BLUUM

LET LEARNING GROW

Treasure in the Valley

Demographic Changes and New School Opportunities in Ada and Canyon Counties

MAY 2016

About ECONorthwest

ECONorthwest specializes in economic, planning, and finance with a deep knowledge of the public education sector. Established in 1974, ECONorthwest has over three decades of experience helping clients make sound decisions based on rigorous economic, planning and financial analysis.

About Bluum

Bluum is a non-profit organization committed to ensuring Idaho's children reach their fullest potential by cultivating great leaders and innovative schools. We work to help Idaho become a national model for how to maximize learning opportunities for children. In partnership with the J.A. and Kathryn Albertson Family Foundation, Bluum plans to help create 20,000 new, high-performing school seats in Idaho in 10 years.

Produced with support from:

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We are grateful to the individuals and organizations that helped produce this report. Matthew Kitchen crunched the data and authored the report. We thank him, and his colleagues at ECONorthwest, for their expertise, thoughtful analysis, and willingness to collaborate throughout the process. We also want to thank Joe Bruno at Building Hope and Conrad Freeman at Vectra Bank for their support and encouragement in moving this project forward. Special thanks to the J.A. and Kathryn Albertson Family Foundation for their ongoing support and encouragement in not only issuing this report, but in supporting the effort to grow new high quality schools for Idaho's children. Idaho's future is brighter because of their efforts.

We would like to thank our fellow Bluum-ers Amy Russell, Suzanne Metzgar and Marc Carignan. Amy gave important feedback on drafts of the report and planned its formal release. Suzanne helped plan the event that preceded the release of the report, while Marc gave feedback and encouragement along the way.

This report makes use of a number of publicly available datasets including data from the 2000 and 2010 U.S. Census of Population, the American Community Survey, a compilation of building permit data assembled by the Community Planning Association of Southwest Idaho (COMPASS), population forecasts from COMPASS, and various data made available through the Idaho State Department of Education. The authors of this report are grateful for the assistance others provided, but all errors and omissions are our own.

The cover photo for this report was taken by Amy Russell. The maps developed for this report make use of a base layer designed by Stamen Design based on data from OpenStreetMap.

Treasure in the Valley:

Demographic Changes and New School Opportunities in Ada and Canyon Counties

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Foreword

Idaho's families and student demographics are changing. Not only is the state's total population growing (Idaho is the 10th fastest growing state), but Gem State families are increasingly urban, non-white and lower income. This was the big takeaway from the 2014 ECONorthwest report *Shifting Sands: Idaho's Changing Student Demographics and What it Means for Idaho*. That report confirmed what many of us who live in communities like Boise, Meridian, Twin Falls, Idaho Falls or Coeur d' Alene see daily as we pass new home construction sites, hunt for apartments, sit in traffic and watch new school buildings pop up like wild flowers.

Nowhere are these dynamics of growth more prevalent than in the Treasure Valley, the area of focus for this new report. Since 2000, the school-aged population in the Treasure Valley has grown by 39 percent (see **Table 1**). This is significant when you consider that the change in school-aged population has only increased by 12.8 percent in the entire state within the same number of years.

Table 1. Treasure Valley School-Age Population 2000-2014 and 2019 Projections

School Age Population	2000	2010	2014	Proj. 2019
White	76,533	98,520	100,056	100,100
Non-White	8,044	13,304	15,024	17,200
Two or More Races	3,168	5,874	6,827	8,000
All Races	**87,745**	**117,698**	**121,907**	**125,300**
Hispanic/Latino (all races)	10,369	21,020	23,552	26,700

Source: U.S. Census, ACS, Nielson and ECONorthwest

With this growth come challenges, but with the challenges also come tremendous opportunities. Specifically, Bluum is most interested in where new innovative schools (charter, district or even private) should be built and opened to best meet the needs of the areas' growing and increasingly diverse student demographics. Bluum, with the support of the J.A. and Kathryn Albertson Family Foundation, is committed to helping create 20,000 new, high-performing school seats, by 2024. We want to make sure that the new seats we advocate for are actually created in the communities with the greatest need and demand for better school options.

To help us figure all this out we went back to the crack research team at ECONorthwest. We asked their Project Director, and the author of the *Shifting Sands* report, Matthew Kitchen to build on the earlier work to help us begin to answer three essential questions specific to the Treasure Valley:

- Where can we expect to see the greatest growth in the pre-K-12 school-age population?
- Where are the highest concentrations of low-income and minority school-aged children?
- Where are current schools underperforming based on the students they serve?

We felt that if we could get insights to these questions we would have a better sense of where new schools in the Treasure Valley should be built. Of course, each school district in the Ada and Canyon Counties have similar studies of their own, which are valuable and important for their planning. But, we wanted to look at this as a regional issue rather than just a school district matter. We wanted this information for all school providers (district, charter and private) as well as for local community leaders, business leaders and others involved in growing and supporting schools and education programs.

Matthew Kitchen and his colleagues at ECONorthwest combined their skills and experience in urban planning and public education to look at demographic trends and school performance in the Treasure Valley. This new report, *Treasure in the Valley: Demographic Changes and New School Opportunities in Ada and Canyon Counties*, uses data from the U.S. Census and Community Planning Association of Southwest Idaho (COMPASS) to project the change of school-aged population through 2025. The ECONorthwest team also tapped the American Community Survey data to look at current concentrations of low-income, non-white, and Hispanic populations within the valley. And, the research team created a performance model from a combination of ISAT math scores and school-level demographics for district and charter public schools. The performance model reports how well each school does in comparison to an expected performance (see full report for notes on methodology).

In interrogating our three essential questions about student growth, school quality and change in the Treasure Valley, the research shows the following insights:

- The Treasure Valley saw overall student enrollment grow by nearly 12,000 students between 2010-2015. The region is expected to add another 3,400 students by 2019, and nearly 65 percent of these students will be from minority backgrounds.
- By 2019 it is projected that there will be a net increase of 9,000 households in the region earning less than $50,000 a year; half of those earning less than $25,000.
- Over 10,000 students in the Treasure Valley (about ten percent of K-12 students) attended schools in 2015-16 that performed significantly worse than expected on their math ISATs.
- "Hot spots" where the demand and need for new and better school options is greatest cross district and community lines within sections of Boise, Caldwell, Meridian, Nampa, and Kuna.
- Nampa is highlighted in our analysis as an area that could benefit significantly from new school investments and support. It is important to note, this has already begun with district innovations and new charter development.

Treasure in the Valley aims to help local education leaders, community leaders, businesses, and philanthropies support wiser and more strategic investments in schools. But, it also breaks new ground by using empirical data across two counties to site schools based on the needs of changing communities. As Idaho and other states, especially in the West, become less rural, more diverse, and more expansive with school choice policies research like this will continue to be needed. A new, high performing school targeted at a "hot spot" of student growth and educational need can make a sizeable difference for not only a community's families and children, but also to the overall economic and civic health of the community.

We hope this report can stimulate some important conversations and be a useful tool for everyone involved in designing the future of education in the Treasure Valley.

Angel Gonzalez, Director of Research
Terry Ryan, Chief Executive Officer

1. Introduction and Study Purpose

Bluum, with support from Building Hope and Vectra Bank, commissioned this study by ECONorthwest to understand how the Treasure Valley's changing demographics and housing growth present opportunities for creating innovative school options for the region's expanding and increasingly diverse student population.

With a high quality of life and strong economy, the Treasure Valley is growing. The Valley is host to one of the youngest urban populations in the U.S. And that population is getting increasingly diverse. The future of the Valley economy depends on successfully preparing tomorrow's workforce by educating today's youth. Idaho's school systems get below average marks[1] for student achievement, school finance, support for teachers and other indicators of a healthy education environment. And in the face of low graduation rates and district fiscal challenges many Idaho students and families are seeking enrollment in schools of choice—district public, charter public, and private schools that offer families education options outside of those bound by their neighborhood. Waiting lists for many of the highest quality charter schools have been growing. New school services are needed to provide a wider range of quality choices for parents and students, and to drive innovation across the education sector.

This study focuses on Idaho's most populous urban region, the Treasure Valley, and seeks to describe the current and expected future conditions that will help shape the demand for new school services and programs.

The goals of this study are to:

- Understand near-term trends in changing demographics of school-age children for Ada and Canyon counties.
- Identify "hot spots" in development and where demand for new school services may be greatest.
- Discuss school quality in these growth areas - how many students are attending low performing schools or could benefit from different school options?
- Discuss how the changing student demographics might be served by new school options.

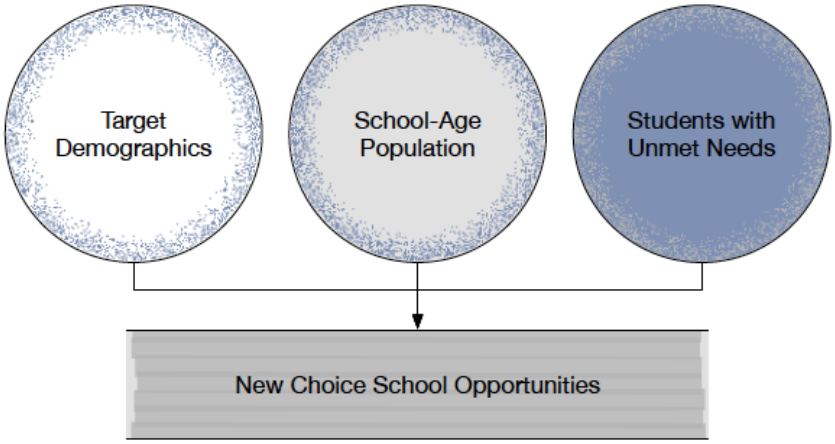
For this project ECONorthwest has combined standard market research techniques with our deep knowledge of the public education sector and data sources in order to provide Bluum with an integrated set of information about the market potential for new school services in the Treasure Valley.

This report begins (**Section 2**) with a brief description of the changing demographic and economic environment in which school services are offered. This is the underlying case for new school investment. It then presents an approach to combining together a wide variety of different geographic measures into a single index of school opportunity (**Section 3**). The School Opportunity Index is a shorthand way of identifying and mapping locations where new school services might best be deployed in order to meet a variety of community and educational needs. The key factors involved relate to demands for new school services in three general categories:

1) the location of target populations,
2) the presence and growth in school-age populations, and
3) the location of students with unmet academic needs.

[1] Education Week. 2014. Idaho State Highlights: A special supplement to Education Week's Quality Counts 2014. Accessed May 10. http://www.edweek.org/media/ew/qc/2014/shr/16shr.id.h33.pdf.

Figure 1. Factors Influencing New School Opportunities



The report then examines more closely (**Section 4**) a number of specific measures across these categories that together constitute the school opportunity index. Then maps of localities are presented (**Section 5**) that depict school opportunity within individual communities. The report ends with some general conclusions and there is an Appendix that describes some technical methods.

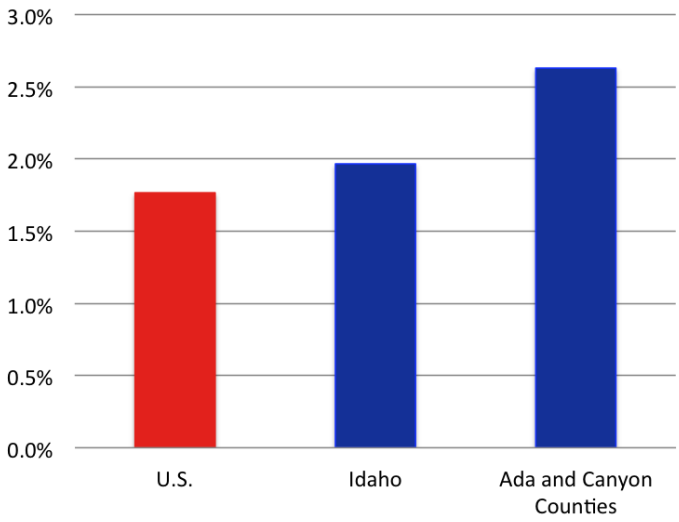
The report is intended as a tool for use by a broad set of stakeholders involved in school siting decisions. As is true of any tool, it has limitations and should be supplemented with local knowledge about student needs and school service delivery organizations' constraints and opportunities.

2. The Importance of New School Services

The Treasure Valley Economy is Growing

Since the recession the Treasure Valley has seen vigorous job growth, experienced a strengthening real estate market, and has one of the highest shares of population under-19 of any urban area in the U.S. The evidence for this growth is seen in crowded classrooms in a number of schools throughout the urbanized area[2]. Since the bottom of the recession employment growth in the Treasure Valley has outpaced the state and the rest of the U.S. economy (see **Figure 2**).

Figure 2. Employment Average Annual Growth Rates Since September 2010



Source: U.S. Bureau of Labor Statistics

Wage growth in the Boise area has also been strong since the recession (2.4% annual average), outpacing the state of Idaho (2.1%) and the U.S. as a whole (2.0%). Growth in jobs and income is evidence of a stable and expanding economy that has revived the area's housing market.

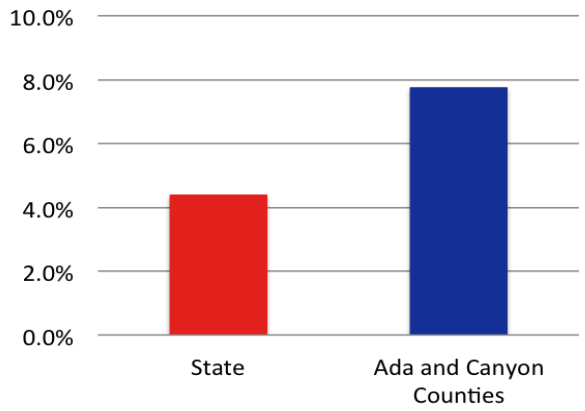
A Rebounding Housing Market

The Treasure Valley has experienced a substantial housing market recovery since the markets lost significant value during the sub-prime mortgage crisis and subsequent recession. In late 2006, just prior to the mortgage crisis average home values in some parts of Boise were at a high of between $150 - $190 on a square foot basis. Two years later values had dropped to between $100 - $150 per square foot. At the end of 2015 home values in these same parts of Boise had recovered to 95% of their pre-recession high. A similar pattern is seen throughout the Treasure Valley. Annual average growth rates for homes within the Treasure Valley measured since the bottom of the housing market (at the end of 2010) have been 7.7%. Annual average growth in home values for

[2] Richert, Kevin. 2015. "Districts Face Rising Enrollment Across Idaho." Idaho Ed News, September 3. Accessed May 10, 2016. http://www.idahoednews.org/news/across-idaho-districts-face-rising-enrollment/

all of Idaho during this period was 4.4% (**Figure 3** below) and was the 12th highest growth rate in home values amongst all states. The strong growth in home values in the Treasure Valley is an indication of the overall demand for housing resulting from a strong economy and a desirable local quality of life.

