

SCAG Economic Conference Preparation Report

Inland Empire

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Prepared by
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For the Inland Empire, a review of the most recent economic data and the overall trend since the turnaround began in 2011 provides very good news. Based on growth through August of 2017, the area is on track to surpass its pre-recession high by 151,776 jobs or 11.6%. This occurred because job growth has surged of late, up 47,575 (4.0%) in 2013, 55,933 (4.5%) in 2014, 64,217 (4.9%) in 2015 and 47,500 in 2016 (3.5%) is on track to grow 42,701 (3.0%) in 2017 based upon 8-months of preliminary data. If 2017 holds, the area will have created 292,426 jobs in the 2011-2017 period of recovery and expansion. That is 151,776 (107.9%) or more than double the 140,650 jobs lost in the Great Recession (2008-2010). Looking at the rest of 2017, there is every reason to anticipate growth levels will be sustained given the forces impacting the key sectors that make up the inland region's economic base (*logistics, construction, health care, manufacturing, high-end*).

Unemployment in the inland area has dropped. It was 6.2% in August 2017, down from 6.3% in September 2016. More representative was the June 2017 versus June 2016 change (5.5% down from 6.3%). Unfortunately, the August rate was the second highest among the 50 major U.S. metropolitan areas after Cleveland (6.8%) and above the unadjusted rates for California (5.3%) and the U.S. (5.4%).

Key metrics on challenges faced by the Inland Empire include the 46.3% of its adults 25 and over with high school or less education in 2016. That compares to 39.0% for the rest of Southern California (*Imperial, Los Angeles, Orange, San Diego, Ventura*). Those with AA degrees or higher were 29.2%, well below the 41.0% for the rest of the Southland. The share with BA's or higher was 21.0% versus 33.7% in the balance of Southern California. These facts limit the kinds of firms for which the area is competitive. These shares have improved from 50.3%, 23.1% and 16.3% respectively in 2000. Related to these educational levels is the fact that the area faces serious public health issues in that 16.4% of all people and 23.5% of children under 18 were living in poverty in 2015. That compares to 14.5% and 20.0% for the balance of Southern California.

Like all regional economies, the key for Inland Empire's growth is the expansion of the economic base sectors for which it has competitive advantages. This is the group of activities bringing money to it from the outside world. Fundamentally, there are five key sectors:

- **Logistics** firms have located in the Inland Empire in response to its available land and the need to handle both the huge flow of goods moving in and out of the U.S. via the ports of Los Angeles and Long Beach plus the rapid expansion of fulfillment centers that handle the explosive expansion of e-commerce. They were responsible for 20.5% of the area's direct job growth in the 2011-2017 period (60,075). Based upon growth to date in 2017 (4.2%), the sector's total should reach 168,900 jobs in 2017. If EDD's data is accurate, that would be the slowest growth in several years.
- **Health Care** firms are expanding in the Inland Empire in part because the average worker in the sector is already serving 27.1% more people than California's average. Meanwhile,

the Affordable Care Act has decreased the share of local residents without health insurance from 27.1% in 2013 to 12.4% in 2016. Health care firms are also beginning to respond to the fact that 23.7% of the population was 55 years or older in 2016. The area's population growth was 320,188 people or 76% from 2010-2017. Based upon job growth to date in 2017 (2.8%), it is forecasted that the sector will add 3,700 jobs in 2017 to reach 136,000.

- **Construction** has historically been the major driver of the Inland Empire's economy given its undeveloped land and Southern California's need for single family homes, apartments, industrial facilities and infrastructure. The mortgage crisis upset the first of these needs and was largely responsible for the local sector losing -68,400 jobs from 2006-2011 (-53.6%). From 2012-2016, it has gained back 33,400 jobs. In 2017, positive factors are appearing. Through June this year, total permit valuation is headed for an increase of 29.9% in 2017 after rising 7.2% in 2016 after a 13.4% gain in 2015. Based upon job growth to date in 2017 (14.8%), it is estimated that the sector will add 13,700 jobs in 2017 to reach 106,200 positions. That would still be -21,300 or -16.7% below the 2006 peak.
- **Manufacturing** has been the economic base sector with sub-par performance in the Inland Empire. This stems from California's punishing regulatory environment plus energy policies that in July 2017 had the state's industrial electrical costs 105.9% above Nevada and 117.2% above Arizona. As a result, the state has created only 48,000 manufacturing jobs (3.9% growth) since January 2011, and accounted for only 5.9% of the 827,000 jobs (7.9% growth) created in the U.S. A good deal of job openings occur in the sector due to the need to replace aging baby boomer technicians. Based upon job growth to date this year, it is estimated that the sector will add 1,500 jobs in the Inland Empire in 2017 and reach 100,400 positions. That would remain -18,100 jobs or -15.3% below the 2007 level of 118,500 positions before the Great Recession.

