orange county

# workforce

2007

# Dear Workforce Development Partner,

The Orange County Business Council, in partnership with the Orange County Workforce Investment Board, celebrates the sixth annual release of the "Orange County Workforce: State of the County 2007 Report." The objective of this joint effort is to not only analyze and reflect on the challenges the community must address in developing its future workforce, but to also showcase the real accomplishments the workforce system and business community has achieved here in Orange County.

Last year's report examined Orange County's growth industry and employment opportunities, salary and wage trends, demographic changes and the cost of workforce housing, as well as projections about what Orange County will look like in 2025. In this year's report, Dr. Walrod will present a clear picture of workforce trends and solutions that will assist businesses in their HR and recruitment efforts for skilled employees. Dr. Walrod's findings will also demonstrate how the county's workforce and education system can positively shape K-12, Community College, and University curriculum to better prepare students for the business world of the future.

Orange County must think ahead to its future. Educators need to commit to provide the knowledge and skills necessary for our local residents to work and succeed in highly skilled positions, such as a focus on our key growth clusters. Teaching youth technical skills early in life will lead to successful careers. Also critical, however, is the assistance of Orange County businesses willing to collaborate with educators and ask tough questions such as:

- Where will are the skilled employees of the future going to come from?
- Do school standards have anything to do with business competitiveness?
- Does our community need more vocational training?

The Orange County Business Council and Orange County Workforce Investment Board advocate strongly on behalf of partnership and cooperation. By providing real-world information on future needs to educators and workforce professionals, business leaders can make a difference by explaining what is working and what can be improved upon. The joint agenda of our organizations is: a prosperous county, flourishing employees and a thriving economy.

The theme of this year's conference is Corporate Social Responsibility – Solutions and Successes. Orange County has long been a wonderful place to live and work. Building upon this great foundation, the Orange County Business Council and Orange County Workforce Investment Board are committed to the future success of Orange County's youth by making educational success and workforce training our highest priority.

The Orange County Business Council hopes you will find this conference both informative and captivating.

Lucy Dunn
President and CEO,
Orange County Business Council

Ruby Yap
President & CEO
Yap & Little Inc., CPA's
Chairman, OCWIB

# contents


Orange County has a long, distinctive history of successfully growing into the world-class economy we see today. For decades we've built this strong, diverse, and entrepreneurial economy upon the foundation of a skilled, educated workforce -- making our community one of the best places in the nation, a great place to live, work, and grow a business. However, we all know that we must now compete in an ever more global economy. Our region's workforce is facing new and unprecedented challenges -- the careers of tomorrow may be very different from those of the past.

There's no better time to examine Orange County's future workforce trends affecting our more than three million residents and our business community's ability to remain competitive. There's also no better time to invest in partnerships with our workforce and education stakeholders.

The 2007 State of the County Workforce report is a go-to guide for Orange County's stakeholders to look at core issues that can help prepare policy-makers, workers, job-seekers, employers compete in a 'flattening' world.

As one of the County's older businesses, dating back to 1860 when Wells Fargo appointed its first agent in Anaheim, and as a major local employer with 89 banking locations, we seek to make our neighborhoods stronger because we're a part of them. Wells Fargo has a tradition for giving back to the communities we serve through outreach programs, financial support, volunteerism, providing high quality financial services, maintaining high standards for integrity and being regarded as a great place to work for our diverse team members. Although we connect to our rich past, Wells Fargo has always focused on the future and is proud to partner with the Orange County Business Council to sponsor its seventh annual Orange County Workforce Conference.

We congratulate the Orange County Business Council and the Orange County Workforce Investment Board for its leadership in bringing quality research, issue analysis and success measures that will help Orange County workforce stay competitive now and long into the future.

Robbin Preciado
Senior Vice President
Wells Fargo

**CHRIS NORBY**
Orange County Board of Supervisors
Supervisor, Fourth District

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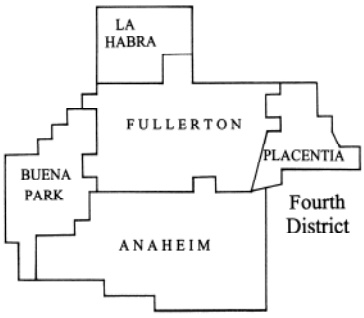


***2007 ORANGE COUNTY WORKFORCE REPORT***

On behalf of the Orange Count Board of Supervisors, it is a pleasure to announce the release of the sixth annual Orange County Workforce Report. This report has demonstrated to be a valuable resource for educators, businesses, and countless other organizations that are committed to the local, national and global capacity of Orange County's economy.

*Orange County Workforce: State of the County 2007* clearly defines the trends in education, employment and population for the county. The report serves as a significant indicator of the workforce needs and movement within the County. It is an indispensable tool of the Comprehensive Economic Development Strategy (CEDS) of Orange County, allowing for the analysis of the present economic situation and the identification of potential opportunities that affect favorable economic development for Orange County.

This report allows educational institutions, businesses, and other organizations to analyze, assess, and plan for success for today and for the future. The business and industry of Orange County is diverse and the workforce needs are distinct. The information in this report is the link between workforce development, education, business and industry, and the economic viability of the county.

Congratulations to the Orange County Workforce Investment Board and the Orange County Business Council on the release of the 2007 Workforce Report.

Sincerely,

CHRIS NORBY, Chairman
Orange County Board of Supervisors, 4th District

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Dear Workforce Development Partner:

The Orange County Workforce Investment Board and the Orange County Business Council are pleased to again partner on the 2007 Workforce Report – our sixth collaboration.

In today's global economy, the issues facing Orange County are not unique. The County faces an aging workforce and the challenges related to it such as a lack of skilled workers who can fill those vacancies; educational and training needs for high-wage and high-growth occupations; home ownership and rental affordability; and economic development challenges.

Orange County must constantly strive to anticipate and respond to changes in the economy, business structure and design, population factors, educational and training needs, and services that impact the workforce development system. In being proactive through development and implementation of programs and services, the entire county will reap the benefits.

The impact of the Workforce Report on Orange County cannot be understated. The Workforce Report reveals the trends influencing and affecting economic development and workforce needs. It serves as a gauge for strategic planning and implementing programs that will best serve the industries and organizations and the people who live and work in Orange County. This report includes population projections, employment trends, educational requirements for occupations, and the widely used economic indicators.

The Orange County Business Council and the Orange County Workforce Investment Board are confident that the Workforce Report will continue to serve as a valuable resource for Orange County residents, businesses, and local governments.

Sincerely,

Jack Mixner
Economic & Workforce Intelligence Committee
Orange County Workforce Investment Board

# introduction

# Beating the Competition in a "Flattening" World

## Continuing our success in the global marketplace will demand Orange County know not only how it is doing today, but where our region must go in the future…

As technology and increased communications shrink our world, Orange County finds itself no longer competing just with other metro areas in California, but also regions across the country and throughout the world. Contemporary analysts describe this as the "flattening" of the world, such that every person and company is increasingly on a level playing field in terms of overall competition for goods and services.

How will Orange County's business community and the three million residents here compete in such a world? Will we excel or fall behind in the race? One thing is clear – talent and skills are key.

Orange County residents must now be prepared to compete like never before with people from around the world. How are Orange County's workers doing and are we preparing a workforce for the future? It's a whole new ballgame, folks. We can no longer be passive and simply rely on our great weather and quality of life.

The 2007 State of the County Workforce seeks to answer these questions by providing a series of snapshots of various issues important to Orange County's economy and workforce. These issues include:

- Educational achievement of our students
- Wages and employment projections of growth occupations
- The growth trends and changes taking place in our key industry clusters
- Our ability to provide housing for our workforce

Conducting sound research on these issues and other competitive challenges is the best way to examine how Orange County's business community and workforce will respond and compete in a "flat" world. Fortunately, this year's report finds that on many crucial issues, Orange County's workforce is not only keeping pace, but making real improvements.

Arguably, the most important preparation for the county's future will take place in our schools. Good news resonates out of many of the education-oriented indicators.

- Achievement in math and science of Orange County students generally exceeds state rates
- SAT scores continued to rise and remain ahead of state, national and most peer market averages.
- Enrollment in upper level science and math is on the rise and continues to exceed state and national targets.
- UC/CSU eligibility continues to increase with a dramatic increase in the Latino population this year over last year.

However, our overall, countywide numbers conceal a serious divide within Orange County. While a few school districts perform at an elite level, others lag behind county, state and national benchmarks. The consequences of these dissimilar outcomes, if unchecked, are considerable for the county's future economic and workforce competitive position. The school districts that are the furthest behind are responsible for educating an ever-larger share of our future workforce. Combined, Anaheim Union and Santa Ana Unified, for example, enroll nearly one-quarter of Orange County's 9th graders.

Moving beyond trends in education, this year's indicators also examine occupational growth and salary trends in our key industry clusters. For the most part, we have good news to report, with solid job growth in nearly every cluster along with strong wage growth. Clouds on the horizon continue to be housing costs and the related high cost of living in Orange County – though in these matters, we can rightly be seen as a victim of our own success.

Orange County has enjoyed an extended period of unprecedented growth and prosperity. Examined together with demographic changes, overall quality of living, and perceived climate for investment, these factors reveal a great deal about not only where we are in 2007, but where we will likely see ourselves in the future.

Creating a competitive, "fit" workforce will continue to require bold ideas and concerted actions among business leaders, policy-makers, educators, workforce professionals, researchers, and, most importantly, parents and students. We can already see the positive impacts that coordinated workforce and education initiatives have had on the Orange County workforce and economy. Success stories this year include efforts to increase educational performance of our Latino students, such as the Latino Educational Attainment (LEA) project. Further, we are beginning to see very positive results from cluster-focused regional collaboratives, such as the Healthcare Collaborative that has made significant progress in addressing our nurse shortage.

We hope that this year's report will again provide readers with key insights to the county's current standing in critical workforce trends, as well as benchmarks about what the future may hold. Above all, we look forward and remain open to opportunities for collaborating on good ideas that will ensure Orange County economy and workforce a bright future.

## Targets for Tracking our Workforce Fitness

Attainable but ambitious short-term goals must be paired with an understanding and vision about the county's long-term prospects. With this in mind, this year's workforce indicators document includes the workforce investment targets that were introduced two years ago.

For the third consecutive year, the Orange County Workforce Indicators includes performance targets. This series of goals (which are included at the footer of most indicators) provide an impetus for stakeholders to take the necessary measures to cultivate the competitive workforce that a vibrant, innovation-driven economy demands.

Starting with last year's edition, our multiyear targets were accompanied by a brief account of year over year performance and analysis. This trend analysis allows readers to check whether the county is on the right track – and if so – when it is likely to reach the target.

The overarching goal of the targets and the accompanying analysis is to convert our annual benchmark of workforce figures, facts and trends into intelligence, accountability, and most importantly -- action. As part of this process, the co-producers of the report – The Orange County Business Council and the Orange County Workforce Investment Board – strive for an increasingly rigorous and constructive discussion on how the county can strengthen the competitiveness of its future workforce.

orange county

# work force indicators

# Percentage of Senior Citizens in Orange County Projected to Increase While Percentage of Working Age Adults Will Decrease; Latino Plurality by 2020 and Majority by 2050

## Description of Indicator

This indicator measures the components of demographic change in Orange County. First, projected population growth by age group is compared between 2000-2050. These projections are by age group and by ethnicity. Second, the population is analyzed by the age distribution ethnicity with a comparison of the age components of the White and Latino population in 2000 and 2050. Third, the components of population growth between 1992 and 2004 are broken down in terms of components of natural increase and net migration. Also, the components of population growth between 1992 and 2004 are broken down in terms of components of net domestic migration and net immigration. Finally, the total number of births in Orange County are shown, 1990-2003 actual statistics and 2004-2013 projected.

## Why is it Important?

Orange County's population components are expected to change dramatically over the next 45 years in ways that will radically affect the type of community and market this area will become. By understanding both this expected pattern of demographic change and the pattern of past demographic changes, policymakers can better understand the evolving population, and hence, the labor force of the county.

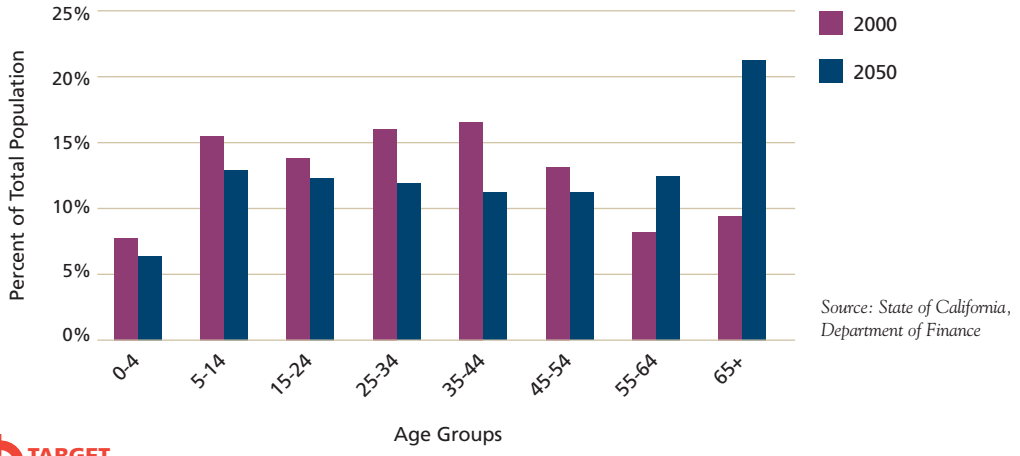
## How is Orange County Doing?

By the year 2050, the age composition of Orange County is projected to change dramatically. Individuals over age 65 made up 9.9% of the total population in the county in 2000. Within the next 35 years, individuals over 65 will make up 21.2% of the county's population. During the same time period, the percent of the population between 25 and 54 years of age will decrease from 45.8% to 34.7%.

Furthermore, by 2020, Latinos will be the largest ethnic group in Orange County, comprising 41% of the population in 2020, and 53% by 2050. The trend towards this is already evident as 71.1% of the Latino population is under the age of 34 and 50.3% is under the age of 24. For the White population, 41.3% is under the age of 34 and 27.8% is under the age of 24. Approximately 14.9% the White population is over the age of 65 while only 3.2% of the Latino population is over the age of 65; however, by 2050 both the White population and the Latino population will have much larger percentages of people over the age of 55 than they do today.

Population changes over the last fifteen years and into the future are due largely to natural increase.

**Projected Populations by Age in Orange County, 2000-2050**



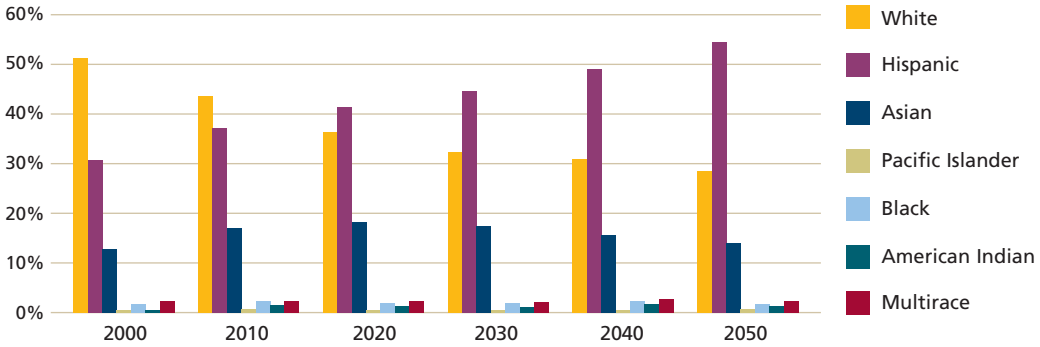

*Source: State of California, Department of Finance*

**TARGET**

**Create sustainable job growth needed to keep unemployment 1.5% below state and national averages.** ***Orange County created about 5,400 new jobs in the last year and is 1.3% under the state and 1.0% under the national unemployment rates.***

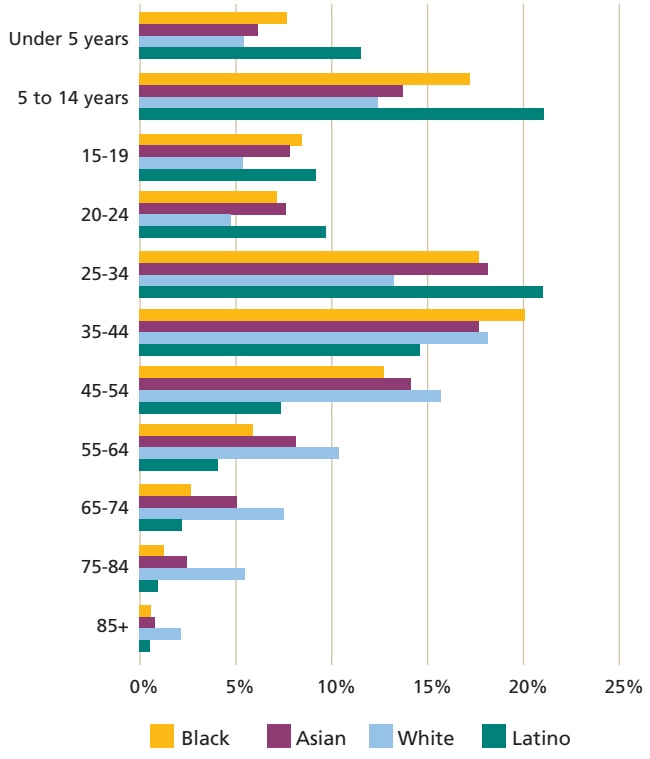
In the late 1990s, the domestic migration out of the county reversed, and in 2001, the trend toward negative and domestic migration resumed. In short, nearly three quarters of the county's population growth during the 1990's was due to an excess of births over deaths, and not due to either domestic or international migration. Between 1991 and 1996, and since 2001, net domestic migration has been negative – more persons moved out of Orange County to other locations in the United States than moved into the county from other locations within the United States. In 1994 and 1995, net domestic migration out of the county exceeded international migration into the county resulting in population growth solely through natural increase. In the late 1990s, the domestic migration out of the county reversed itself although the trend toward negative net domestic migration resumed in 2001. With the exception of a slight spike in 2001, overall net migration into Orange County has been declining since 1999. Instead, as shown by the number of births in Orange County, since 2004 the number of actual births is increasing, projected to reach approximately 47,500 per year by 2013.

**Projected Populations by Ethnicity in Orange County, 2000-2050**




*Source: State of California, Department of Finance*

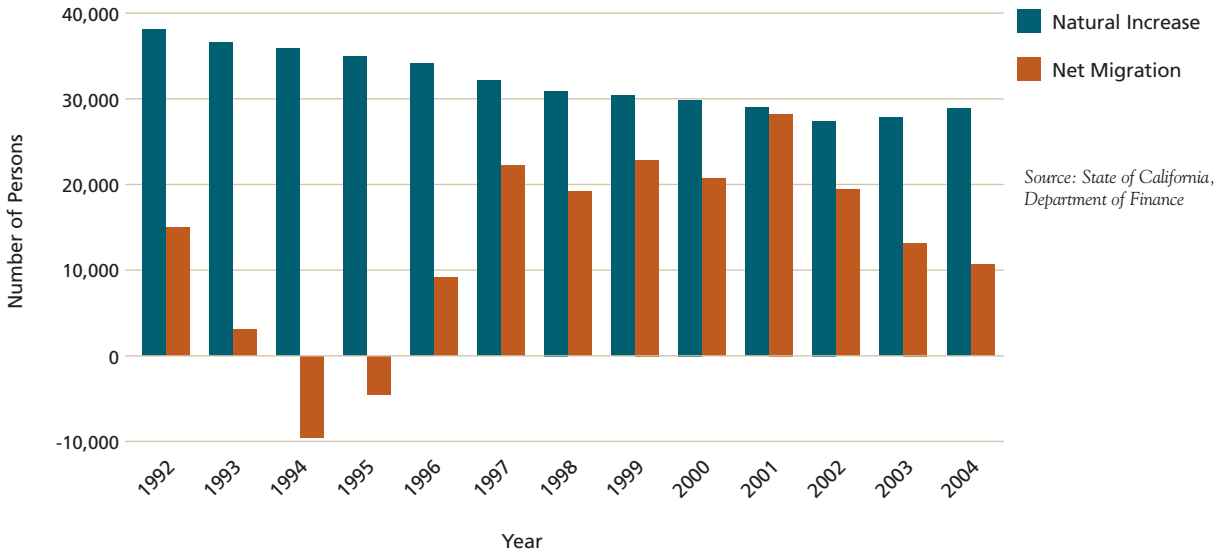
**Age Distribution by Ethnicity in Orange County**




*Source: US Census Bureau, 2000 Census*

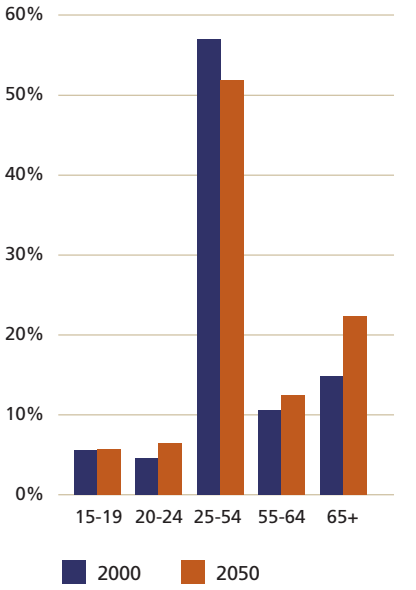
## Orange County Population Growth Trends – Continued

### Orange County Population Change, 1992-2004: Natural Increase vs. Migration



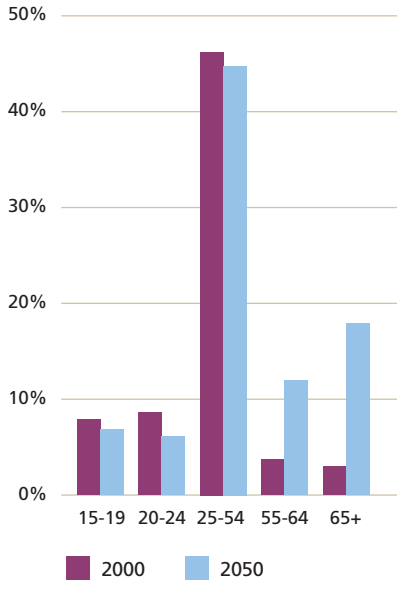

*Source: State of California, Department of Finance*

### Projected Components of the White Population in Orange County, 2000-2050



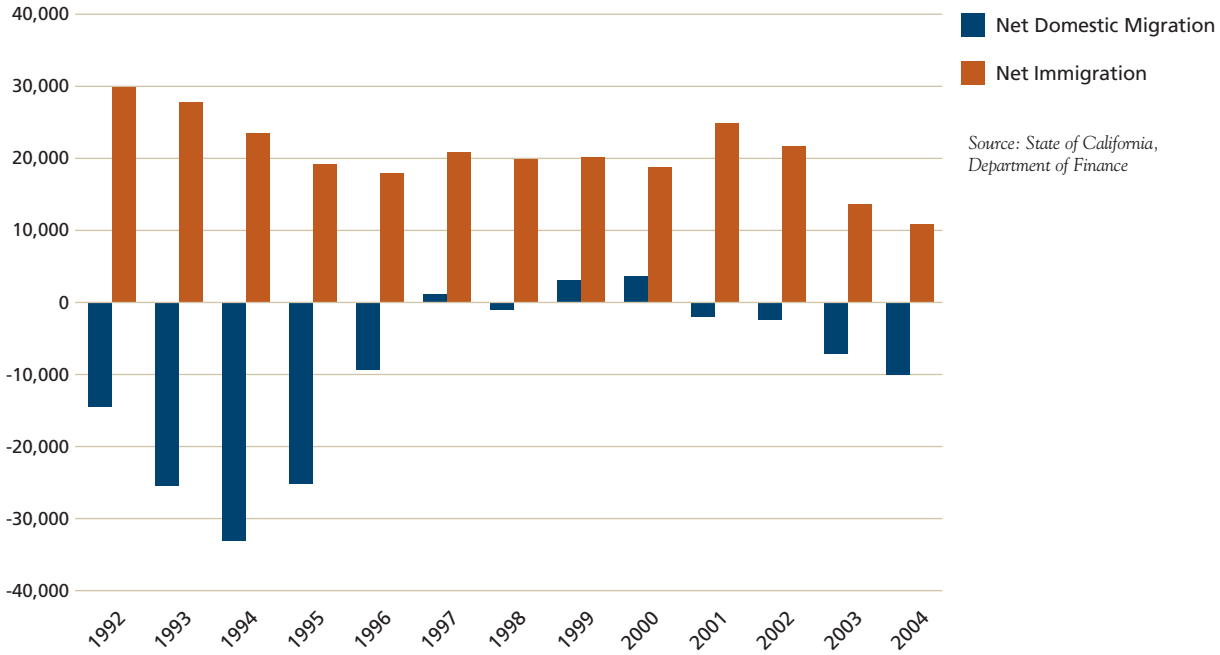

*Source: State of California, Department of Finance*

### Projected Components of the Latino Population in Orange County, 2000-2050




*Source: State of California, Department of Finance*

## Orange County Population Change 1992-2004: Migration and Immigration




*Source: State of California, Department of Finance*

# Employment Growth for High Literacy Jobs Higher than Low Literacy Jobs

## Description of Indicator

This indicator lists the ten job categories with the lowest literacy requirements and the ten job categories with the highest literacy requirements. Following a study conducted by the National Center for Adult Learning and Literacy, the indicator projects Orange County job openings from 2004-2014, as well as the average Orange County wage in the first quarter of 2006. The job opening and wage data were obtained by matching the occupation categories to data from the California Employment Development Department.

## Why is it Important?

Identifying the literacy requirements of different occupations gives insight to the entry barriers that face many workers in Orange County. Understanding projections on job and wage growth, in addition to the aforementioned entry barriers, can help ensure that training programs boost job and wage growth while accommodating for various levels of literacy among Orange County workers.

## How is Orange County Doing?

Low literacy jobs typically offer low pay. The ten lowest literacy occupations had an average Orange County wage of $13.77 per hour in 2006 – the equivalent of a $28,641 annual salary. This is 5.8% increase over the average wage in 2005 of $13.01. The ten highest literacy jobs paid almost three times that amount – an average Orange County wage of $38.77 in 2006. That is the equivalent of $80,641 per year. It also represents a 2.0% increase over the 2005 average wage of $38.00. Even though low literacy jobs had a faster rate of wage increase, given the high cost of living in Orange County, persons in low literacy jobs will have a difficult time earning an adequate wage in the county.

Job growth projections show that there are slightly more projected openings in the high literacy than low literacy jobs in Orange County from 2004 through 2014. This suggests that those who are well educated will have less difficulty in finding a job in coming years, while those who are less educated will have a more difficult time in finding even a low paying job. One implication is that potential workers need to increase their education levels to find not just higher wage jobs to afford the Orange County cost of living, but to even find a job at all. Low literacy jobs are not out there for the taking and are becoming harder to find for even the low wages that they pay.