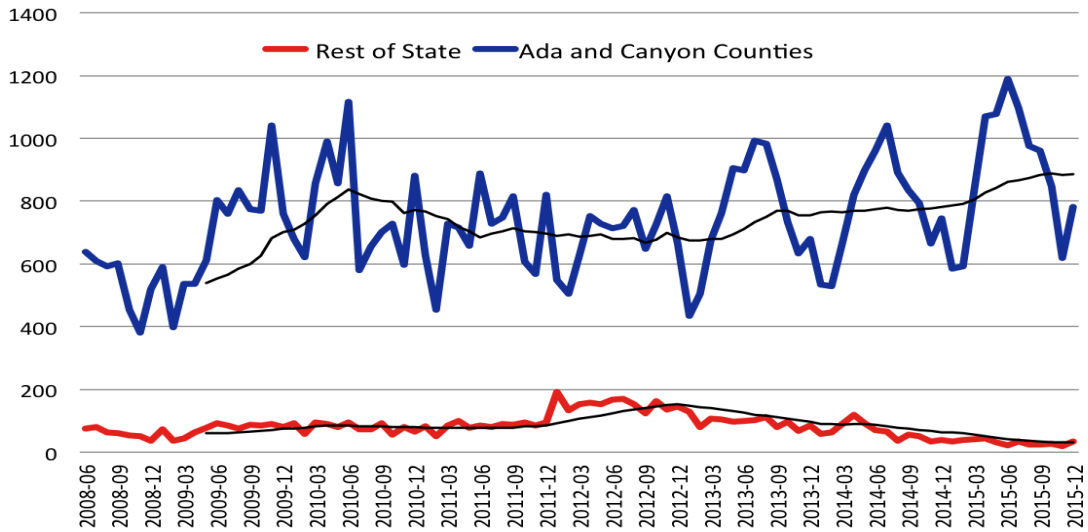
Figure 3. Annual Average Growth in Home Values on a Sq. Ft. Basis



Source: data from Zillow, ECONorthwest

The Treasure Valley comprises the largest housing market in Idaho. Monthly home sales date from Zillow demonstrates that the activity of this market has been increasing since the general collapse of the housing markets in 2007. **Figure 4** below displays monthly home sales and a 12-month moving average (black lines in graph) of sales for the region and the rest of Idaho. The dynamic nature of the growth in the market is demonstrated in growth in home sales volume that precedes the rest of the state, and that continues to be strong even as home sales volumes for the rest of the state have flattened. With an expanding residential market comes growth in families with school-age children, thus increasing school enrollments. This population growth is evident in recent census data and is expected to continue over the near-term.

Figure 4. Monthly Home Sales in the Treasure Valley and Rest of Idaho

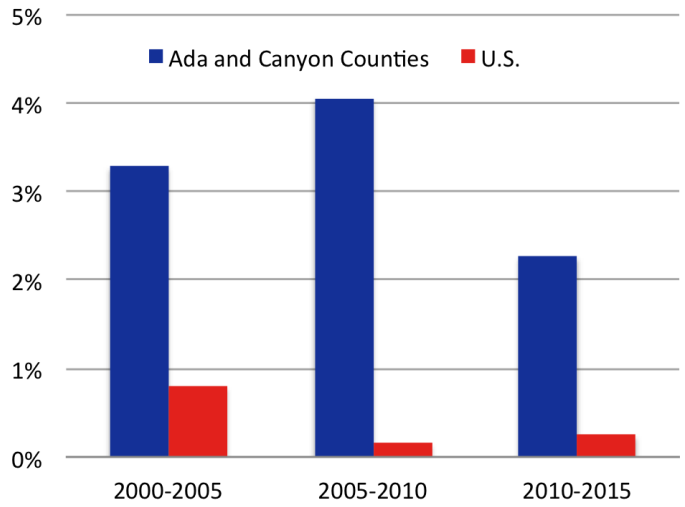


Source: Data from Zillow, ECONorthwest

Increasing School Enrollment

The number of students enrolled in public schools in the Treasure Valley region rose dramatically during the pre-recession period. And since 2010 enrollments have continued to increase. Public schools in the Treasure Valley saw enrollment grow by nearly 12,000 students, or 2%, between 2010-2015. Charter schools in the region grew by over 11% during the same period while public school enrollment in the U.S. grew by less than one-half of one percent (see **Figure 5** below).

Figure 5. Percent Change in Enrollment in Treasure Valley and U.S.



Source: ISDE and National Center for Education Statistics

New School Construction

Public school districts in the Treasure Valley where enrollment increases have been largest struggle to provide sufficient school capacity to meet demands. School construction is dependent on the successful passage of local capital bond measures. The upfront costs and long-lived nature of these investments in new buildings makes developing and garnering support for these capital plans a challenge for districts. Conventional wisdom about scale economies of school construction[3] often result in fairly large increments of new construction[4]; elementary schools sized for 500 or more students and middle and high schools that accommodate between 1000 to 2000 students. And at some point growth in enrollments necessitates these new investments.

The West Ada School District plans to open a new elementary school and a new middle school in 2017. Hillsdale Elementary will open near the corner of West Amity and South Eagle roads and accommodate 650 students. Victory Middle School will open near the corner of West Overland and South Stoddard roads with a capacity of 1,000. And Meridian High School is undergoing a remodel that will be complete before the 2017-18 school year,

[3] Vincent, Jeffrey M. and Deborah Mckoy. 2008. "The Complex and Multi-Faceted Nature of School Construction Costs: Factors Affecting California." AIA Community Council. Accessed May 10, 2016. http://citiesandschools.berkeley.edu/reports/K-12_CA_Construction_Report.pdf

[4] Humann, Cheryl, Robert Palaich, Mark Fermanich, and Shawn Stelow Griffin. 2015. "Final School Size Study Report: Impact of Smaller Schools." APA Consulting. Accessed May 10, 2016. http://marylandpublicschools.org/adequacystudy/docs/SchoolSizeReport071615.pdf

increasing capacity by 200 students. The Vallivue School District is completing construction on Ridgevue High School (capacity 1,800) near the corner of Madison and Linden roads in Nampa, and has broken ground on Elementary School #7; which will have a capacity of 800 students. Boise School District has no current construction plans but under its 2006 bond measure constructed East, South and West junior high schools; Grace Jordan, Whitney and Morley Nelson elementary schools; and Frank Church High School. The Nampa School District is planning to open an innovative high school choice for the 2017-18 school year, having just received a major grant to fund the school's first two years of operation.

A Changing School-Age Population

Public school enrollment has mirrored the region's growth in school-age populations. Since 2000 the region has seen a net increase in school-age population (years 5 – 17) of over 34,000. And that growth is expected to continue. Between 2014 and 2019 there will be an additional 41,000 people in the region and 15,000 households. And there will be an additional 6,100 households with children. Population projection estimates provided by Nielson anticipate a net increase in the school-age population of nearly 3,500 by 2019. The inflow and outflow of households and the aging of population cohorts will also bring changes in the demographic composition of the school-age population within the region. The Treasure Valley school-age population will altogether become less white and more Hispanic. This is the continuation of trends evident since 2000.

Table 2. Treasure Valley School-Age Population 2000-2014 and 2019 Projections

School Age Population	2000	2010	2014	Proj. 2019
White	76,533	98,520	100,056	100,100
Non-White	8,044	13,304	15,024	17,200
Two or More Races	3,168	5,874	6,827	8,000
All Races	**87,745**	**117,698**	**121,907**	**125,300**
Hispanic/Latino (all races)	10,369	21,020	23,552	26,700

Source: U.S. Census, Nielson and ECONorthwest

The strong regional economy will create more prosperity and attract new households, but it will also result in additional households with modest means living in the region. In 2019 it is projected that there will be a net increase of 9,000 households in the region earning less than $50,000 a year; half of those earning less than $25,000. The growth in student-age population and its increased racial and economic diversity will present an evolving set of demands on local school services. In such a dynamic setting there will be significant benefits from the development and deployment of new school services. New, high quality schools have an important role to play in educating this growing population by offering students a diverse range of educational opportunities.

School Performance

In addition to growth in student populations and enrollments, new high-quality school choices are needed in the Treasure Valley to better serve students currently enrolled in schools struggling to advance student performance. In this study school performance is measured by examining the share of students that meet proficiency standards on the statewide math assessments. Math assessments were selected as a bellwether measure of student achievement. Actual shares of students meeting proficiency for each school are compared with expected student proficiency given the performance of other similar schools statewide. The expected performance of schools is predicted by a model described in the **Appendix** to this report. Schools are considered to be

underperforming when the actual shares of student meeting proficiency are significantly lower than is the case for similar schools statewide. This definition of underperformance is admittedly narrow and is not observed over multiple years. As a result, the measures should be understood for what they are – not an assessment of individual school quality but rather a general indicator of where there are students who might benefit from a broader array of school choices.

School-level models were estimated based on data from 2013 statewide assessments (ISAT) and from 2015 assessments. Between 2013 and 2015 Idaho adopted a new assessments based on the Smarter Balanced Assessment Consortium and designed to support Common Core curriculum. This transition in assessment platforms means that analysis of 2013 and 2015 school performance, based on these testing data, are independent and are not comparable. We have included both 2013 and 2015 results independently in our final index.

In the Treasure Valley there were more than 18,000 students enrolled in significantly underperforming schools (in the bottom 20% of performance on the math assessment as compared with similar schools across the state) in 2013. There were just fewer than 10,000 students in significantly underperforming schools (by this measure) in 2015 (see **Table 3**). Between 2013 and 2015, again noting the change in tests, the total share of students in the Treasure Valley meeting standards in math declined from 77 percent to 38 percent. However, the share of Treasure Valley students enrolled in schools that significantly underperformed when compared with similar schools statewide declined.

Table 3. Students Enrolled in Schools Grouped by Performance Quintile for Math Assessments

	2013		2015	
Performance Quintile	Enrollment	Share	Enrollment	Share
Lowest Quintile	18,752	18%	9,960	9%
Second Quintile	26,770	25%	19,985	19%
Third Quintile	23,433	22%	24,042	22%
Fourth Quintile	22,812	21%	27,087	25%
Highest Quintile	15,378	14%	26,071	24%

Source: ECONorthwest, data from ISDE

The Need For New School Services

In summary we find that the Treasure Valley has a strengthening economy, with a growing population. This population is notably younger than is typical for many U.S. metro areas. School enrollments, like school-age populations, have increased in recent years and will continue to do so. Many school districts in the area are challenged to provide increased school capacity and expanded programs. And some schools struggle with getting kids to meet state standards. All these factors point to the importance of actively pursuing the development of new choice school options for the residents of the Treasure Valley. One very important question, however, is where should these school options locate in order to best serve the expanding needs of Treasure Valley kids over the next 5-10 years?

3. A School Opportunity Index

By virtue of economic growth, a young population, and inconsistent performance across existing schools – new school choices will be an important part of meeting the Treasure Valley's needs over the next decade. It is the premise of this report that schools of choice should strategically locate within the region in order to best meet emerging needs. There are a large number of potential factors that contribute to the where new option schools might locate, but primary factors can be categorized as follows:

- The location of target populations of interest (e.g. populations of non-white, Hispanic and persons living in poverty)
- The location and expected growth in the school-age populations
- The location of students currently enrolled in underperforming schools

New school services are needed most where existing target populations (minority and low income students) are concentrated, where the expectations of school-age population growth is greatest, and where existing student needs are not adequately met by current programs. These are the factors selected in order to identify potential priority locations for investments in new school services and programs. These factors are clearly not the only ones that could be used for this purpose. Instead these represent a reasonable approach to developing a high-level understanding of new school opportunities in the Treasure Valley. The results of this effort should be used in combination with other local knowledge about school program siting opportunities and needs.

Each of the factors is described in greater detail in **Section 4** of this report. For purposes of identifying new school opportunities the factors are best considered in combination. And meaningfully combining many measures together is always a difficult proposition.