For the first time, a high paying sector is showing signs of starting to add to the Inland Empire's economic base:

- **Professional, management & scientific** work has recently started expanding. This appears to be a reaction to three factors. First, it has seen a 93.0% gain in residents with bachelors or higher degrees from 2000-2016. Even though the inland area's population is less well educated than its coastal county competitors, in this period its overall percentage of college graduates grew from 16.3% to 21.0%. Its percent of those with AA degrees or higher went from 23.1% to 29.2%. Second, the growth of the inland economy requires increasing levels of professional service providers given its 4.56 million people and 106,867 firms. Third, the re-emergence of the construction sector creates an need for engineers and other such specialists. Based upon job growth to date in 2017 (2.1%), it is estimated that the sector will add 1,000 jobs in 2017 to reach 49,400 positions.

Given the high levels of poverty in the Inland Empire (16.4% of all people, 23.5% of those under 18), it is important to find sectors that offer workers median incomes at middle class levels provided their families have a secondary wage earner in a lower paying sector. The data show that this is possible in several sectors due to their median pay levels over \$45,000, their minimal

educational requirement for large shares of the workers and their growth potential. Looking at the economic base sectors and one related to them, the following is the situation:

- **Logistics** (2017 median pay: \$48,708) has 78.4% of its workers in jobs requiring high school or less schooling. The sector is the fastest growing in the Inland Empire.
- **Construction** (2017 median pay: \$52,604) has 82.2% of workers in jobs requiring minimal levels of formal education, though apprenticeship is necessary for some types of work. The sector has become the second fastest growing in the inland area though firms continue having trouble finding workers.
- **Health Care** (2017 median pay: \$60,768) has a smaller share of workers in jobs with minimal educational requirements (33.7%). The sector has provided significant upward mobility for those with AA degrees or post-secondary training (30.2%). It grows continuously with those obtaining technical certifications finding good jobs and the ability to move up within the sector.
- **Manufacturing** (2017 median pay \$51,385) offers a little job growth. However, industry leaders indicate that a large share of existing technicians are starting to retire. Of workers in the sector, 66.5% needed high school or less training.
- **Professional, management & scientific** (2017 median pay \$73,279) has a relatively small share of workers in jobs for marginally educated workers (34.5%). However, another 9.2% can step up to better paying jobs with AA degrees or post-secondary training.
- **Finance, Insurance & Real Estate** (2017 median pay: \$49,034) will grow as the real estate market recovers. In this sector, 65.6% of workers are in jobs requiring minimal entry level educations though many require specific state certifications. Its growth requires more home sales and construction activity.

Finally, the need for change in the Inland Empire's economy is underscored by the fact that the median income adjusted for inflation has been nearly stationary (-0.5%) between 1990-2016. Per capita income has fared better in that it is up 5.7% from 1990-2015. However, that measure is pulled higher by the small share of people with high incomes. That fact is seen by the imbalance in the income distribution. Thus in 2016, the 10.9% of households making over \$150,000 a year captured 27.8% of all income. And, the 14.8% of households receiving \$100,000-\$149,999 a year earned 25.4% of the region's income. These two groups together constituted 25.6% of households but had 53.2% of the Inland Empire's income. By contrast, the 43.3% of families earning below \$50,000 received only a 15.6% share of the area's income.

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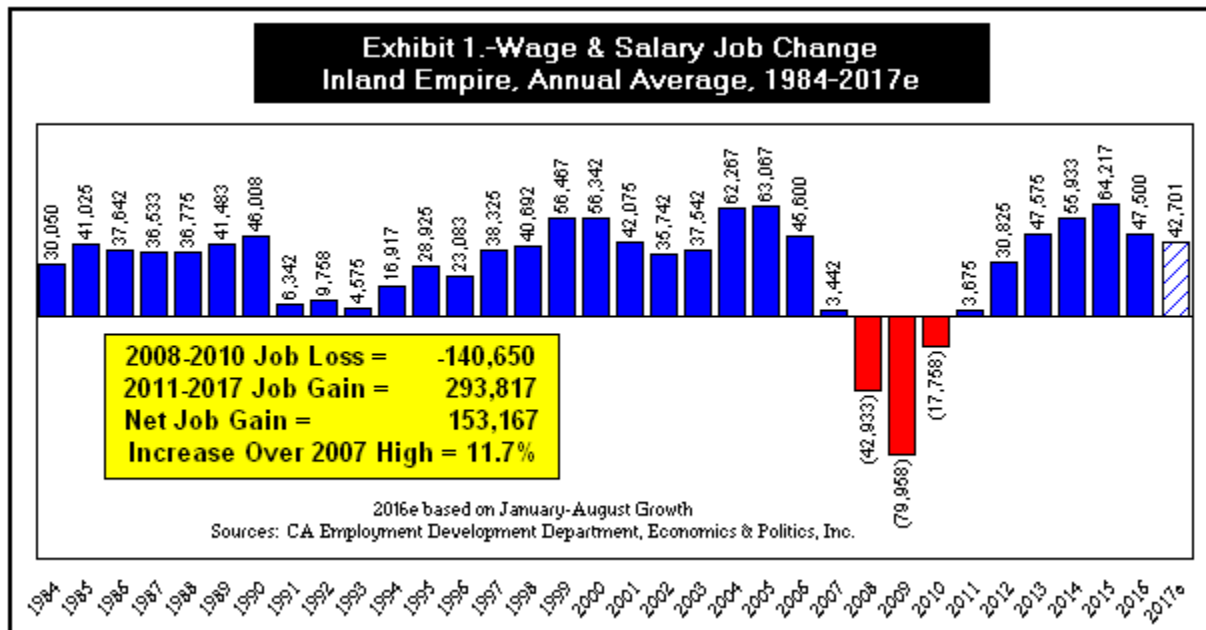
SCAG Economic Conference Preparation Report: Inland Empire, 2017