### Ten Lowest Literacy Occupations

| Occupation | % Jobs Low Literacy | % Jobs High Literacy | Orange County Job Openings, 2004-2014 | Orange County Average Wage 2006 |
|---|---|---|---|---|
| Health services (e.g. nursing aides) | 65% | 35% | 1,580 | $10.96 |
| Miscellaneous farming/fishing/hunting (e.g. farm worker) | 63% | 37% | 230 | $10.79 |
| Cleaning equipment handlers/laborers (e.g. construction laborers) | 63% | 37% | 1,120 | $14.93 |
| Miscellaneous assembler/operator/fabricator (e.g. textile operator) | 61% | 39% | -890 | $8.68 |
| Fabricator/assembles/inspector (e.g. welder, cutter, solderer, and brazer) | 61% | 39% | 350 | $14.32 |
| Transport operative (e.g. truck drivers, light) | 57% | 43% | 2,600 | $18.44 |
| Miscellaneous services (e.g. maids and housekeeping cleaners) | 56% | 44% | 13,650 | $7.99 |
| Construction crafts (e.g. carpenters) | 49% | 51% | 4,410 | $22.57 |
| Manager/operators in agriculture | 49% | 51% | 250 | $18.16 |
| Personal service occupations (e.g. hairdressers) | 45% | 55% | 9,240 | $10.85 |
| **Total, Ten Lowest Literacy Occupations** | | | **32,540** | **$13.77** |

### Ten Highest Literacy Occupations

| Occupation | % Jobs Low Literacy | % Jobs High Literacy | Orange County Job Openings, 2004-2014 | Orange County Average Wage 2006 |
|---|---|---|---|---|
| Math/computer scientists | 2% | 98% | 13,830 | $34.19 |
| Miscellaneous health related (e.g. pharmacists) | 3% | 97% | 12,460 | $33.78 |
| Accountants/auditors | 3% | 97% | 3,650 | $30.21 |
| Architects/surveyors | 4% | 96% | 1,120 | $32.26 |
| Natural scientists (e.g. life scientist) | 4% | 96% | 410 | $36.35 |
| Health diagnostics (e.g. physicians) | 5% | 95% | 620 | $71.60 |
| Engineers (e.g. civil engineer) | 10% | 90% | 4,530 | $36.40 |
| Teachers (e.g. secondary school teacher) | 10% | 90% | 4,040 | $25.45 |
| Registered nurses | 11% | 89% | 5,050 | $32.28 |
| Misc. management (e.g. management analysts) | 12% | 88% | 6,870 | $36.74 |
| **Total, Ten Highest Literacy Occupations** | | | **41,640** | **$38.37** |

*Sources: National Center for the Study of Adult Literacy and Learning; California Employment Development Department*

# College Readiness Increases in 2005-2006 for Orange County Students; Doubling in Eligibility for Hispanic Students

## Description of Indicator

College readiness measures the number of public high school graduates eligible for admission to University of California (UC) and California State University (CSU) campuses.

The University of California (UC) and California State University (CSU) systems established a minimum number of courses students must take to be admitted into each of the college systems. The courses are the following:

- 4 years of College Preparatory English
- 3 years of College Preparatory Mathematics (Algebra, Geometry, Intermediate Algebra)
- 2 years of College Prep Foreign Language
- 2 years of College Prep History (1 year World History, 1 year US History)
- 2 years of College Prep Laboratory Science (1 year biological science, 1 year physical science)
- 1 year of College Prep Visual and Performing Arts
- 1 year of College Preparatory Elective

This indicator also measures Orange County high school graduates' performance on the Scholastic Aptitude Test (SAT).

## Why is it Important?

To gain entry to most four-year universities, high school students must complete the necessary course work and perform well on standardized tests. As a college education or related-skill certification is increasingly important for many of today's jobs in Orange County, college readiness is a critical indicator.

## How is Orange County Doing?

From 1992-1993 to 2005-2006, UC/CSU eligibility for the entire county has risen by approximately 30.7%. Overall, average eligibility for the county increased from 37.6% in 2003-2004 to 43.4% in 2005-2006. After decreases in the early 2000s, the increases in recent years are good news.

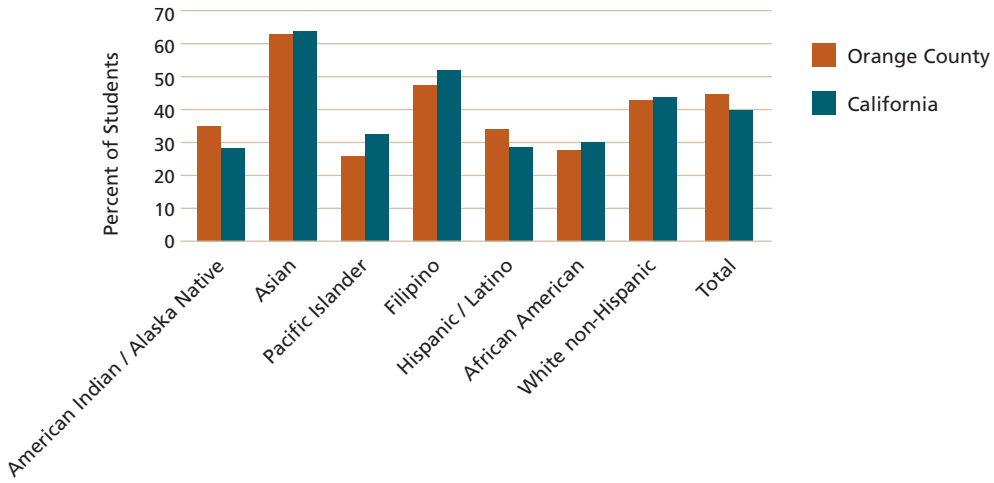
In addition, most ethnicities have seen increases in eligibility since 1992-1993. In the last year, Hispanic students saw a dramatic increase in the number of students eligible for UC/CSU Admission rising from 18.2% to 35.1%. Making up approximately 30% of total enrollment, this doubling of eligibility contributed significantly to overall improvements for the county.

Compared to the entire state, Orange County has slightly lower percentages of students in five ethnic groups taking the necessary courses for UC/CSU eligibility: Asian Americans, Pacific Islanders, Filipinos, African/Americans, and Whites. By contrast, a larger percentage of American Indian and Hispanic students in Orange County took the necessary courses for UC/CSU eligibility in 2005-2006. Overall, the county had a larger percentage of students graduating with the necessary courses in 2005-2006 than the state average.

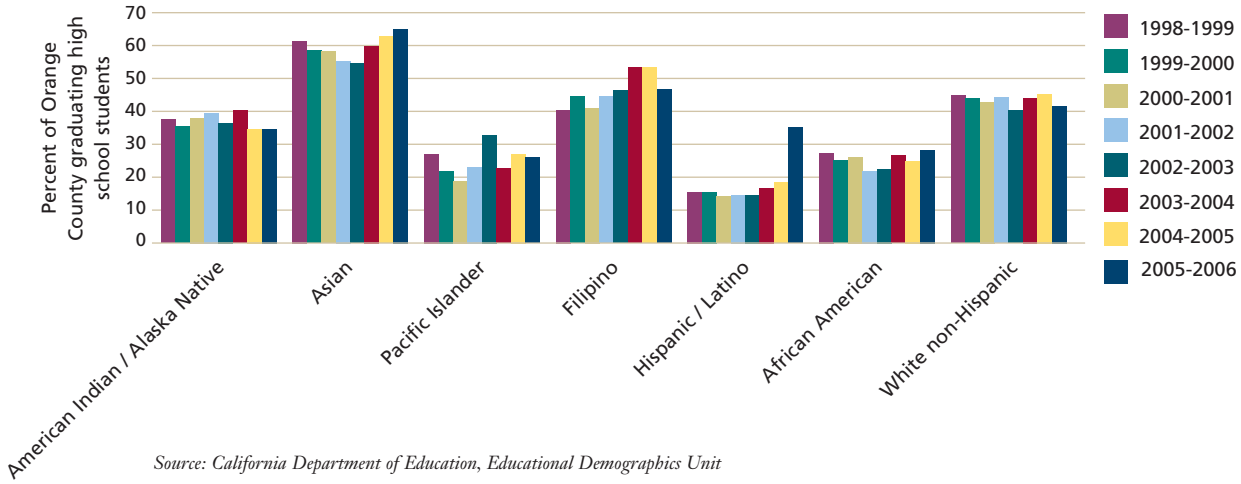
**TARGET**

**By 2010, 50% of Hispanic/Latino and Pacific Islander students meet UC/CSU eligibility.** ***In the last year, 35.1% of Hispanic/Latino and 26.5% of Pacific Islander students met UC/CSU eligibility, a dramatic increase from last year.***

**UC/CSU Eligible Graduates, Comparison to State, 2005-2006**




**UC/CSU Eligible Graduates (by percent of students), 1998-2006**

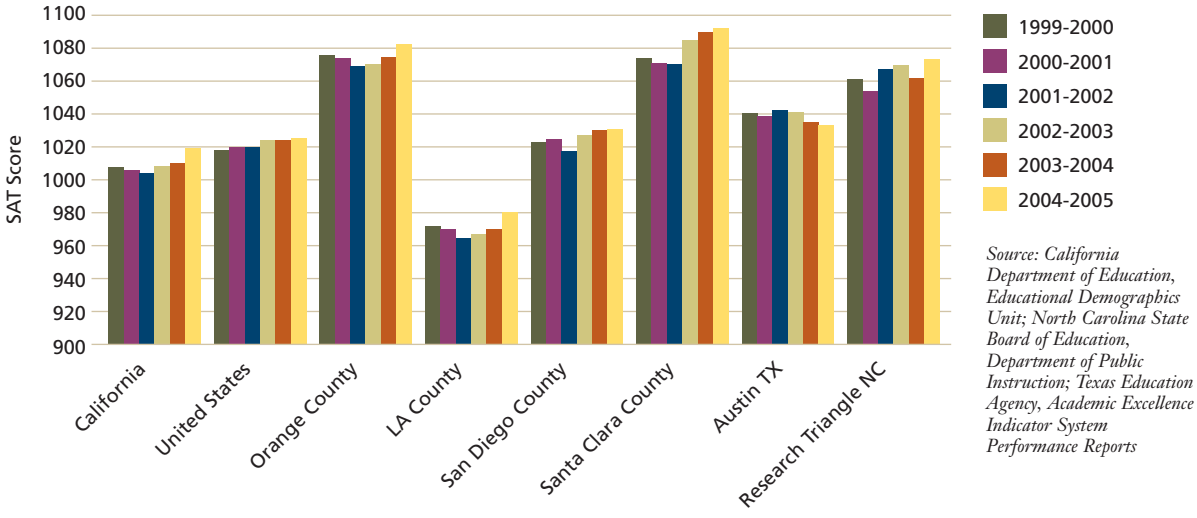



*Source: California Department of Education, Educational Demographics Unit*

Orange County students, on average, perform well on the SAT. Starting in 2006, the "Verbal" section of the SAT was replaced by two sections: Writing and Critical Reading. Orange County students score higher on average than students in the nation, state, and most peer metropolitan areas. Of the counties used for a comparison with Orange County, only Santa Clara County had seven-year average scores that were above Orange County. The charts show six years of SAT history under the old format and the 2007 test scores for Orange County and other peer metropolitan regions.

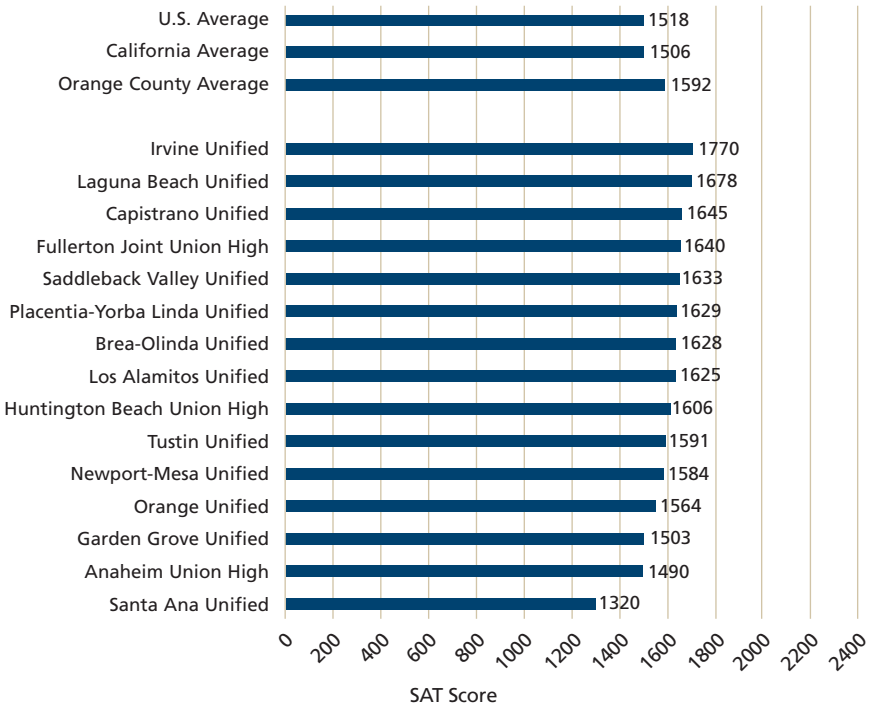
Within Orange County, SAT scores vary considerably across school districts. Irvine Unified School District reports the highest average reading/writing/math combined score for the county in 2005-2006, while Santa Ana Unified School District has the lowest average score. With the exception of Santa Ana, Anaheim and Garden Grove all of the school districts in Orange County have average scores above both the California and National average SAT scores for 2005-2006.

### 1999-2005 SAT Scores: Metro Comparisons




*Source: California Department of Education, Educational Demographics Unit; North Carolina State Board of Education, Department of Public Instruction; Texas Education Agency, Academic Excellence Indicator System Performance Reports*

### Average Total SAT Scores By School District, 2006




*Source: California Department of Education*

# Largest Absolute Growth Projected to be in Sales and Customer Service Occupations While High-Tech Industry Boasts Fastest Rate of Growth

## Description of Indicator

This indicator is based on projections for growth in occupations in Orange County. The projections were developed by the state Employment Development Department. This indicator shows projected growth in the fastest growing Orange County occupations, with projected growth measured in both absolute terms (number of jobs) and percentage terms (as a percent of employment in the occupation in 2004). A large percentage change does not necessarily imply a large number of new jobs. Also note that occupational growth is a measure of growth in specific types of jobs, not growth in the number of jobs in particular industries. Many occupations are found in several different industries.

## Why is it Important?

The measurement of occupational growth enables workforce professionals to develop training programs that prepare workers to enter occupations that are expected to have the greatest demand in the future.

## How is Orange County Doing?

Orange County is expected to have the greatest overall growth in sales and related occupations with 32,200 projected new job openings from 2004 to 2014. This is closely followed by food preparation and related occupations with a projected total of 29,290 new job openings. For specific occupations, out of the total 287,400 new jobs projected to be added to the Orange County economy from 2004 to 2014, 30,350 are expected to be in "Retail Salespersons." Other high growth occupations are "Cashiers," "Waiters and Waitresses," and "Combined Food Preparation and Serving Workers, Including Fast Food." In terms of percentage growth, the fastest occupational growth in Orange County will be in "Network Systems and Data Communications Analysts" (56.0%), "Home Health Aides" (55.8%) and "Special Education Teachers, Preschool, Kindergarten, and Elementary School" (44.7%).

**Business and Professional Services, Biomedical and Computer Software Findings**

The Computer Software cluster is expected to have the fastest percentage growth of occupations between 2004 and 2014. However, the fast growing occupations tend to be high educational requirement occupations such as Computer Programmer while lower educational requirement occupations such as Word Processors with substantial declines.

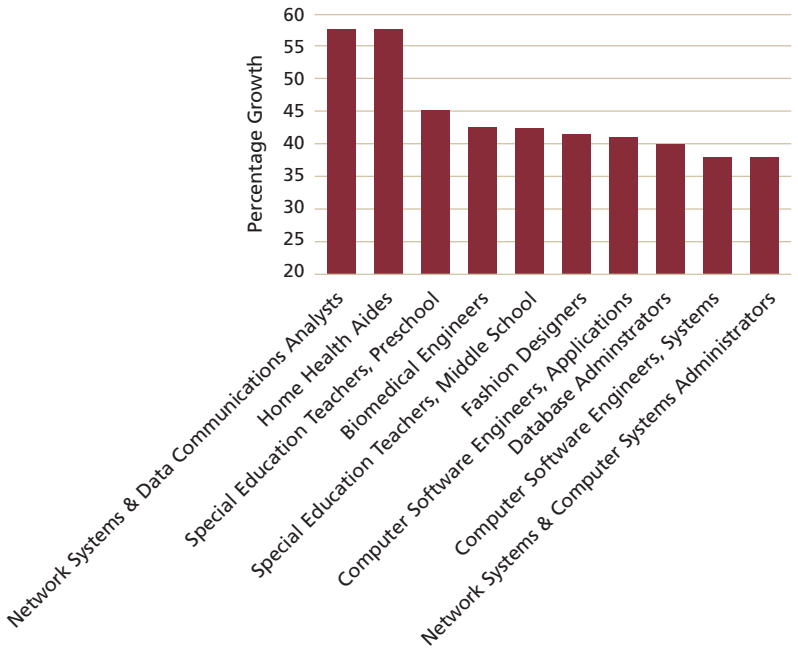
Business and Professional Services occupations are expected to have large numerical growth with over 15,000 new jobs between 2004 and 2014. Computer oriented and legal oriented occupations are expected to have the fastest percentage growth.

Biomedical occupations have much lower numerical growth than Business and Professional Services and Computer Software occupations. The fastest percentage growth occupations are Medical and Clinical Lab Technicians and Technologists, with an expected growth rate of approximately 23% over the ten year period.

**TARGET**

**Orange County creates 5,000 new, high-wage jobs in Biomedical and Computer Software Clusters and 25,000 jobs in Business and Professional Service by 2010.** ***Biomedical grew almost 1,800 jobs, Computer Software grew about 1,500 jobs, and Business and Professional services grew approximately 4,600 jobs last year for the target.***

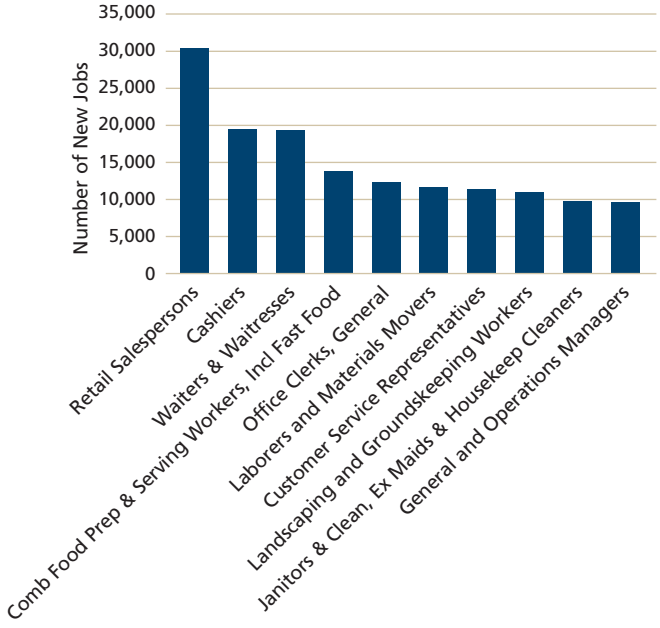
**Top 10 Fastest Growing Occupations in Orange County By Percentage Growth, 2004-2014**




In terms of percentage growth, the three occupations with the fastest projected growth are:

- "Network Systems & Data Comm. Analysis" (56.0%);
- "Home Health Aides" (55.8%); and
- "Special Ed. Teachers" (44.7%).

**Top 10 Fastest Growing Occupations in Orange County By Absolute Growth 2004-2014**

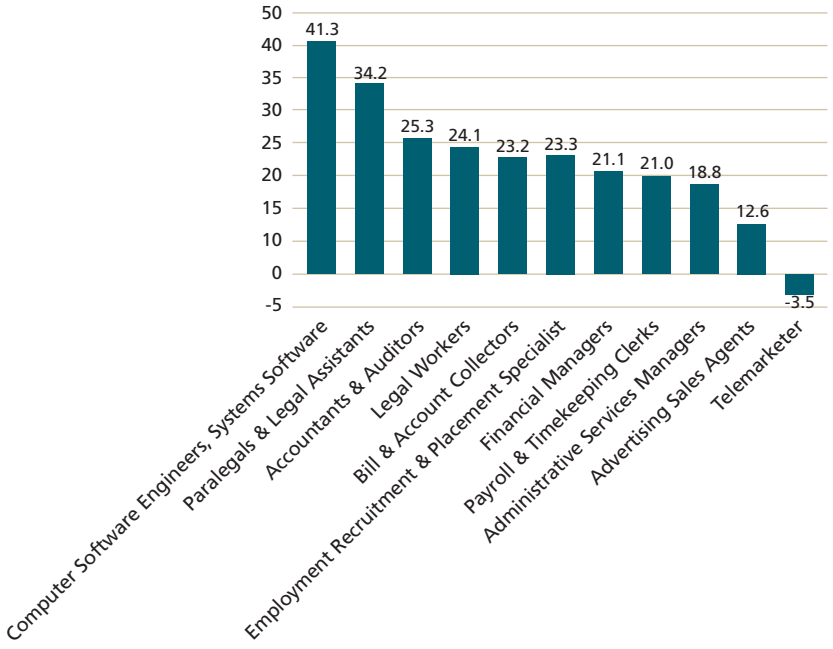



Out of the total 287,400 new jobs projected to be added to the Orange County economy from 2004 to 2014, 30,350 are expected to be in "Retail Salespersons." Other high growth occupations are:

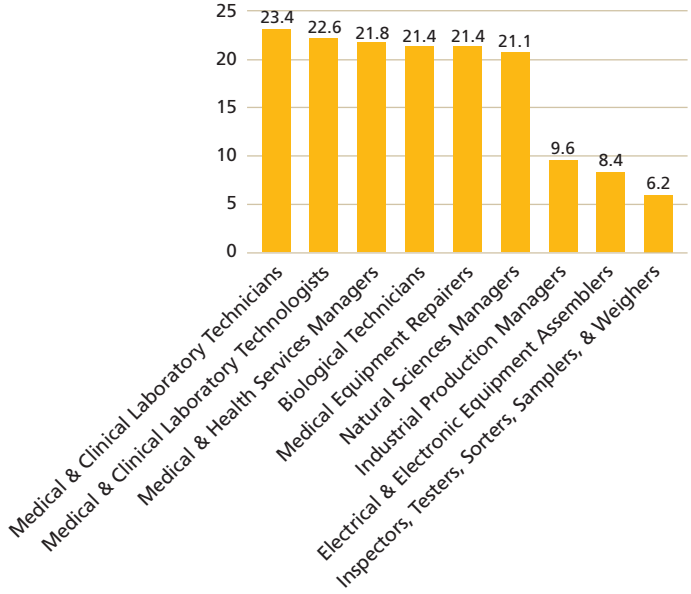
- "Cashiers"
- "Waiters and Waitresses" and
- "Combined Food Preparation and Serving Workers, Including Fast Food."

*Source: California Employment Development Department*

**Percent Growth of Orange County Business and Professional Services Occupations 2004-2014**

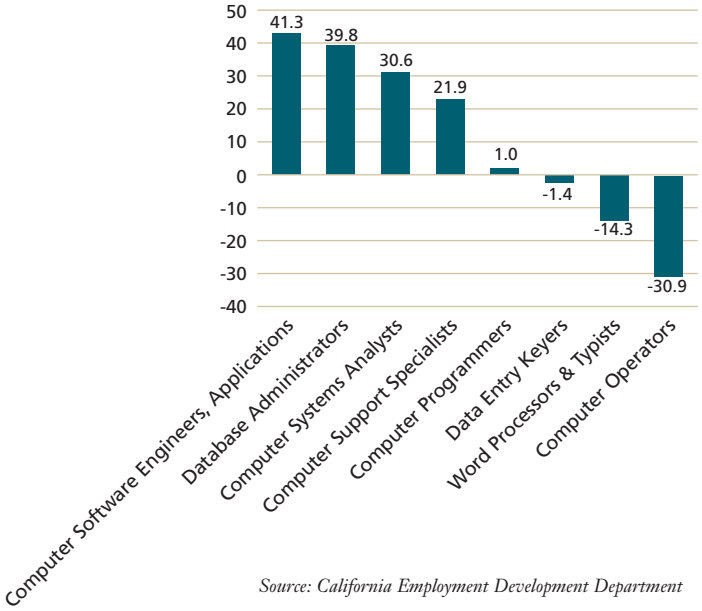



**Percent Growth of Orange County Biomedical Occupations 2004-2014**




*Source: California Employment Development Department*

**Percent Growth of Orange County Computer Software Occupations 2004-2014**




*Source: California Employment Development Department*

# Largest Projected Job Growth is in Business Services, Food Services and Education

## Description of Indicator

This indicator is a measure of employment growth in particular industries in Orange County, as projected by the Employment Development Department from 2004-2014. Industries are defined by the activities performed by the businesses that compose them. The employment numbers are the count of all the employees hired by businesses in that industry regardless of the type of occupation performed by the employee in that business.

## Why is it Important?

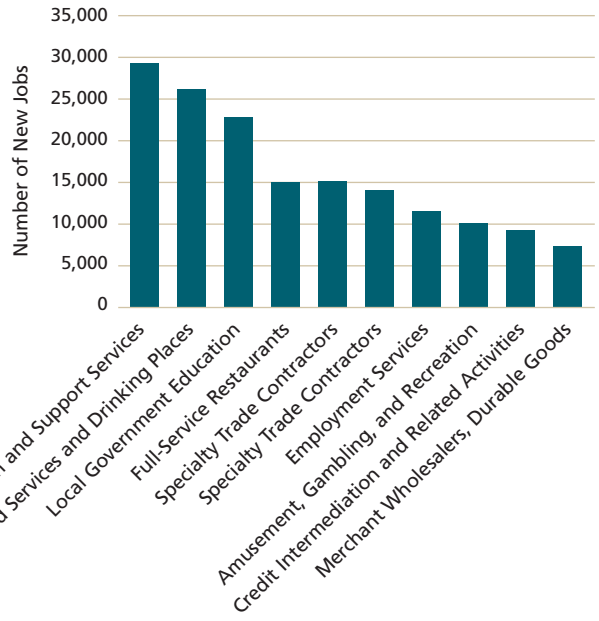
In the 1990s, Orange County underwent a major shift in its industry composition as defense downsizing dramatically reduced the importance of defense/aerospace and business services catering to and supporting high tech industries came to the forefront.

Measuring the continuing transformation of the Orange County economy away from its aerospace past and into greater diversification in other arenas enables policymakers to better assess the strengths and vulnerabilities of the local economy and capitalize on existing assets.

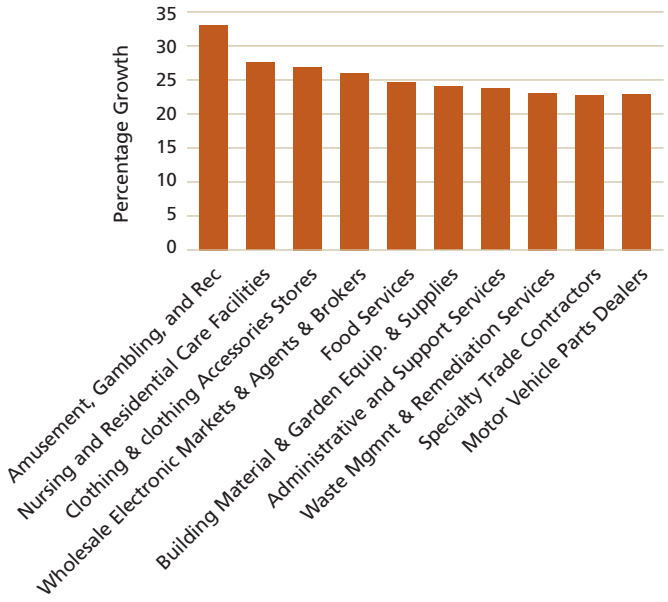
## How is Orange County Doing?