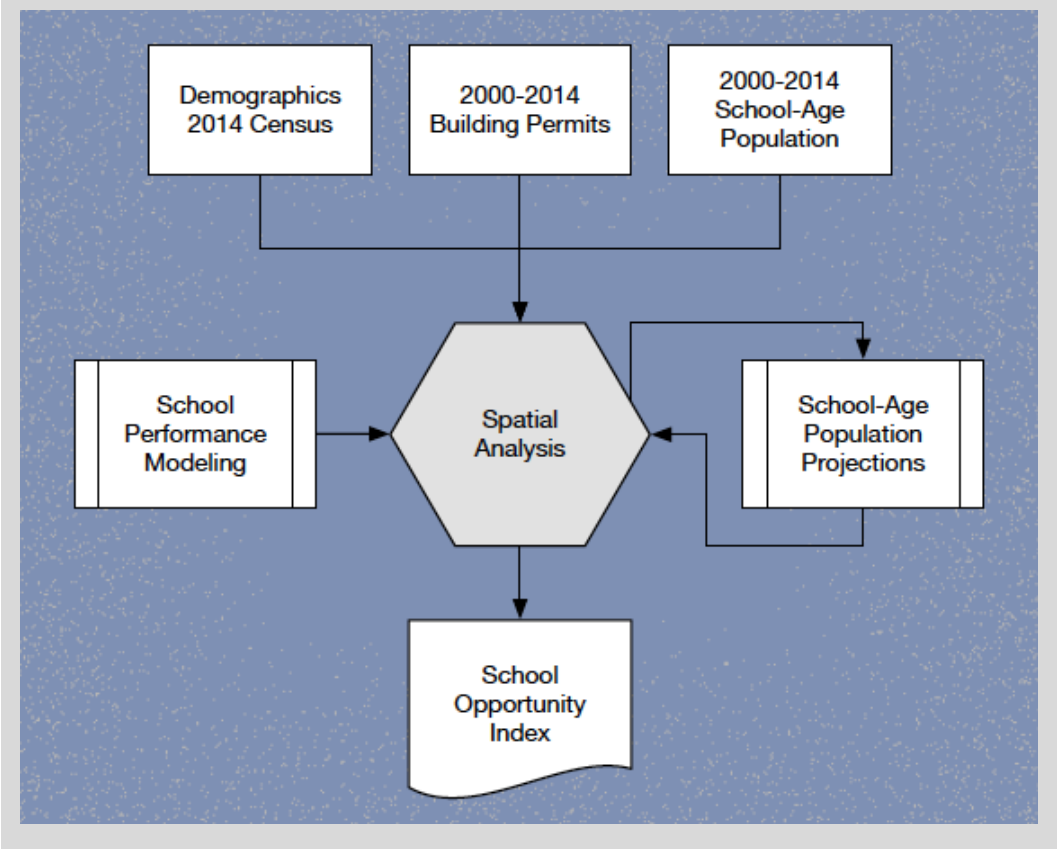
Bringing together many factors to highlight new opportunities for school placement is a challenging exercise. First, each factor must be measured in some common unit (in this case each factor was rendered into a common spatial unit). Creating a common spatial unit of analysis can involve the translation of values from one spatial unit to another. This introduces some degree of measurement error. Second, the variability of observed values for each factor must be normalized. And finally, the importance of factors, measuring very different phenomena must be determined. Once all these steps are performed factors can be combined into an index.

This study has developed a School Opportunity Index from the various factors described in more detail later in this report. Each of the three factor categories is given equal weight in the final index. Factor weight are best provided by the parties involved directly in a decision process. This report employs equal weights as a starting point, but this assumption could be modified if one factor is considered more important than others. Measures for each factor are normalized[5] before they are combined into the School Opportunity Index. At the end of the process each 1-mile grid of the Treasure Valley is assigned an index value. Most grids cells have an index value of less than one, and grid cells with an index above one are considered to be meaningful candidates for new school services.

Such an index is a shortcut for understanding the relative opportunities for new school services across the urban geography. As a shortcut, it is an efficient means of conveying information, but at the expense of some fidelity of meaning that is contained in the individual factors that lie beneath the index. Indices should be used appropriately, as a means of narrowing in on some dimension of a problem or phenomenon. In this case the School Opportunity Index gives some insights into generally where new school services might best be located. But final decisions about the siting of those services need to dive deeper into the local environment to better understand opportunities and constraints.

[5] As a result of a normalization process it is the highest 10 percent of each factor in the index that contributes meaningfully to the index value.

Figure 6. Development of School Opportunity Index



4. Factors Contributing to the Need for New School Services

Public schools must meet a diversity of student needs while maintaining an appropriate degree of standardization across the services they provide. The need to standardize arises both from principle and necessity. Public services should be fairly administered, and within available budgets. These challenges often limit the ability of traditional public school providers to innovate and specialize in the delivery of education services. Yet innovation is needed. Charter schools, and other public schools of choice, strive to meet the needs of students that might not otherwise be met by other available public school options. Private school programs also serve an important role in addressing the diversity of student needs. Many of these schools are driven by mission to serve students with unique requirements or disadvantaged backgrounds. In total, the education sector has an obligation to provide broad access to high quality educational services and strive to improve educational outcomes for all students.

It is the premise of this report that schools of choice should strategically locate within the region in order to best meet emerging needs. There are a large number of potential factors that contribute to the need for choice schools. What follows is a closer examination of some of the most important factors (grouped into three overarching categories) that will help to define the market for new school services.

- The location of target populations of interest (e.g. populations of non-white, Hispanic and persons living in poverty)
- The location and expected growth in the school-age populations
- The location of students currently enrolled in underperforming schools

Factor 1: Location of Target Populations of Interest

The locations of target populations within the greater Boise region can be understood through an examination of data from the American Community Survey (ACS) collected by the Census Bureau. The ACS is an ongoing survey providing information about the nation and its population on an annual basis. The most current information about local population demographics is associated with the 5-year estimates covering 2010-2014. Census block group estimates of population demographics have been superimposed onto a hexagonal grid of the region where each grid cell represents one square mile.

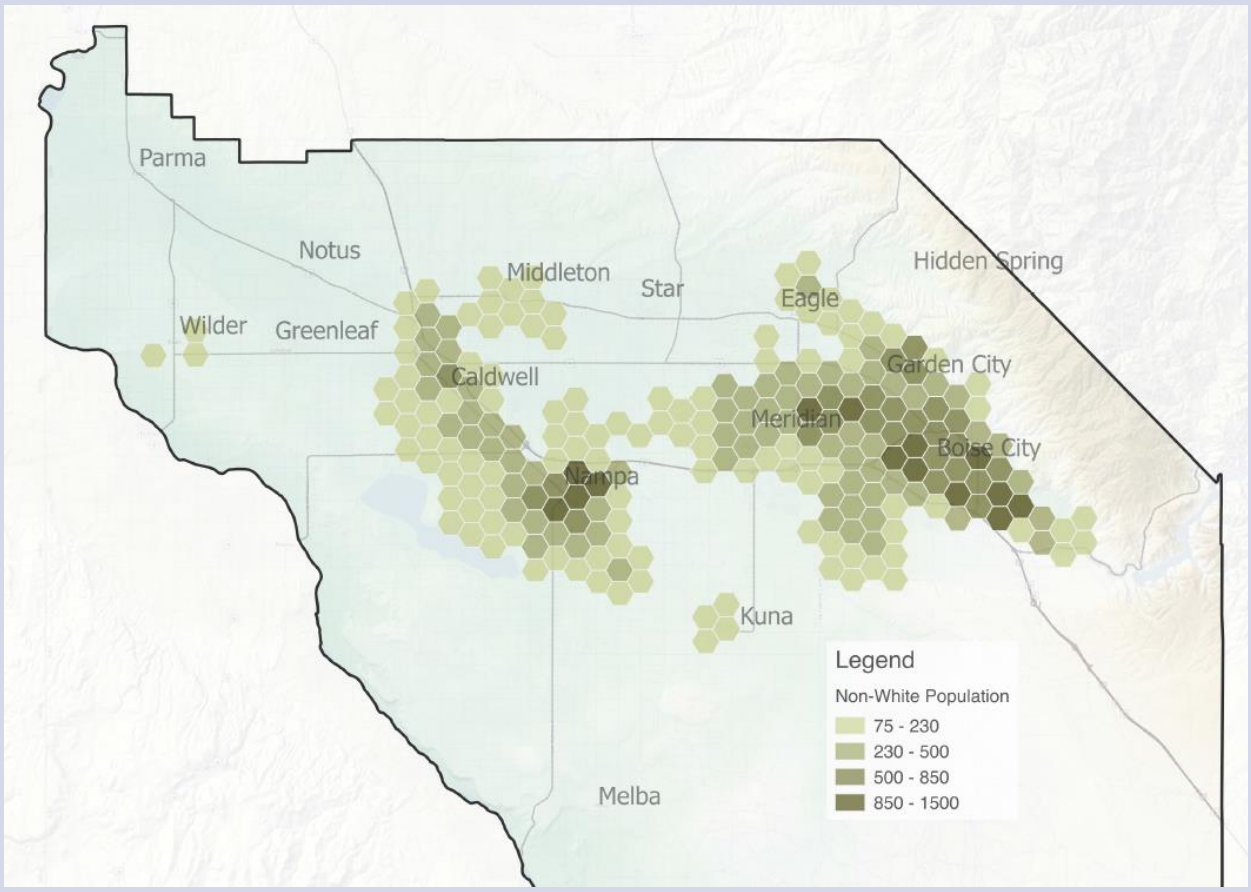
Non-White Population

The current non-white population in the Treasure Valley is concentrated in the primary urban places of Boise, Meridian, Nampa and Caldwell. The population (see **Figure 7**) is located:

- In the Boise area bounded by I-184, I-84 and U.S. 20,
- West Boise south of U.S. 26,
- North of Garden City,
- In the neighborhoods to the east of Broadway Avenue,
- East Meridian,
- In central Nampa, and
- Along the I-84 corridor through Caldwell.

The location of the school-age non-white population largely mirrors that of the total non-white population.

Figure 7. Non-White Population 2014 (5-year Estimate)



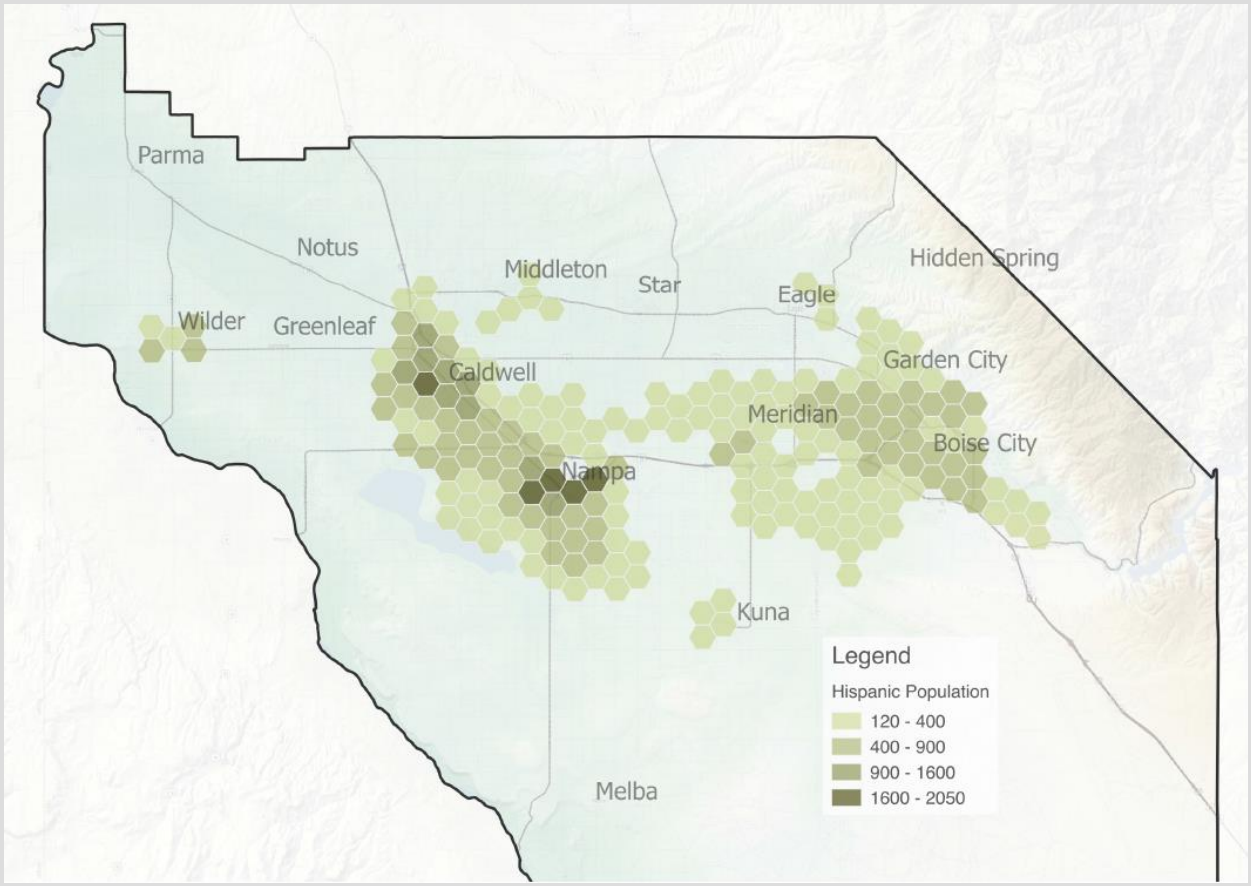
Source: American Community Survey

Hispanic Population

The current Hispanic population (see **Figure 8**) in the Treasure Valley is concentrated in the primary urban places of Boise, Meridian, Nampa, Caldwell and Kuna – with the highest concentrations in Nampa and Caldwell. There are also population concentrations located:

- In the Boise area bounded by I-184, U.S. 26, and U.S. 20,
- North of downtown Boise,
- In Meridian near the intersection of I-84 and S. Meridian Rd.,
- South of Nampa, and
- South of Caldwell.