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I. Economic Recovery

A. Forecast & Justification

In 2017, the Inland Empire is on-track to reach 1,458,118 jobs and exceed its pre-recession employment level by 153,167 based on CA Employment Development Department (EDD) data. This includes a 2017 gain of 42,701 (3.0%) based on the growth rate through August. Assuming EDD is accurate for 2017, the inland economy is up 293,817 jobs from 2011-2017, well over the -140,650 positions lost from 2008-2010. The 2017 growth rate appears on track to be 3.02% (*Exhibit 1*).



However, some caution must be exercised about EDD's job estimates for 2017 since they are high than by U.S. Bureau of Labor Statistics' estimates which are based on a more thorough access to employment data. From March 2016-2017, they had Inland Empire non-agricultural growth at 42,180 jobs (3.05%). BLS had it at 53,000 (3.83%) (*Exhibit 2*). Ultimately, EDD's data must be revised down to conform to BLS information in March 2018.

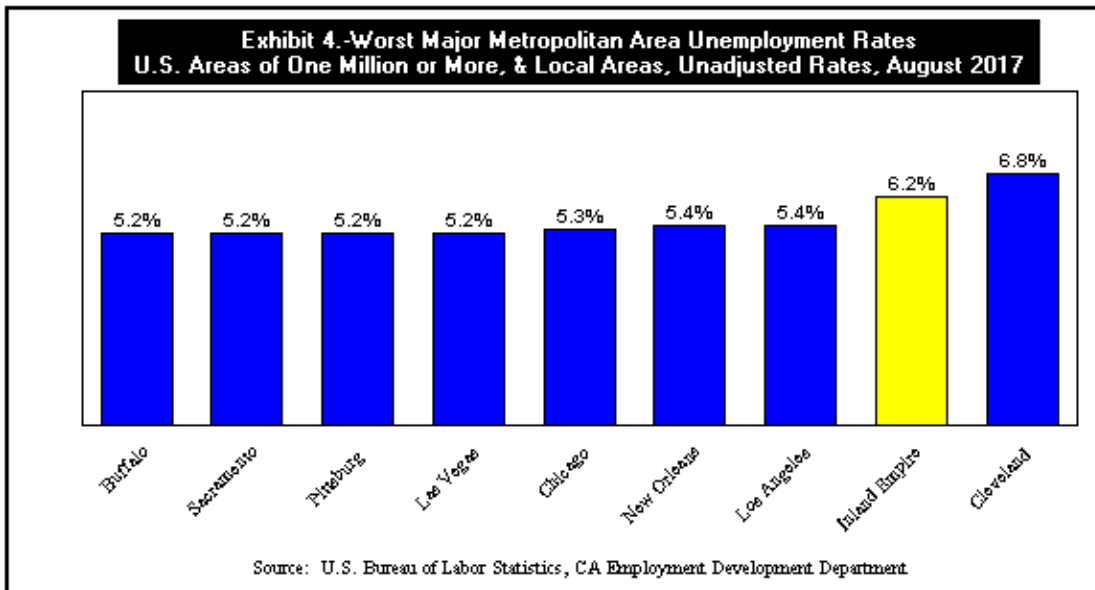
Exhibit 2.-Non-Agricultural Job Gains, Inland Empire, March 2016-2017

Agency	March 2016	March 2017	Change	Percent
U.S. Bureau of Labor Statistics	1,382,420	1,424,600	42,180	3.05%
EDD-Non-Agricultural	1,384,800	1,437,800	53,000	3.83%

Source: Quarterly Census of Employment and Wages, U.S. Bureau of Labor Statistics