Overall, Orange County employment is expected to increase 18.0 % from 2004-2014. The county is demonstrating the continuing importance of professional and business services, as this sector is the leading sector in projected absolute number of jobs. This sector was also a leader in both absolute and percentage job growth for the previous projections, covering the period from 2004-2014. When looking at individual industries, the largest growth industries are in administrative and support (business services), food services and local government-education. When looking at the industries that will generate the largest employment growth as a percentage of their 2004 Orange County employment level, services, construction and wholesale trade sectors figure prominently among the top ten.

**Top 10 Fastest Growing Industries in Orange County By Absolute Growth 2004-2014**




**Top 10 Industries in Orange County By Percentage Job Growth 2004-2014**




*Source: California Employment Development Department*

**TARGET**

**Orange County creates 5,000 new, high-wage jobs in Biomedical and Computer Software Clusters and 25,000 jobs in Business and Professional Service by 2010.** ***Biomedical grew almost 1,800 jobs, Computer Software grew about 1,500 jobs, and Business and Professional services grew approximately 4,600 jobs last year for the target.***

# orange county's employment trends

# Continued Expansion of Economy Sustains Job Growth in All Clusters Except Defense/Aerospace

## Description of Indicator

This indicator shows one-year employment growth in ten Orange County industry clusters for each of three different statewide employment growth rates. The growth projections are derived from the Labor Market Early Warning System built for the Orange County Workforce Investment Board.

The Early Warning System simulates how employment in Orange County industry clusters is affected by statewide employment growth. The three different state employment growth rate scenarios used for this indicator are:

- 1.8% annual statewide employment growth[1]
- 3.55% one-year California employment growth[2]
- 0.86% one-year decline in California employment[3]

This indicator shows both percentage growth in cluster employment and absolute growth (number of jobs gained or lost). The projections in this indicator are based on an updated Early Warning System model that incorporates information available as of second quarter 2006[4].

## Why is it Important?

Orange County industry clusters respond to the health of the state economy. Workforce planning requires an understanding of how the California economy will influence Orange County industry clusters, and not all clusters in the county respond the same way to changes in State growth. Some clusters are volatile, growing rapidly as the economy expands but losing a relatively large number of jobs during recessions. Other clusters are more stable over the business cycle. This indicator, by highlighting how Orange County clusters are projected to grow in varying statewide economic climates, can help workforce professionals plan for and adapt to changing economic conditions.

## How is Orange County Doing?

The Orange County clusters that are most volatile in relation to state economic conditions are the technology clusters – Computer Hardware, Computer Software, Defense and Aerospace, and Energy and Environment. The projections in the Early Warning System suggest that when California employment shrinks by 0.86% in a year, the Orange County computer software cluster loses 18.49% of its jobs. When California employment grows by 3.55% in a year, the Orange County computer software cluster increases its employment by 17.23%. Other Orange County technology clusters are projected to have similarly dramatic swings in employment. A 0.86% decline in California employment is projected to lead to job losses that are 23.59% of the Orange County Computer Hardware cluster employment, 35.96% of the county's Defense and Aerospace employment, and 17.61% of Orange County's Energy and Environment employment. These are large percentage changes partly because those four clusters are among the smallest of the ten clusters shown in this indicator. Still, the magnitude of projected job losses are also large, ranging from 2,590 jobs lost in Energy and Environment to almost 6,800 jobs lost in Defense and Aerospace during a recession that is similar to what occurred in 2002.

[1] 1.8% is the California Department of Finance projection for statewide employment growth in 2008.
[2] 3.55% is the statewide non-farm employment growth rate for the year 2000.
[3] 0.86% decline was the statewide non-farm employment change in 2002.
[4] Some projections in this indicator differ from forecasts in the previous year's (2006) workforce report. The projections here are more reliable, as they are based on more recent data and refined analysis.

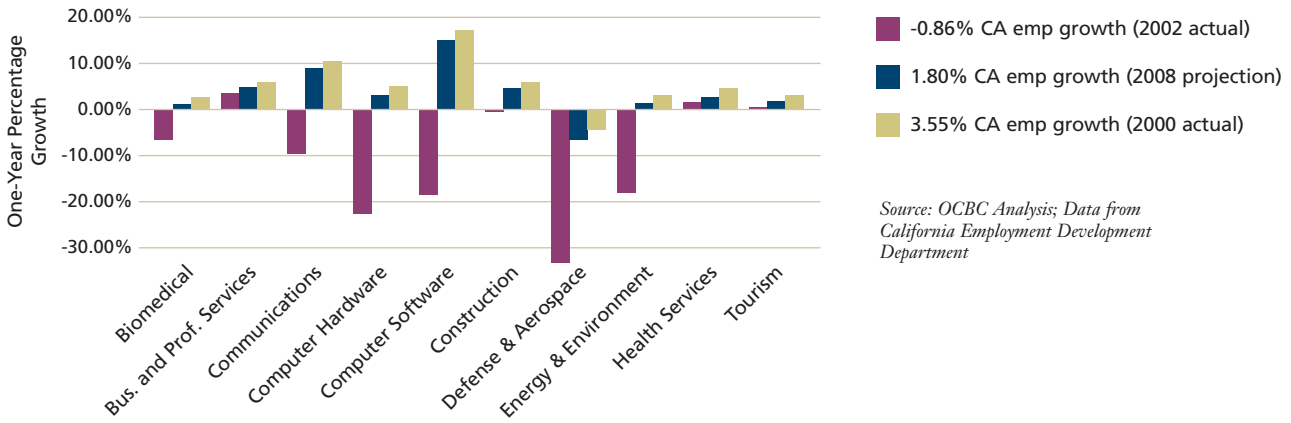
**TARGET**

**Orange County creates 5,000 new, high-wage jobs in Biomedical and Computer Software Clusters and 25,000 jobs in Business and Professional Service by 2010.** ***Biomedical grew almost 1,800 jobs, Computer Software grew about 1,500 jobs, and Business and Professional services grew approximately 4,600 jobs last year for the target.***

Moving forward, one should focus on projected cluster employment changes based on the forecast 1.80 percent job growth in California in 2008. If that forecast is accurate, the Early Warning System suggests continued expansion of Orange County's technology clusters. Early Warning System projections, for 1.80 percent California employment growth, show positive job growth in all clusters except Defense and Aerospace, with strong growth in Computer Software (a projected addition 3,410 jobs in one year in that cluster). The Early Warning System might over predict Computer Software jobs as 2006 shows smaller employment in that cluster than might be expected.

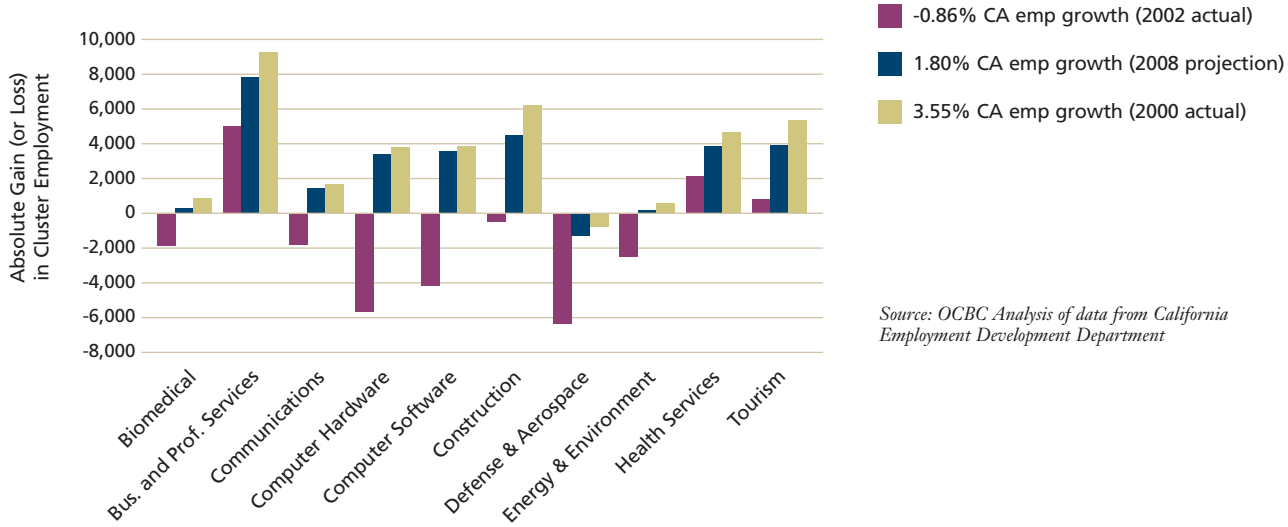
Three Orange County clusters – Business and Professional Services, Health Services, and Tourism – show projected job growth for all statewide economic scenarios, including the recession scenario (loss of 0.86 percent of California employment). These clusters are among the county's largest, and their growth is stable during periods of statewide expansion or contraction. For that reason, job training targeted at the Business and Professional Services, Health Services, and Tourism clusters should be a mainstay of Orange County's workforce policy. Yet, as other indicators in this report illustrate, those three clusters pay lower wages than the volatile, but higher paying, technology clusters. This suggests that, during economic recoveries in particular, workforce policy should give added attention to training related to the technology clusters.

**Projected One-Year Orange County Percentage Cluster Employment Growth**




*Source: OCBC Analysis; Data from California Employment Development Department*

**Projected One-Year Orange County Cluster Employment Growth**




*Source: OCBC Analysis of data from California Employment Development Department*

## Orange County Industry Cluster Employment Growth, One-year Projections – Continued

**Business and Professional Services, Biomedical, and Computer Software Findings**

The Business and Professional Services cluster is expected to have substantial growth in all economic environments, from a recessionary -0.86% growth to an expansionary of 3.55% growth. This cluster will grow in Orange County at an approximate rate of growth 3% faster than the economy as a whole in all scenarios, producing between 5,000 and 9,500 jobs a year in any recent scenario.

The Biomedical and Computer Software clusters are much more sensitive to the growth rate of the overall economy. In a recessionary environment, the Biomedical cluster would decline by slightly over 6% (a loss of 1,895 jobs) and the Computer Software cluster would decline by approximately 20% (a loss of 4,074 jobs).

However, with moderate and expansionary growth, these clusters are sustained and even expand substantially. The Biomedical cluster grows at about half the rate of the larger economy (with 236 jobs with moderate growth and 770 jobs with expansionary growth). The Computer Software cluster rapidly expands with only moderate growth by about 15.5% (3,410 jobs), and booms with expansionary growth at about 17% (3,795 jobs).

### Percentage Rate Growth of Clusters

| | - 0.86% CA employment growth (2002 actual) | 1.80% CA employment growth (2008 projection) | 3.55% CA employment growth (2000 actual) |
|---|---|---|---|
| Biomedical | -6.21% | 0.77% | 2.52% |
| Bus and Prof Services | 2.98% | 4.77% | 5.66% |
| Computer Software | -18.49% | 15.48% | 17.23% |

### Jobs Created by Clusters

| | - 0.86% CA employment growth (2002 actual) | 1.80% CA employment growth (2008 projection) | 3.55% CA employment growth (2000 actual) |
|---|---|---|---|
| Biomedical | -1,895 | 236 | 770 |
| Bus and Prof Services | 4,963 | 7,957 | 9,433 |
| Computer Software | -4,074 | 3,410 | 3,795 |

*Source: OCBC Analysis*

# Employment Growth in Health Services and Business and Professional Services Occupations Projected to be Robust Across a Range of Statewide Economic Conditions

## Description of Indicator

This indicator shows projected one-year employment growth in the top ten Orange County growth occupations for each of three different statewide employment growth rates. The growth projections for occupations shown in this indicator are derived from the Labor Market Early Warning System built for the Orange County Workforce Investment Board. The Early Warning System simulates how Orange County employment in industrial clusters and in occupations within those clusters is affected by statewide employment growth.

This indicator shows Orange County occupation growth for three different California employment growth rates:

- 1.80% annual statewide employment growth (which is the California Department of Finance projection for statewide employment growth in 2008)
- 0.86% one-year decline in California employment (the statewide growth rate for 2002)
- 3.55% one-year California employment growth (statewide employment growth in 2000)

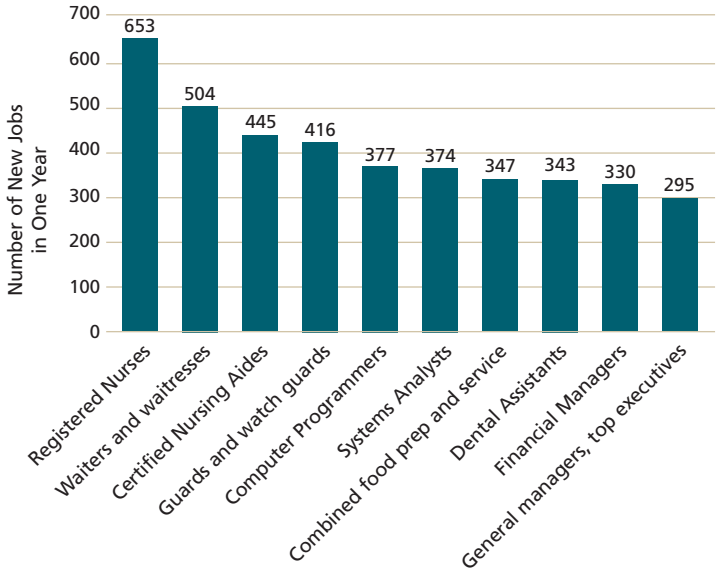
## Why is it Important?

Growth in Orange County occupations is strongly affected by the growth of the California economy. This indicator shows growth projections for Orange County occupations based on statewide employment growth rates that have been realized or forecast since 2000. What's more, the indicator illustrates how changing statewide economic conditions influence growth patterns in the fastest growing Orange County occupations. Understanding the link between the California economy and growth in Orange County occupations is paramount for effective workforce planning. The information in this indicator can help county workforce professionals respond to changing economic conditions.

**Business and Professional Services, Biomedical and Computer Software Findings**

Across three potential projected growth rate scenarios, except for the recessionary environment, two Computer Software jobs (Computer Programmers and System Analysts) are projected to be among the fastest growing occupations. Business and Professional Services occupations such as Financial Managers and Guards are projected to have sizeable growth in all economic environments. The selected Biomedical Occupations tend to grow slowly in expansionary economic environments, and tend to shrink slowly in ecessionary economic environments

**Top 10 Projected Orange County Growth Occupations, 1.80% Statewide Employment Growth (2008 Forecast)**




*Source: OCBC analysis*

**TARGET**

**Orange County creates 5,000 new, high-wage jobs in Biomedical and Computer Software Clusters and 25,000 jobs in Business and Professional Service by 2010. *Biomedical grew almost 1,800 jobs, Computer Software grew about 1,500 jobs, and Business and Professional services grew approximately 4,600 jobs last year for the target.***

## Orange County Cluster Occupation Growth, One-year Projections – Continued

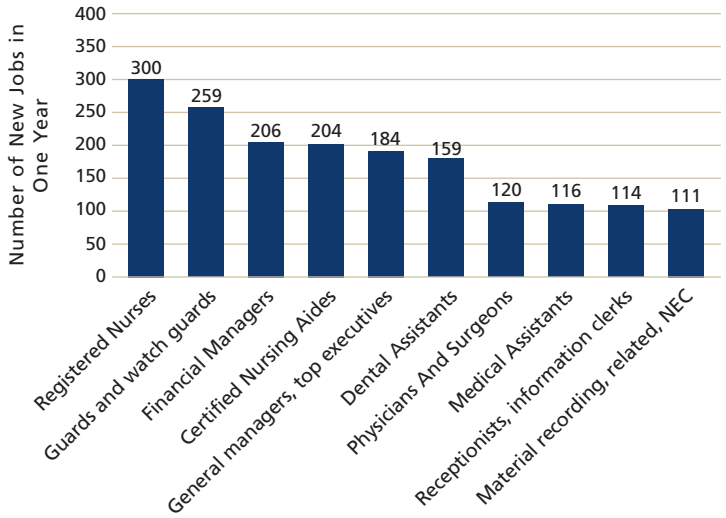
### How is Orange County Doing?

As the data in this indicator show, changes in state employment growth can in some cases more than double the amount of growth of specific occupations. Five occupations appear in the top ten for each of the statewide employment growth scenarios shown in this indicator:

- Three of the five are occupations in health services: Registered Nurse, Certified Nursing Aide and Dental Assistant.
- The fourth and fifth occupations: Financial Managers and Guards are in Business and Professional Services.

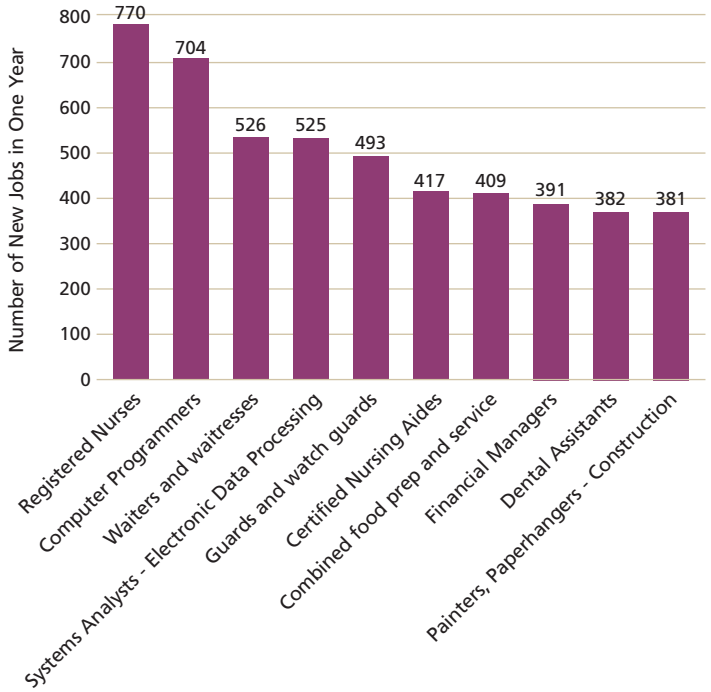
General Managers, System Analysts, and Computer Programmers are three other Business and Professional Services Occupations that are top occupations in two out of the three scenarios.

**Top 10 Projected Orange County Growth Occupations 0.86% Statewide Employment Loss (2002 Actual)**




*Source: OCBC analysis*

**Top 10 Projected Orange County Growth Occupations, 3.55% Statewide Employment Growth (2000 Actual)**




*Source: OCBC analysis*

# County has Substantial Competitive Advantage in Professional and Business Services and Manufacturing

## Description of Indicator

This indicator uses a technique called shift-share analysis to drill-down employment growth in Orange County by three drivers:

- Employment growth attributed to statewide employment growth;
- Employment growth resulting from the county's mix of industries; and
- Employment growth that can be credited to unique competitive advantages or disadvantages in Orange County.

The indicator details employment growth during two time periods: high growth years from 1997 through 2000 and a slow growth period from 2001 to 2006.

## Why is it Important?

Understanding the pattern of Orange County's competitive advantage, relative to statewide employment trends, can help policymakers assess where to focus workforce training initiatives. Furthermore, understanding the county's competitive advantage during periods of both rapid and slow growth provides a perspective on the county's advantages in differing economic contexts.

## How is Orange County Doing?

From 1997 through 2000, Orange County experienced growth in all industry categories shown in this indicator except natural resources and mining. During that time period, California's strong employment growth contributed positively to employment growth in all Orange County industries. From 1997 through 2000, Orange County showed a competitive advantage in generating job growth in durable goods manufacturing, nondurable goods manufacturing, retail trade, information, professional and business services, leisure and hospitality, other services, and government.

In the last six years, Orange County's economy has experienced significant economic swings resulting in a restructuring of employment. During this time period, the county had employment growth in the construction, retail trade, financial activities, professional and business services, educational and health services, leisure and hospitality, other services, and government sectors. Orange County showed competitive advantages in job generation in all sectors except wholesale trade, retail trade, transportation/warehousing/utilities, information and leisure/hospitality from 2001 to 2006. Considering both local competitive advantage and industry mix for the 2001-2006 time period, the county experienced job gains in durable goods manufacturing, nondurable goods manufacturing, professional and business services, other services, and natural resources and mining due to local competitive advantages.

### ORANGE COUNTY EMPLOYMENT GROWTH, BY INDUSTRY, 1997-2000

| | 1997 Employment | 2000 Employment | Growth (Loss) from 1997 through 2000 |
|---|---|---|---|
| **TOTAL ORANGE COUNTY EMPLOYMENT** | 1,142,000 | 1,287,900 | 145,900 |
| **O.C. Employment by Industry:** | | | |
| Natural Resources and Mining | 800 | 600 | (200) |
| Construction | 59,200 | 77,000 | 17,800 |
| Durable Goods Manufacturing | 147,200 | 153,400 | 6,200 |
| Nondurable Goods Manufacturing | 61,500 | 63,300 | 1,800 |
| Wholesale Trade | 75,800 | 80,800 | 5,000 |
| Retail Trade | 132,900 | 147,800 | 14,900 |
| Transportation, Warehousing and Utilities | 28,900 | 30,400 | 1,500 |
| Information | 32,500 | 41,500 | 9,000 |
| Professional and Business Services | 196,500 | 248,800 | 52,300 |
| Educational and Health Services | 106,200 | 112,800 | 6,600 |
| Leisure and Hospitality | 127,600 | 140,700 | 13,100 |
| Other Services | 40,200 | 44,200 | 4,000 |
| Government | 132,700 | 146,600 | 13,900 |

**TARGET**

**Orange County creates 5,000 new, high-wage jobs in Biomedical and Computer Software Clusters and 25,000 jobs in Business and Professional Service by 2010.** ***Biomedical grew almost 1,800 jobs, Computer Software grew about 1,500 jobs, and Business and Professional services grew approximately 4,600 jobs last year for the target.***

## Orange County Competitive Advantage – Continued

### Components of Orange County Employment Growth, 1997-2000

| | O.C. Job Growth Due to State Growth | O.C. Job Growth Due to O.C. Industrial Mix | O.C. Job Growth (Loss) Due to O.C. Competitive Advantage |
|---|---|---|---|
| **TOTAL COUNTY EMPLOYMENT** | 120,587 | 616 | 24,696 |
| **Breakdown by Industry** | | | |
| Natural Resources and Mining | 84 | (66) | (219) |
| Construction | 6,251 | 12,593 | (1,044) |
| Durable Goods Manufacturing | 15,543 | (10,676) | 1,332 |
| Nondurable Goods Manufacturing | 6,494 | (7,098) | 2,404 |
| Wholesale Trade | 8,004 | (1,730) | (1,274) |
| Retail Trade | 14,033 | (3,233) | 4,100 |
| Transportation, Warehousing and Utilities | 3,052 | (707) | (845) |
| Information | 3,432 | 4,572 | 996 |
| Professional and Business Services | 20,749 | 16,449 | 15,102 |
| Educational and Health Services | 11,214 | (2,474) | (2,140) |
| Leisure and Hospitality | 13,474 | (3,501) | 3,127 |
| Other Services | 4,245 | (498) | 253 |
| Government | 14,012 | (3,015) | 2,903 |

### ORANGE COUNTY EMPLOYMENT GROWTH, BY INDUSTRY, 2001-2006

| | 2001 Employment | 2006 Employment | Growth (Loss) from 2001 to 2006 |
|---|---|---|---|
| **TOTAL ORANGE COUNTY EMPLOYMENT** | 1,307,800 | 1,352,600 | 44,800 |
| **O.C. Employment by Industry** | | | |
| Natural Resources and Mining | 600 | 600 | 0 |
| Construction | 80,700 | 107,000 | 26,300 |
| Durable Goods Manufacturing | 147,800 | 128,200 | (19,600) |
| Nondurable Goods Manufacturing | 60,700 | 55,200 | (5,500) |
| Wholesale Trade | 83,900 | 82,900 | (1,000) |
| Retail Trade | 150,100 | 159,500 | 9,400 |
| Transportation, Warehousing and Utilities | 30,400 | 28,400 | (2,000) |
| Information | 40,200 | 31,700 | (8,500) |
| Professional and Business Services | 106,100 | 139,000 | 32,900 |
| Financial Activities | 248,400 | 274,800 | 26,400 |
| Educational and Health Services | 114,600 | 138,900 | 24,300 |
| Leisure and Hospitality | 154,300 | 169,500 | 15,200 |
| Other Services | 45,200 | 47,900 | 2,700 |
| Government | 150,900 | 156,500 | 5,600 |

### Components of Orange County Employment Growth, 2001-2006

| | O.C. Job Growth Due to State Growth | O.C. Job Growth Due to O.C. Industrial Mix | O.C. Job Growth (Loss) Due to O.C. Competitive Advantage |
|---|---|---|---|
| **TOTAL COUNTY EMPLOYMENT** | 8,673 | (4,157) | 40,284 |
| **Breakdown by Industry** | | | |
| Natural Resources and Mining | 19 | (31) | 12 |
| Construction | 2,596 | 14,020 | 9,683 |
| Durable Goods Manufacturing | 4,755 | (31,131) | 6,776 |
| Nondurable Goods Manufacturing | 1,953 | (9,097) | 1,645 |
| Wholesale Trade | 2,699 | 2,690 | (6,389) |
| Retail Trade | 4,829 | 4,990 | (419) |
| Transportation, Warehousing and Utilities | 978 | (2,055) | (923) |
| Information | 1,293 | (7,030) | (2,763) |
| Financial Activities | 3,413 | 9,875 | 19,612 |
| Professional and Business Services | 7,991 | (3,606) | 22,015 |
| Educational and Health Services | 3,687 | 9,889 | 10,724 |
| Leisure and Hospitality | 4,964 | 12,603 | (2,367) |
| Other Services | 1,454 | (775) | 2,021 |
| Government | 4,855 | (724) | 1,470 |

*Source: OCBC analysis of data from California Employment Development Department*

# State Manufacturing Climate Creates a Drag on Orange County Manufacturing Competitive Advantages

## Description of Indicator

This indicator uses a technique called shift-share analysis to drill-down employment growth in Orange County industries into three categories – employment growth that can be attributed to growth in the statewide employment, employment growth that is due to Orange County's mix of industries, and employment growth that can be credited to unique competitive advantages or disadvantages in Orange County.

The analysis decomposes Orange County employment growth for two time periods – the high growth years from 1997 through 2000, and the slow growth period from 2001 to 2006. This analysis examines Orange County's competitive advantage in the manufacture of durable goods and non-durable goods. Durable goods manufacturing is the creation of items such as fabricated metals, industrial machinery, semiconductors and aerospace equipment. Non-durable goods manufacturing involves the creation and/or processing of items such as food, textiles, clothing and paper.

## Why is it Important?

Understanding the pattern of Orange County's competitive advantage, relative to statewide employment trends, can help policy-makers assess where to focus workforce training initiatives. Furthermore, understanding the county's competitive advantage during periods of both rapid and slow growth provides a perspective on the county's advantages in differing economic contexts. Given the importance of manufacturing in an economy's ability to create long-term sustainable wealth for its residents, understanding Orange County's competitive advantage in durable goods and non-durable goods manufacturing is essential

## How is Orange County Doing?

From 1997 through 2000, Orange County experienced growth in fabricated metal production, computers and peripherals, communication equipment, semiconductors and aerospace products. During that time period, California's strong employment growth contributed positively to employment growth in all Orange County manufacturing industries. From 1997 through 2000, Orange County showed a competitive advantage in generating job growth in fabricated metal products, communications equipment, semiconductor manufacturing, electronic instruments manufacturing and aerospace manufacturing. For non-durable goods during that time period, Orange County had a competitive advantage in paper manufacturing and printing and related support activities.

From 2001 to 2006, Orange County experienced job losses in all durable goods and non-durable goods manufacturing sectors except computers and peripherals, and electronic instrument manufacturing. Furthermore, from 2001 through 2006, the weak State manufacturing situation contributed negatively to employment growth in all Orange County industries in this sector. In durable goods manufacturing, from 2001 to 2006, Orange County showed competitive advantages in job generation in the pre-fabricated metal manufacturing, machinery manufacturing, electronic instrument manufacturing, aerospace products and parts manufacturing and other transportation equipment manufacturing categories. For the non-durable goods sectors during that same time period, Orange County had a competitive advantage in textile and apparel, and printing and related materials.