Figure 8. Hispanic Population 2014 (5-year Estimate)



Source: American Community Survey

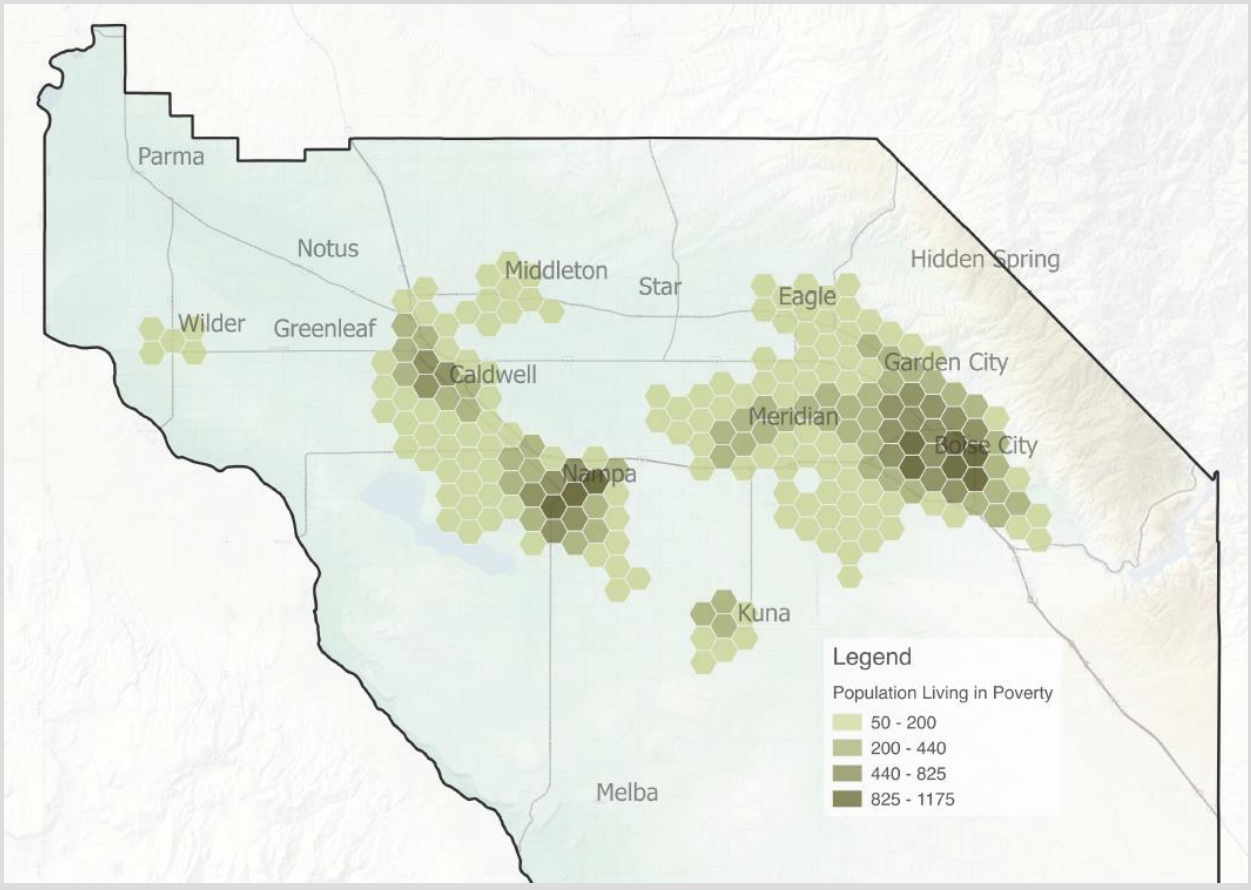
Persons Living in Poverty

The current population of persons living in poverty in the Treasure Valley is concentrated in the primary urban places of Boise, Meridian, Nampa, Caldwell and Kuna (see **Figure 9**). The highest population concentrations are located:

- In the Boise area bounded by I-184, I-84 and U.S. 20,
- In Boise to the north of I-184,
- In the neighborhoods to the east of U.S. 20,
- East Meridian and just north of I-84,
- In central Nampa and Caldwell, and
- In central Kuna.

The location of the school-age low-income population largely mirrors that of the total population of persons living in poverty.

Figure 9. Persons Living in Poverty 2014 (5-year Estimate)



Source: American Community Survey

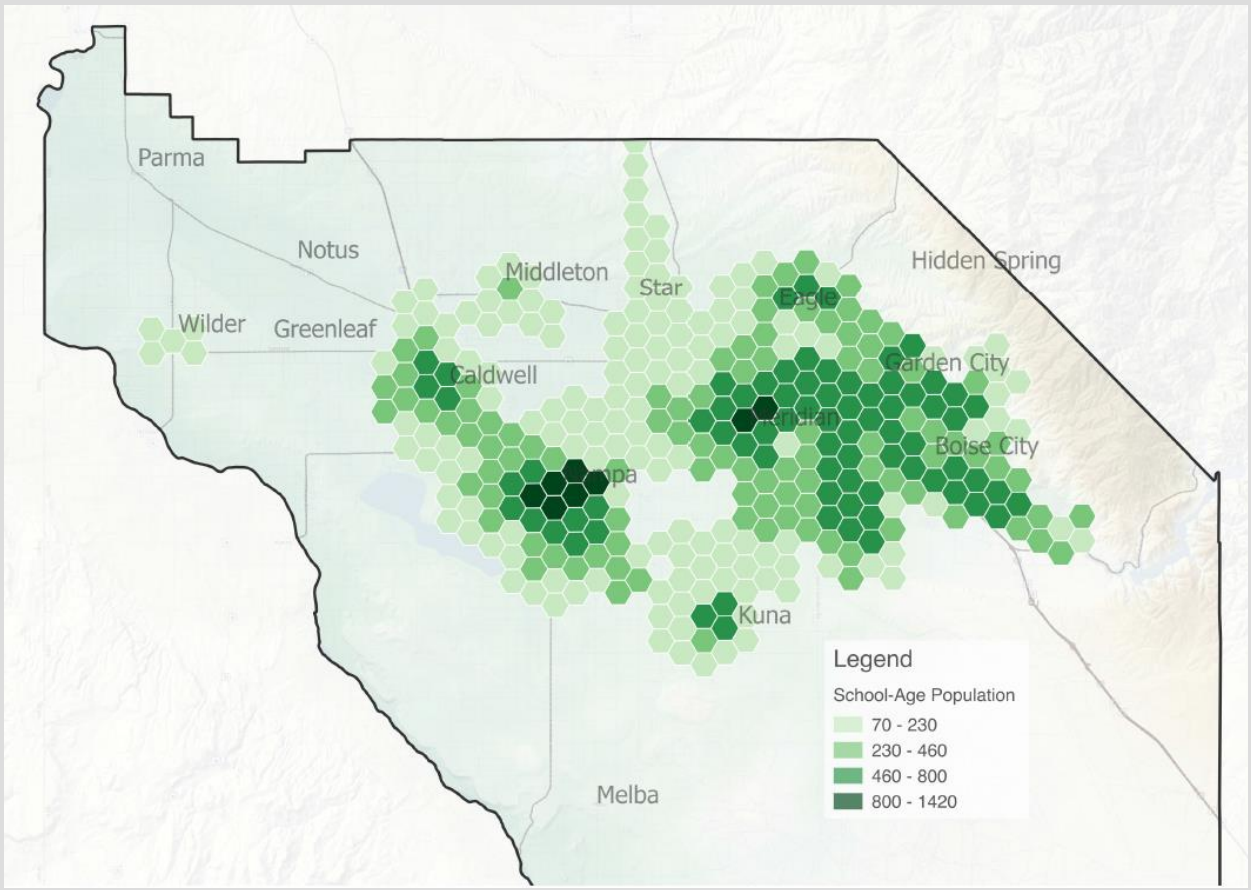
Factor 2: School-Age Population Location and Growth

A key determinant of new school opportunities is the current location of school-age populations (ages 5-17) and expectations about the amount and location of growth in the school-age population.

Current School-Age Populations

The location of the current school-age population largely reflects the total population. But there are some notable differences. The total population is heavily concentrated in the Boise vicinity. The school-age population (shown in **Figure 10**) is relatively more concentrated in Meridian, Nampa, Caldwell, Kuna, Middleton and Eagle than is true for the total population as a whole.

Figure 10. School-Age Population in 2014 (5-year Estimate)

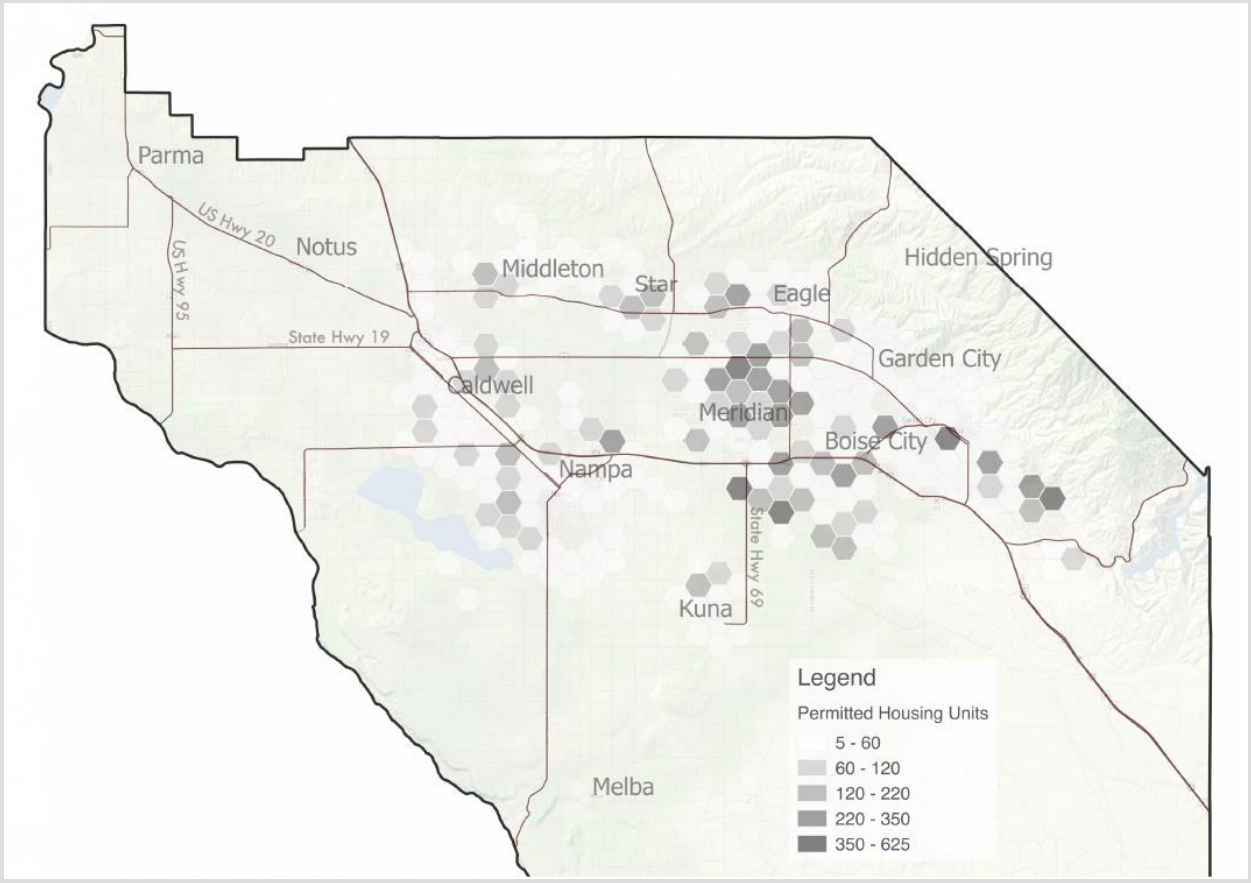


Source: American Community Survey

Housing Development

In order to gain insights into the amount and location of the growth in school-age population it is helpful to examine activity in the land development markets. The permitting of housing units is, by definition, a precursor of new housing growth. Permitted housing units are employed by COMPASS in the development of their population forecasts, and the COMPASS forecasts inform the projections of school-age population developed for this study. This is described in more detail in the **Appendix** to this report. As a result, the location and number of permitted housing units is included as a factor in the school opportunity index. Permitted units between 2010-2014 are displayed in the **Figure 11** below at a 1-mile grid cell spatial resolution.

Figure 11. Housing Units Permitted Between 2010 - 2014



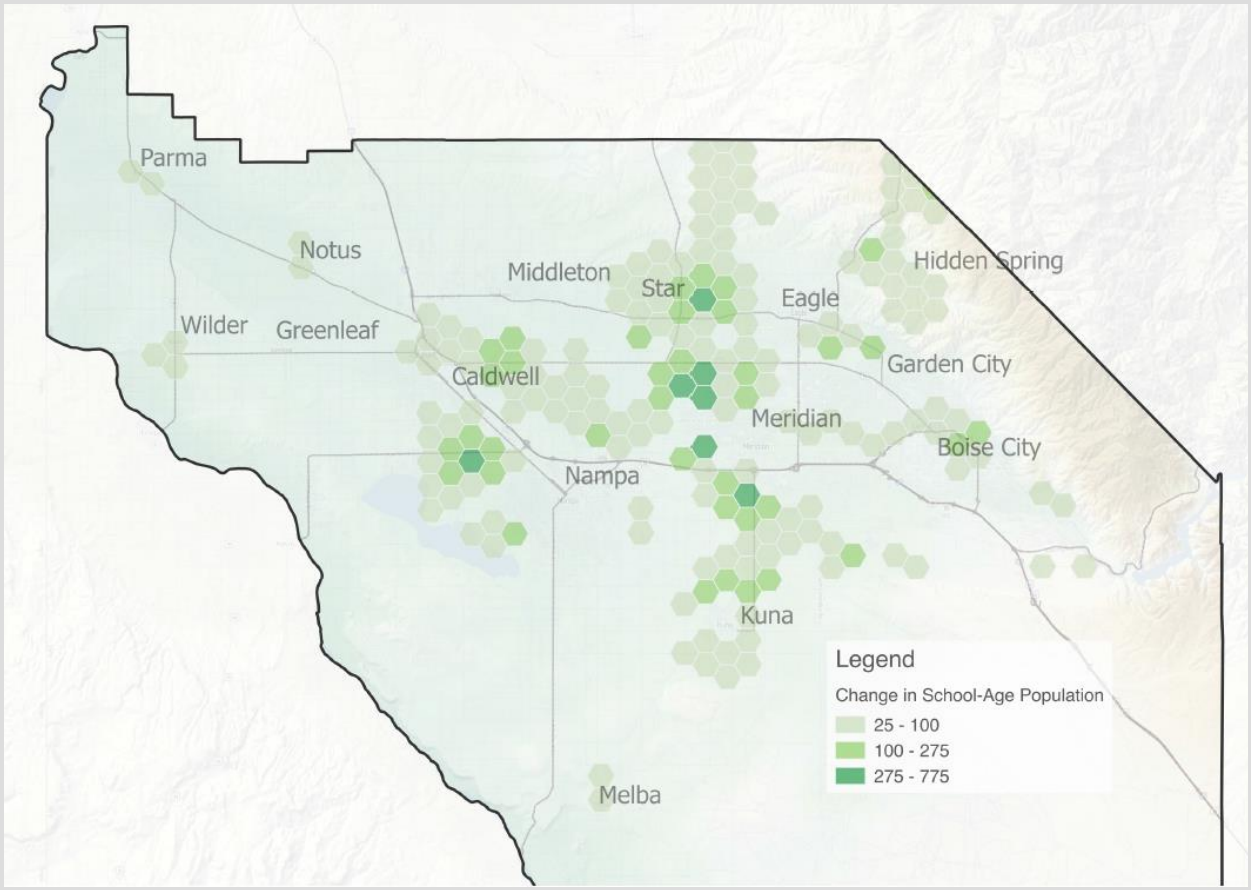
Source: COMPASS, Jurisdictions

School-Age Population Projections

Expectations about the magnitude and location of growth in school-age population are of significant importance to the siting of new school services. This study has developed school-age (5-17) population projections for 2020 and 2025 at a 1-mile grid cell geography. The projections of school-age population are based on a model estimated from block-group data from the U.S. Census and American Community Survey. The methods are described in detail in an Appendix to this report. This very simple model performs well and allows for the development of small geography school-age population projections where future population growth is supplied by the COMPASS population forecasts.