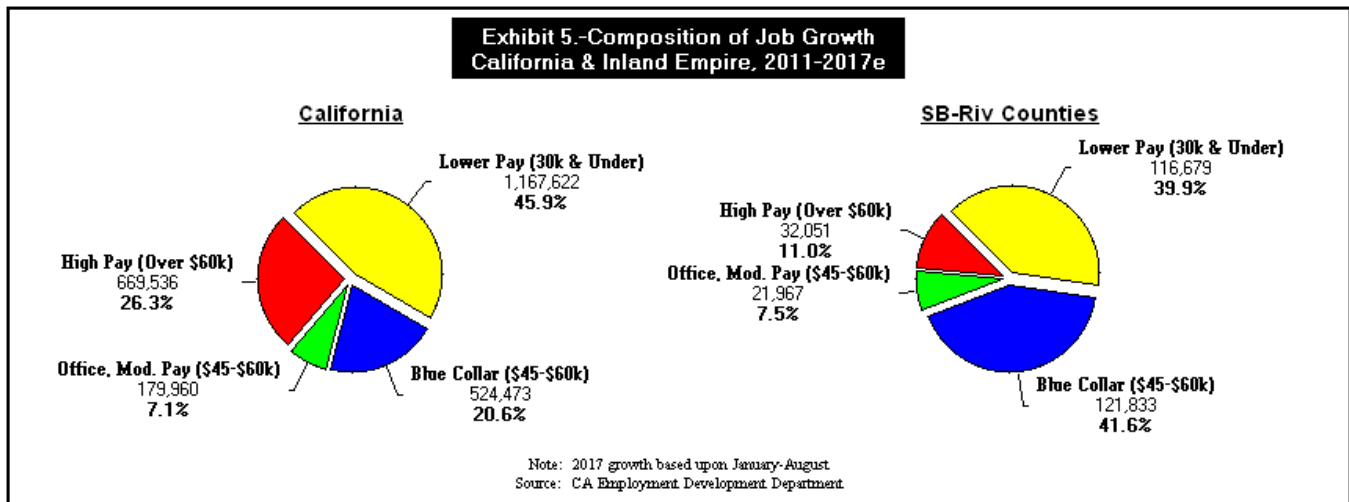


Meanwhile, the Inland Empire’s unadjusted unemployment rate has been falling. The August 2017 figure of 6.2% was the lowest for that month since the 5.3% figure in August 2006. The area’s high for the month was 14.1% in August 2010 (*Exhibit 3*). However, the latest figure was above the unadjusted levels for California (5.4%) and the U.S. (4.5%). Unfortunately, the area’s 6.2% rate in August 2017 was the second highest among U.S. metropolitan areas of one million or more people (*Exhibit 4*).



Job quality has historically been the subject of a great deal of discussion in the Inland Empire. A comparison of the area’s job growth versus California from 2011-2017 in private sectors with varying pay levels produces a surprising result. In the lowest paying sectors (*under*

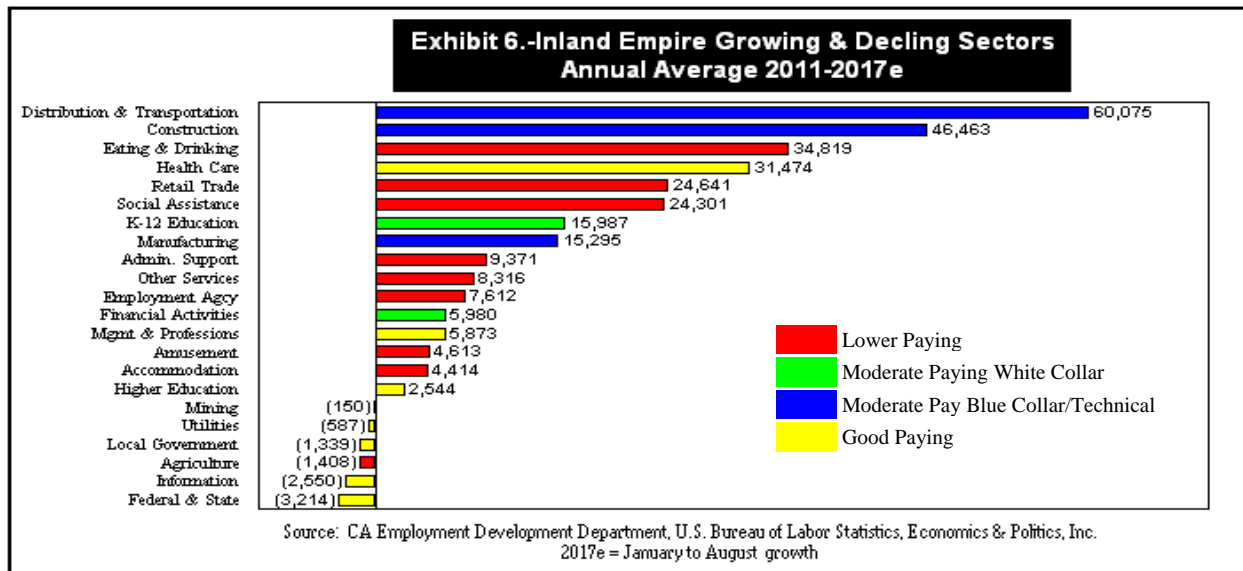
\$30,000), the local area saw 39.9% of its job growth (*Exhibit 5*). That was much less than the 45.9% share in California. In the highest paying group, the local share was 11.0% versus the state's 26.3%. The state's difficulty and the inland strength was in blue collar/technical sectors paying \$45,000-\$60,000 with a 41.6% local share versus the state's 20.6%. The share in \$45,000-\$60,000 office based sectors were 7.5% v. 7.1%. These data highlight the state's problem in seeing its blue collar/technical sector routes to the middle class being cutoff. They also underline the need for more expansion in the Inland Empire's higher paying groups.



B. Economic Challenges To Continuing The Expansion

For the Inland Empire, the key to continued expansion will be the expansion of the clusters constituting its economic base. Here, the sectors that must grow include logistics, health care and construction. Manufacturing has weakly joined this group, but suffers due to the high energy costs and heavy regulatory burden faced by that sector in California. The management, professional, engineering and scientific group should see its role improve as those types of companies seek lower space and labor costs and respond to the stronger educational foundation in specific inland sub-areas close to the coastal counties.