Overall, these results illustrate that even in periods of economic expansion (1997-2000), Orange County loses jobs in some manufacturing industries. The California economy is an important factor in Orange County manufacturing employment growth, but the county also shows local competitive advantages and disadvantages that importantly offset statewide growth factors. In the late 1990s, Orange County maintained strength in selected durable goods manufacturing sectors that were not as evident statewide, while from 2001-2006 the county's competitive advantages have become key reasons for these industry's survival in the face of declining manufacturing overall.

**TARGET**

**Executives create a business environment in Orange County conducive to competitive advantages and positive job growth.** ***Orange County remains competitive in many industry clusters. Orange County executives rate Orange County highly as a place to do business.***

## Orange County Manufacturing Competitive Advantage – Continued

### Orange County Durable Goods Employment Growth, by Industry, 2001-2006

| | 2001 Employment | 2006 Employment | Growth (Loss) from 2001-2006 |
|---|---|---|---|
| **O.C. Employment by Industry** | | | |
| Fabricated Metal Product Mfg | 25,300 | 23,300 | (2,000) |
| Machinery Manufacturing | 12,300 | 11,300 | (1,000) |
| Semiconductor & Electronic Component Mfg | 19,800 | 15,100 | (4,700) |
| Electronic Instrument Manufacturing | 16,200 | 17,900 | 1,700 |
| Aerospace Product and Parts Manufacturing | 13,000 | 11,300 | (1,700) |
| Other Transportation Equipment Manufacturing | 6,500 | 5,500 | (1,000) |
| Residual-Miscellaneous Manufacturing | 41,300 | 34,700 | (6,600) |

*Source: California Employment Development Department*

### Orange County Durable Goods Employment Growth, 2001-2006

| | O.C. Job Growth (Loss) Due to State Growth | O.C. Job Growth (Loss) Due to O.C. Industrial Mix | O.C. Job Growth (Loss) Due to O.C. Competitive Advantage |
|---|---|---|---|
| Fabricated Metal Product Mfg | (3,995) | 606 | 1,390 |
| Machinery Manufacturing | (1,942) | (886) | 1,829 |
| Semiconductor & Electronic Component Mfg | (3,127) | (1,596) | 23 |
| Electronic Instrument Manufacturing | (2,558) | 764 | 3,494 |
| Aerospace Product and Parts Manufacturing | (2,053) | 32 | 321 |
| Other Transportation Equipment Manufacturing | (1,027) | 1,943 | (1,916) |
| Residual-Miscellaneous Manufacturing | (6,522) | 2,186 | (2,264) |

*Source: Orange County Business Council analysis of data from California Employment Development Department*

# Highest Employment Growth in Services, Health, Construction, and Tourism in the Past Five Years

## Description of Indicator

This indicator shows employment in 10 major Orange County industry clusters from 1991 through 2000 and from 2001 through the second quarter of 2006. These clusters were chosen to reflect the diversity of Orange County employment, major economic drivers within the county, and important industry sectors for workforce development. The data are divided into two time periods – 1991 through 2000 and 2001 through second quarter of 2006 – because the California Employment Development Department (EDD) changed their method for classifying industry data in 2001. Through 2000, the EDD utilized the Standard Industrial Classification system (SIC). For 2001 and later years, the EDD uses the North American Industrial Classification System (NAICS). Because the NAICS includes many changes in industry classification that are intended to improve upon the SIC system, the 1991-2000 and 2001-2006 data series cannot be directly compared. Instead, the two series are shown separately in this indicator.

## Why is it Important?

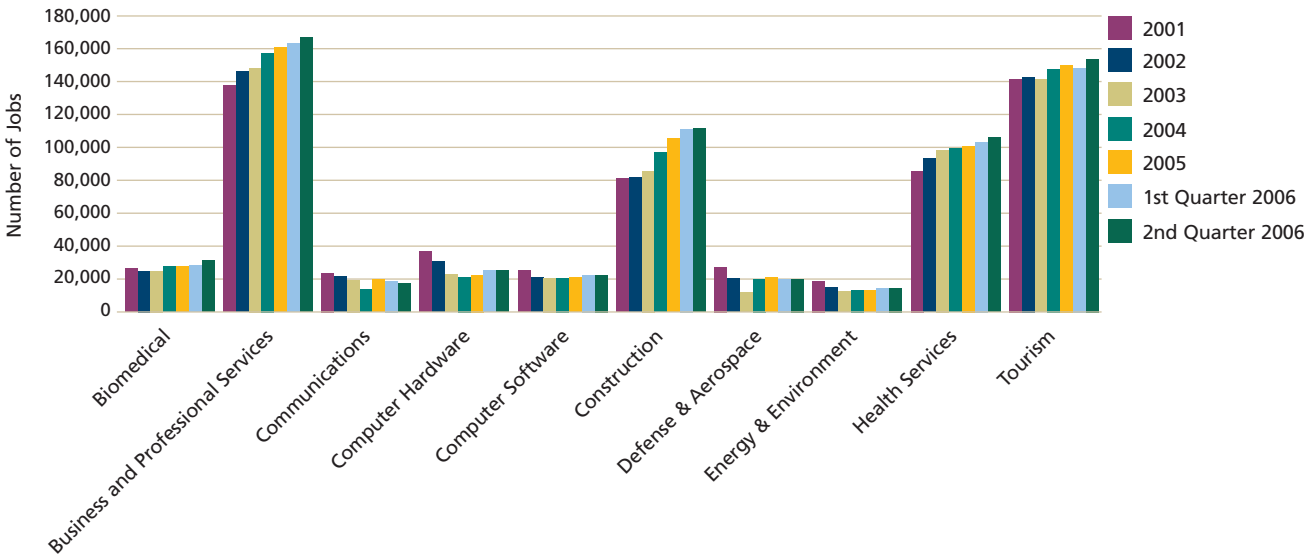
Approximately 40% of all Orange County jobs are in the 10 clusters described in this indicator. These clusters were chosen to reflect both key economic drivers for the Orange County economy and industries that are central to workforce development. Understanding employment trends in those clusters can inform workforce policy.

## How is Orange County Doing?

The three largest clusters are Business and Professional Services, Health Services, and Tourism, reflecting the importance of the service sector in the Orange County economy. These three large clusters posted solid employment growth during the 1990s, with Business and Professional Services growing at a 3.15% annualized rate over the ten year period, Health Services posting 1.12 % annual growth and Tourism growing at a 1.78 % annual rate.

Since 2001, these clusters have seen strong growth, with the Construction industry joining the top ranks. From 2001 through the second quarter of 2006, Orange County Business and Professional Services employment increased by 17.63%, Health Services employment grew 16.44%, Construction grew 27.67% and Tourism grew by 8.10%. (These growth percentages hardly change if the comparison is from the second quarter of 2001 to the second quarter of 2006, to control for seasonality).

**Orange County Cluster Employment, 2001 - 2006**



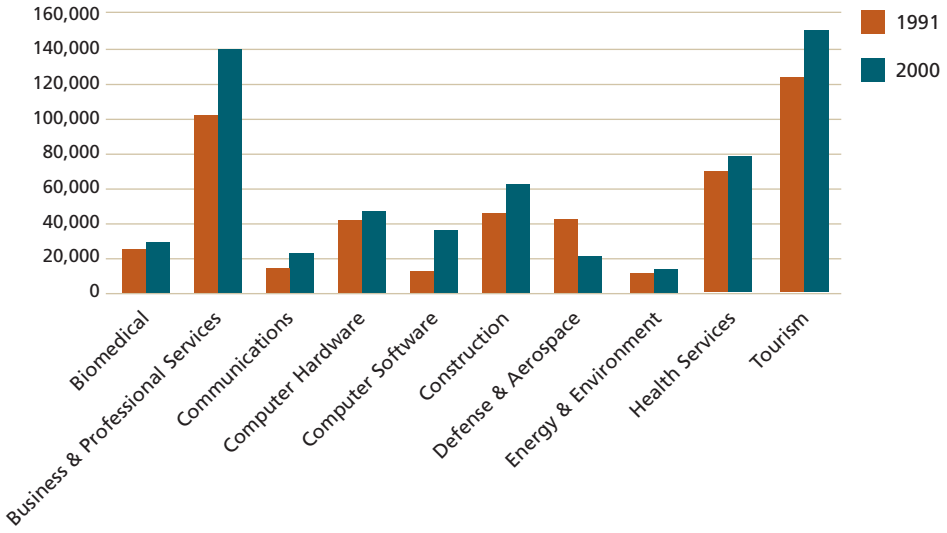

**TARGET**

**Orange County creates 5,000 new, high-wage jobs in Biomedical and Computer Software Clusters and 25,000 jobs in Business and Professional Service by 2010.** ***Biomedical grew almost 1,800 jobs, Computer Software grew about 1,500 jobs, and Business and Professional services grew approximately 4,600 jobs last year for the target.***

## Cluster Employment Trends – Continued

The major difference between the 1990s and the period from 2001-2006 is the performance of the technology clusters. Employment in Computer Software increased 205% from 1991 to 2000 (a gain of 21,713 jobs), and employment in Communications increased 85 % during the same time period (a gain of 10,591 jobs). Yet technology clusters have lost ground since 2001. Communications employment dropped by 52% from 2001 to the second quarter of 2006, the Computer Hardware cluster lost more than 12,000 jobs during that time period (a 50% decline) and Computer Software employment dropped by 13.47%. Employment in the Defense and Aerospace cluster dropped by approximately 7,000 jobs from 2001 to 2002, and despite an increase in 2003, it decreased approximately 19,000 jobs overall from 2004-2006.

### Orange County Employment in Selected Clusters 1991-2000




**Business and Professional Services, Biomedical and Computer Software Findings**

The Business and Professional Services cluster grew by over a third in the 1990s and has continued to expand substantially for the first three years of the new decade to almost 167,000 in the second quarter of 2006. While experiencing explosive growth through the 1990s, the Computer Software cluster has declined through the early 2000s to 22,027—a slight increase over 2002. The Biomedical cluster expanded moderately in the 1990s; but after initially peaking in 2001 at about 30,000, it has declined to 26,990 in 2004 with a rebound to a new peak of 30,521 in the second quarter of 2006.

### Orange County Cluster Employment, Percentage Change, 1991 through 2000

| | O.C. Employment, 1991 | O.C. Employment, 2000 | Percent Change, 1991 through 2000 |
|---|---|---|---|
| Biomedical | 24,468 | 28,540 | 17% |
| Business and Professional Services | 101,995 | 138,643 | 36% |
| Computer Software | 10,586 | 32,818 | 210% |

### Orange County Cluster Employment, Percentage Change, 2001 through 2006

| | 2002 Annual | 2003 Annual | 2004 Annual | 2005 Annual | 2006 Annual | % Change, 2001 to 2006 |
|---|---|---|---|---|---|---|
| Biomedical | 27,949 | 27,392 | 26,990 | 28,745 | 30,521 | 2.24% |
| Business & Professional Services | 145,432 | 145,824 | 157,299 | 162,116 | 166,719 | 17.63% |
| Computer Software | 20,894 | 20,796 | 19,862 | 20,554 | 22,027 | -13.47% |

*Source: OCBC analysis of data from the California Employment Development Department*

# Biomedical Cluster Wages Surge but Overall Orange County Cluster Salaries Still Below State Averages in Most Industries

## Description of Indicator

This indicator shows salaries in 10 major Orange County industry clusters, 1991 to 2000 and from 2001 to the second quarter of 2006. Showing each cluster's percentage wage growth from 2002 through the second quarter of 2006 in comparison with the state, this indicator gives salaries in clusters for both Orange County and California. The data are split into two time periods, 1991 to 2000 and 2001 to second quarter of 2006. This distinction is made because the California Employment Development Department utilized the Standard Industrial Classification system (SIC) prior to 2001 but switched to the North American Industrial Classification System in 2001. As such, true comparison between the two time periods is not possible without drawing this distinction.

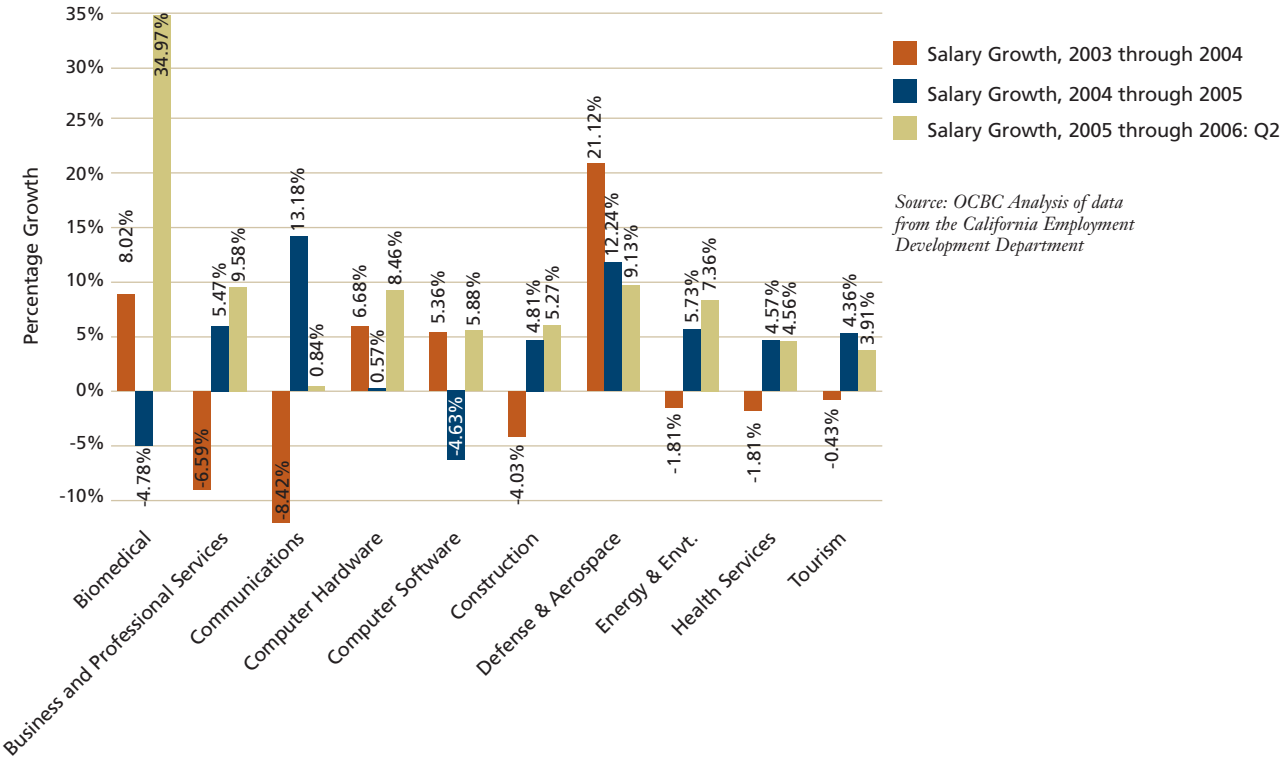
## Why is it Important?

Understanding comparative salary levels and salary growth trends is vital for workforce development policy. This information, combined with information from the indicator on cluster employment growth trends, allows workforce development professionals to understand how the county's economy is performing in terms of generating jobs across salary levels. Growth of low wage jobs, for example, if unbalanced by growth of high wage jobs, is a problem – especially so in a high cost of living location like Orange County.

## How is Orange County Doing?

The two clusters with the largest amount of job growth in the 1990s – Business and Professional Services and Tourism – were among the lowest paying clusters. Tourism jobs paid, on average, $19,095 in 2006 (the equivalent of $9.55 per hour for 50 weeks per year of full time work). Business and professional services jobs paid an average of $48,801 per year in 2006.

**Percentage Salary Growth, Orange County Clusters, 2002 Annual through Second Quarter 2006**




*Source: OCBC Analysis of data from the California Employment Development Department*

**TARGET**

**By 2010, increase wages for Orange County's top ten industry clusters by 20%.** ***Wages increased in all ten clusters, averaging a 9% increase over the previous year.***

## Cluster Salary Trends – Continued

Tourism is the lowest paying cluster among the ten summarized in this indicator, and Business and Professional Services is the third lowest paying cluster (only Health Services paid less in 2006).

The highest paying clusters in 2006 were Defense and Aerospace, Computer Software and Biomedical. Biomedical salaries dramatically increased in the last year surging 35% to $82,739. Salaries in Defense and Aerospace have also made impressive gains growing 42% since 2001. These wage trends indicate that the county's recent economic contraction in some high technology clusters may be on the verge of expansion as growing wages suggest a potential for employment growth over time.

Continuing salary growth in some of Orange County's technology clusters in the first half of 2006 is good news. Yet the preponderance of employment growth in relatively low-wage clusters suggests a long-term issue for Orange County workforce development policies.

This indicator also shows average salaries in the ten clusters in Orange County compared to California averages for those same clusters in 2006. Orange County annual salaries are below the state average annual salary for all clusters except Biomedical, Construction and Tourism. Because much of Orange County's job growth is in service sector clusters that have low wages and weak wage growth, workforce development policy in those sectors should focus strongly on skills development to provide avenues for wage growth that otherwise might not exist. Workforce development policy should also attempt to identify skill ladders that can move employees from service sector jobs to jobs in the technology clusters that have higher wages and more rapid wage growth.

**Business and Professional Services, Biomedical, and Computer Software Findings**

The average wages for the Biomedical, Business and Professional Services and Computer Software clusters in Orange County have been less than average in these clusters for the state of California overall. Since 2001, the Biomedical cluster wage growth has steadily increased, with dramatic growth in the last year increasing from $61,300 in 2005 to $82,739 in the second quarter of 2006. Business and Professional Services cluster increased modestly in the last year to $48,801 and the Computer Software cluster reversed a previous year's decline with salaries rebounding to $83,526.

### 2006 Average Annual Cluster Wage, Orange County and California

| | Orange County | California |
|---|---|---|
| Biomedical | $82,739 | $82,085 |
| Business and Professional Services | $48,801 | $50,487 |
| Computer Software | $83,526 | $100,978 |

*Source: OCBC analysis of California Employment Development Department data*

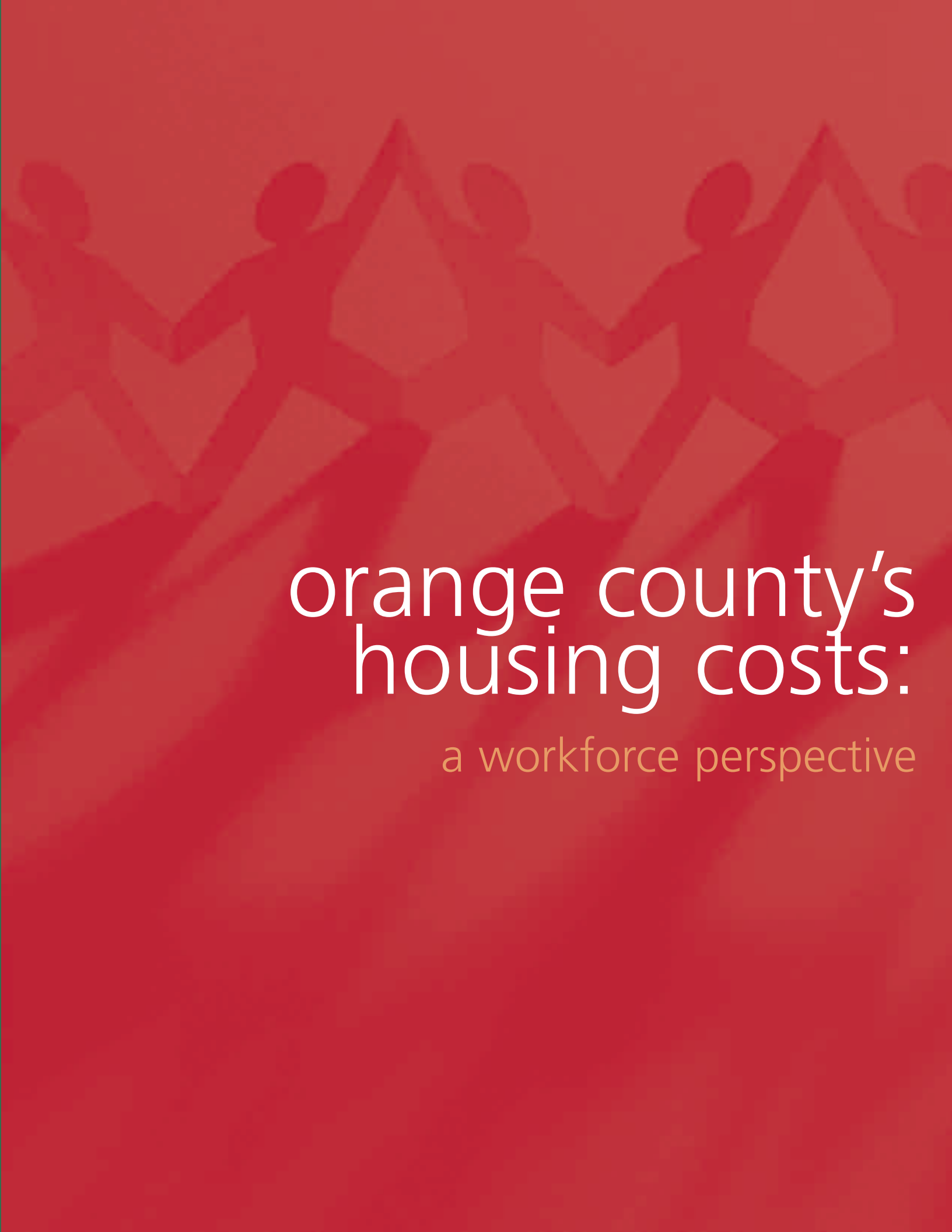
### Average Orange County Salaries in Three Clusters

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|
| Biomedical | $55,524 | $56,625 | $59,132 | $64,232 | $61,300 | $82,739 |
| Business & Professional Services | $43,973 | $43,826 | $42,257 | $42,099 | $44,533 | $48,801 |
| Computer Software | $81,158 | $76,388 | $76,727 | $82,541 | $78,887 | $83,526 |

### 2006 Average Annual Cluster Wage, Orange County and California

| | Orange County | California |
|---|---|---|
| Biomedical | $82,739 | $82,085 |
| Business and Professional Services | $48,801 | $50,487 |
| Communications | $62,320 | $77,812 |
| Computer Hardware | $69,277 | $98,094 |
| Computer Software | $83,526 | $100,978 |
| Construction | $49,927 | $46,997 |
| Defense & Aerospace | $89,244 | $88,272 |
| Energy & Environment | $54,475 | $69,121 |
| Health Services | $45,736 | $47,740 |
| Tourism | $19,095 | $19,115 |

*Source: OCBC analysis of California Employment Development Department data*



# orange county's housing costs:

## a workforce perspective

# Orange County Median Home Prices Remain Unchanged From May 2006 and May 2007

## Description of Indicator

This indicator measures the home purchasing power of the different wage levels in Orange County. The indicator shows what home can be purchased for different annual incomes, and the median home price for Orange County compared to peer regions. Home purchasing power is based on the approximate size of a mortgage that a homeowner could obtain with a given income level.

## Why is it Important?

It is important to understand what wages are required to purchase a home in Orange County. The county's high cost of homeownership requires either that some low-wage workers live in crowded conditions or that they commute from locations outside of the county. More generally, workforce development efforts that target higher wage occupations, while holding the skill level constant, can provide wages that are better suited to Orange County's cost of living.

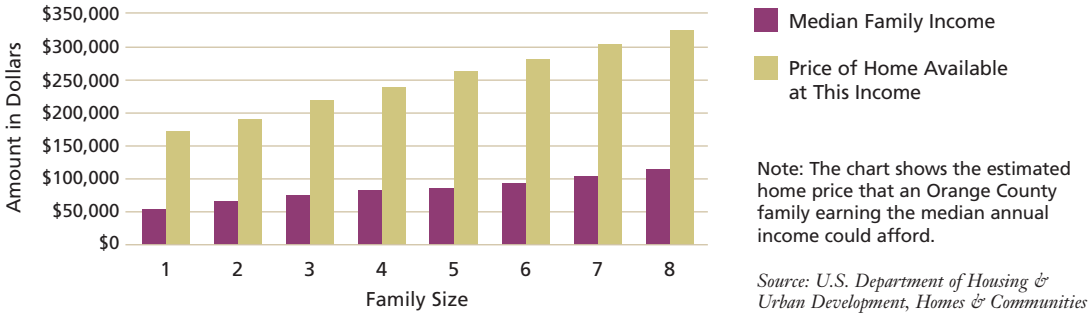
## How is Orange County Doing?

Between May of 2006 and May of 2007, the Orange County median priced home (condos and single family homes) remained essentially unchanged at $635,000. After years of double digit increases, this leveling shows that housing price boom is over. However, while the boom is over, housing is not necessarily more affordable. Of the selected cities, Stanton had the lowest median home price for May 2007 ($401,000) and La Habra had the highest percent of change (increasing 57.6% from $355,227 to $560,000).

Families making the median family income for Orange County are not able to afford median priced single-family homes in the county. The median family income for a family of four in Orange County in 2006 was $78,300 and the purchasing power for that level of income is a $244,000 home. This information suggests that the gap between the purchasing power of income for county residents and what a home costs is substantial, even if it is no longer growing.

When compared to peer regions, only median single family home princes in the San Francisco Bay Area are higher than Orange County. The median single family home price in Austin, Texas for 2006 (seasonally adjusted) was more than $500,000 less than in Orange County. This suggests that employers in Orange County may have a more difficult time retaining or attracting high quality workers than other similar communities.

**Purchasing Power of Orange County Annual Median Income, 2006**



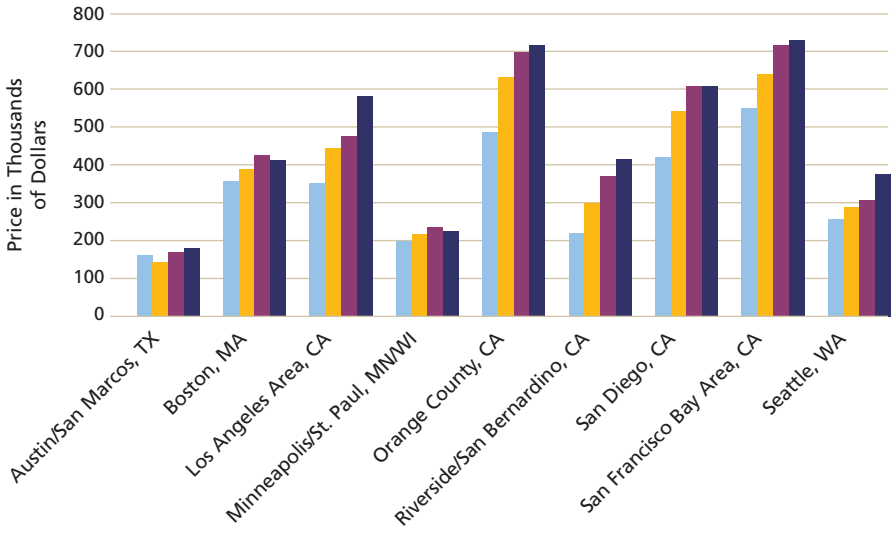

Note: The chart shows the estimated home price that an Orange County family earning the median annual income could afford.

