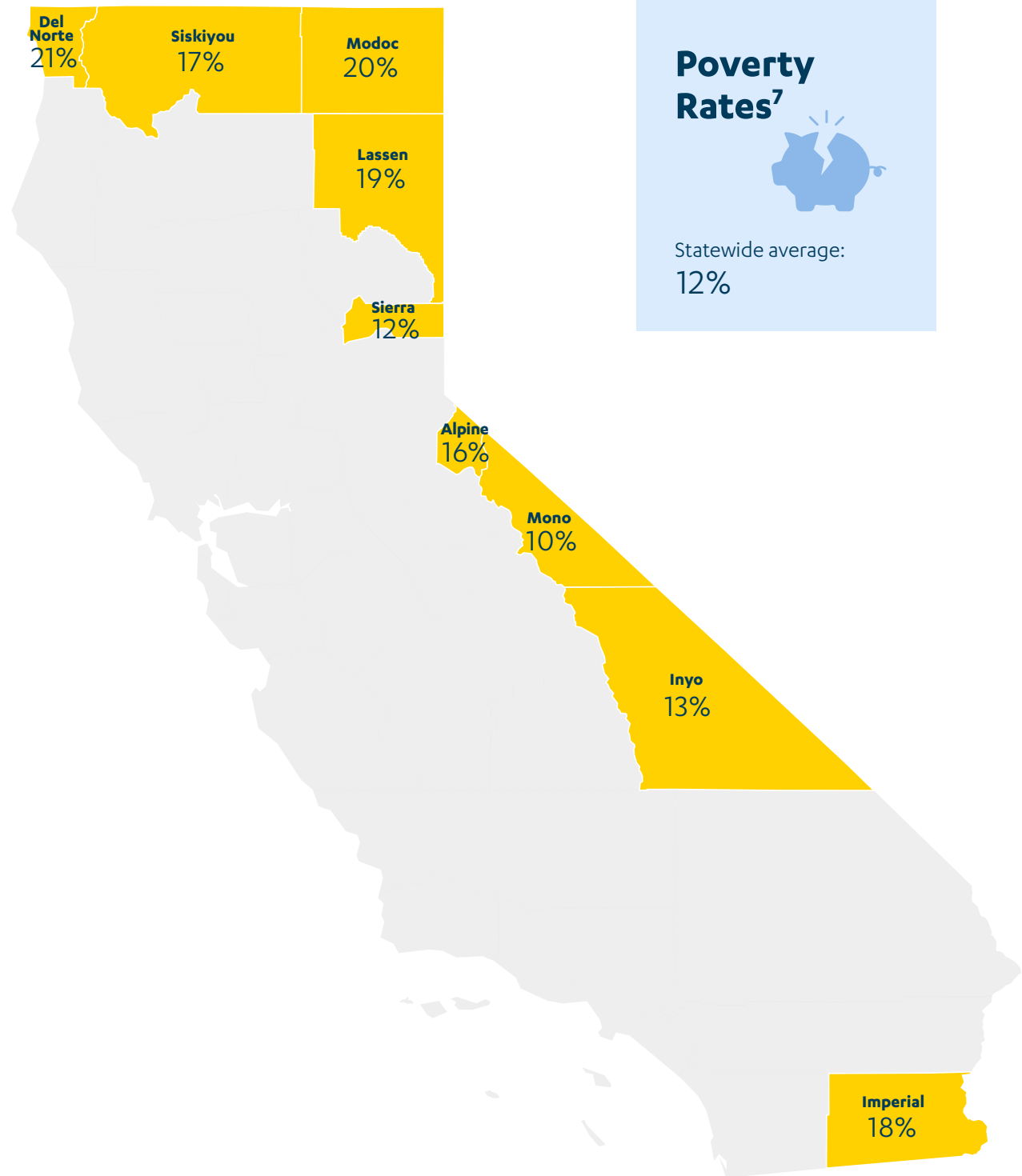
Teacher education deserts are also resource deserts.⁷

Eight out of nine teacher education deserts have poverty rates that exceed the state average of 12%. Only Mono County, with a poverty rate of 10%, is lower than the state average. The northernmost counties of Lassen, Modoc, and Del Norte have the highest poverty rates among teacher education deserts at 19%, 20% and 21%, respectively. Furthermore, median and mean incomes are lower in most teacher education desert counties. With the exception of Alpine County, teacher education deserts have median household incomes between \$49,000 and \$71,000, far below the state median household income of \$92,000. In fact, the average household income for the northernmost and southernmost counties is less than \$30,000 (Lassen, Modoc, Del Norte, and Imperial), with Imperial County, at \$19,000, being the lowest, possibly a reflection of the high number of seasonal workers in this area (Caltrans, 2023).