Figure 12 below is a map depicting the projected net change in school-age population between 2014-2025. Areas of expected growth include parts of Boise, north of Garden City, areas west of Meridian (both north and south of I-84), north of Meridian in Star, north of Nampa, in the vicinity of Caldwell and areas surrounding Kuna.

Figure 12. Projected Growth in School-Age Population 2014 - 2025

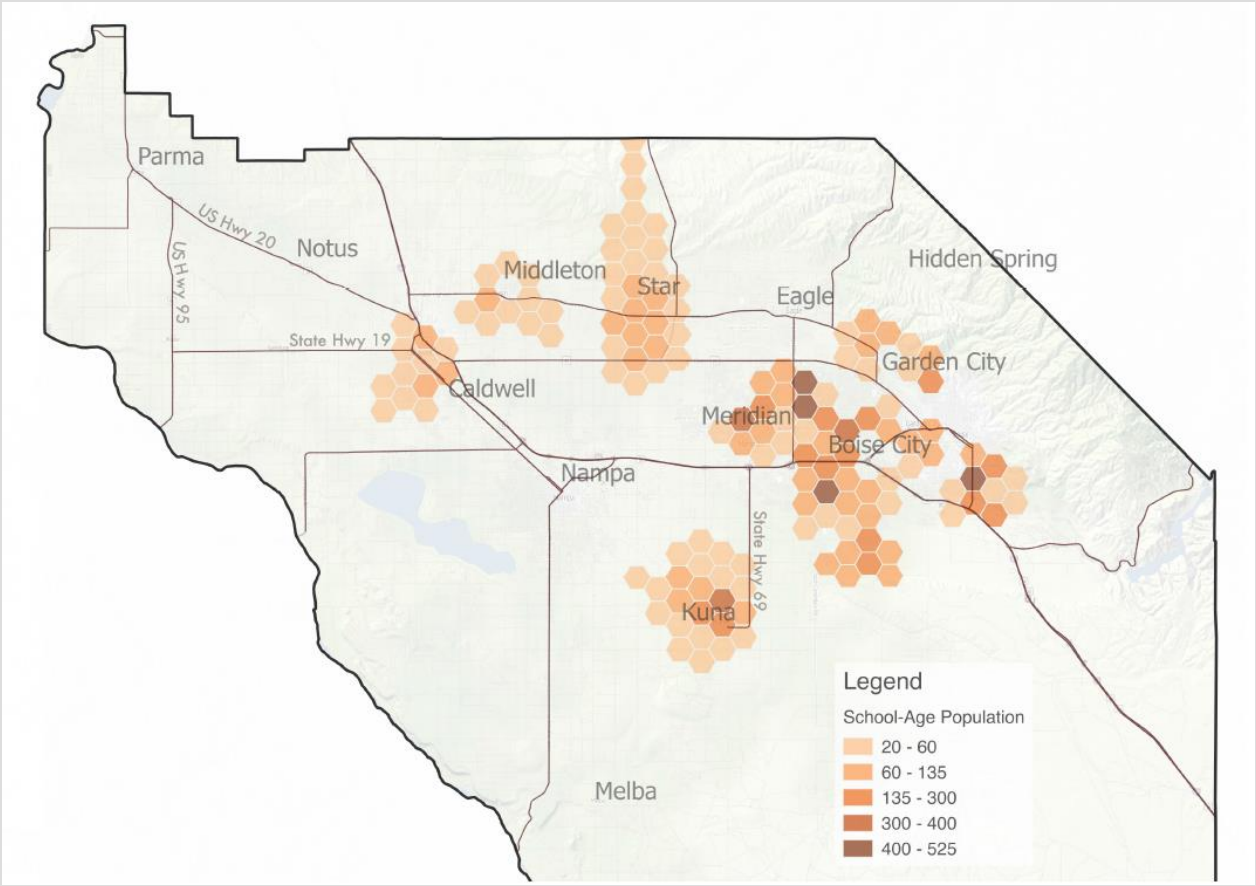


Source: ECONorthwest, Data from Census, ACS and COMPASS

Factor 3: Location of Students in Underperforming Schools

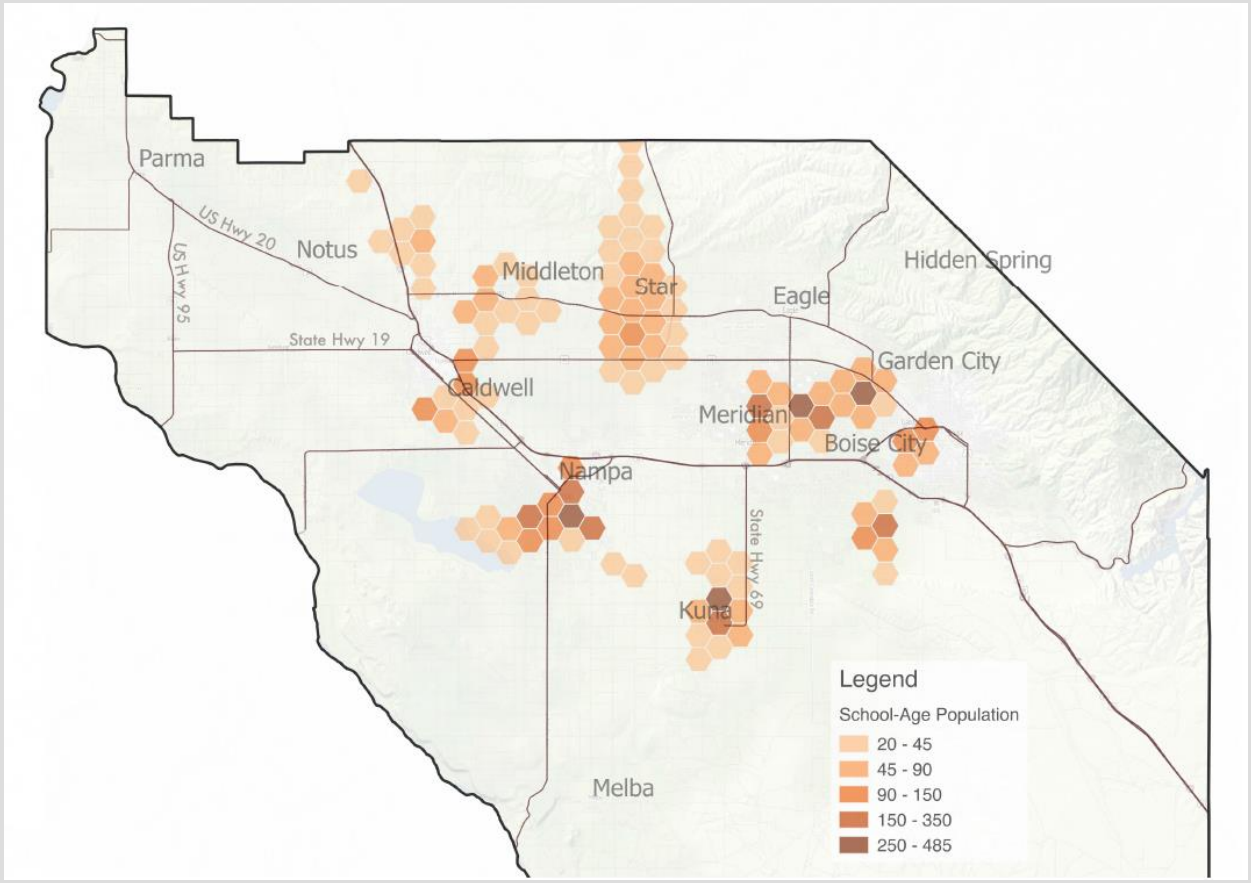
The third factor utilized in the identification of new school opportunities is a measure of the school-age population living proximate to schools that have underperformed as a share of students proficient on the math assessment relative to similar schools statewide (see **Figure 13** for 2013 assessment results and **Figure 14** for 2015 results). A model of school performance was estimated (details are contained in an **Appendix** to this report), where the share of students meeting or exceeding state standards in math assessments is the outcome of interest. The actual performance of schools, as compared with their expected performance, is the determinant of whether a school is underperforming, meeting performance expectations of exceeding expectations. Students enrolled in schools performing in the lowest 20 percent by this measure were identified as being significantly underserved.

Figure 13. School-Age Populations Near Underperforming Schools in 2013 Math Assessments



Source: ECONorthwest, Data from ISDE

Figure 14. School-Age Populations Near Underperforming Schools in 2015 Math Assessments

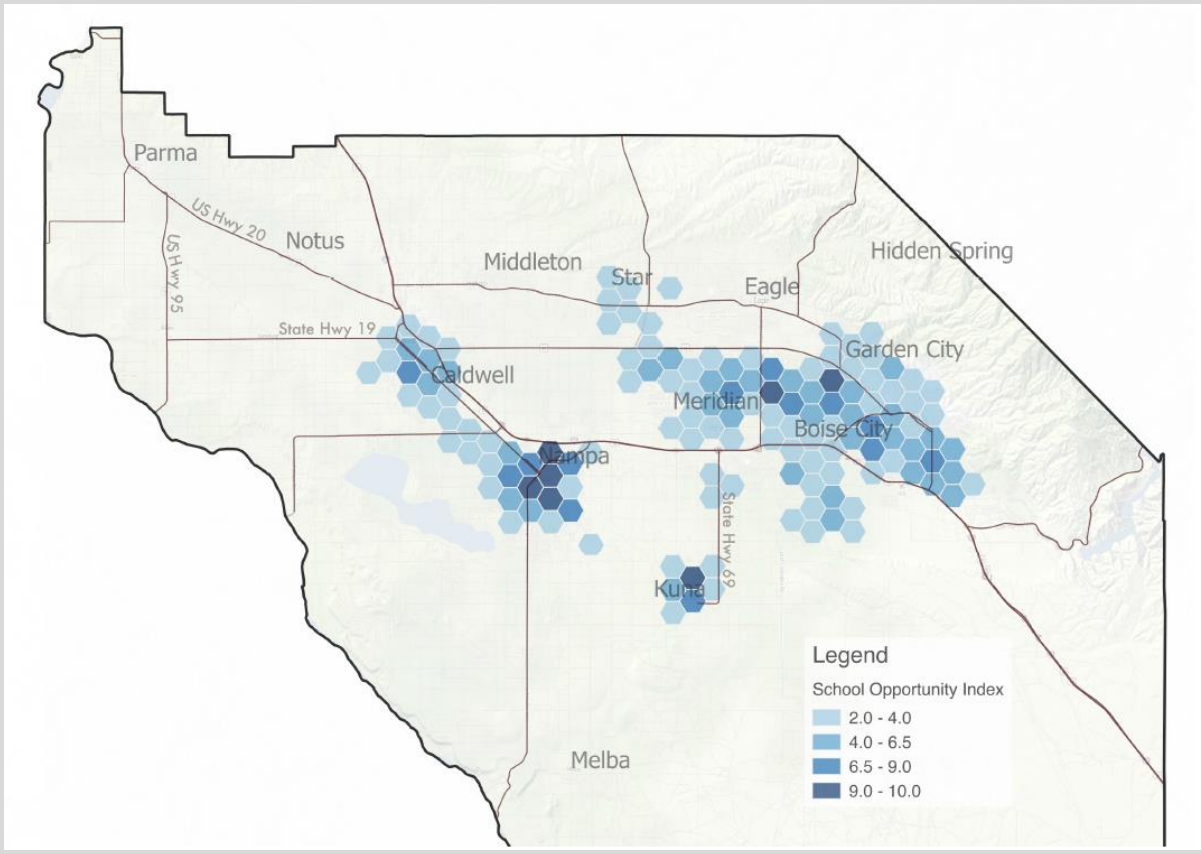


Source: ECONorthwest, Data from ISDE

5. A Summary of School Opportunity

The strongest opportunities for new school services in the Treasure Valley are located in an around the region's largest urban places of Boise, Meridian, Nampa, Caldwell and Kuna (see **Figure 15**). This is not an entirely surprising finding. School services should be directed towards the school-age population; which is located in major population centers. But underneath this high-level conclusion are more nuanced observations. The Nampa area in particular seems to be a strong candidate for new school services. A large area comprised of parts of west Boise and east Meridian also presents strong opportunities. Kuna and Caldwell also stand out given their relatively smaller concentration of population. Each of these urban places is examined more closely in what follows with some observations about the index value's contributing factors.