*Source: U.S. Department of Housing & Urban Development, Homes & Communities*

**TARGET**

**Orange County has sufficient affordable housing for all income levels and maintains a competitive home purchasing power of wages compared to other innovation-driven economies.** ***Orange County remains one of the most expensive places to purchase a home, although prices have moderated.***

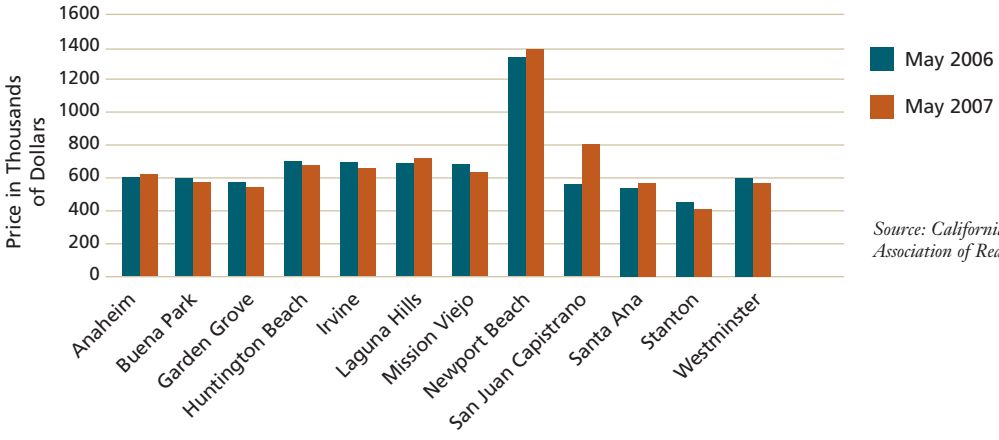
### Median Home Price, Seasonally Adjusted, 2002-2006




*Note: Data from National Association of Realtors is of Single Family Home Prices while California Association of Realtors data is of all homes, single family as well as condominiums and town-homes.

*Source: National Association of Realtors*

### Median Home Price May 2006-May 2007, Selected Orange County Cities




*Source: California Association of Realtors*

# Orange County is Among Nation's Most Expensive Rental Markets

## Description of Indicator

The rental affordability indicator measures the Housing Wage – the hourly wage a resident would need to afford Fair Market Rent. This indicator also shows fair market rents for a typical Orange County residence.

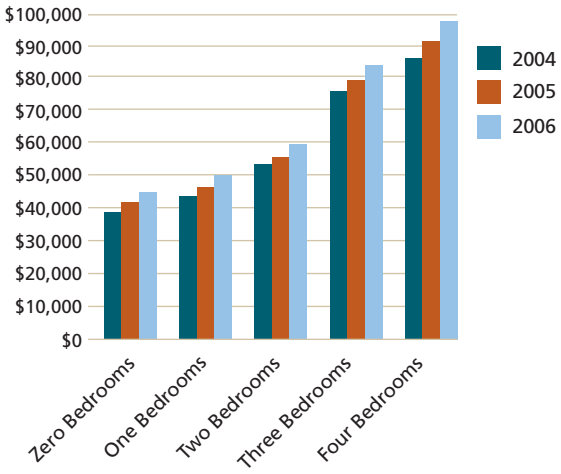
## Why is it Important?

Rental housing can provide low- and moderate-income workers with affordable places to live. Lack of affordable rental housing can cause high occupancy levels, leading to crowding and household stress. Less affordable rental housing also restricts the ability of moderate-income renters to save for a down payment on a home, limiting their ability to become home owners and build personal wealth through housing appreciation. Ultimately, a shortage of affordable housing for renters can instigate a cycle of poverty with potentially debilitating effects throughout the county.

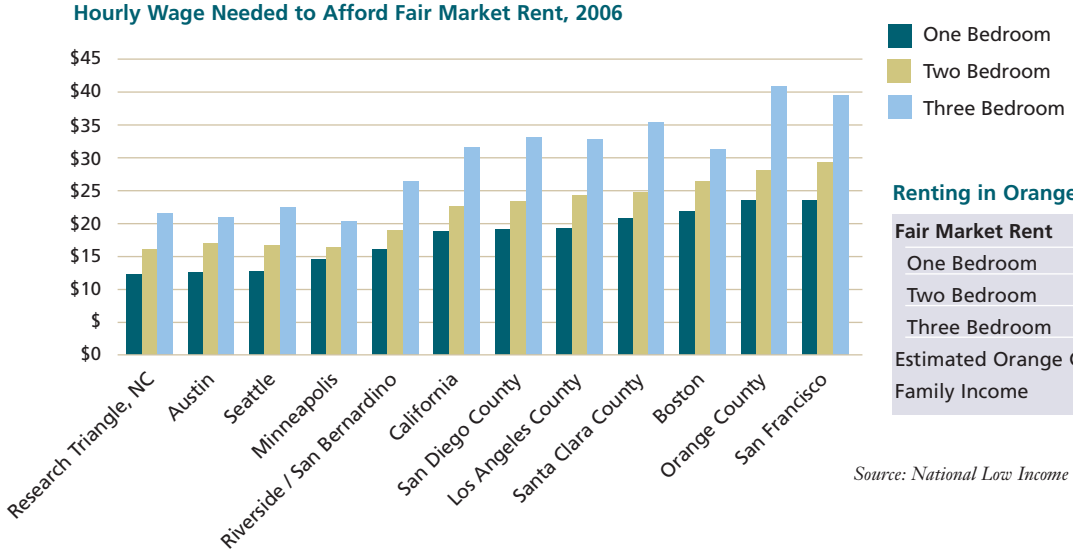
## How is Orange County Doing?

The Housing Wage in Orange County ranges from $23.81 per hour for a one-bedroom apartment to $40.81 per hour for a three-bedroom apartment. The hourly wage needed for a one-bedroom apartment ($23.81) is equivalent to an annual income of $49,525. Orange County's Housing Wage rates have increased since 2000, when Housing Wages were $15.23, $18.85, and $20.86 for, respectively, one-bedroom, two-bedroom, and three-bedroom apartments. According to the National Low Income Housing Coalition, an Orange County household earning minimum wage can afford to pay no more than $351 per month in rent. A household earning 30% of the Orange County median family income ($23,490) can only afford to pay $587 in rent. Among state and national peer metropolitan areas, only San Francisco has higher Housing Wages (in other words, less affordability rental housing) than Orange County.

**Annual Income Needed to Afford Fair Market Rent in Orange County, 2004-2006**




**Hourly Wage Needed to Afford Fair Market Rent, 2006**




**Renting in Orange County**

| Fair Market Rent | 2006 |
|---|---|
| One Bedroom | $1,238 |
| Two Bedroom | $1,485 |
| Three Bedroom | $2,125 |
| Estimated Orange County Median Family Income | $78,300 |

*Source: National Low Income Housing Coalition*

[1] For Orange County, Fair Market Rent is the 50th percentile (or median) rent in the market.

**TARGET**

**Orange County has affordable rented housing rates for all income levels.** ***Rental affordability declined this year.***

# orange county's workforce demand and supply

# Occupations with High Education Requirements Pay Well but Constitute Less than a Third of Projected Orange County Job Openings

## Description of Indicator

This indicator shows selected occupations in Orange County with high educational or training requirements. The indicator also shows projected job growth in those occupations in Orange County from 2004 through 2014 and average first quarter 2006 hourly wage.

## Why is it Important?

As this indicator shows, occupations with high education/training requirements often pay more than $30 per hour. Because these occupations are high paying, they play an important role in providing job opportunities that can meet Orange County's high cost of living. Yet the education requirements in many of these occupations are substantial. Understanding those education requirements can help workforce professionals assess how to prioritize training in high-education occupations.

## How is Orange County Doing?

Of the 582 occupations listed in Orange County by the California Employment Development Department 184 have high education or training requirements (bachelor's degree or more). There are 81,060 projected job openings for these occupations between 2004 and 2014. The table below shows a selection of occupations with high education/training requirements with projected job growth from 2004 through 2014 and average hourly wage for 2006 also shown. Occupations were selected to include a wide range of skills and to emphasize high education/training occupations that are projected to have relatively high job growth. The overall average wage for the selected occupations is $40.37.

**Business and Professional Services, Biomedical, and Computer Software Findings**

Occupations with high educational requirements are common in the Biomedical, Business and Professional Services and Computer Software Occupations. These occupations are expected to continue to grow by 15,530 jobs from 2004 to 2014 in Orange County with an average wage of $39.28 per hour. With a decrease in average wages paid Computer Software occupations, the overall wages for these three clusters are down almost 6% since 2003. All of these jobs require a BA / BS degree, with Manager positions requiring experience as well.

| Occupation | Job Growth 2004-2014 | Education/ Training Req. | Average Hourly Wage (2006) |
|---|---|---|---|
| Microbiologists | 30 | PhD Degree | $24.19 |
| Postsecondary Teachers, All Other | 670 | PhD Degree | $41.59 |
| Mental Health Counselors | 150 | MA/MS Degree | $21.93 |
| Librarians | 80 | MA/MS Degree | $28.90 |
| Lawyers | 1,460 | LLD/MD Degree | $65.72 |
| Family & General Practitioners | 140 | LLD/MD Degree | $76.17 |
| Health Diagnosing & Treating Practitioners, All Others * | 80 | LLD/MD Degree | $39.35 |
| General & Operations Managers | 5,010 | BA/BS + exper | $55.11 |
| Administrative Services Managers | 520 | BA/BS + exper | $41.62 |
| Financial Analysts | 510 | BA/BS Degree | $34.13 |
| Computer Software Engineers, Applications | 4,850 | BA/BS Degree | $37.76 |
| Electronics Engineers, Except Computer | 390 | BA/BS Degree | $40.57 |
| Market Research Analysts | 790 | BA/BS Degree | $31.52 |
| Elementary School Teachers, Except Special Ed | 3,380 | BA/BS Degree | $27.00 |
| Physician Assistants | 110 | BA/BS Degree | $40.00 |
| Average Hourly Wage | | | $40.37 |

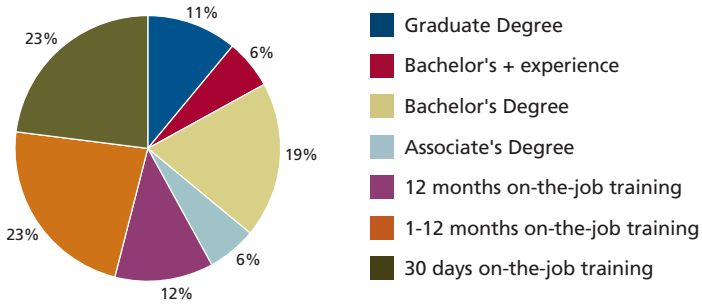
* Does not include health diagnosing and practitioner occupations classified elsewhere.

*Source: California Employment Development Department*

[1] Average wage figure taken from the first quarter of 2005

The chart below shows a breakdown of education/training requirements for Orange County occupations. Overall, occupations with high education/training requirements represent 32% of all occupations in Orange County.

**Education/Training Requirements for Orange County Occupations by Percent of Total Occupations**




*Source: California Employment Development Department*

| Cluster | Occupation | Job Growth 2004-2014 | Education/ Training Req. | Average Hourly Wage (2006) |
|---|---|---|---|---|
| Business and Professional Services | Computer Software Engineers, Systems Software | 1470 | BA/BS Degree | $40.92 |
| Business and Professional Services | Legal & Related Workers, All Other | 60 | BA/BS Degree | $24.93 |
| Business and Professional Services | Administrative Services Managers | 520 | BA/BS + experience | $41.62 |
| Business and Professional Services | Financial Managers | 1,550 | BA/BS + experience | $53.90 |
| Business and Professional Services | Accountants & Auditors | 3,650 | BA/BS Degree | $34.13 |
| Business and Professional Services | Employment, Recruitment, & Placement Specialist | 440 | BA/BS Degree | $25,96 |
| Biomedical | Medical & Health Services Managers | 380 | BA/BS + experience | $41.58 |
| Biomedical | Medical & Clinical Laboratory Technologists | 280 | BA/BS Degree | $31.21 |
| Biomedical | Natural Sciences Managers | 80 | BA/BS + experience | $56.00 |
| Biomedical | Industrial Production Managers | 240 | BA/BS Degree | $40.73 |
| Computer Software | Computer Software Engineers, Applications | 4,850 | BA/BS Degree | $37.76 |
| Computer Software | Database Administrators | 410 | BA/BS Degree | $35.15 |
| Computer Software | Computer Systems Analysts | 1,560 | BA/BS Degree | $37.13 |
| Computer Software | Computer Programmers | 40 | BA/BS Degree | $35.61 |
| Average Hourly Wage of Top Occupations | | 15,530 | | $39.28 |

*Source: California Employment Development Department*

# Occupations with Low Educational Requirement Represent Largest Portion of Occupations in Orange County But Have Low Wages

## Description of Indicator

This indicator shows selected occupations in Orange County with low educational or training requirements. The indicator also shows projected job growth in the occupations in Orange County from 2004 through 2014 and average first quarter 2006 hourly wage.

## Why is it Important?

Understanding which occupations have low educational requirements is vital for workforce policy. As this indicator shows, occupations with low education/training requirements span a range of hourly wage, albeit most fall under $20 per hour. At the same time, the forecasts for new job growth in these occupations vary significantly. Understanding these trends is pivotal for designing and tailoring training programs that are optimal for boosting wages and employment among persons with modest education levels.

## How is Orange County Doing?

Of the 582 occupations listed in Orange County by the California Employment Development Department, 398 have low education or training requirements (associate's degree or less). There are 203,740 projected job openings for these occupations between 2004 and 2014. The table below shows a selection of occupations with low education/training requirements with projected job growth and average hourly wage for 2006. Occupations were selected to include a wide range of skills and to emphasize low education/training occupations that are projected to have relatively high job growth. The overall average wage for the selected occupations is $15.37.

**Business and Professional Services, Biomedical, and Computer Software Findings**

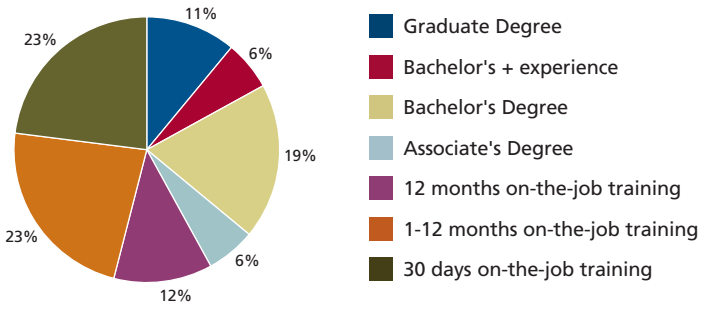
Occupations in Business and Professional Services and Computer Software that have low educational requirements are expected to grow by 4,410 positions between 2004 and 2014 and have an average wage of $18.72 per hour. These jobs range from 30-days On-The-Job (OJT) training to an Associate's degree.

| Occupation | Job Growth 2004-2014 | Education/ Training Req. | Average Hourly Wage (2006) |
|---|---|---|---|
| Computer Support Specialists | 1,440 | AA Degree | $23.11 |
| Registered Nurses | 5,050 | AA Degree | $33.68 |
| Cooks, Restaurant | 2,270 | 12 mos OJT | $10.60 |
| Carpenters | 4,410 | 12 mos OJT | $22.57 |
| Medical Assistants | 1,940 | 1-12 mos OJT | $13.85 |
| Customer Service Representatives | 7,120 | 1-12 mos OJT | $15.97 |
| Construction Laborers | 1,120 | 1-12 mos OJT | $14.93 |
| Textile Cutting Machine Setters, Ops, & Tenders | 50 | 1-12 mos OJT | $9.94 |
| Truck Drivers, Heavy & Tractor-Trailer | 1,670 | 1-12 mos OJT | $18.44 |
| Nursing Aides, Orderlies, & Attendants | 1,580 | 30-days OJT | $10.96 |
| Security Guards | 2,200 | 30-days OJT | $10.68 |
| Waiters & Waitresses | 6,490 | 30-days OJT | $8.39 |
| Landscaping & Groundskeeping Workers | 5,320 | 30-days OJT | $10.68 |
| Retail Salespersons | 12,510 | 30-days OJT | $13.12 |
| Helpers, Construction Trades, All Other | 0 | 30-days OJT | $13.61 |
| Average Hourly Wage | | | $15.37 |

*Source: California Employment Development Department*

The chart below shows a breakdown of education/training requirements for Orange County occupations. Occupations that require 30 days to 12 months on-the-job training represented 68% of all occupations in Orange County. Overall, occupations with high education/training requirements represent 32% of all occupations in Orange County.

**Education/Training Requirements for Orange County Occupations by Percent of Total Occupations**




*Source: California Employment Development Department*

| Cluster | Occupation | Job Growth 04-14 | Education/ Training Req. | Average Hourly Wage (2006) |
|---|---|---|---|---|
| Business and Professional Services | Paralegals & Legal Assistants | 910 | AA Degree | $29.74 |
| Business and Professional Services | Bill & Account Collectors | 1,450 | 30-days OJT | $16.89 |
| Business and Professional Services | Telemarketer | -220 | 30-days OJT | $13.67 |
| Biomedical | Biological Technicians | 90 | AA Degree | $21.70 |
| Biomedical | Medical Equipment Repairers | 90 | 1-12 months OJT | $14.68 |
| Biomedical | Inspectors, Testers, Sorters, Samplers, & Weigh | 430 | 1-12 months OJT | $14.39 |
| Biomedical | Electrical & Electronic Equipment Assemblers | 310 | 30-days OJT | $14.86 |
| Biomedical | Medical & Clinical Laboratory Technicians | 250 | AA Degree | $17.12 |
| Computer Software | Data Entry Keyers | -370 | 1-12 months OJT | $12.47 |
| Computer Software | Computer Operators | -60 | 1-12 months OJT | $16.57 |
| Computer Software | Word Processors & Typists | -200 | 1-12 months OJT | $18.42 |
| Computer Software | Computer Support Specialists | 1,440 | AA Degree | $23.11 |
| Average Hourly Wage of Top Occupations | | 4,410 | | $18.72 |

*Source: California Employment Development Department*

# Significant Closing of the Gap Between Entry Level Wage and Average Wage Levels in Orange County Occupations in 2006

## Description of Indicator

This indicator measures job titles in Orange County that have the largest gaps between entry-level and average wages, as well as job titles with the smallest gaps between entry-level and average wages. Job titles are divided into two families: high-income and low income. An estimate of the number of jobs in Orange County for each job title is also included.

Statistics are presented that show the return-on-investment for resources spent on job training programs. These take into account taxes collected, increased economic activity, and indirect benefits coming from reduced government support, personal gain and social gain.

## Why is it Important?

Understanding the return-on-investment of job training programs is essential for determining how these programs ought to be designed and justifying their expenditures to decision makers. As such, a large gap between average wages and entry-level wages sends two positive signals to workforce planners:

1. The potential for career advancement for workers, and
2. The disparity in pay could be attributed to variances in skills, training, and/or experience.

Generally, occupations with a large ratio of average to entry-level wages have the potential for wage growth. Such occupations, therefore, could be good targets for training that seeks to accelerate an individual's wage progression within the occupation. Occupations with low ratios of average divided by entry-level wages, on the other hand, do not provide much potential for within-occupation wage growth. Training resources for individuals in those occupations might be better focused on transitioning to occupations with greater potential for upward mobility. Another critical component for assessing workforce returns on investment is to take into account the potential volume of employment opportunities for these occupations.

**Return on Investment (Value of Experience) as Indicated by Wages in Orange County Occupations: Ten Occupations with Highest Return to Experience**

| Occupation Title | Mean Hourly Wage (2006) | Entry-Level Hourly Wage (2006) | Mean Wage/ Entry Level Wage (2006) | 2005 OC Employment Estimates |
|---|---|---|---|---|
| Personal Financial Advisors | $38.56 | $17.74 | 2.17 | 1,380 |
| Media and Communication Equipment Workers, All Other | $23.18 | $11.47 | 2.02 | 500 |
| Real Estate Sales Agents | $33.83 | $16.77 | 2.02 | 2,190 |
| Music Directors and Composers | $16.11 | $8.03 | 2.01 | 80 |
| Agents and Business Managers of Artists, Performers, and Athletes | $31.70 | $15.97 | 1.98 | 180 |
| Musical Instrument Repairers and Tuners | $19.00 | $10.27 | 1.85 | 30 |
| Computer Software Engineers, Applications | $37.76 | $20.54 | 1.84 | 11,970 |
| Healthcare Practitioners and Technical Workers, All Other | $21.26 | $11.66 | 1.82 | 450 |
| Fitness Trainers and Aerobics Instructors | $15.64 | $8.60 | 1.82 | 2,470 |
| Material Moving Workers, All Other | $15.95 | $8.81 | 1.81 | 470 |

**TARGET**

**By 2010, demonstrate that workforce spending in Orange County has been targeted to high growth, high wage industries and occupations.** ***Orange County Workforce Investment Board resources are being directed to Orange County Growth Clusters.***

## How is Orange County Doing?

The year 2006 witnessed a significant closing of the gap between the wages earned by entry level workers and the average wage levels of Orange County occupations. This pattern is persistent even in comparing top level wages with the entry level wages.

The occupations with the greatest potential for wage growth (and hence the greatest potential for within-occupation return on training investments) are largely in the service sector, including positions such as personal financial advisors, media and communication workers, and real estate agents. Health occupations are also represented in the list of high potential wage growth. Occupations with low ratios of average wage divided by entry-level wage include occupations in dishwashers, pharmacists and dancers.

The ten occupations with the lowest ratio of average divided by entry-level wages in 2006 account for 11,200 jobs in Orange County, while the ten occupations with the highest ratio of average divided by entry-level wages account for 29,030 jobs in the county, albeit with a lower differential between entry and average level wages. This situation is the reverse of the extreme situation in 2002 when the lowest return on investment occupations accounted for 63,320 jobs while the highest return on investment occupations accounted for only 12,960 jobs. This may be only a temporary aberration in that it contradicts patterns of recent years.

One implication is that job training resources should be focused on career ladders that can move persons through several occupations with increasing wage opportunities, since many jobs in Orange County are likely in occupations with low potential for wage growth within the occupation.

Job training expenditures for the 2004-2005 program year from the Orange County Workforce Investment Board were $6,507,435. An analysis of the return-on-investment on this expenditure examining taxes paid by trained program participants going to work upon completion, tax gains from increased economic activity contributed by these individuals and reduced government support found a return of between $12.7 million and $16.0 million. This equates to a return-on-investment of 195% - 246%.

**Business and Professional Services, Biomedical, and Computer Software Findings**

The Business and Professional Services, Biomedical and Computer Software occupational clusters tend to be clusters that do not have a high return on investment for additional experience. Instead, it appears that education prior to hire is expected.

For these three clusters, mean hourly wages tend to be 1.40 times as much as entry-level wages. This may be because these clusters have occupations that place a high premium on education and training prior to entry into the occupations as reflected by their relatively high entry-level hourly wages. Once the employee is hired, his/her wage growth then appears to grow relatively slowly in comparison to other occupations in the Orange County economy since prior education is expected to provide the background and skills for a worker to contribute successfully in their occupation.

**Return on Investment (Value of Experience) as Indicated by Wages in Orange County Occupations: Ten Occupations with Lowest Return to Experience**

| Occupation Title | Mean Hourly Wage (2006) | Entry-Level Hourly Wage (2006) | Mean Wage/ Entry Level Wage (2006) | 2005 OC Employment Estimates |
|---|---|---|---|---|
| Pharmacists | $45.69 | $45.13 | 1.01 | 2,880 |
| Dancers | $19.19 | $18.67 | 1.03 | 50 |
| Physicists | $60.78 | $58.72 | 1.04 | 40 |
| Embalmers | $18.66 | $17.86 | 1.04 | 50 |
| Avionics Technicians | $24.95 | $23.70 | 1.05 | 40 |
| Manicurists and Pedicurists | $7.99 | $7.50 | 1.07 | 2,020 |
| Dishwashers | $8.01 | $7.49 | 1.07 | 5,240 |
| Bicycle Repairers | $10.16 | $9.37 | 1.08 | 110 |
| First-Line Supervisors/Managers of Police and Detectives | $51.21 | $46.98 | 1.09 | 390 |
| Physical Therapist Assistants | $24.23 | $22.21 | 1.09 | 380 |

*Source: State of California, Employment Development Department; OCBC analysis*

**Return on Investment (Value of Experience) as Indicated by Wages in Orange County Occupations: Ten Occupations with Highest Return to Experience**

| Occupation Title | 2005 Employment Estimates | Entry-Level Hourly Wage (1) | Mean Hourly Wage | Mean Wage/Entry Level Wage (2006) |
|---|---|---|---|---|
| **Business and Professional Services** | | | | |
| Legal Secretaries | 3,540 | $16.55 | $21.72 | 1.31 |
| Paralegals and Legal Assistants | 2,590 | $24.44 | $29.74 | 1.22 |
| Employment, Recruitment, and Placement Specialists | 1,940 | $16.42 | $25.96 | 1.58 |
| Computer Software Engineers, Systems Software | 3,860 | $32.45 | $40.92 | 1.26 |
| Administrative Services Managers | 2,830 | $29.25 | $41.62 | 1.42 |
| Bill and Account Collectors | 6,410 | $13.90 | $16.89 | 1.22 |
| Telemarketers | 6,950 | $9.35 | $13.67 | 1.46 |
| Payroll and Timekeeping Clerks | 2,160 | $15.17 | $18.61 | 1.23 |
| Financial Managers | 7,450 | $37.60 | $53.90 | 1.43 |
| Advertising Sales Agents | 2,160 | $16.89 | $29.73 | 1.76 |
| Accountants and Auditors | 13,460 | $21.14 | $30.21 | 1.43 |
| | | | | |
| **Biomedical** | | | | |
| Medical Appliance Technicians | 120 | $19.02 | $25.12 | 1.32 |
| Microbiologists | 170 | $16.54 | $24.19 | 1.46 |
| Biological Technicians | 420 | $15.14 | $21.70 | 1.43 |
| Industrial Production Managers | 2,490 | $28.88 | $40.73 | 1.41 |
| Medical Equipment Preparers | 260 | $11.73 | $14.68 | 1.25 |
| Precision Instrument and Equipment Repairers, All Other | 110 | $13.37 | $21.62 | 1.62 |
| Medical and Clinical Laboratory Technicians | 1,090 | $13.23 | $17.12 | 1.29 |
| Medical and Health Services Managers | 1,640 | $30.94 | $41.58 | 1.34 |
| Natural Sciences Managers | 400 | $41.90 | $56.00 | 1.34 |
| Medical and Clinical Laboratory Technologists | 1,250 | $27.39 | $31.21 | 1.14 |
| Electrical and Electronic Equipment Assemblers | 3,730 | $9.14 | $14.86 | 1.63 |
| Inspectors, Testers, Sorters, Samplers, and Weighers | 7,000 | $9.66 | $14.39 | 1.49 |
| | | | | |
| **Computer Science** | | | | |
| Data Entry Keyers | 4,420 | $9.95 | $12.47 | 1.25 |
| Computer Systems Analysts | 4,980 | $29.11 | $37.13 | 1.28 |
| Database Administrators | 1,070 | $25.23 | $35.15 | 1.39 |
| Computer Software Engineers, Applications | 11,970 | $20.54 | $37.76 | 1.84 |
| Computer Programmers | 4,220 | $24.37 | $35.61 | 1.46 |
| Computer Support Specialists | 6,840 | $16.09 | $23.11 | 1.44 |
| Computer Operators | 1,270 | $12.17 | $16.57 | 1.36 |
| Word Processors and Typists | 1,650 | $14.84 | $18.42 | 1.24 |

(1) 25th Percentile Hourly Wage

# Orange County Community Colleges Educate Residents in Local Communities

## Description of Indicator

This indicator shows the high school district of origin for first-time students entering North Orange County Community College District, Rancho Santiago Community College District Coast Community College District and South Orange County Community College District for Fall semester 2006. This indicator identifies the primary service location for the nine community colleges within the four community college districts in Orange County.