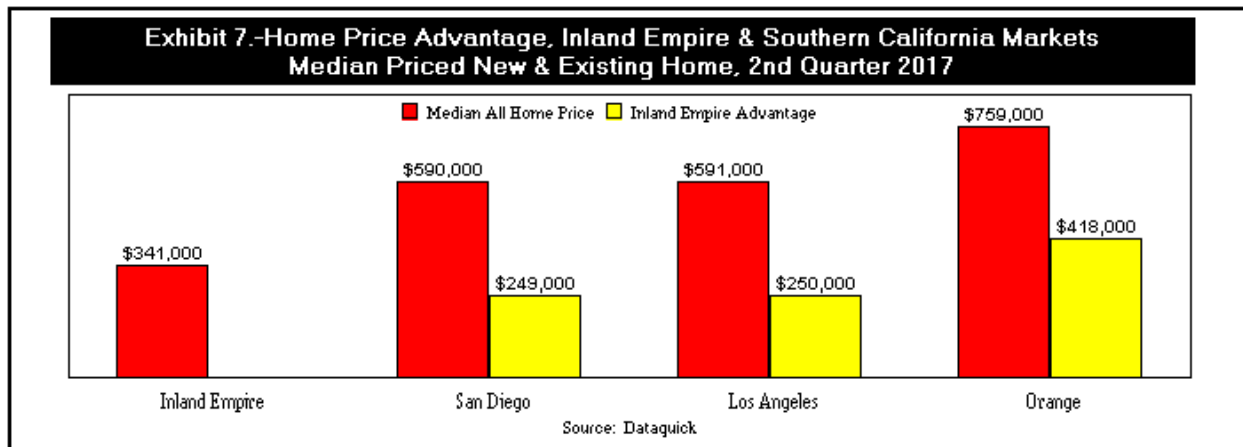
All of these sectors are crucial as each one brings money from the outside world into the local market that then recirculates allowing local population-serving sectors to add to growth. The logistics and manufacturing sectors do so because their customers are largely located throughout the state, country and world. Health care brings in funds since the sector is largely funded through federal or state programs or by medical insurance companies. Construction does so because projects are funded either by governmental infrastructure grants or private loanable funds flowing to local contractors and workers from the national mortgage market. The management, professional, engineering and scientific group is a mixed part of the base. Some firms are financed by selling services to the outside world. Others indirectly receive outside funds through selling services to those firms. However, some of these high-end firms primarily sell services to the local population.



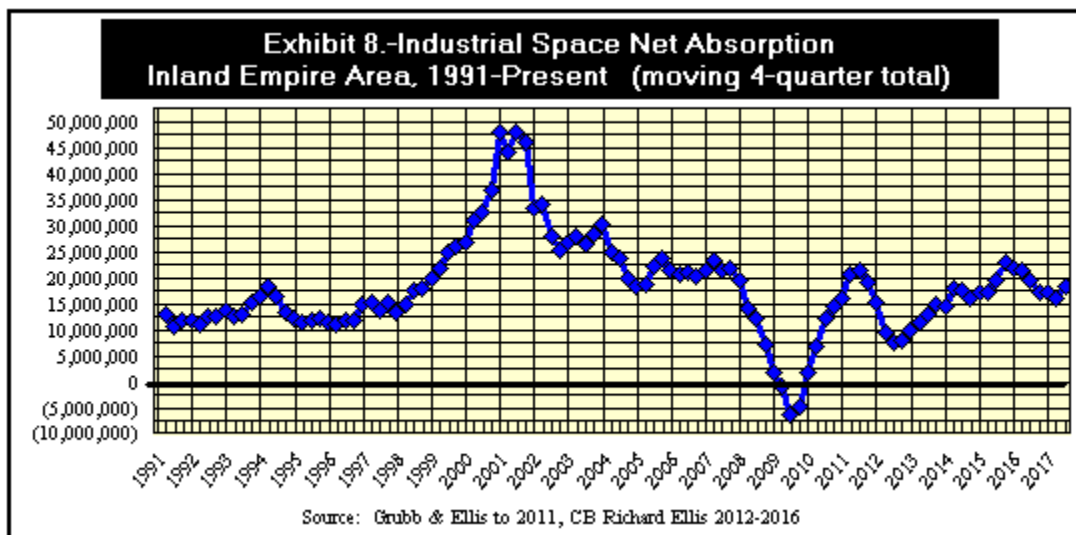
Each of these five sectors faces issues:

1. **Logistics** has been the Inland Empire’s fastest growing sector and has strong basics. However, local activists want to stop its growth and the South Coast Air Quality Management District (*AQMD*) and CA Air Resources Board (*CARB*) believe it cannot meet its air quality requirements unless the truck traffic associated with the sector is dramatically reduced. A major fight is brewing that could conceivably halt the sector’s strong continual expansion. From 2011-2017, the data indicate that it has been responsible for 20.5% of direct job growth (*60,075 jobs*) (*Exhibit 6*). Despite adding 6,638 jobs in 2017, the sector lost its share of growth as construction has risen in importance
2. **Construction** is the sector that is rising in importance as it moves towards its traditional role of being a major driver of the Inland Empire’s growth. The group lost -68,408 jobs from 2006-2011 (-53.7%). From 2011-2017, it has gained back 46,463 indicating that the sector is coming back. EDD estimates that its 2017 growth is on pace to be 13,513 jobs, though that may be an overestimate.