Figure 15. School Opportunity Index



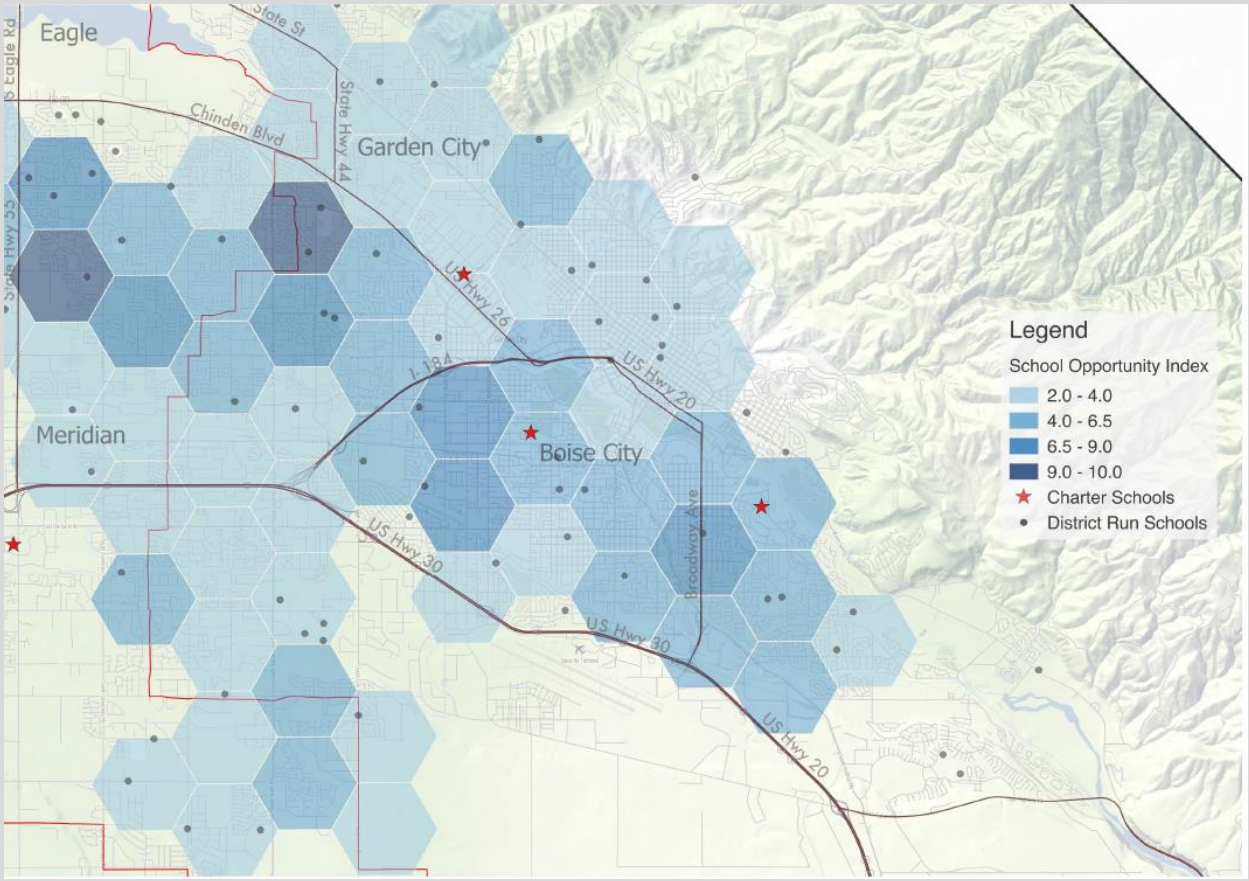
Source: ECONorthwest

Boise

The strongest opportunities for new school services in the Boise vicinity are south and west of downtown. These opportunities (see **Figure 16**) are associated with the following:

- Concentrations of existing school-age population throughout the Boise area and especially west of downtown between U.S. 26 and I-84.
- Expected growth in school-age population in the vicinity of downtown and along the I-84 corridor.
- A large number of permitted housing units southeast of downtown between U.S. 20 and the Boise River.
- Concentrations of people living in poverty in the area bounded by I-184, I-84 and U.S. 20.
- Concentrations of Non-White populations fairly concentrated throughout the Boise vicinity.
- Concentrations of Hispanic populations between Eagle Rd. and Broadway Ave., and U.S. 26 and I-84.
- Students enrolled in underperforming schools in west Boise in 2013 and to a lesser degree in 2015.

Figure 16. School Opportunity Index: Boise



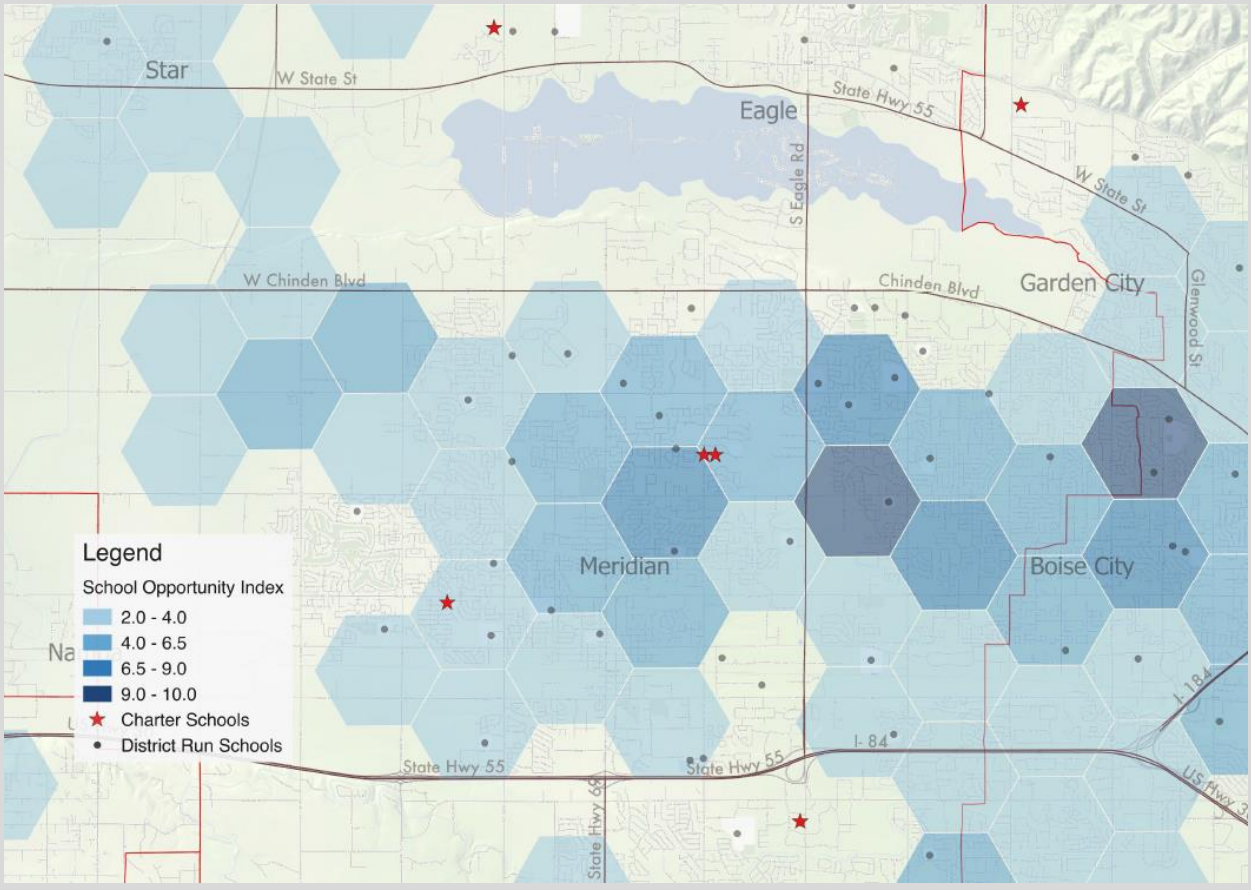
Source: ECONorthwest

Meridian

The strongest opportunities for new school services in the Meridian area are along the U.S. 26 corridor, to the east towards Boise, and south of I-84. These opportunities (see **Figure 17**) are associated with the following:

- Concentrations of existing school-age population within central Meridian, to the east towards Boise and the neighborhoods just to the south of Meridian and Boise.
- Expected growth in school-age population in west Meridian, north of Meridian near Eagle and Star, south of I-84 and along S. Meridian Rd.
- A large number of permitted housing units north and south of central Meridian and along the Eagle Rd.
- Concentrations of people living in poverty in central Meridian.
- Concentrations of Non-White populations within Meridian proper.
- Concentrations of Hispanic populations in south Meridian along the I-84 corridor, along S. Meridian Rd. and in the vicinity of Ten Mile Creek.
- Students enrolled in underperforming schools in east Meridian and areas south of Meridian and Boise in 2013, and to a lesser degree in 2015.

Figure 17. School Opportunity Index: Meridian



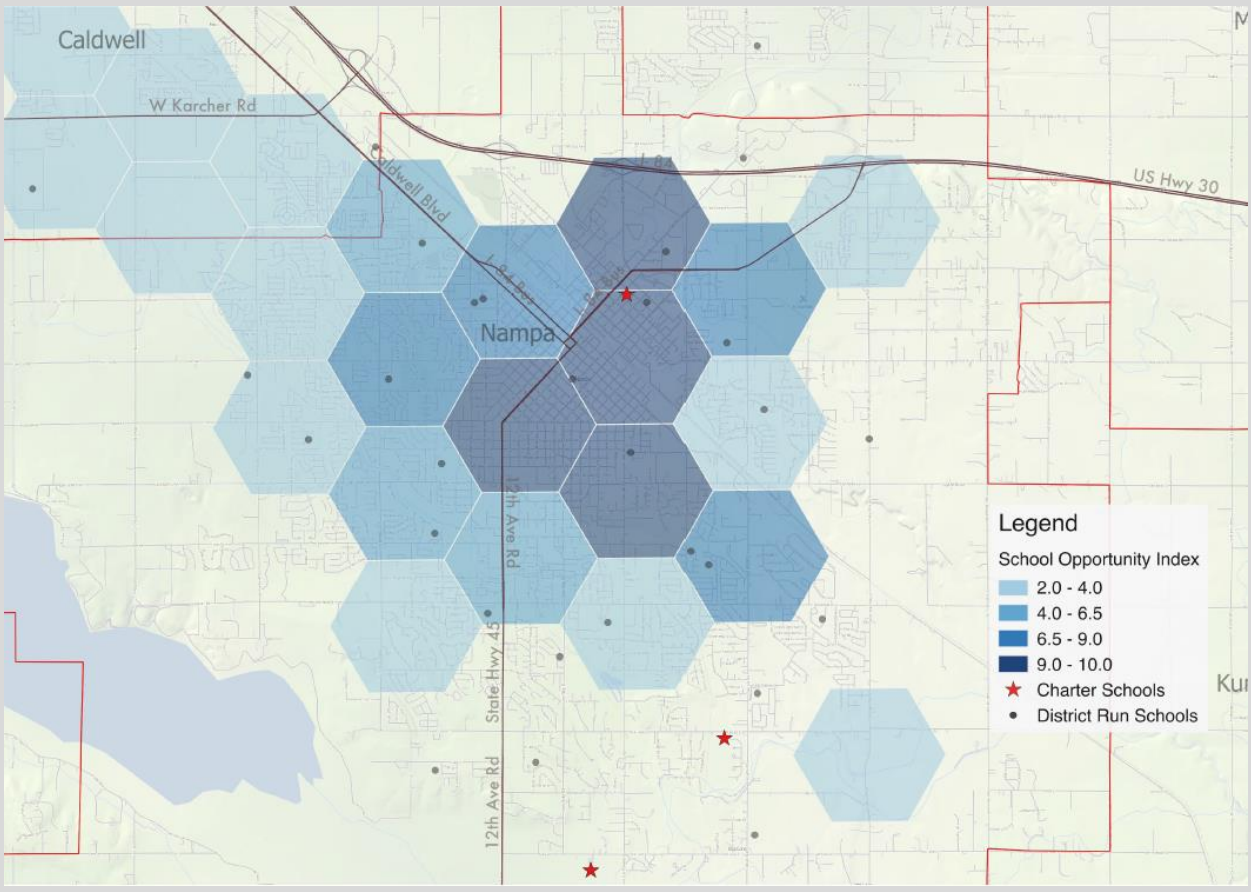
Source: ECONorthwest

Nampa

The strongest opportunities for new school services in the Nampa vicinity are within central Nampa and along the I-84 corridor towards Caldwell. These opportunities (see **Figure 18**) are associated with the following:

- Concentrations of existing school-age population in the vicinity of central Nampa and stretching north towards Caldwell and south towards Kuna.
- Expected growth in school-age population between Nampa and Caldwell south of I-84.
- A large number of permitted housing units along the northern, western and southern peripheries of central Nampa.
- Concentrations of people living in poverty in the center of Nampa, along the I-84 corridor and extending south along 12th Ave. S.
- Concentrations of Non-White populations along the I-84 corridor.
- Concentrations of Hispanic populations in central Nampa along Caldwell-Nampa Blvd. and 11th Ave. N.
- Students enrolled in underperforming schools in the Nampa area in 2015.