## Why is it Important?

Community colleges provide a locally oriented opportunity for post-secondary education and workforce training that is flexible and affordable. By identifying and understanding the service areas for these institutions, programs can be designed to best serve the target population.

## How is Orange County Doing?

The four community college districts in Orange County are relatively well spread out from the northern part of the county to the southern and are thus able to serve the local community without much of overlap. Irvine Valley College (IVC) and Saddleback College are both located in the southern part of Orange County and both draw their first-time students primarily from school districts located in the same region. Approximately 32.6% of students at IVC graduated from the Irvine Unified School District and about 19.8% come from Saddleback Valley Unified School District. For Saddleback College, 78% of first-time students graduated from high schools in either the Capistrano or Saddleback Valley unified school districts.

Coast Community College District (CCD) has colleges located in Fountain Valley, Costa Mesa and Huntington Beach and draws the majority of its first-time students from the Garden Grove, Newport-Mesa and Huntington Beach school districts. The service area for Rancho Santiago CCD is located primarily in the local area around Santa Ana and Orange. Over 41% of first-time students at Santa Ana College graduated from the Santa Ana Unified School District.

Two community colleges are located in the northern part of the county: Cypress College and Fullerton College. In addition to drawing first-time students from the local Anaheim and Fullerton Joint unified school districts, a large number of students graduated from Los Angeles County schools.

**TARGET**

**Increase attendance at OC Community Colleges to 210,000 by 2010.** ***Enrollment trends are on track to meet this target.***

### High School District of Origin for First-Time Students by Percentage

| | Coast Community College District (CCD)[1] | | | Rancho Santiago CCD[2] | | South Orange County CCD[3] | | North Orange County CCD | |
|---|---|---|---|---|---|---|---|---|---|
| School District | Orange Coast | Golden West | Coastline | Santa Ana | Santiago Canyon | Irvine Valley | Saddleback | Cypress | Fullerton |
| Anaheim | 3.1% | 4.8% | 3.6% | 3.9% | 7.4% | 1.3% | 0.7% | 34.3% | 17.2% |
| Brea-Olinda | 0.1% | 0.1% | 0.5% | 0.4%. | 0.3% | 0.2% | 0.0% | 0.4% | 4.5% |
| Capistrano | 1.3% | 0.2% | 2.1% | 0.8% | 1.9% | 9.6% | 46.4% | 0.1% | 0.2% |
| Fullerton Joint | 1.3% | 0.7% | 2.0% | 1.6% | 1.2% | 0.5% | 0.2% | 9.1% | 22.5% |
| Garden Grove | 14.4% | 24.5% | 24.1% | 1.7% | 14.7% | 0.8% | 0.1% | 6.9% | 1.7% |
| Huntington Beach | 23.6% | 43.5% | 24.0% | 0.9% | 3.4% | 0.6% | 0.3% | 1.9% | 0.4% |
| Irvine | 8.2% | 0.6% | 1.7% | 2.0% | 1.1% | 32.6% | 4.7% | 0.2% | 0.3% |
| Laguna Beach | 0.8% | 0.1% | 0.0% | 0.0% | 0.3% | 0.6% | 1.3% | | |
| Los Alamitos | 0.9% | 4.7% | 1.2% | 0.1% | 0.3% | 0.2% | 0.1% | 5.5% | 0.3% |
| Newport-Mesa | 14.6% | 2.1% | 6.6% | 0.3% | 1.4% | 2.1% | 0.3% | 0.2% | 0.2% |
| Orange | 3.0% | 0.9% | 1.5% | 40.7% | 9.6% | 2.4% | 0.5% | 1.0% | 4.4% |
| Placentia-Yorba Linda | 1.4% | 0.2% | 2.0% | 12.5% | 2.4% | 0.5% | 0.2% | 1.6% | 11.9% |
| Saddleback Valley | 2.9% | 0.9% | 1.5% | 2.5% | 2.5% | 19.8% | 31.6% | 0.2% | 0.3% |
| Santa Ana | 9.3% | 2.3% | 3.9% | 6.1% | 41.2% | 3.2% | 1.1% | 0.6% | 1.0% |
| Tustin | 3.1% | 0.5% | 0.8% | 11.7% | 4.3% | 7.7% | 0.8% | 0.3% | 0.4% |
| Private Schools/ Home Schooling/ Other | 0.0% | 0.0% | 0.0% | . | . | 0.0% | 0.0% | . | . |
| District Not Specified | 0.6% | 0.0% | 0.5% | 12.6% | 6.7% | 1.7% | 2.8% | . | . |
| Out of OC | 11.4% | 13.9% | 24.0% | 2.6% | 1.3% | 13.1% | 8.9% | 37.7% | 34.7% |

*Sources: Rancho Santiago Community College District, Educational Services; Coast Community College District, Educational Services; South Orange County Community College District, Educational Services; North Orange County Community College District, Public Affairs*

# Orange County Community Colleges Serve Over 200,000 Students

## Description of Indicator

This indicator provides selected demographic information for the four community college districts located in Orange County.

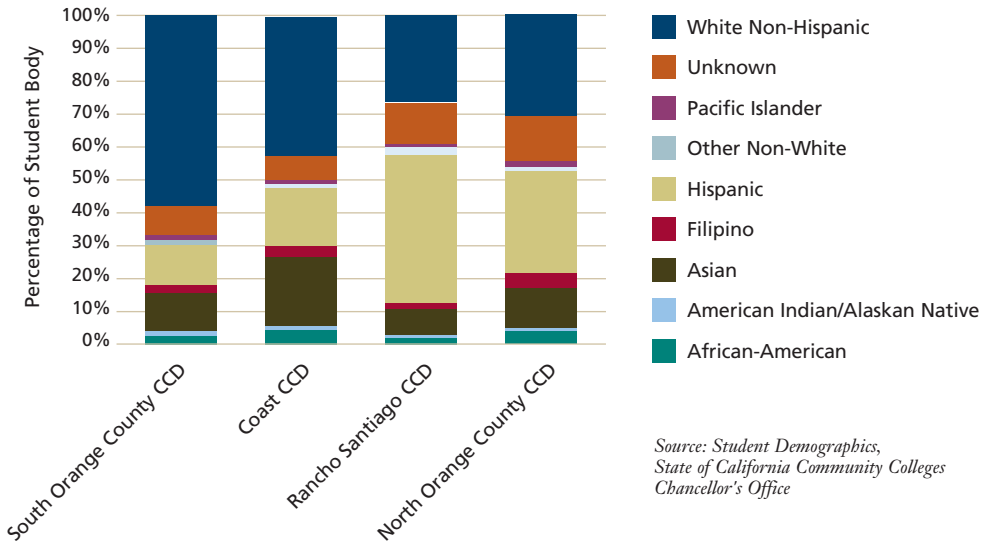
## Why is it Important?

Post-secondary education is increasingly important for the Orange County workforce. One option for graduating high school seniors and those interested in returning to school for additional education is a community college. These institutions enable students to obtain specialized training and certification or to complete up to two years of courses to be transferred to a four-year baccalaureate institution. In addition to this role as an entry point into the higher education system, community colleges are an important source of workforce training in many occupations. Demographic information on community college students can inform how closely community college enrollments reflect Orange County's changing demographics, while illustrating the diversity of the county's community colleges service population.

## How is Orange County Doing?

Approximately 205,000 students registered to attend courses at one of the four community college districts (CCD) in Orange County for Fall 2006. The smallest CCD in the county is South Orange County CCD with a Fall 2006 student body of approximately 36,000 students attending one of two institutions: Irvine Valley College (Irvine) and Saddleback College (Mission Viejo). Coast CCD has a student body of approximately 46,000 students attending Coastline College (Fountain Valley), Orange Coast College (Costa Mesa), and Golden West College (Huntington Beach). The largest CCD is Rancho Santiago CCD with approximately 63,000 students attending Santa Ana College (Santa Ana) and Santiago Canyon College (Orange). North Orange County CCD services approximately 60,000 students at one of two colleges: Cypress College (Cypress) and Fullerton College (Fullerton). The School of Continuing Education (SCE) is also within the North Orange County CCD although this indicator does not include demographic information from the SCE.

**Breakdown of Community College District Attendance by Ethnicity (Fall 2006)**




*Source: Student Demographics, State of California Community Colleges Chancellor's Office*

**TARGET**

**Increase attendance at OC Community Colleges to 210,000 by 2010.** ***Enrollment trends are on track to meet this target.***

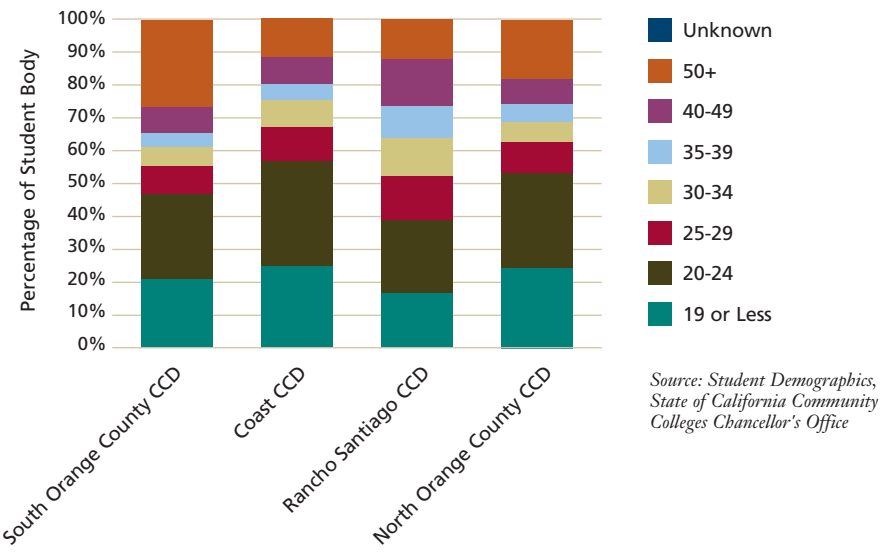
## Orange County Community College Demographics – Continued

In terms of a breakdown of the Fall 2006 student body by ethnicity, White students make up the largest component for three of the four CCD's. Nearly 60% (20,980) and 42% (19,661) of students in South Orange County CCD and Coast CCD respectively are White, while nearly a third of the student body at North Orange County CCD is white. The largest ethnic component of Rancho Santiago CCD is Hispanic with about 47% (29,361) of the student body of Hispanic origin. Asian students make up approximately 25% of the Coast CCD student body, less than 15% of students at both North and South Orange County CCD, and less than 10% of students at Rancho Santiago CCD.

Community colleges appeal to a wide range of ages. While most students tend to be younger (students under the age of 25 make up between 39.3% and 52.8% of the total student body at all four CCD's ), older adults make up significant portions of the students attending community colleges. Interestingly, the second largest age group at South Orange County CCD is students over 50 years with 26.9%. This age group also represents about 19% of students at North Orange County CCD. Older students are not as well represented at Coast and Rancho Santiago CCD's .

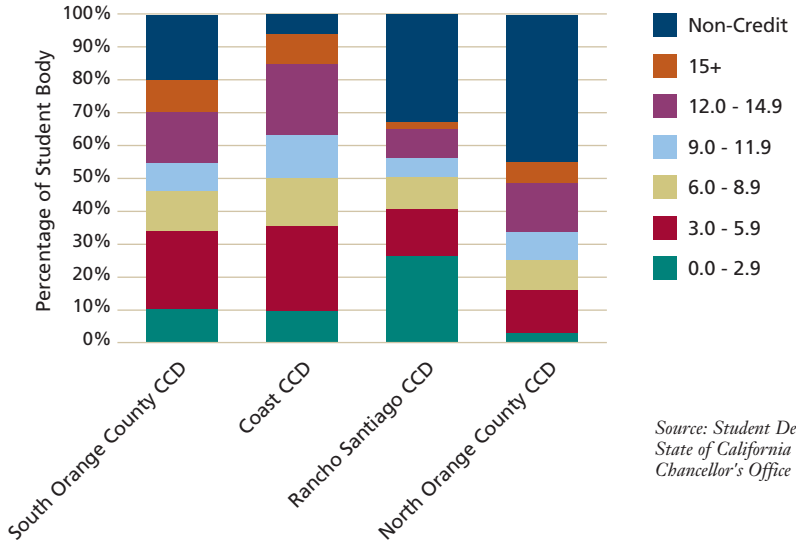
A popular feature of community colleges is the ability to take classes part-time while working or to take non-credit classes. At North Orange County and Rancho Santiago CCD's, approximately 40% of students are enrolled in non-credit courses. Students taking less than 12 units per semester are considered part-time and this group makes up the majority of credit attendance at Coast, South Orange County, and Rancho Santiago CCD's (64%, 59%, and 50% of student respectively). Currently, the cost per unit for schools in the California Community College system (all four Orange County CCD's are in this system) is $26 per unit for California residents.

**Breakdown of Community College District Attendance by Attendance (Fall 2006)**



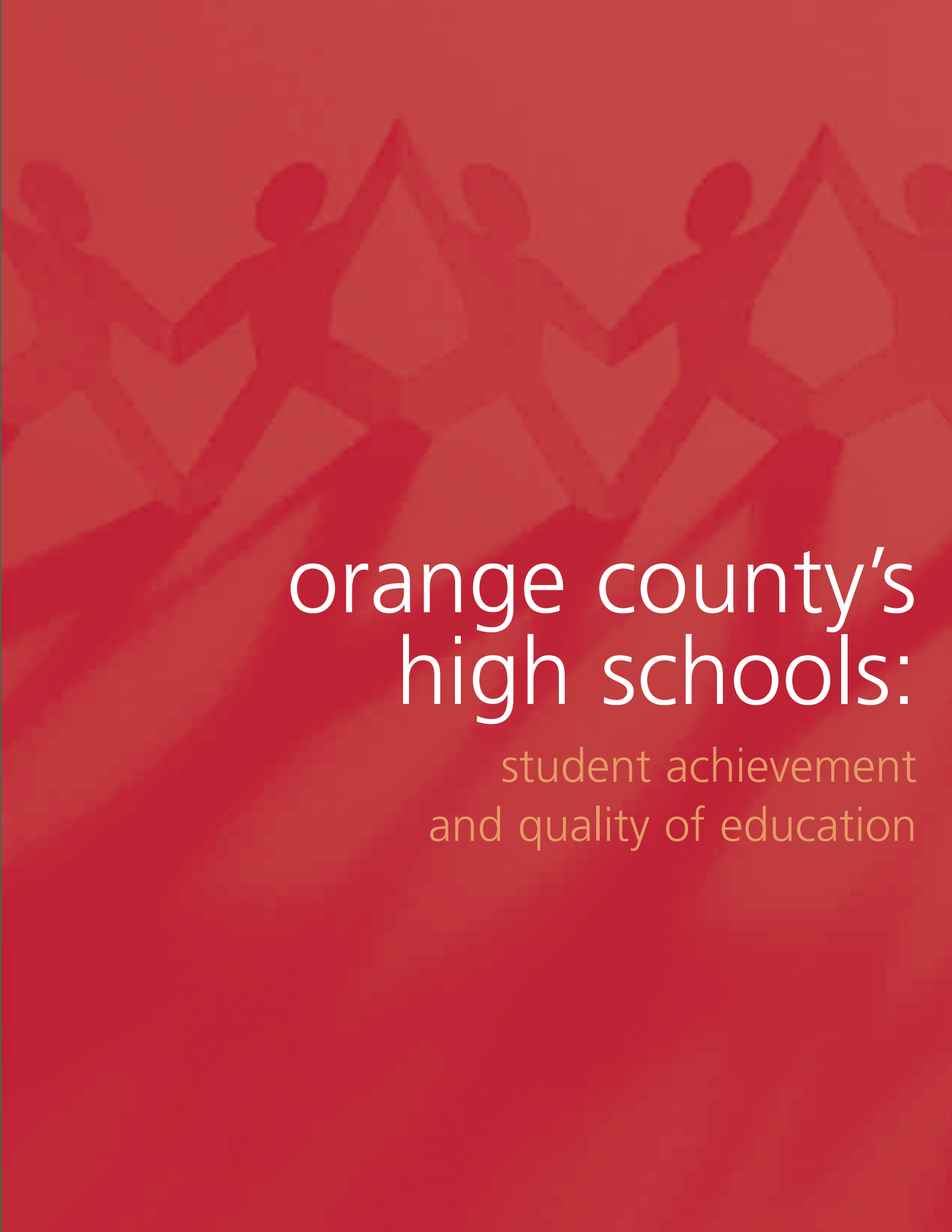

*Source: Student Demographics, State of California Community Colleges Chancellor's Office*

**Breakdown of Course Units Attempted by Community College Students (Fall 2006)**




*Source: Student Demographics, State of California Community Colleges Chancellor's Office*

| Community College District | Community Colleges In District |
|---|---|
| South Orange County CCD | • Irvine Valley College<br>• Saddleback College |
| Coast CCD | • Coastline College<br>• Orange Coast College<br>• Golden West College |
| Rancho Santiago CCD | • Santa Ana College<br>• Santiago Canyon College |
| North Orange County CCD | • Cypress College<br>• Fullerton College<br>• School of Continuing Education |



# orange county's high schools:

## student achievement and quality of education

# Orange County Outperforms the State in Math and Science

## Description of Indicator

This indicator reports Orange County performance on state-sponsored standardized education performance testing measures in math and science subjects in comparison to the state for the 2005-06 school year. This indicator also reports the trend in math achievement for 2000 through 2002.

To measure math achievement, standardized test reports from 11th Grade Algebra II and 11th Grade Summative High School Math are reported. To measure science achievement, START test reports from First Year Chemistry and Grade Integrated/Coordinated Sciences III are reported.

## Why is it Important?

A quality education in Orange County bodes well for students and businesses alike. Orange County's innovative economy is dependent on a highly educated workforce. To this end, when local schools perform poorly compared with other areas of the state or county, students are not the only ones that are adversely affected. Under-performing schools force local universities and businesses to recruit more students and workers, respectively from outside of Orange County.

Just as teachers need to track their students' progress in class, policymakers, school administrators, and civic leaders must routinely evaluate the performance of schools. Standardized tests, like class exams, enable education stakeholders to evaluate the quality of instruction at Orange County schools against the state and national averages. An informed assessment of our local schools' strengths and weaknesses relative to the California and U.S. averages is a critical component for designing policies and allocating resources to improve the performance of local schools.

### "Advanced" or "Proficient" Math and Science Achievement Compared to the State

| | Grade 11 Algebra II | Grade 11 Summative HS Math | Grade 11 Chemistry | Grade 11 Integrated/Coordinated Sciences III |
|---|---|---|---|---|
| Orange County | 18% | 58% | 34% | 28% |
| State | 10% | 43% | 22% | 15% |

### Standardized Test Results 2005-06 Orange County - Female

| | Grade 11 Algebra II | Grade 11 Summative HS Math | Grade 11 Chemistry | Grade 11 Integrated/Coordinated Sciences III |
|---|---|---|---|---|
| % Advanced | 1% | 16% | 8% | 4% |
| % Proficient | 15% | 38% | 21% | 22% |
| % Basic | 35% | 29% | 51% | 50% |
| % Below Basic | 33% | 15% | 14% | 19% |
| % Far Below Basic | 16% | 2% | 7% | 6% |

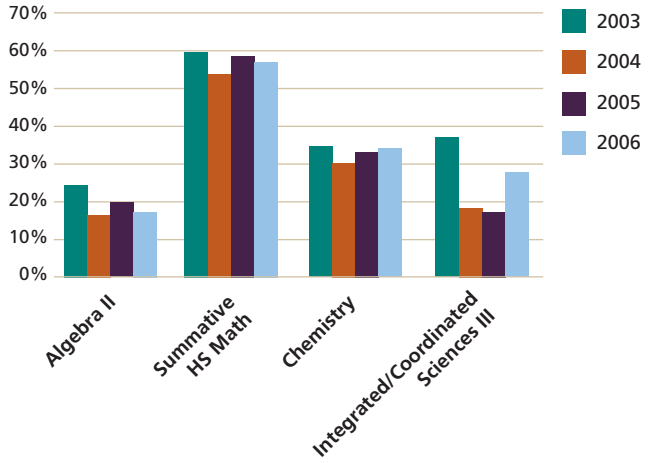
### Standardized Test Results 2005-06 Orange County - Male

| | Grade 11 Algebra II | Grade 11 Summative HS Math | Grade 11 Chemistry | Grade 11 Integrated/Coordinated Sciences III |
|---|---|---|---|---|
| % Advanced | 3% | 25% | 14% | 4% |
| % Proficient | 18% | 38% | 25% | 26% |
| % Basic | 34% | 24% | 41% | 50% |
| % Below Basic | 28% | 11% | 12% | 15% |
| % Far Below Basic | 17% | 2% | 8% | 5% |

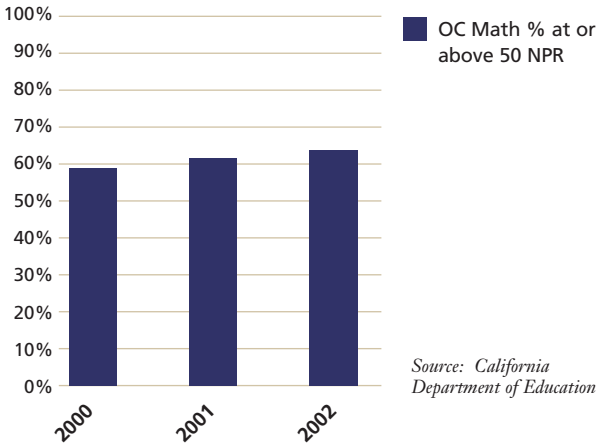
**TARGET**

**Increase test scores of students in Intermediate Algebra, Advanced Math, and First-Year Chemistry by 10% by 2010.** ***Test scores in Chemistry increased slightly while scores in Algebra and Advanced Math declined.***

### Standardized Test Results in Grade 11 Math and Sciences "Advanced" and "Proficient" 2003 to 2006

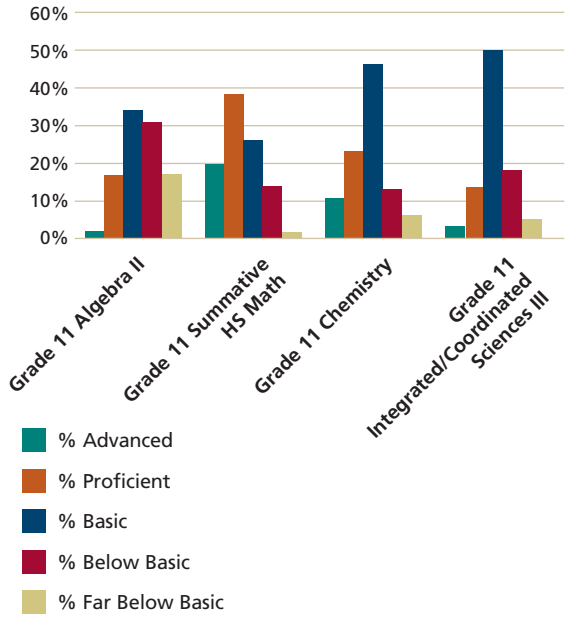



### Orange County Standardized Test Results in Math 2000 to 2002




*Source: California Department of Education*

### Standardized Test Results 2005-06 Orange County




## How is Orange County Doing?

Orange County achievement in math and science exceeds the state rates of achievement in all math and science subjects measured. Approximately 18% of Orange County 11th Graders showed "advanced" or "proficient" achievement in Algebra in comparison to 10% for the State. Over half (58%) of Orange County 11th graders showed "advanced" or "proficient" achievement in Summative High School Math in comparison to 43% for the State.

In the sciences, 34% of Orange County 11th graders showed "advanced" or "proficient" achievement in Chemistry in comparison to 22% for the State. In Integrated/Coordinated Sciences III, 28% of Orange County 11th Graders showed "Advanced" or "Proficient" achievement, in comparison to15% for the State.

The vast majority of Orange County 11th Graders show only "Basic", "Below Basic" and "Far Below Basic" achievement in math and science. The percentage of students showing "Advanced" achievement in math and science ranged from 2% for Algebra II and Integrated/Coordinated Science 3 to 20% for Summative High School Math. On the other end of the spectrum, the percentage of students "Far Below Basic" ranged from 17% for Algebra II to 2% for Summative High School Math.

Over time, Orange County's scores in math and science achievement appear to be worsening. Though the trend is difficult to discern because the testing regime changed between the 2001-2002 and 2002-2003 school year. The most recent four academic years of testing show decrease in Algebra II, Summative High School Math, Chemistry and Integrated Coordinated Sciences III.

The earlier testing regime, 2000 through 2002, did not measure achievement in terms of "advanced," "proficient," "basic," "below basic," and "far below basic." Instead it measured achievement in comparison to the 50th percentile of nationwide achievement. It also only measured general math achievement rather than math as well as science. In these results, Orange County's achievement was slightly increasing relative to the nation over time.

# Most District Passing Rates Exceed State Rates; Overall Passing Rates Declining

## Description of Indicator

This indicator measures the rates that students pass the High School Exit Exam by school district in Orange County, the Orange County combined rate, and the statewide rate. The High School Exit Exam Rates indicator shows the rates that students pass the Math section of the exam and the rates students pass the English Language Arts section of the exam. Students must pass both sections of the exam in order to graduate.

## Why is it Important?

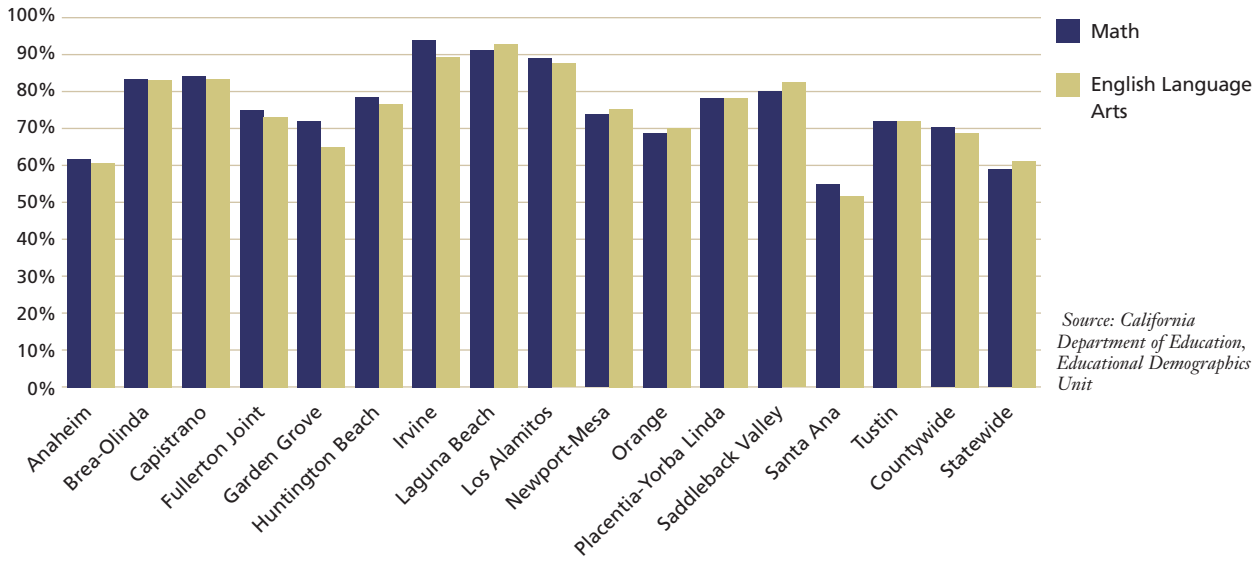
The future of Orange County's economy hinges in no small part on the quality of education that our high school students receive. If our schools fail to prepare our students for success in our competitive business climate, our businesses will have to recruit workers from outside the county. While students may demonstrate competence in individual courses, exit exams are the best tool available for measuring cumulative student achievement against their peers in other school districts.