Construction is re-emerging in part due to the lack of housing affordability in the coastal counties that is pricing thousands of families out of those markets. (*Los Angeles: 28%; San Diego: 26%; Orange: 21%*) The Inland Empire’s \$341,000 median priced home is \$249,000 to \$418,000 less expensive than those in those counties (*Exhibit 7*). Historically, this will ultimately drive people with all types of incomes and educations to migrate inland for homes they can afford. However to date, the speed at which this is occurring has been blunted by the low FHA, Fannie Mae and Freddie Mac conforming loan limit (*\$441,100*) for the inland market compared to \$636,150 in the coastal counties. Consumer fears of making large purchases given their experiences in the Great Recession also appears to be a lingering factor.

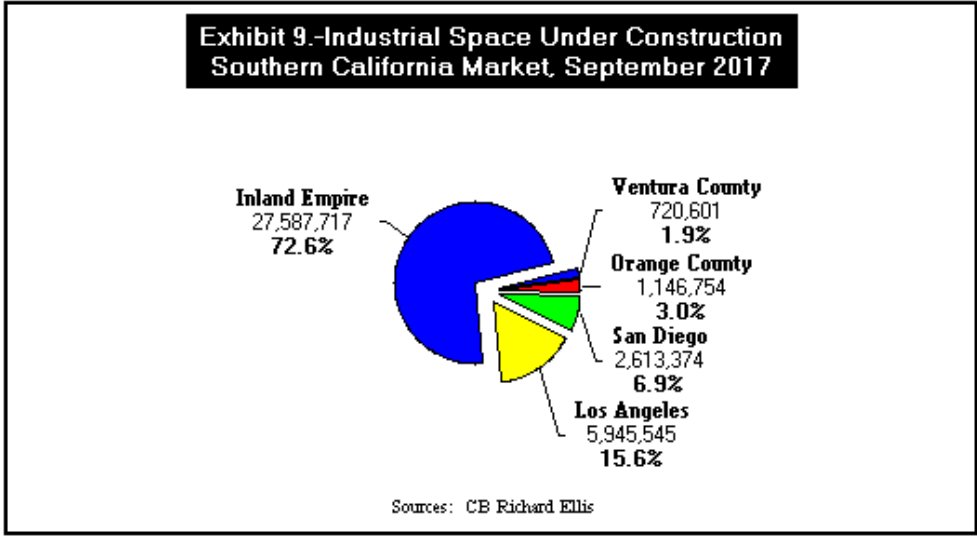


A second reason for construction optimism is the strength of the Inland Empire’s industrial market where logistics firms occupied a net of 18.2 million square feet of space in the year ended September 2017 (*Exhibit 8*), while 27.6 million square feet is being built. That means the market is only roughly matching its net absorption. Both those figures are the strongest in the U.S., and the inland area is handling 72.6% of Southern California’s industrial construction due to its available land (*Exhibit 9*). Meanwhile, extensive infrastructure construction is on-going largely thanks to local transportation sales tax measures.

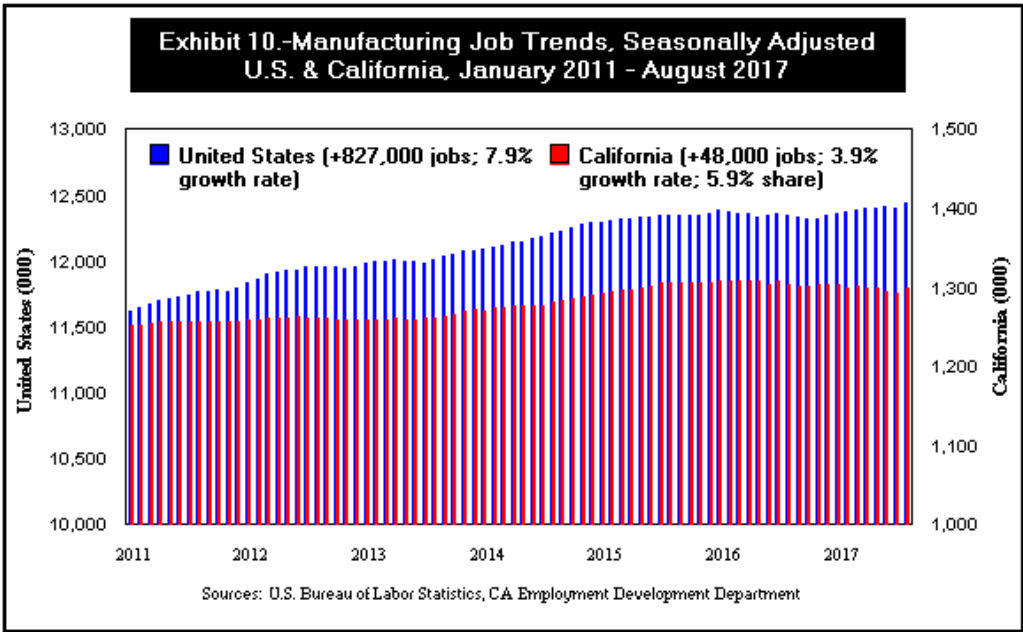


- 3. Health Care** is the one inland sector that grew throughout the recession. There is a huge need for this to continue since each local health care worker already handles 27.1% more people than the state average. Also, the sector is seeing a major increase in demand as the share of people without health insurance fell from 27.1% in 2013 to 12.4% in 2016. Still, there are 336,238 non-institutionalized adults without insurance. From 2011-2017, the data indicate that it has been responsible for 10.8% of direct job growth (31,474). The key for the health care system’s job growth will likely be the ability of educational institutions to gear up to handle the

volume of training that its growth will require in both professional and technical occupations. Also, management has the complexities of dealing with the sector’s new dynamics under the Affordable Care Act and the inability of the President and Congress to decide what to do with it.