Figure 18. School Opportunity Index: Nampa



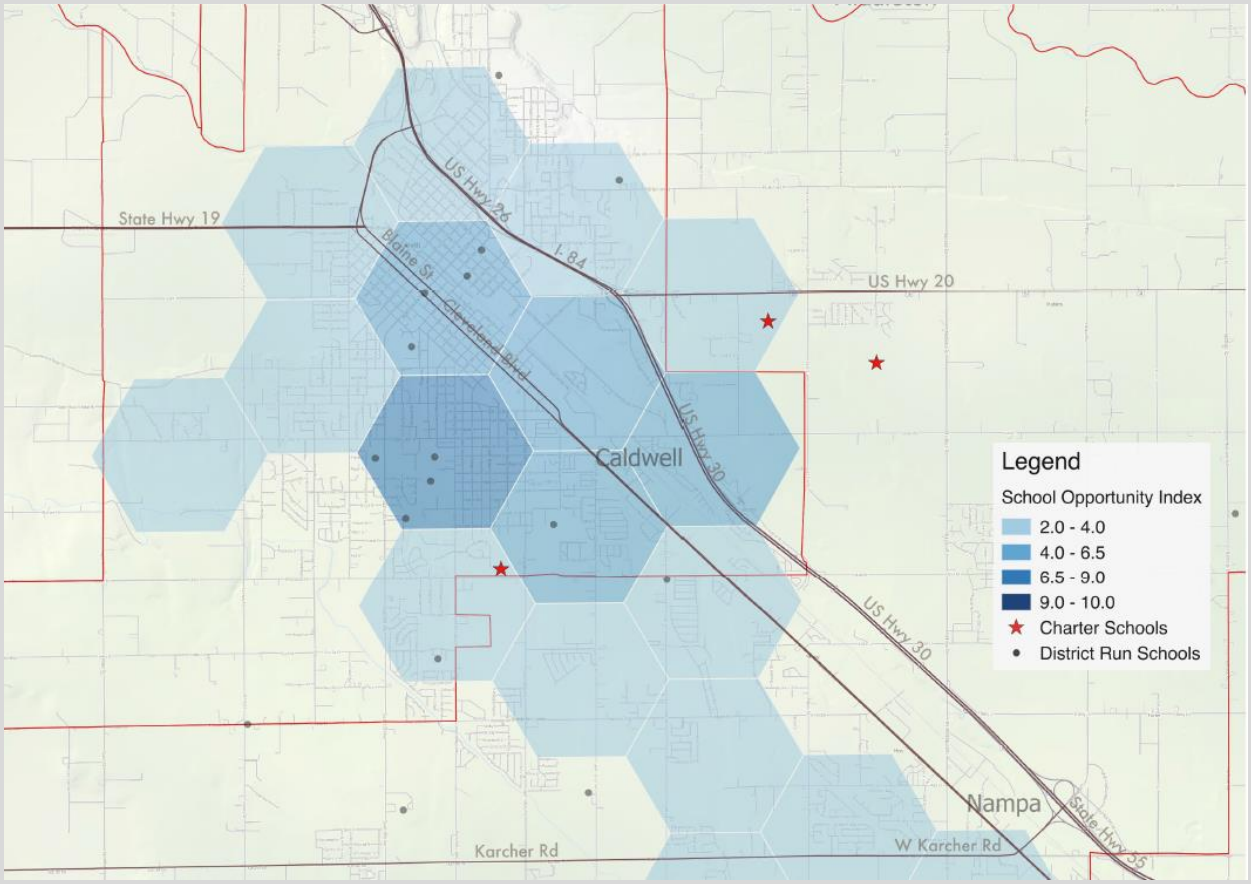
Source: ECONorthwest

Caldwell

The strongest opportunities for new school services in the Caldwell vicinity are in central Caldwell and along the I-84 corridor towards Nampa. These opportunities (see **Figure 19**) are associated with the following:

- Concentrations of existing school-age population in the vicinity of central Caldwell and stretching south towards Nampa.
- Expected growth in school-age population between Nampa and Caldwell southwest of I-84, and east of Caldwell towards Middleton.
- A concentration of permitted housing units to the south and east of central Caldwell.
- Concentrations of people living in poverty in central Caldwell and along the I-84 corridor.
- Concentrations of Non-White populations along the I-84 corridor.
- Concentrations of Hispanic populations in central Caldwell and along Cleveland Blvd.
- Students enrolled in underperforming schools in the Caldwell area in 2013 and in both Caldwell and to the north in Middleton in 2015.

Figure 19. School Opportunity Index: Caldwell



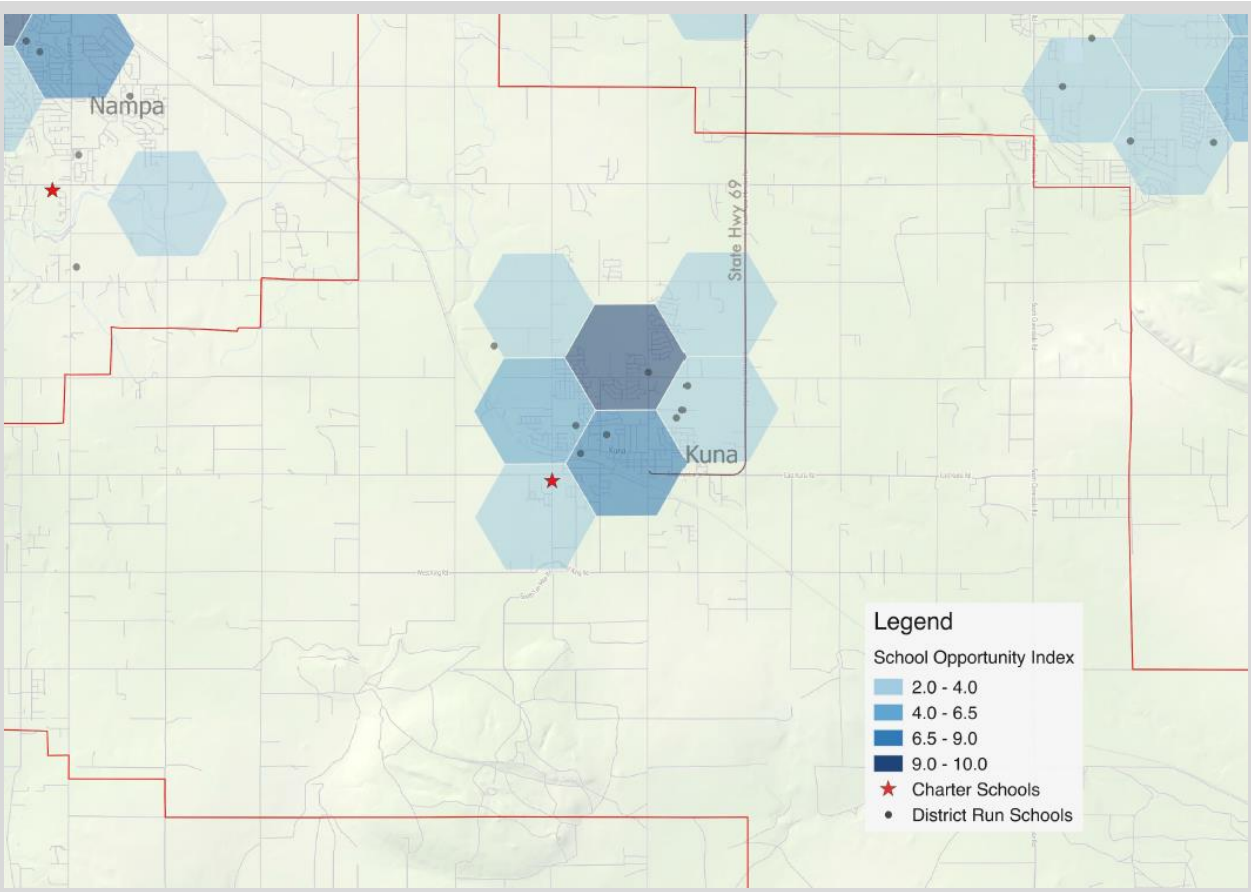
Source: ECONorthwest

Kuna

The strongest opportunities for new school services in the Kuna vicinity are within central Kuna and north along S. Meridian Rd. These opportunities (see **Figure 20**) are associated with the following:

- Concentrations of existing school-age population in central Kuna and along S. Meridian Rd. towards the neighborhoods south of Meridian and Boise.
- Expected growth in school-age population primarily north of Kuna and along S. Meridian Rd.
- A concentration of permitted housing units to the north of central Kuna.
- Concentrations of people living in poverty in central Kuna.
- Concentrations of Non-White populations in central Kuna.
- Concentrations of Hispanic populations in central Kuna.
- Students enrolled in underperforming schools in Kuna in both 2013 and 2015.

Figure 20. School Opportunity Index: Kuna



Source: ECONorthwest

6. Conclusion

This report examined a number of factors important to the question of where new school opportunities exist within the Treasure Valley. These factors included measures relating to 1) the current location of populations that are the target of new choice school options, 2) the locations of expected growth in school-age populations, and 3) the location of school-age populations that are currently underserved by existing school programs. Any one of these factors, on their own, could be a justification for the siting of new school programs. This report made progress toward the development of a combined measure of the relative importance of school siting locations, or a School Opportunity Index.

By this measure the most promising locations for the siting of new school services are throughout much of the city of Boise; in the city of Meridian between I-84 and U.S. 26, south along SR 69 and north to Star; and within the cities of Nampa, Caldwell and Kuna. Unsurprisingly, new school opportunities are greatest in existing population centers, and also reflect expectations for where growth in school-age population will be greatest over the next few years.

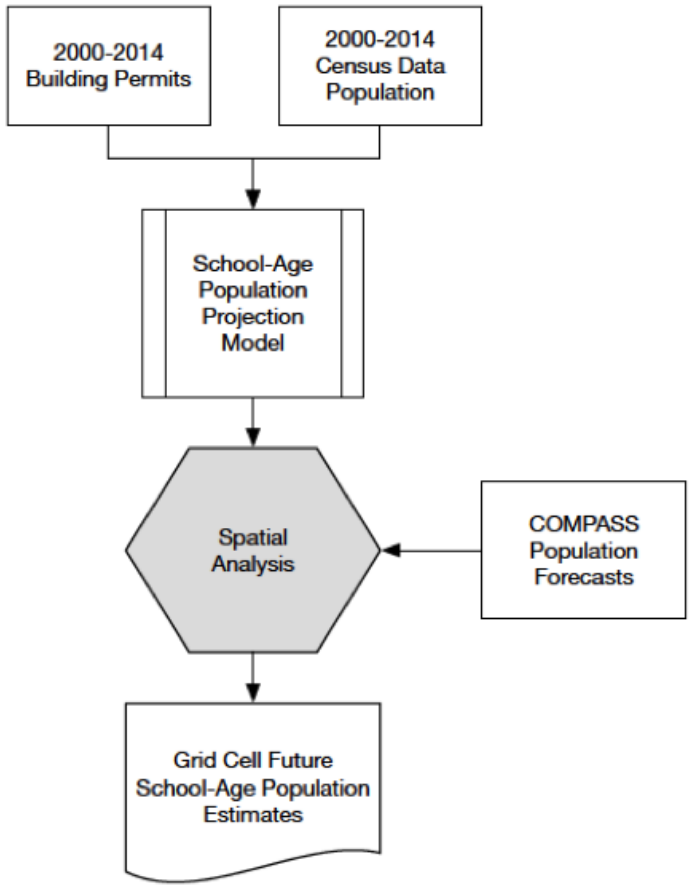
The School Opportunity Index is not a substitute for a deeper understanding of local market conditions. It should be used only as a guide within a more detailed examination of local factors and student needs in support of decisions about where to locate new school programs. This report does highlight the need for new school options in the Treasure Valley. The school-age population in the Valley is expected to grow by around 3,400 by 2020 and an additional 5,000 by 2025. And the number of existing students served by school programs that are underperforming relative to their peer schools across the state number in the thousands. An increasingly diverse population of students will lead to the need for a diverse set of programs to meet those needs. This report provides a starting point for the consideration of where new school programs might be located in the Treasure Valley.

APPENDIX: Modeling Methods

School-Age Population Projection Methods

This study has developed Treasure Valley projections of school-age population at a 1-mile grid cell geography. A previous project, *Shifting Sands: Idaho's Changing Student Demographics and What it Means for Education*, made use of census tract level population projections made available by the Nielson Company. The Nielson projection methods start with estimates of "base counts," such as total population, household population, group quarters population, households, family households, and housing units. Characteristics related to these base counts are then estimated. Population characteristics include age, sex, race, and Hispanic ethnicity; households are estimated by age of householder and income; family households are estimated by income; and owner-occupied housing units are estimated by value. The Nielson cohort survival method is executed first at county level, then for tracts, and finally block groups, with each set of estimates controlled to the results at the next higher geographic level.

Figure 21. School-Age Population Projection Model



These projections had two important limitations with respect to what was useful to this study of school opportunities. First, population projections for 2019 represent only a very small time increment. Second, census tract geography is too large to allow for the development of insights relevant to the school service siting problem. The methods employed in this study differ considerably. A simple block-group model of school-age population was estimated from U.S. Census and ACS data.

The model predicts school-age population in the current time period as a function of the school-age population and the under-5 population in the previous time period, as well as the change in total population and permitted housing units between the previous and current time periods. A second model predicts the under-5 population in the current time period as a function of the under-5 population in the previous period, total population in the previous period and the change in total population between the previous and current time periods. Both models fit the data well. The school-age model has an r-squared of .98, explaining 98 percent of the variability in current year school-age population across the census block groups. The under-5 model has an r-squared of .96.

The use of these simple models in the production of school-age population projections involves a number of additional steps. Future estimates of total population at a small geography are supplied by population forecasts developed by the regional Metropolitan Planning Organization (COMPASS)[6]. These population forecasts include 5-year estimates of population at a Transportation Analysis Zone (TAZ) geography through 2040. These forecasts of total population are needed to estimate growth in school-age population. To operationalize the model in the population projection process all data elements are converted into the 1-mile grid cell geography. The results are grid cell level projections for under-5 population and school-age population for 2020. These results are then used to develop projections for 2025 as well. The process is displayed in **Figure 21**.

The number of permitted housing units (between the previous and current period) was included in our school-age population model, but was a weak predictor of school-age population given the inclusion of a measure of total population change. There is also no reasonable means of developing a future estimate of permitted units and so this variable is dropped when projecting future school-age population. The permit data collated by COMPASS from individual jurisdictions informs the COMPASS demographic forecasts, and in this manner influence the results.