## How is Orange County Doing?

Every school district in Orange County, except for Santa Ana, exceeds the statewide high school exam pass rate. Approximately 70% of Orange County students passed the Math portion of the exam and 69% passed the English Language Arts portion of the exam. This is a decrease from 2005 when 73% passed the Math portion of the exam and 72% passed the English Language Arts portion of the exam. For the state, 59% passed Math and 61% passed English Language Arts. State scores were also down from 2004 when 63% passed the Math portion of the exam and 65% passed the English Language Arts portion of the exam. Given continuing declines since 2004, it appears that high school student achievement on these tests is decreasing.

For the Math portion of the exam, Orange County school districts ranged from 93% in Irvine passing to 55% in Santa Ana passing. For the English Language Arts portion of the exam, Orange County school districts ranged from 92% in Laguna Beach passing to 51% in Santa Ana passing.

### High School Exit Exam Scores 2006




*Source: California Department of Education, Educational Demographics Unit*

**TARGET**

**By 2010, 90% of all Orange County students pass the High School Exit Exams.** ***Pass rates have declined and are not trending towards the target.***

# Percentage of English Language Learners Decreasing While Fluent English Proficient Students and Re-designated Fluent English Proficient Students Increasing

## Description of Indicator

This indicator measures the percentage of enrolled students who are English language learners in Orange County unified and high school districts from 1996-2006. Also shown is the percent of Orange County students initially identified as Fluent English Proficient (FEP) and English Learners re-designated to Fluent-English-Proficient. The percentage of English Learners as a percentage of total enrollment is shown for Orange County compared to its peer counties and greater California. The percentage of English Learners by district, as well as the percentage of English Learners, Fluent-English-Proficient and Re-designated English Proficient over time is also shown.

Children for whom English is a second language are given a test upon enrollment in school, and yearly thereafter, to assess their level of English fluency. Students are identified as either English Learner (students who are not fluent in English), initially Fluent English Proficient (students for whom English is a second language, but are initially identified as fluent in English), or re-designated Fluent English Proficient (students initially identified as English Learner, but are now considered fluent in English).

## Why is it Important?

Understanding the number and progress of limited English speaking students is important for both policymakers and the public at-large to have an accurate conception about the student bodies of their county, and a proper understanding of how educational progress is being made. Through greater awareness of the true population of students in Orange County, proper resources can be assigned to address the educational needs of students on fundamental language skills. Furthermore, showing the progress students are making in learning English bolsters confidence that students are learning the essential skill for academic, social and ultimately financial achievement.

## How Orange County Doing?

Orange County experienced a slight decrease in the percentage of English Language Learners in the 2005-06 school year. In 2005-06, the percentage of English Language Learners was 28.3% of students, while in 2004-05 it was 29.1%. Orange County is behind only Los Angeles County in the percentage of English Language Learners. Orange County's English Language Learner percentage of 28.3% is below Los Angeles which is at 31.1% and above the California percentage of 24.9%, San Diego County's percentage of 23.4%, Riverside County's percentage of 24.2% and San Bernardino County's percentage of 20.0%. The decrease in Orange County is part of a decreasing trend since 2002-03 -- while increases occurred in the Inland Empire counties of Riverside and San Bernardino.

Santa Ana Unified School District has the highest percentage of English Language Learners, with 55.9% of students designated as English Language Learners. Garden Grove was second with 46.7%. These two districts bring the overall Orange County average to 28.3%. Every other school district in Orange County is below the county average with Los Alamitos the lowest percentage at 2.5%.

The percentage of students re-designated from English Learner to Fluent English Proficient has experienced a steady rise between 1995-96 and 2005-2006. Also, the number of students considered initially Fluent English Proficient grew in the 2005-06 school year.

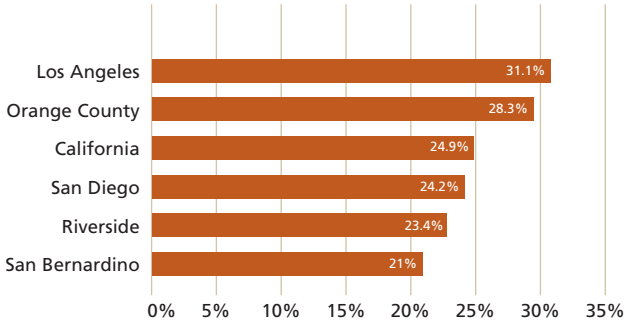
This is even more positive when considered in combination with a factor that has contributed to a decline in re-designation statewide. During the 2001/02 school year districts began to be required to assess English Learners with a single, state-approved exam and reclassify students using a locally-developed, but state-approved, criteria and process. This resulted in a one-year decline in the percentage of re-designated Fluent English Proficient Students in 2002 for Orange County. However, since then re-designation has increased, showing true improvement.

**TARGET**

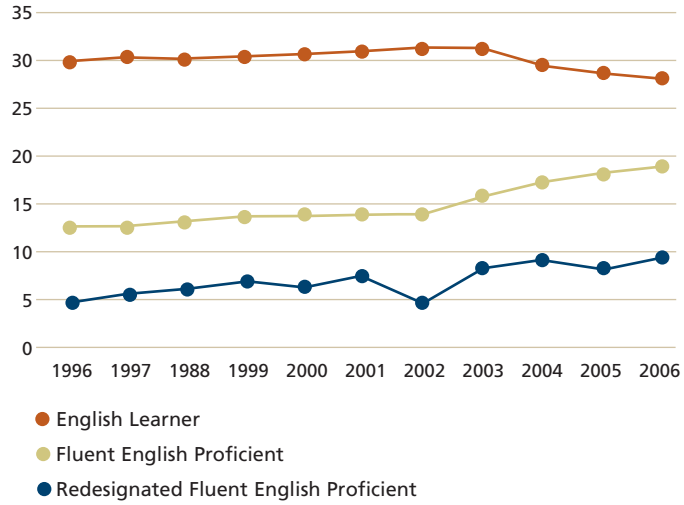
**By 2010, double the rate of "converted" fluent English proficient students from 10 % to 20%.** ***English language acquisition trends are positive and on pace to meet the 2010 target.***

## English Learners – Continued

### English Learners as a Percent of Total Enrollment – 2005-06




### English Language Learners Orange County 1996-2006




Note: Numbers do not add up to 100%

# Orange County High Schools API Scores Average 782 Out of 800 on Statewide Performance Target

## Description of Indicator

This indicator compares the average API (Academic Performance Index) scores for high schools in Orange County's districts. The average scores for 2006 are shown as well as the average 2007 targets per district. Each individual school receives a score and a target for the following year. The API scores for the high schools in each district are averaged to show the API score for the district.

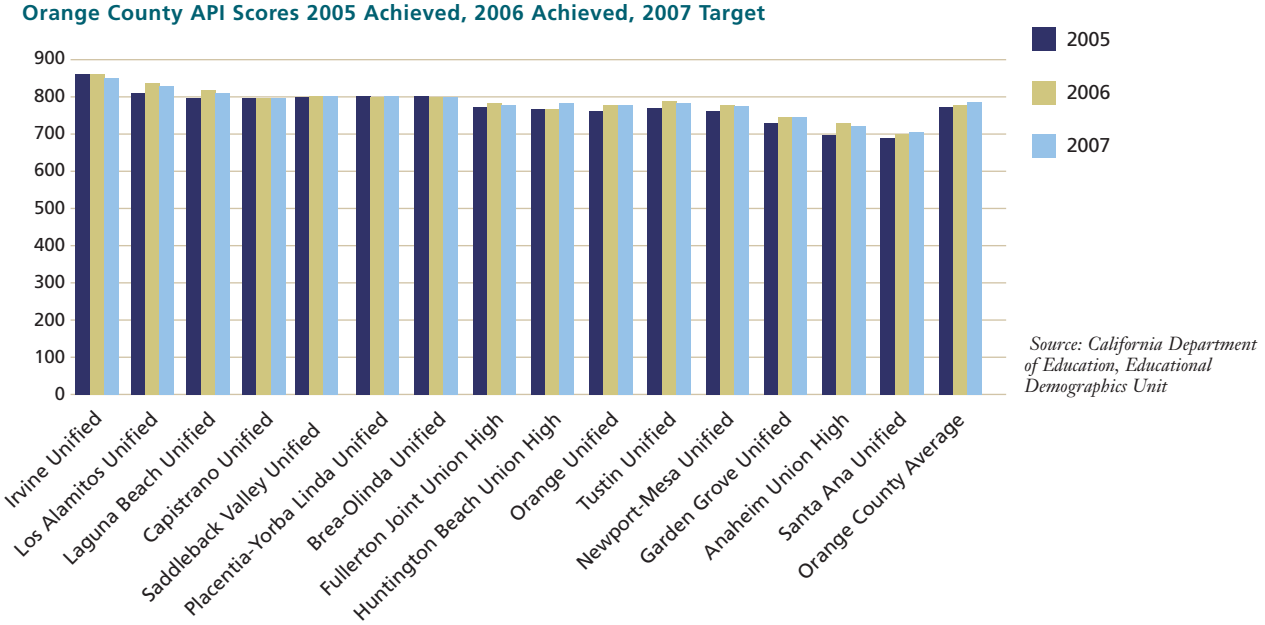
## Why is it Important?

School performance is a key measure of whether students in a particular school district and Orange County as a whole are learning the materials necessary to succeed in a modern economy. Rather than measuring individual student achievement, the API scores measure overall performance for entire schools. A particular school's overall environment sets and expectations for its students. Schools with high scores have a self-reinforcing standard of achievement. Such achievement is necessary for students to be well prepared to obtain higher education and the skills to succeed in an advanced economy such as Orange County.

## How is Orange County Doing?

High schools in Orange County had an overall API score of 782 in 2006 and the API target for Orange County high schools for 2007 is 786. The statewide performance goal for schools to aspire is 800. High schools in Irvine Unified (854), Los Alamitos (836) Laguna Beach (819), Capistrano (803) and Saddleback (802) and Placentia-Yorba Linda (800) met or exceeded this target. The lowest scores are in Anaheim (723) and Santa Ana (701).

**Orange County API Scores 2005 Achieved, 2006 Achieved, 2007 Target**




*Source: California Department of Education, Educational Demographics Unit*

**TARGET**

**By 2010, All Orange County School Districts meet the statewide API target of 800. *Orange County API performance continues to increase and is on pace to meet the 2010 target.***

# Orange County AP Science and Math Enrollment Highest In Southern California

## Description of Indicator

Advanced Placement (AP) Course Enrollment in Science and Math measures the percentage of students in Grades 11 and 12 who are enrolled in Advanced Placement courses in science and math topics. This indicator also measures the percentage of students who obtained a passing score of "3" on an advanced placement test.

Advanced Placement courses are courses students can take in high school to obtain credit for college. Though many students take more than one advanced placement course at the same time, an overall sense of advance placement course participation and success can be captured through looking at enrollment and test success.

## Why is it Important?

Advanced Placement course participation measures the number of students who are serious enough about math and sciences during high school that they are pursuing college credit in those arenas. Having already obtained course credit often enables students to pursue more advanced college courses, making it easier for them to major in topics such as mathematics, physics, computer science or chemistry. A higher number of students with majors in the sciences and math allows for local high tech firms to recruit more local talent to help their business grow.

## How is Orange County Doing?

Orange County enrollment in Advanced Placement courses in sciences and math is the highest of Southern California counties, but trails those of Northern California. Out of the total enrollment of Orange County 11th and 12th Graders, approximately 1% took AP Computer Science, 6.00% took AP Calculus, almost 3% took AP Statistics, about 4.15% took AP Biology, almost 2.3% AP Chemistry, about 2.75% took AP Physics and about 1% took Environmental Science. A higher percentage of students in San Francisco, Santa Clara and Alameda Counties took AP courses. The percentage of Orange County students taking AP courses in the sciences and math exceeded Los Angeles, San Diego, Riverside and San Bernardino Counties. In addition, Orange County AP enrollment percentages are up in most courses.

Orange County students generally perform well on Advanced Placement tests. In 2006, between 15.6% and 78.7% of AP test takers passed with a score of "3" or higher. Irvine had the highest percentage of test takers pass while Santa Ana had the lowest percentage of students pass. Passing rates in all districts as well as the state increased in 2006 in comparison to previous years.

**Orange County AP Math and Sciences Enrollment Percent of Total 11th and 12th Grade Enrollment 2006, 2007**

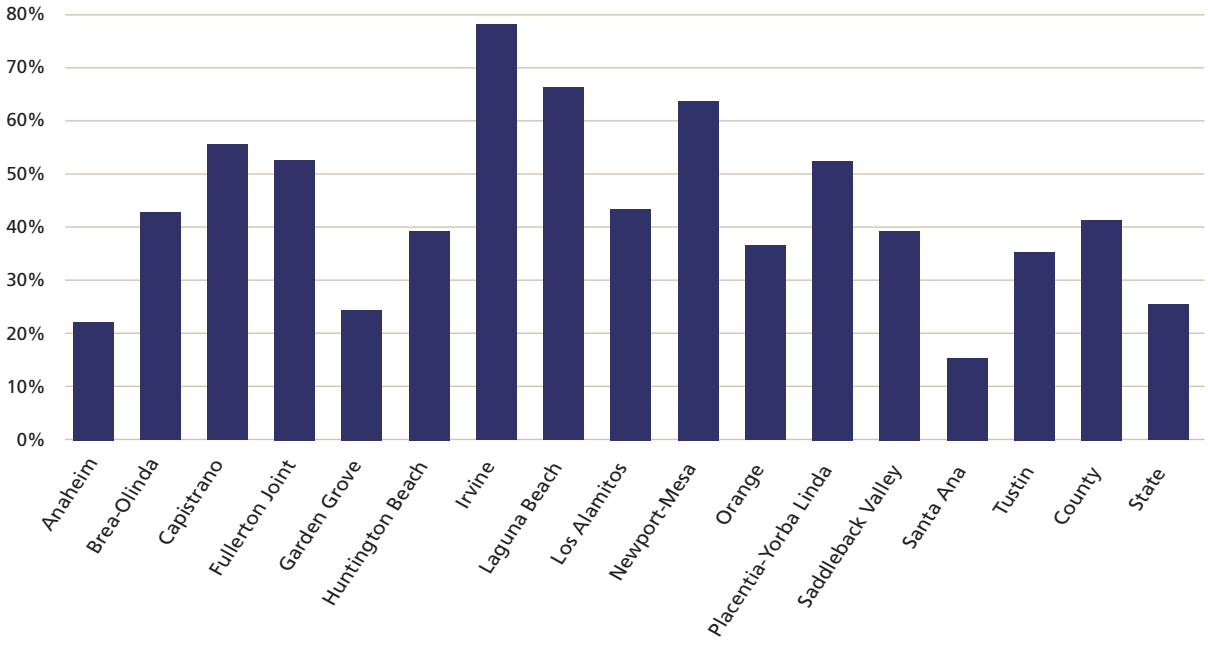
| | 2006 | 2007 |
|---|---|---|
| Computer Science A | 0.79% | 0.71% |
| Computer Science A B | 0.18% | 0.15% |
| Calculus AB | 4.47% | 4.87% |
| Calculus BC | 0.78% | 1.06% |
| Statistics | 2.92% | 2.98% |
| General biology | 3.75% | 4.15% |
| General chemistry | 2.56% | 2.34% |
| Physics B | 2.21% | 2.40% |
| Physics C | 0.50% | 0.34% |
| Environmental science | 1.36% | 1.42% |

*Source: California Department of Education, Educational Demographics Unit*

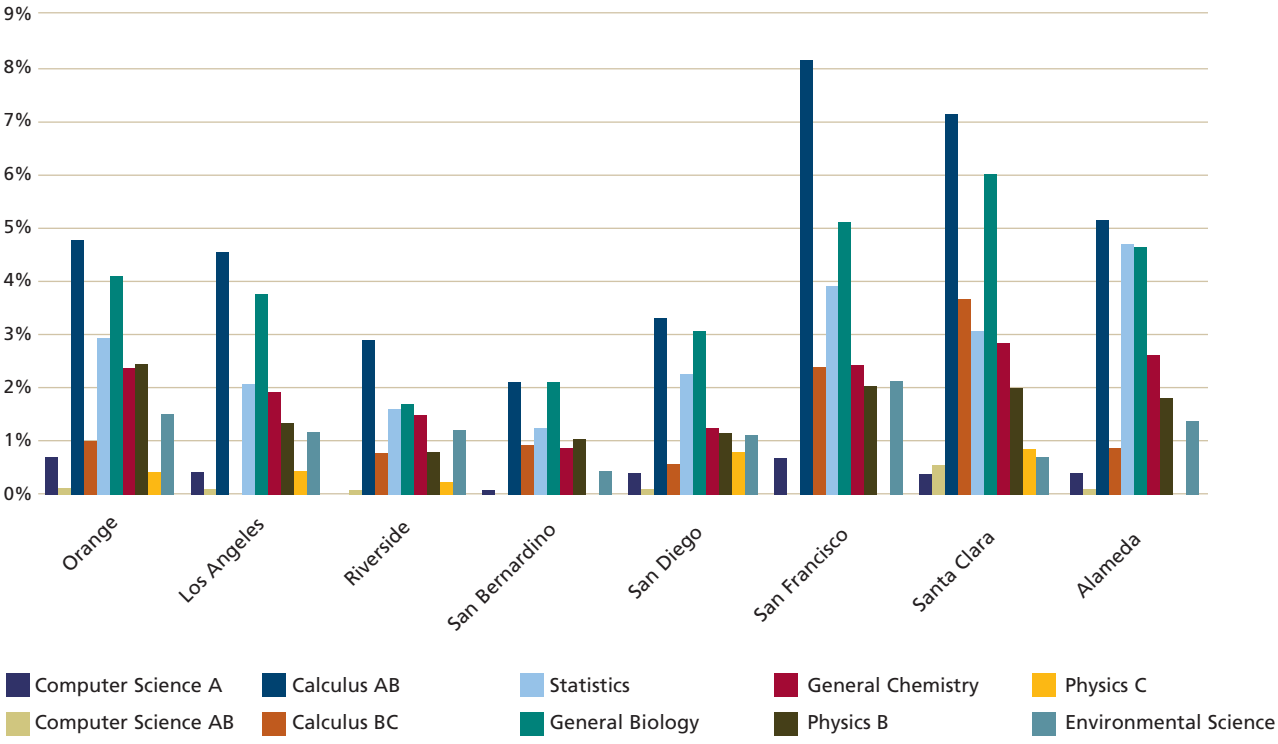
**TARGET**

**By 2010, double student enrollment in AP Science, Math and Computer Science from current enrollment levels. *Enrollment trends show that Orange County is not on pace to meet this target.***

## AP Test Scores 3 (Passing) or Greater 2005-06 By District




## Advanced Placement Enrollment as Percentage of Total Enrollment of 11th and 12th Grades, 2007




*Source: California Department of Education, Educational Demographics Unit*

# Wide Variety in Enrollment in Upper Level Math and Science Courses by District; Computer Course Enrollment Very Low

## Description of Indicator

This indicator measures enrollment in upper level math and science courses by Orange County high school students within each school district. The math courses treated are Intermediate Algebra and Advanced Math. The science courses are First Year Chemistry and First Year Physics. The enrollment of students in computer courses by district is also shown.

## Why is it Important?

Having a great percentage of high school students taking upper level math, science and computer courses is essential for the continuing economic success of Orange County businesses hoping to hire local workers.

If Orange County high school students do not enroll in upper level sciences and math courses, they will not be prepared to obtain college degrees in the science or technology sectors that form the foundation of high tech industries. Orange County high tech businesses must then recruit students either at local colleges who grew up outside of Orange County, or recruit from outside the region.

Since local colleges such as Cal State Fullerton, UC Irvine, Chapman University and the four community college districts primarily draw from the local high school population, low math and science course enrollment will result in fewer science degrees for students, thus fewer local recruits for high tech businesses over the long-term.

## How is Orange County Doing?

Enrollment in upper level science, math and computer courses varies distinctly by school district. Computer course enrollment is less than one percent by all districts.

Upper level math enrollment varies among district. In 2006-07, some districts such as Laguna Beach have 27.0% enrolled in Intermediate Algebra and 46.4% enrolled in Advanced Math. Others such as Anaheim have 12.4% in Intermediate Algebra and Santa Ana with 11.5% in Advanced Math.

For the sciences, the situation is less stark, but still very disparate. In 2006-07, 27.8% of Laguna Beach Unified, 18.9% of Los Alamitos and 17.6% of Irvine Unified are enrolled in First Year Chemistry. In Laguna Beach 13.2% are in First Year Physics. However, in Newport-Mesa, 7.9% are enrolled in First Year Chemistry, and in Santa Ana Unified 3.3% are enrolled in First Year Physics.

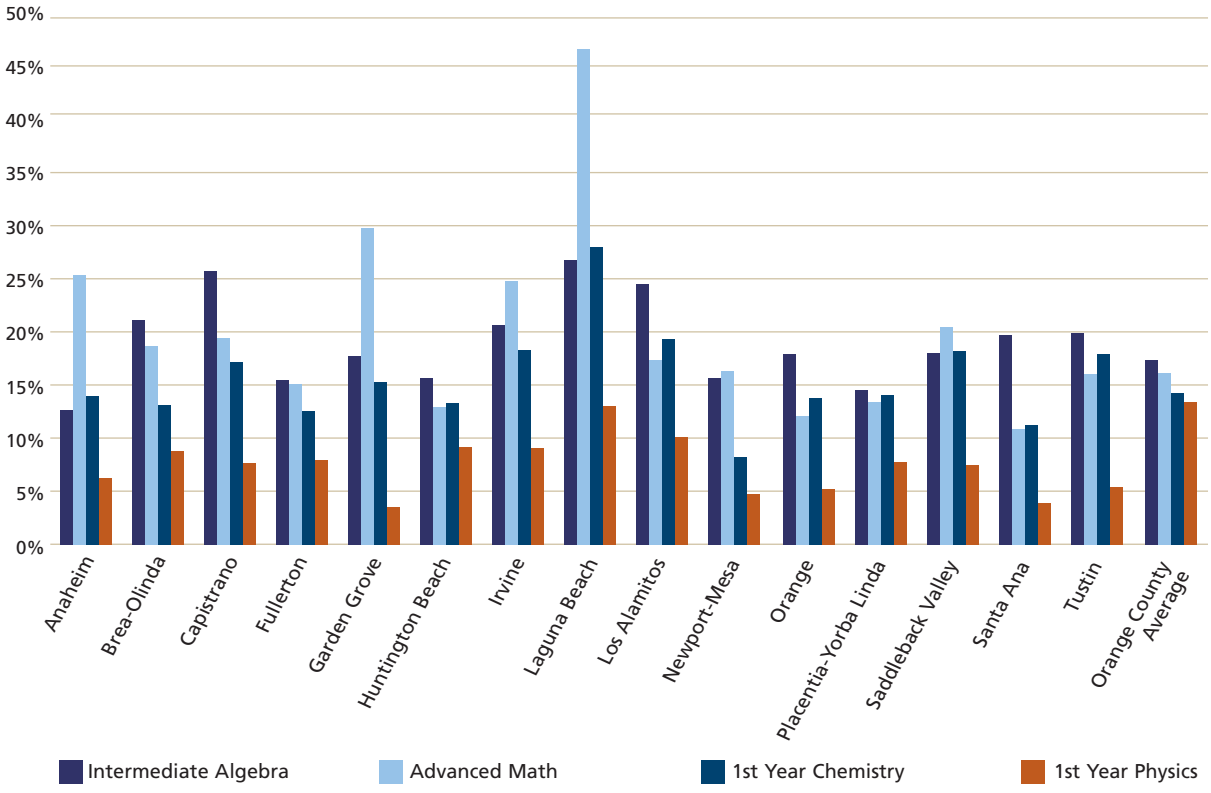
Between 2004 and 2005, enrollment in Intermediate Algebra stayed relatively constant in most districts. However, Los Alamitos experienced a dramatic increase going from 13.9% to 24.7%. Enrollment in Advanced Math similarly was generally stable, with a dramatic increase in Laguna Beach Unified.

In the sciences, school districts generally had constant enrollments in First Year Chemistry and First Year Physics. Laguna Beach had the highest enrollment in First Year Chemistry classes. The school districts with the highest enrollment in First Year Physics were Laguna Beach, Huntington Beach and Irvine.