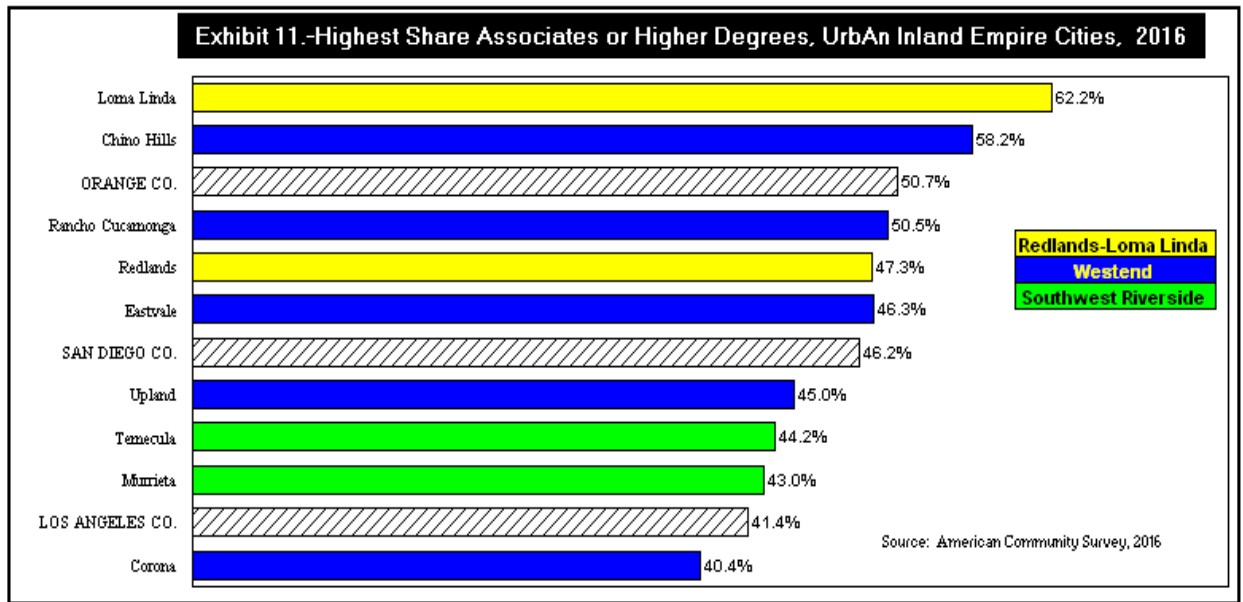


4. **Manufacturing** should be a major growing sector in the Inland Empire as both space and labor costs are below other Southern California areas. This is particularly true given the recent resurgence in manufacturing employment nationally. However, local firms are tending to increase efficiency rather than hire workers because California’s regulatory policies have pushed energy levels far beyond what competitors pay in other states. That fact, plus regulatory costs and delays means firms must save on labor to maintain their profitability. Here, a key finding is that on a seasonally adjusted basis, California only created 48,000 jobs from January of



2010 to August 2017 (3.9% growth rate) while the U.S. added 827,000 (7.9% rate). The state saw just 5.9% of new U.S. manufacturing jobs (*Exhibit 10*). Still, the Inland Empire has added 15,295 jobs in the sector from 2011-2017 (5.2% share). That includes the estimated 1,520 positions (3.5% share) in 2017.

- Professional, engineering, management & scientific** sectors have been the missing link in the Inland Empire’s job growth. However, they are showing a little life. From 2011-2017, the group added 5,130 jobs (1.8% share). This includes an estimated 1,163 (2.7% share) in 2017. Several phenomena offer potential for this group. First is the migration of better educated people to three parts of the area: cities west of the I-15 near Los Angeles and Orange counties (*blue*); cities near San Diego County (*green*); and the Redlands-Loma Linda area (*yellow*). In these areas, the inland cities are competitive with the coastal counties (*stripped*) (*Exhibit 11*).