The school-age population projection methods employed for this study have advantages and disadvantages. They are simple to implement and understand, and they perform well in terms of estimation from historical data. As aggregate models when used to project out future populations they are sensitive to small changes in the estimated parameters, or model error. The future estimates are also intimately linked to the total population forecast that "drive" the projections, in this case these are the COMPASS forecast products. The current methods allow for the representation of the projected population at a small geography (1-mile grid cell) and the total projected school-age population for the Treasure Valley compares reasonably with the projections produced by Nielson using their proprietary "top-down" approach.

Table 4. Historical and Projected School-Age Population

Source and Year	School-Age Pop
2000 Census	87,745
2010 Census	117,698
2014 ACS	121,907
2019 Nielson	**125,300**
2020 Current Method	**125,230**
2025 Current Method	130,520

Source: ECONorthwest, Nielson, U.S. Census

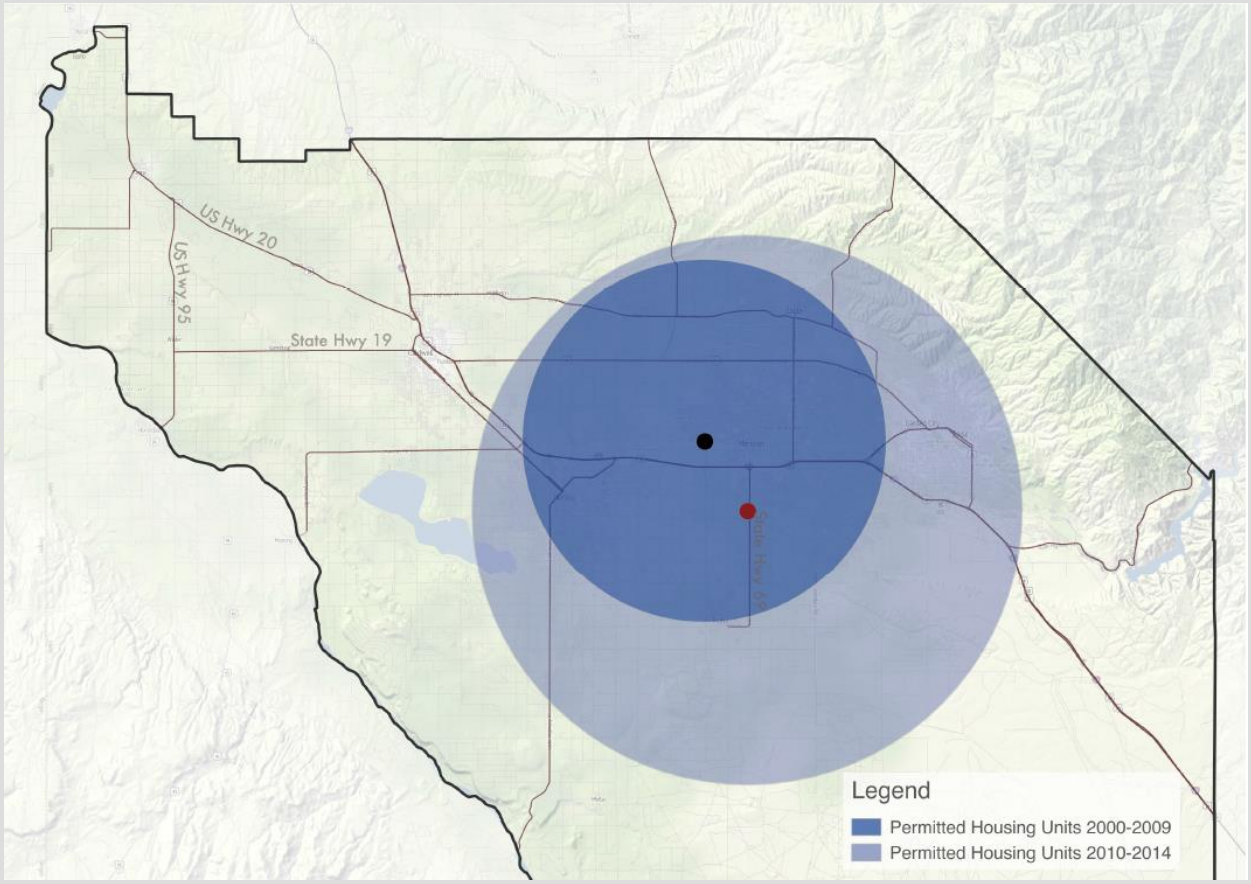
Building Permit Data

Within urban environments the construction of new housing units typically occurs at locations that are not necessarily where there are the densest concentrations of current residents. Land is often less expensive at the periphery of existing developments, especially in the case of land suitable to single-family detached housing. Multi-family housing units, on the other hand, will tend to concentrate in more densely populated areas (spreading land costs over multiple units) and along major transportation corridors. These trends are in part determined by land use policies but are also a function of the underlying economics of land markets. In trying to understand where new development may happen it is useful to look at data collected by permitting jurisdictions relating to permitting activities for residential units. COMPASS, the Metropolitan Planning Organization for the

[6] COMPASS. 2016. "Demographic Forecasts: Population, Housing, and Employment." Accessed May 10, 2016. http://www.compassidaho.org/prodserv/demo-forecasts.htm

Boise region, collects and assembles housing building permit data from individual jurisdictions. COMPASS uses this data in its own population forecasting process.

Figure 22. Mean Permitted Housing Unit-Weighted Distance to Center



Source: ECONorthwest, COMPASS and Jurisdications

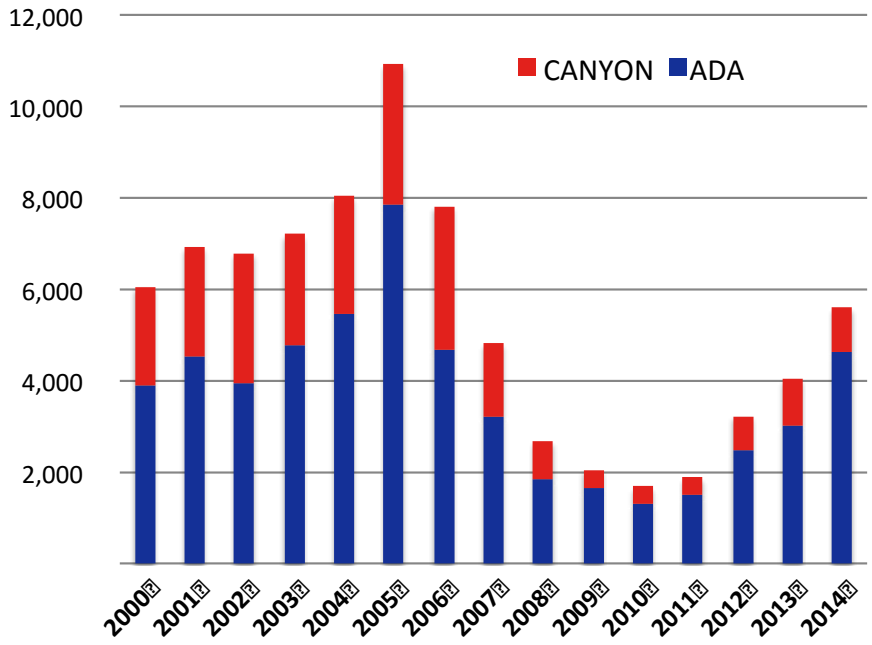
The issuance of a building permit does not necessarily lead the development of new housing units associated with that permit. The permit allows developers to proceed along the path of the development process, but that process may be abandoned for any number of reasons. For example, a simple model that predicts (at the 1 mile grid geography) the change in housing units (as measured through the U.S. Census and American Community Survey) as a function of the number of permitted housing units in previous years suggests that somewhere in the range of 70 percent of permitted units result in new housing units. This result held true in the period leading up to the 2010 census. Post 2010 the model is a weaker predictor and the pattern in less clear.

Examining permitted housing units pre- and post-2010 also shows some differences in the location of new permitted units. **Figure 22** depicts the housing unit-weighted mean (centered) locations and buffers depicting the housing unit-weighted mean distance from the center for units permitted pre-2010 and post-2010. Units permitted pre-2010 were on average more centrally clustered (8.2 miles) around the center point of development than was the case for units permitted post-2010 (12.4 miles).

The number of permitted housing units in the region averaged over 6,000 per year leading up to the mortgage crisis in 2007. After the housing market collapse new permitted units declined dramatically (see **Figure 23**). Permitted units in Canyon County in 2011 were just 10 percent of the number of permitted units in 2006 just

prior to the recession. The economic recovery has resulted in a steady increase in the number of permitted units once again in the greater Boise area. In 2014 the number of permitted units reached over 5,500, approaching the volume of permit activity experience in the pre-recession period.

Figure 23. Permitted Housing Units in Ada and Canyon Counties 2000-2014



Source: COMPASS and Jurisdictions

School Performance Model Methods

The identification of the number of students enrolled in underperforming schools begins with the development of a statewide model of school performance. The model estimates school performance as a function of school-level characteristics, predominantly characteristics of the student population being served. The model attempts to answer the following question: What is the expected performance of any school given the characteristics of the school population? The model is a linear regression model estimated using data on all schools in Idaho. The dependent variable is a measure of the share of students at the school-level meeting proficiency in the statewide Math assessment. The explanatory variables include shares of students who are white, black, Hispanic, Asian/Pacific Islander, eligible for FRL, are designated as receiving Special Education services, are English language learners, the total enrollment in the school, and dummy variables indicating if the school is a middle or high school. The method is similar to the methods employed in the Center on Reinventing Public Education's (CRPE) report *Measuring Up*.[7] Math assessments were selected for this study for two reasons. First, performance on math assessments is likely influenced by reading proficiency, but performance on reading

[7] DeArmond, Michael, Patrick Denice, Betheny Gross, Jose Hernandez, and Ashley Jochim. 2015. "Measuring Up: Educational Improvement and Opportunity in 50 Cities." Center for Reinventing Public Education. Accessed May 10, 2016. http://www.crpe.org/sites/default/files/measuringup_10.2015_0.pdf

assessments are less influenced by math proficiency[8]. Second, math proficiency is strongly linked with future earning potential[9].

The model produces estimates of expected shares of students meeting proficiency standards in math, along with standard errors around these estimates. Actual school-level performance can be then be compared with the model predictions. Where actual school performance is sufficiently different than predicted performance (taking into account the prediction's standard errors), schools can be characterized as underperforming, performing as expected, or performing above expected levels.

School-level models were estimated based on data from 2013 statewide assessments (ISAT) and from 2015 assessments. Between 2013 and 2015 Idaho adopted a new assessments based on the Smarter Balanced Assessment Consortium and designed to support Common Core curriculum. Tests were administered in 2014 as well but the Idaho State Department of Education (SDE) does not release these results as 2014 was considered a "test" of the test during the transition to the new assessment program. This transition in assessment also means that analysis of 2013 and 2015 school performance based on these testing data are independent and may not be comparable.

$$Y = \beta_0 + \beta_1(White)_j + \beta_2(Black)_j + \beta_3(Asian)_j + \beta_4(Hisp)_j + \beta_5(FRL)_j + \beta_6(ELL)_j + \beta_7(Size)_j + \beta_8(Size^2)_j + \beta_9(Mid)_j + \beta_{10}(High)_j + \epsilon$$

School Performance Model	**2013**
R	0.743
R-square	0.552
Adjusted R-square	0.544
N	637

	Coefficient	***Standard Error***	***t Stat***	***p-level***
Intercept	69.08343	6.0148	11.48558	0.
White	0.28745	0.05755	4.99477	7.65345E-7
Black	-1.19659	0.31861	-3.75568	0.00019
Asian	0.53753	0.25415	2.11502	0.03482
Hisp.	-0.05224	0.0677	-0.77161	0.44064
FRL	-0.11003	0.02935	-3.74875	0.00019
ELL	0.30527	0.08625	3.53938	0.00043
SpecEd	-0.68318	0.07974	-8.56705	0.
Size	0.02634	0.00418	6.2943	5.8146E-10
Size^2	-0.00002	3.22136E-6	-5.13266	3.81939E-7
HIGH	-22.57957	1.18178	-19.10638	0.
MID	-10.40493	1.103	-9.43328	0.

[8] Jordan, Nancy C., Laurie B. Hanich, and David Kaplan. 2003. "A Longitudinal Study of Mathematical Competencies in Children With Specific Mathematics Difficulties Versus Children With Comorbid Mathematics and Reading Difficulties." Child Development. 74: 834-850. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2791887/

[9] Rose, Heather and Julian R. Betts. 2001. "Math Matters: The Link Between High School Curriculum, College Graduation, and Earnings." Public Policy Institute of California. Accessed May 10, 2016. http://www.ppic.org/content/pubs/report/R_701JBR.pdf

School Performance Model	2015
R	0.692
R-square	0.479
Adjusted R-square	0.468
N	552

	Coefficient	*Standard Error*	*t Stat*	*p-level*
Intercept	50.2178	6.66441	7.53522	0.
White	0.15927	0.06266	2.54185	0.01131
Black	0.0478	0.33577	0.14236	0.88685
Asian	0.9695	0.25989	3.73043	0.00021
Hisp.	0.05855	0.07642	0.7662	0.44389
FRL	-0.34024	0.03349	-10.15974	0.
ELL	-0.11101	0.0965	-1.15046	0.25047
SpecEd	-0.61505	0.12512	-4.91584	1.1745E-6
Size	0.00978	0.00472	2.07009	0.03892
Size^2	-5.63991E-6	3.35802E-6	-1.67954	0.09363
HIGH	-14.72552	1.39396	-10.56377	0.
MID	-8.95282	1.18483	-7.55619	0.

For each assessment year the difference between actual and expected performance is calculated for each school, and schools are then sorted into quintiles. For the purposes of this report the bottom performing quintile (20%) of schools are identified as significantly underperforming as compared with similar schools statewide. The school-age population located near each school is estimated as a function of distance to the school and other nearby schools.

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1010 W JEFFERSON ST
SUITE 201
BOISE, ID 83702
BLUUM.ORG