Schools in lower-income communities often face budget constraints, which lead to lower salaries and fewer benefits for teachers. Research also suggests that students from rural areas are less likely to return to their community after graduating college, especially if they come from households with low socioeconomic status (Sowl et al., 2022).



The economic landscape of teacher education deserts negatively impacts their ability to recruit and retain teachers.



⁷ This finding utilizes data from 2022 U.S. Census Bureau estimates.

FINDING 6

Academic Performance

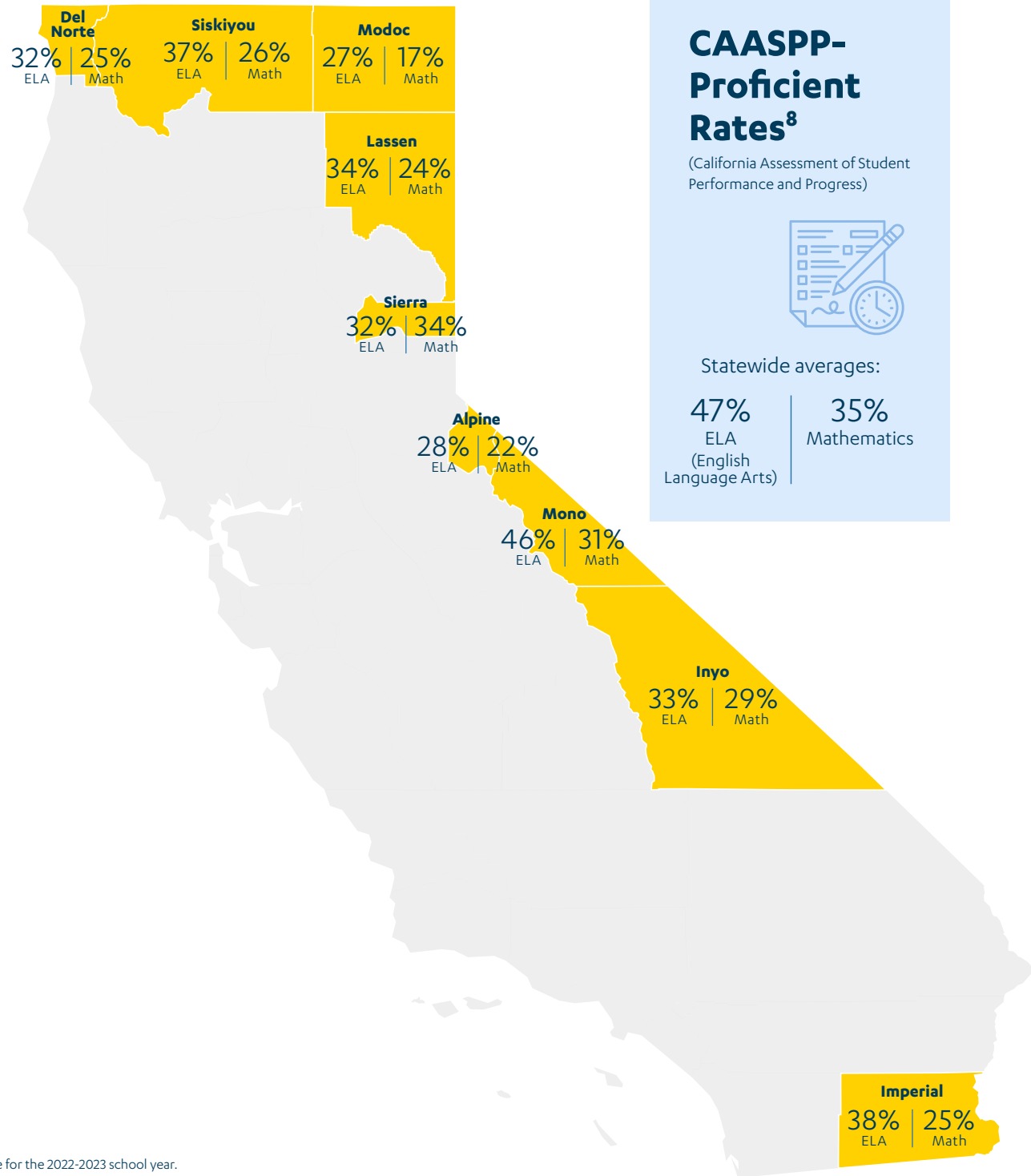
Academic performance on state standardized tests is lower in teacher education deserts.⁸