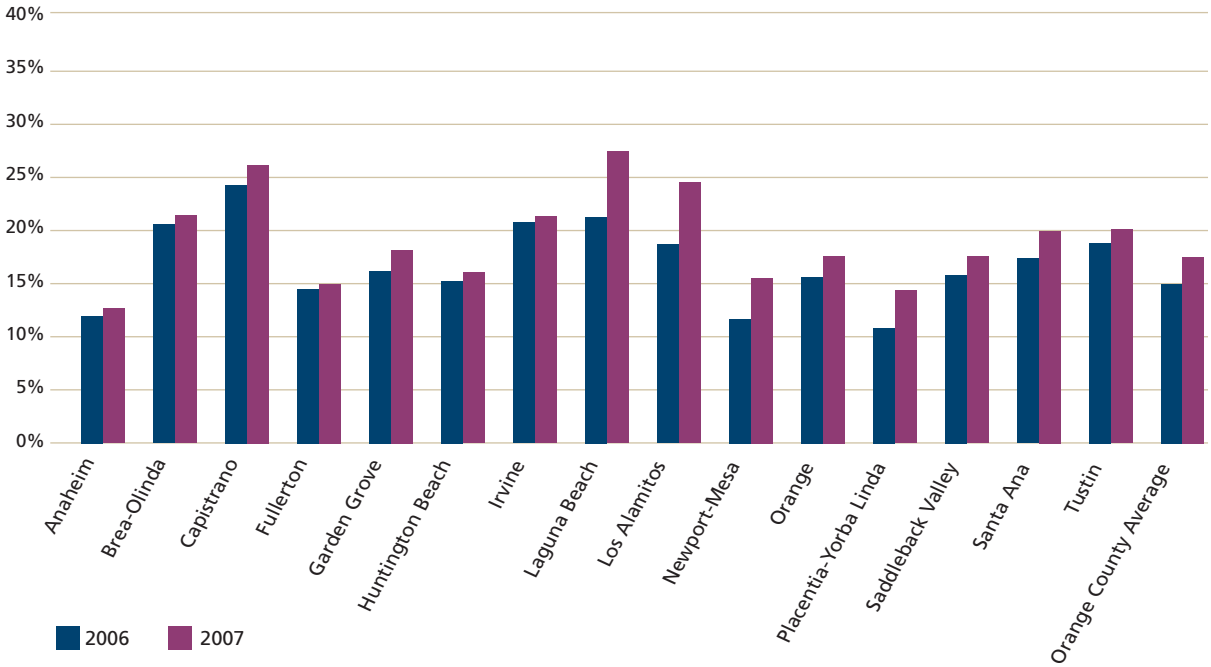
**TARGET**

**By 2010, increase enrollment in key career and tech prep courses by 20%.** ***Performance varied but overall it is not enough of an increase to make the target by 2010.***

### Enrollment in Upper Level Science and Math Courses by District, 2006-2007 Orange County



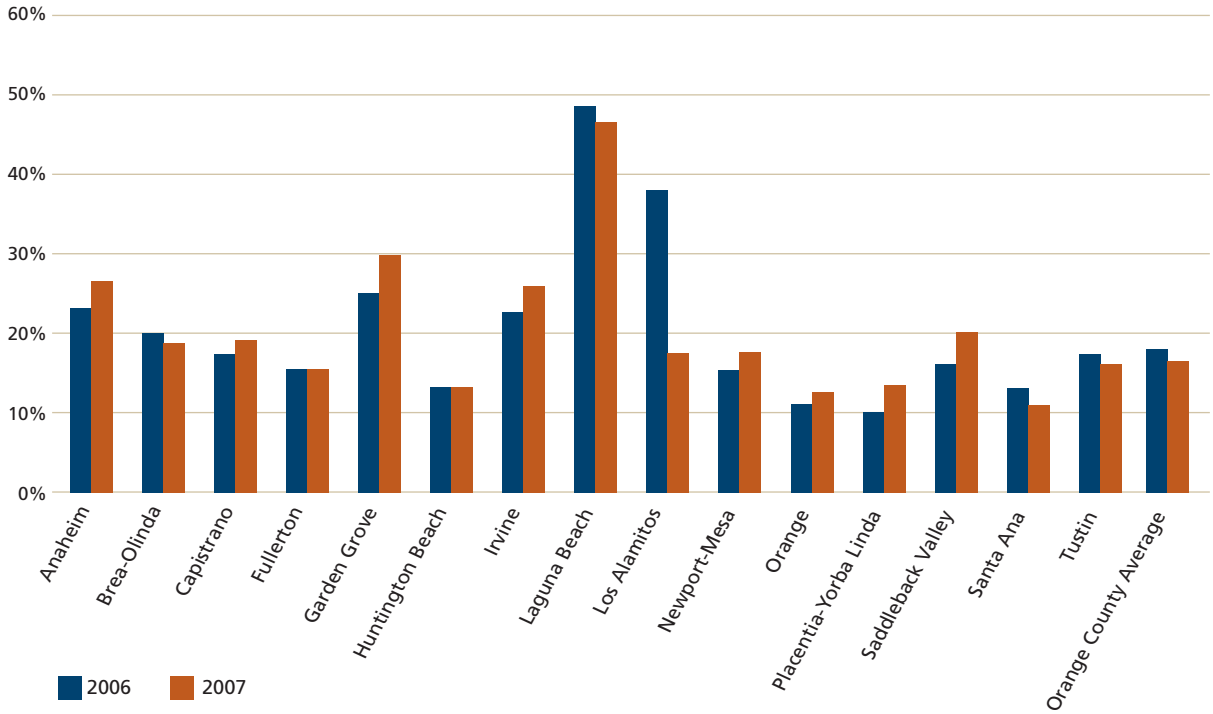

### Enrollment in Intermediate Algebra, 2006-2007



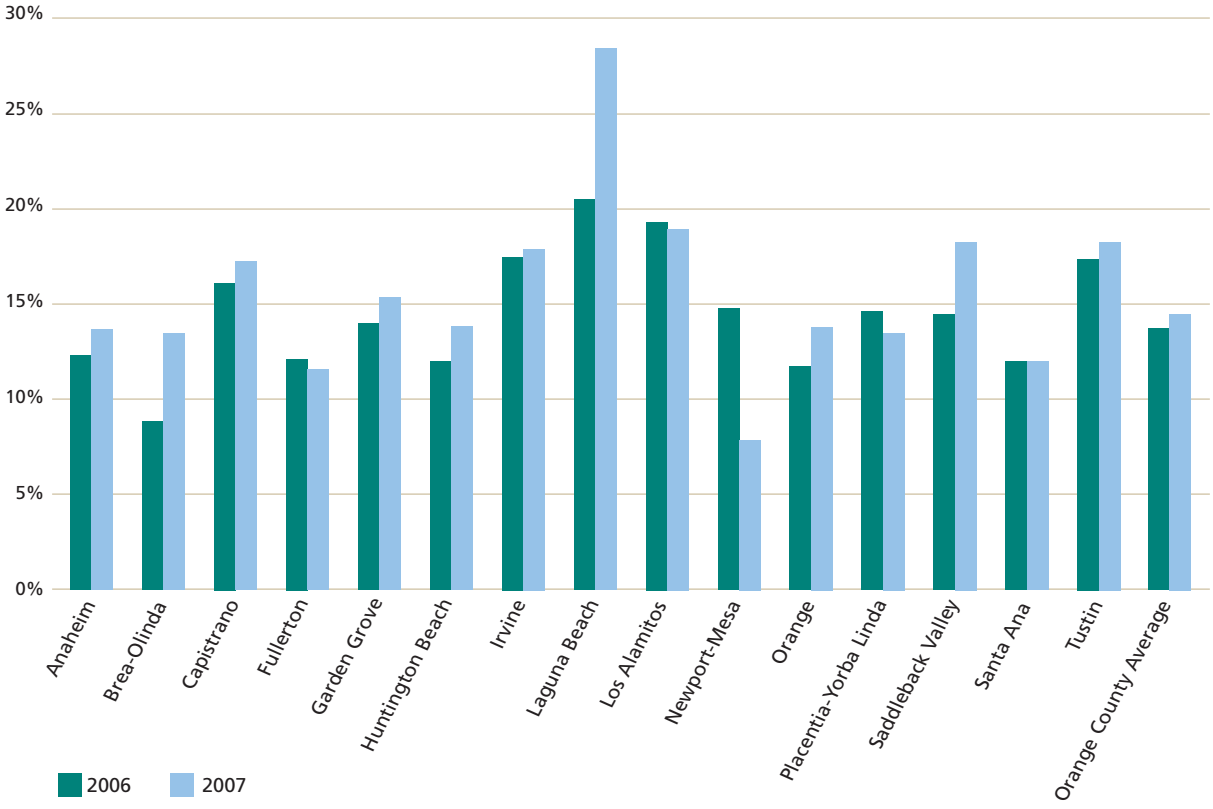

*Source: California Department of Education, Educational Demographics Unit*

## Enrollment in Upper Level Math, Science and Computer Courses by District – Continued

### Enrollment in Advanced Math, 2006-2007




### Enrollment in First Year Chemistry, 2006-2007




*Source: California Department of Education, Educational Demographics Unit*

# Orange County Class Sizes Exceeds Other Counties and State Average

## Description of Indicator

Average Class Size by Subject measures the number of students in high school classes by subject. The four subjects measured are English, Math, Social Science, and Science. Orange County is compared to seven other counties and the state of California average for the subject.

## Why is it Important?

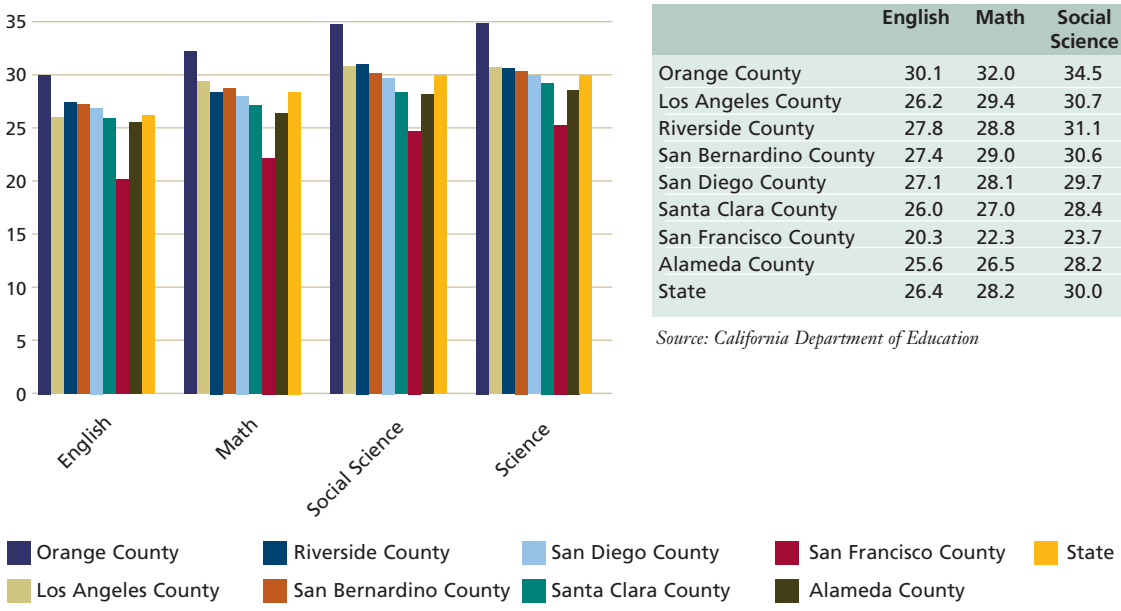
Small class sizes are shown to contribute to greater learning in students. Decreasing teacher to student ratios increases the likelihood that students will receive personalized attention. Given the difficulty of math and science for many students, having small class sizes could contribute to greater learning. Large class sizes may indicate that less learning may be occurring since teacher attention is spread among more students.

## How is Orange County Doing?

Orange County has a greater average class size for English, Math, Social Science and Science in comparison to seven other counties and the state average. In 2005-06 for English, the average class size in Orange County was 30.1. It was 32 for Math, 34.5 for Social Science and 34.9 for Science. These class sizes compare to state averages of 26.4 for English, 28.2 for Math, 30.0 for Social Science and 30.2 for Science. Orange County average class size has also grown year after year as well.

Orange County class sizes for these subjects are consistently larger than other counties across the state. San Francisco County is consistently smaller than other counties, while Riverside and San Bernardino are comparable to Orange County.

### Average Classroom Size 2005-06 in Selected Subjects




*Source: California Department of Education, Educational Demographics Unit*

### Average Class Sizes by Subject

| | English | Math | Social Science | Science |
|---|---|---|---|---|
| Orange County | 30.1 | 32.0 | 34.5 | 34.9 |
| Los Angeles County | 26.2 | 29.4 | 30.7 | 31.2 |
| Riverside County | 27.8 | 28.8 | 31.1 | 31.1 |
| San Bernardino County | 27.4 | 29.0 | 30.6 | 30.7 |
| San Diego County | 27.1 | 28.1 | 29.7 | 29.9 |
| Santa Clara County | 26.0 | 27.0 | 28.4 | 29.3 |
| San Francisco County | 20.3 | 22.3 | 23.7 | 24.6 |
| Alameda County | 25.6 | 26.5 | 28.2 | 28.8 |
| State | 26.4 | 28.2 | 30.0 | 30.2 |

*Source: California Department of Education*

**TARGET**

**By 2010, reduce Orange County's average class size below the State average for English, Math, Social Sciences and Science courses. *Average class sizes have not decreased.***

# Less Than 25% of Students of Most Ethnicities Take Upper Level Math and Science Courses

## Description of Indicator

This indicator is a measure of enrollment in upper level math and science courses by Orange County high school students, measured by ethnicity and gender. The math courses are Intermediate Algebra and Grade 11 Summative Advanced Math. The science courses are First Year Chemistry and First Year Physics.

## Why is it Important?

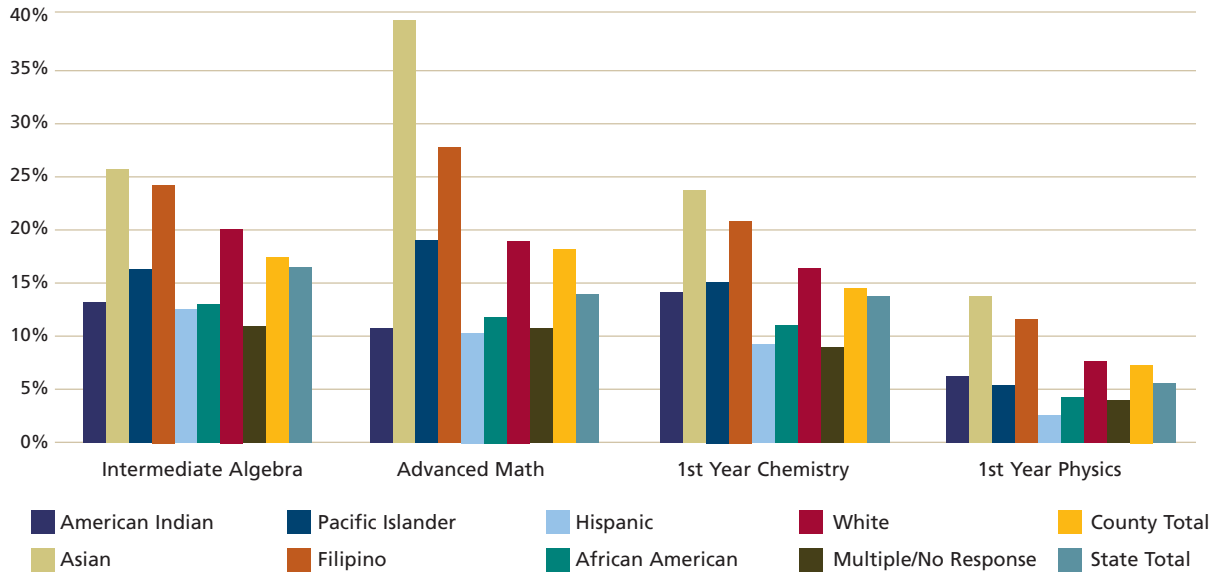
As Orange County's population becomes more Hispanic and Asian over time, the greatest indication of this transition is the high Hispanic and Asian enrollment in Orange County school districts. In addition, increasing the number of female students in math and sciences courses is essential to have as many workers as possible with backgrounds in these key areas. If students of non-male and non-White ethnic backgrounds do not have the proper preparation, companies seeking a diverse work force may leave or recruit from elsewhere.

## How is Orange County Doing?

Orange County students taking upper level math and science courses are a low proportion of the student population, but exceed state averages. Approximately 17.3% take courses in Intermediate Algebra, 18.1% take courses in Advanced Math, 14.2% take First Year Chemistry and 6.5% take First Year Physics. State averages range from 5.3% for First Year Physics to 16.7% for Intermediate Algebra. The highest percentages of upper level math and science courses in Orange County are in the Asian, Filipino, and White populations. The lowest percentages are in the Hispanic, American Indian and African American populations. Between 2006 and 2007, enrollments in upper level math and science courses stayed relatively constant across ethnicities.

For gender, a higher percentage of female students took Intermediate Algebra, Advanced Math and First Year Chemistry than male students. Approximately 18.5% of female students took Intermediate Algebra in comparison to 16.2% of male students. Female students outnumbered male students in Advanced Math 19.1% to 17.2% and outnumbered male students in First Year Chemistry 15.3% to 13.1%. Only in First Year Physics are there a higher number of male students to female students with 6.5% of male students in comparison to 6.4%.

**Upper level Math and Science Course Enrollment as Percentage of Total Enrollment of 11th and 12th Grades 2005-06**




*Source: California Department of Education, Educational Demographics Unit*

**TARGET**

**Increase enrollment of students in Intermediate Algebra, Advanced Math, and First-Year Chemistry by 10% by 2010.** ***Trends in this indicator are not growing rapidly enough to meet the target.***

# Career and Tech Prep Course Offerings and Enrollment Not In Line with Orange County Economy

## Description of Indicator

This indicator is a measure of the enrollment of Orange County high school students in courses specifically designed to give them career relevant job skills or experience. These include such courses as keyboarding, computers, work experience, automotive repair and child development & guidance.

## Why is it Important?

Students should have opportunities to explore career interests and develop competence in particular jobs tasks while still in high school. Such classes help make school more relevant and prepare students with skills they can apply immediately in the workplace. Having school systems provide students with these opportunities helps train the future workforce and may motivate students to pursue career paths that will benefit them as well as the larger economy.

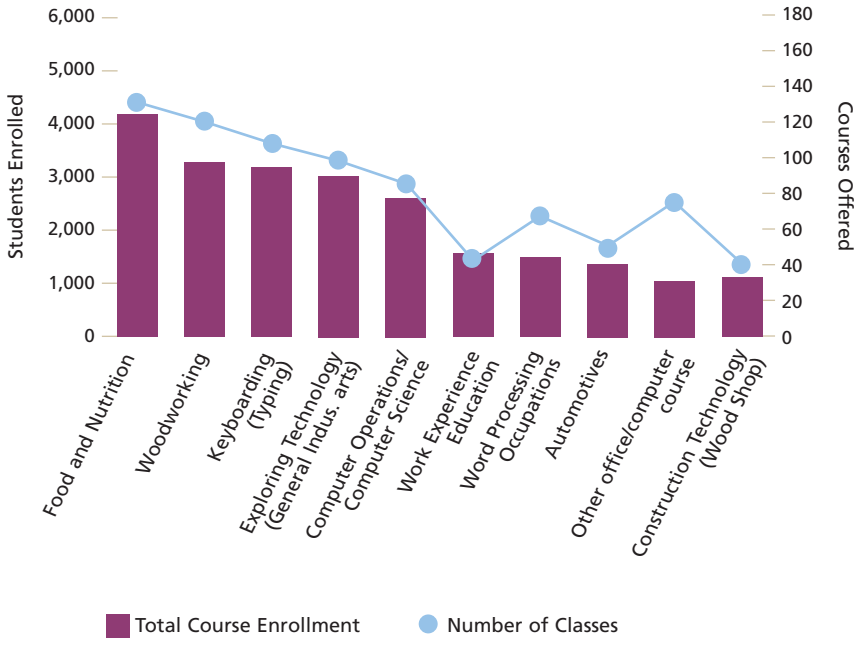
## How is Orange County Doing?

The career and tech prep courses that Orange County students can take in school do not generally reflect growing economic sectors of the Orange County economy. Overall, approximately one third of the total enrollment of Orange County high schools takes career and tech prep courses. Enrollment in "Other Computer" and "Work Experience" courses increased in 2006-7 in comparison to 2005-06 while enrollment in "Keyboarding," "Food and Nutrition" and "Woodworking" declined, resulting in an overall decline as these courses were the most frequently enrolled courses in 2006-07. Actual enrollment is less since students may elect to take more than one career and tech prep course in the academic school year.

Perhaps the reason that less than half of students enroll in these courses is because course enrollment numbers are dominated by options such as "Food and Nutrition," "Keyboarding," "Exploring Technology," and "Woodworking." While these courses may be beneficial to students on a number of levels, they do not generally preset high school students with the best career opportunities available in Orange County's high technology economy.

The fifth-most enrolled course, "Computer Operations/Computer Science" appears to be more in line with the occupational sectors in the Orange County economy that provide opportunities and wages for current students to flourish in the future if they choose to remain living in Orange County as adults. More courses such as this, or "Accounting/Computer Accounting," "Technology Core, Level 1," "Computer Aided Drafting/Design," and "Metal Fabrication" reflect the growing sectors of the Orange County economy.

**Career and Tech Prep Courses in Orange County, 2006-2007**




*Source: California Department of Education*

**TARGET**

**By 2010, increase enrollment of students in key career and tech prep courses by 20%.** ***Enrollment is not increasing enough to meet the target by 2010.***

# Our Students Speak Out

## Description of Indicator

This indicator is based on the results of the 2005 and 2006 "NetDay Speak Up Day for Students" opinion survey of teachers and students in K-12 public, private and charter schools around Orange County and around the nation. Nationwide, the survey included more than 253,000 students and teachers from all 50 states. The findings of the survey are designed to benefit federal, state, and local policies and programs on technology and education.

## Why is it Important?

Essential to sustaining Orange County's innovation-driven economy is a workforce that is adept at utilizing and leveraging technology. If Orange County's schools fail to integrate technology effectively in our education curriculum, both businesses and students will be at a competitive disadvantage.

As the principal beneficiaries of our educational system, students' perception of their school is critical to evaluating the overall effectiveness and relevance of their education. As students are increasingly savvy about technology that permeates their lives outside of school, they are uniquely qualified to assess the quality of technology being used inside the classroom.

If students feel that schools are adequately integrating technology into classes, this should be interpreted as a good omen that their learning experience is on the right track. If, however, students feel that schools aren't adequately employing technology for their education, their concerns should be heeded.

## How is Orange County Doing?

Orange County students are becoming increasingly technology savvy. This is shown by how students communicate electronically with each other. The favorite communication tool of students is the cell phone—voice, which is chosen by 39% of students. The second favorite communication tool is cell phone text messaging, favored by 19% of students. Instant messaging is next (16%) followed by the home telephone at 12%. Email (7%), using a Smart Phone like a Treo, Blackberry or Sidekick (3%), letter writing (2%), and Skype /VOIP (1%) are lowest in their preference. These trends closely follow national trends, though Orange County students prefer voice cell phone and cell phone text messaging at higher rates and instant messaging and the home telephone at slightly lower rates than other students throughout the nation.

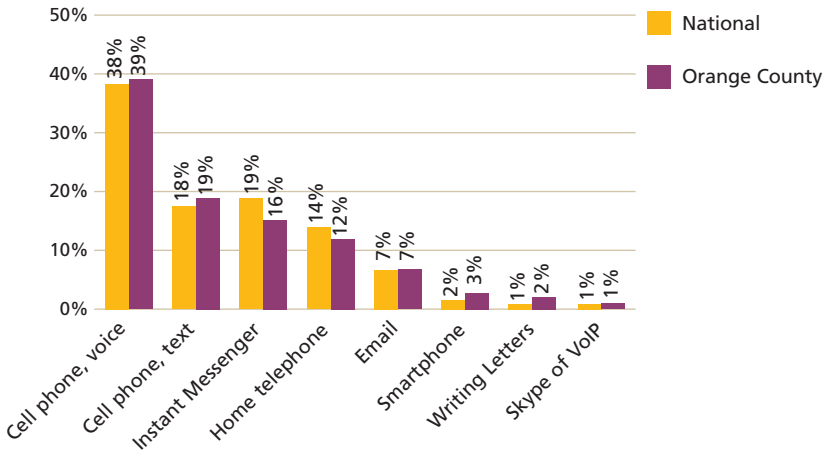
Asked if they were designing a new school for students just like themselves what they would want, Orange County students wanted most to have "Wireless laptops for every student to use at school" (54%), "Digital cameras, video equipment, and a film studio" (53%), and "Interactive white boards (SmartBoards) in every classroom" (52%). Orange County students had stronger preferences for these high technology items in their schools than students on the national survey indicator a greater demand, familiarity and expectation for technology as a part of their education in Orange County than in the nation as a whole.

Asked which items they used in the last week, Orange County students used the cell phone (90%), desktop computer (87%) and MP3 player (81%) most frequently. Orange County students surpassed their peers on a national survey on their usage of high technology items on all items listed except for usage of video games (48% for Orange County vs. 53% for the national survey).

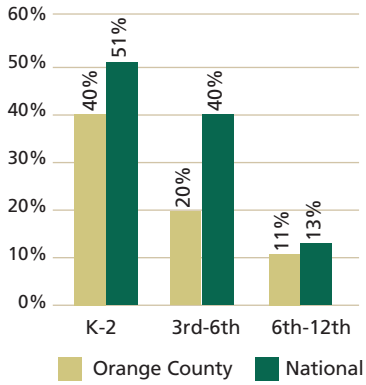
However, the rates of participation in computer classes leave much to be desired. While participation rates for K-3 students are at 40%, this is less than the 51% for the nation for primary grades. Grades 4-6 have participation rates of only 20% in Orange County in comparison to 40% for the nation and 11% for grades 6-12 in Orange County in comparison to 13% for the nation. Arguably, the lower participation rates in the upper grades may be due to students desiring to learn computer skills independently or from friends. However, Orange County, as a leading technology hub of the nation having so few students learning computer skills in an academic setting, is a situation that needs to improve.

Students in Orange County are very tech savvy as shown by their high usage of technology in their regular lives; however, this is failing to translate into academic participation at schools. This gap between how students live and what they learn needs to be addressed.

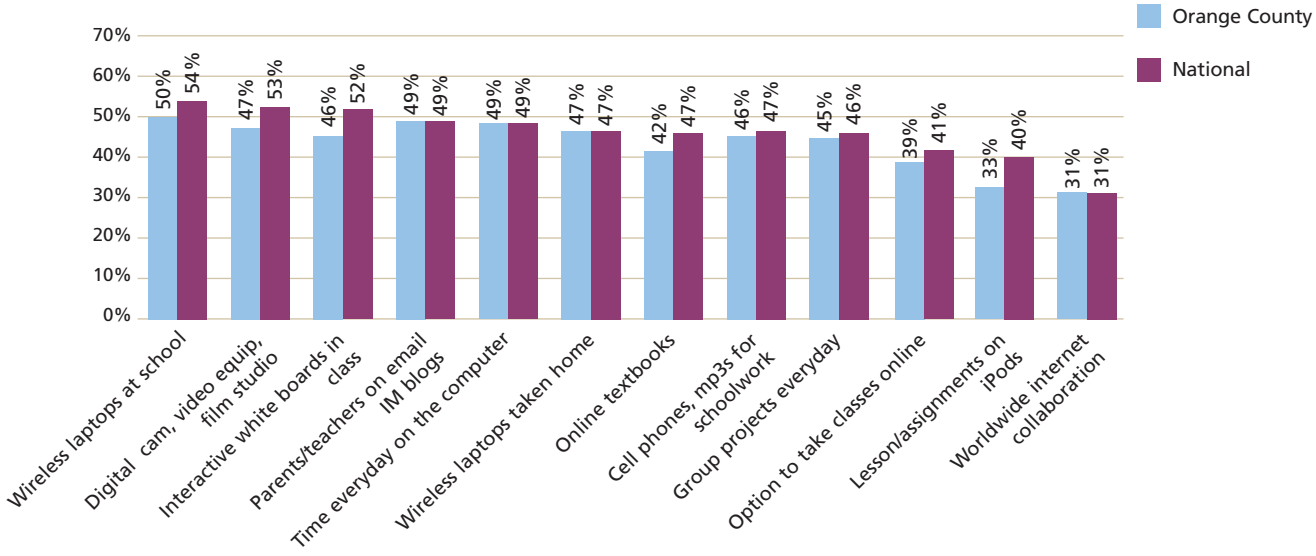
### What is Your Favorite Communication Tool?



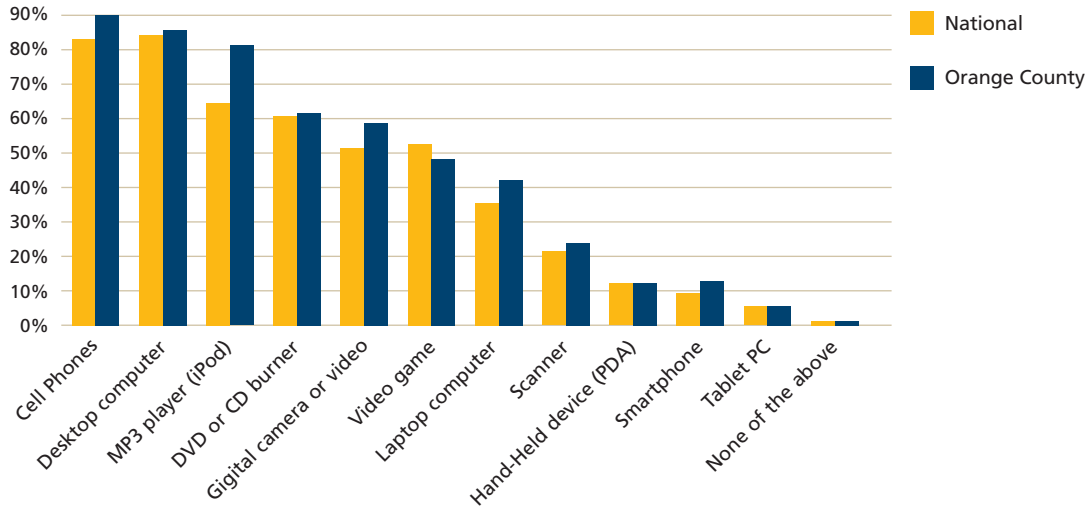

### Do You Participate in Computer Classes at Your School?




### If you were designing a new school for students just like you, which of these would be part of your school?




### Which of these things have you used this week? In the last week, did you use any of these things?




*Source: "NetDay Speak Up" Survey, 2006*

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**Data Sources:**
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