Teacher education deserts face significant challenges in student academic achievement. All teacher education deserts, with the exception of Mono County, fall below the state average (47%) of students who met or exceeded standards on the English Language Arts (ELA) portion of the California Assessment of Student Performance and Progress (CAASPP). On the Mathematics portion of the CAASPP, all teacher education deserts fall below the state average of 35% of students who met or exceeded standards. In Modoc, Del Norte, Sierra, and Alpine counties, students are underperforming by more than 15% below the state average in either one or both subject areas. These patterns may be indicative of systemic challenges within these educational environments, such as a lack of resources including advanced coursework, insufficient access to qualified educators, and fewer students with college-going aspirations (*Lavalley, 2018*). Low-performing schools require increased workloads for teachers, who are expected to provide individual support, differentiated instruction, and participate in customized remediation strategies. Research also indicates that highly qualified teachers are substantially more likely to leave low-performing schools (*Boyd et al., 2005*).



Schools experiencing consistently low student achievement may struggle to attract teachers due to negative perceptions and may struggle to retain teachers due to burnout.

⁸ This finding utilizes data from California Department of Education's DataQuest Database for the 2022-2023 school year.



CAASPP-Proficient Rates⁸

(California Assessment of Student Performance and Progress)



Statewide averages:

47%
ELA
(English Language Arts) | **35%**
Mathematics

FINDING 7

Stability Rates and Foster Students

Teacher education deserts have lower school stability rates⁹ and serve higher proportions of foster students¹⁰.

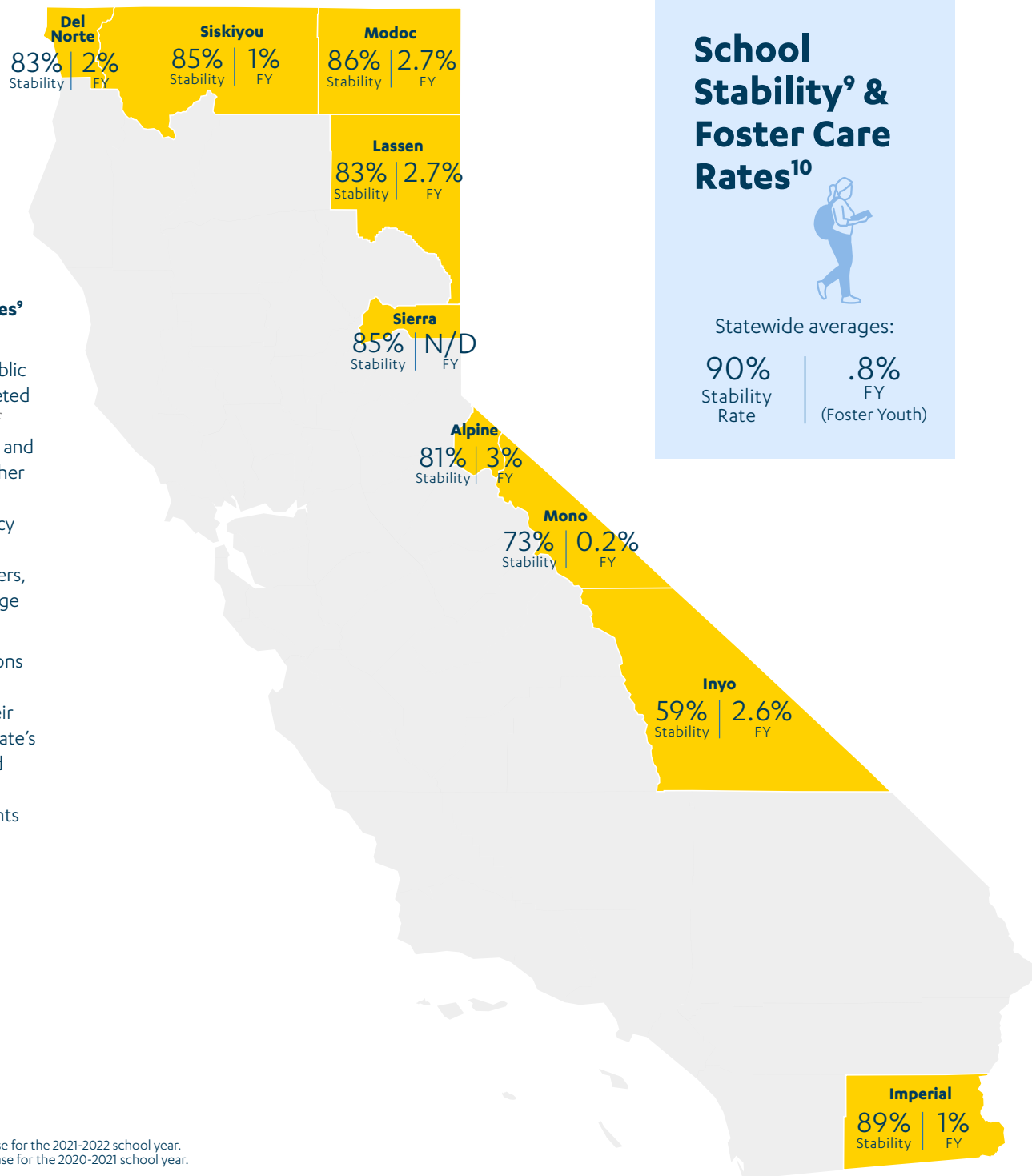
School stability is defined as the “percentage of all California public school students enrolled during the academic year who completed a ‘full year’ of learning in one school” (*California Department of Education, 2023*). Stability rates in schools reflect the continuity and consistency of a student’s educational experience. All nine teacher education deserts have a lower student stability rate than the state average of 90%, highlighting the issue of student transiency across these counties. Research shows that in rural agricultural areas, where schools often serve children of migrant farm workers, schools and districts are frequently confronted with the challenge of student instability (*Lavalley, 2018*).

Notably, teacher education deserts also serve larger proportions of foster students as compared to the state average of 0.8%. Alpine, Modoc and Lassen counties each report that 3% of their student populations are in foster care, nearly four times the state’s average. This outsized number of students in foster care could account for the lower levels of student stability within teacher education deserts due to frequent changes in home placements that cause foster students to change school or even districts.



The impact of student transiency on students’ educational experience is substantial and can be characterized by low academic performance and negative school climates, which may impact the recruitment and retention of teachers.

⁹ This finding utilizes data from California Department of Education’s DataQuest Database for the 2021-2022 school year.
¹⁰ This finding utilizes data from California Department of Education’s DataQuest Database for the 2020-2021 school year.



School Stability⁹ & Foster Care Rates¹⁰



Statewide averages:
 90% Stability Rate | .8% FY (Foster Youth)

Recommendations

Addressing Teacher Supply Issues in Teacher Education Deserts

The findings in this brief highlight the need for more comprehensive approaches to recruiting and retaining teachers. Rural areas often struggle to attract and retain qualified teachers due to lower salaries, limited professional development opportunities, and distance from urban amenities. These can lead to increased teacher turnover and teacher shortages. As a result, teacher education deserts employ higher rates of teachers who are underprepared or lack experience. To support these counties in attracting and recruiting qualified, experienced teachers, additional incentives and new initiatives need to be created.



Financial Support

Individual school districts or a collaborative coalition of teacher education desert county offices of education should endeavor to provide educational support stipends for underprepared teachers employed through an IPW to complete the necessary coursework and assessments to receive a preliminary teaching credential. Districts should also agree to pay all teaching assessment fees for out-of-field educators to receive appropriate teaching credentials. Dual credential bonuses for educators teaching more than one subject should also be offered. To support these efforts, the state should establish rural teacher fellowships providing financial aid to teacher candidates who commit to teaching in rural schools for a certain number of years.



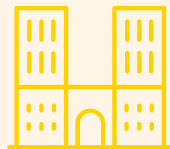


Mentorship and Professional Development Support

To prevent teacher turnover and burnout, the state needs to provide teacher education desert county offices of education with more structural and developmental support. Teachers involved in mentorship programs have higher job satisfaction, commitment, and retention (*Ingersoll & Strong, 2011*). California should establish and fund specialized mentorship programs for new teachers focusing specifically on challenges, opportunities, and strategies for teaching in rural schools. Additionally, the state should invest more heavily in California's Rural Ed Network, which aims to amplify the voices of and provide resources and guidance to rural educators.

Rural teachers are twice as likely as urban teachers and three times as likely as suburban teachers to consider leaving the profession due to conflicting job expectations.¹¹ Therefore, we recommend that teacher education programs offer specific pathways, coursework, and curricula that center the experience of working in rural education.

¹¹ Data sourced from a 2022 California Teacher Survey conducted by Hart Research Associates, commissioned by UCLA Center for the Transformation of Schools and California Teachers Association.



Community College Support

California's teacher education deserts are geographically distant from four-year institutions of higher learning, which makes it difficult for teacher education desert counties to locally source potential teacher candidates. To mitigate this issue, the state should allow community colleges in desert counties to grant K-12 teaching credentials to (at least) second-career individuals residing in those areas. Second-career individuals are those who already possess a bachelor's degree and may or may not have started a career in a field other than teaching. Currently, if someone wants to return to school to become an educator in California, they would have to enroll in a post-baccalaureate credentialing program. The location and cost of these programs often limit accessibility for those living in teacher education deserts.

Five of the nine teacher education deserts are within 60 miles of at least one public community college. With the state's support, early childhood programs in these schools should expand into K-12 teacher licensing programs, allowing for county natives to pursue a teaching credential through their local community college. The state should also work in partnership with teacher education desert county offices of education and nearby universities to develop hybrid residency programs for local community college graduates to earn their teaching credentials without needing to leave the county to take classes or student teach. Such initiatives should assist in retaining local talent. This model is not unprecedented; multiple states, like Florida, Texas, and Washington, already offer similar credentialing pathways.



Community and Culture Support

Effective K-12 educator recruitment strategies should prioritize diversity, focusing on attracting educators who share similar cultural and linguistic backgrounds with their students, as well as those who demonstrate a strong commitment to valuing and incorporating the cultural and linguistic assets that students bring to the classroom. Professional development programs for teachers should underscore the design and implementation of culturally responsive teaching strategies and curricula. School curricula and teacher training initiatives must also be carefully designed to promote inclusivity and cultivate a more comprehensive understanding of cultural diversity in the school community. Furthermore, to enhance course offerings and student learning in rural areas, districts and schools should provide specialized professional development that equips teachers with skills to integrate the use of technology into their instruction (*Monk, 2007; Blanchard et al., 2016*).

In counties with lower stability rates, teacher training should include guidance on how to support transient students—including students in foster care and students experiencing

housing insecurity—and emphasize strategies for inclusive teaching. Recruiting teachers from within the community can ensure a deeper understanding and connection to the local context, especially because teachers tend to remain in their position if they have strong connections with the local community (*Seelig & McCabe, 2021*). It is also important for schools in desert counties to establish strong support systems that utilize community and public resources to cater to the evolving needs of a changing student population.



Marketing Support

Lastly, a collaborative coalition of teacher education desert county offices of education should partner with the state on regional marketing campaigns to attract more teachers to work in teacher education deserts. Campaigns should highlight open positions, benefits, and incentives like housing or education stipends. Partnering with other local organizations to recruit teachers from bordering states should also support teacher pipeline shortages and stimulate the local economy.

Conclusion

This research explores significant factors impacting the teacher supply in California's teacher education deserts. Our findings reveal how rural geographic locations, lower wages, and limited postsecondary options contribute to these counties' unique struggles in attracting and retaining qualified teachers. These border counties face higher poverty rates, higher underprepared teacher rates, and a less experienced teaching workforce. These factors contribute to lower student academic performance and higher teacher turnover, creating a cyclical challenge.

Addressing these issues requires a comprehensive approach that combines financial support, expanded opportunities, community college partnerships, and targeted recruitment strategies. Financial support through stipends, fellowships, and bonuses can incentivize teachers to work in teacher education deserts. Professional development and mentorship programs specifically designed for rural settings and accessible credentialing pathways through local community colleges can help educators enter and thrive in these unique environments.

By implementing these recommendations, California can begin to bridge the gap between teacher supply and demand, and more equitably distribute qualified educators across the state. This will assist in providing all students, regardless of their location, access to a more equitable education experience.

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