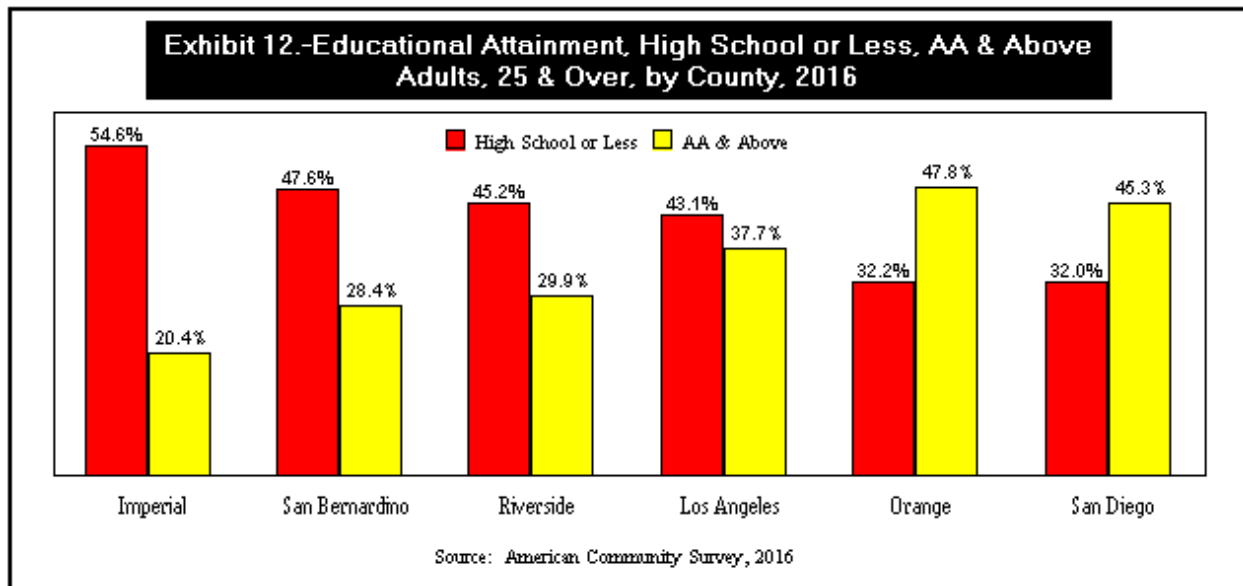
Second is the sheer size of the Inland Empire market with 4.56 million people (*larger than 25 states*) and 114,691 companies that require professional services. Third is the existence of some strategic and successful high-end companies including Bourns (*product engineering*), SigmaNet (*management software*), Abbot Cardiovascular Systems (*bio-med*), Watson Pharmaceutical (*generic drugs*), ESRI (*geographic information systems*) and Kelly Space & Technology (*aerospace*). Fourth is the reemergence of the construction sector that requires engineers and other professionals to support it.

Today, the main challenges for this group have been the overall low level of educated workers in the inland area and the slow recovery of residential construction.

C. Public Health Challenges To Inland Empire's Prosperity

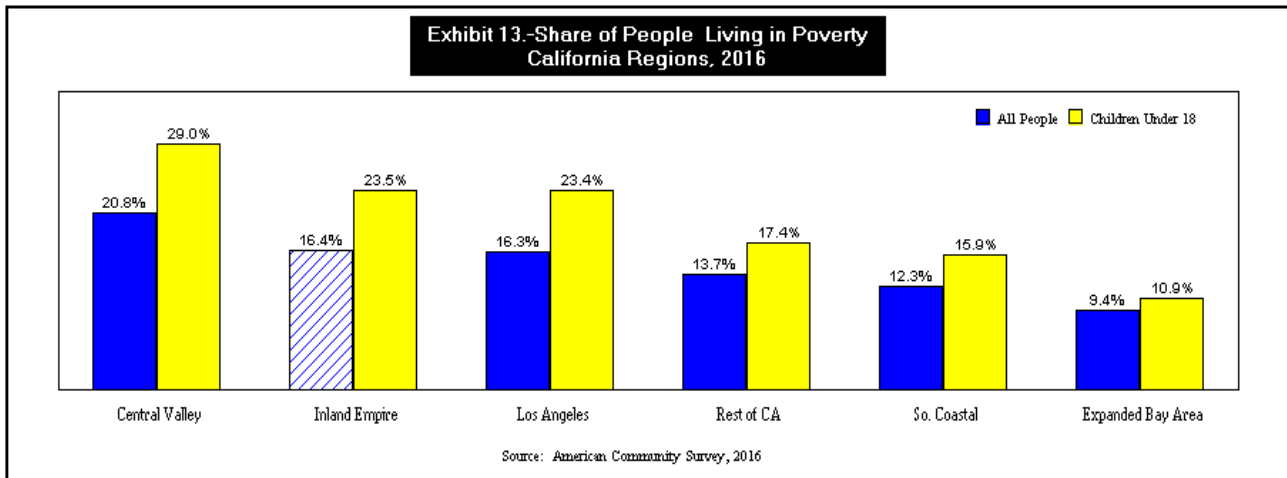
Two other key public health issues impact the ability for the Inland Empire to attain prosperity. These are the degree to which the region's population is marginally educated and the level of poverty affecting its residents.

According to the Census Bureau in 2016, 47.6% of San Bernardino County's population had stopped their educations with high school or less schooling. The share was 45.2% in Riverside County (*Exhibit 12*). The situation has improved in that both counties were on either side of 50% of the population in 2000 (50.8%; 49.7%). However, these data mean that the kinds of firms interested in locating in the Inland Empire tend to be those not needing well educated workers.



For the Inland Empire, the degree to which it is uncompetitive for firms requiring educated workers is seen in that just 28.4% of adults in San Bernardino County had associates degrees or higher. It was 29.9% in Riverside County. These 2016 figures contrast with 37.7% to 47.8% of adults in the adjacent coastal counties.

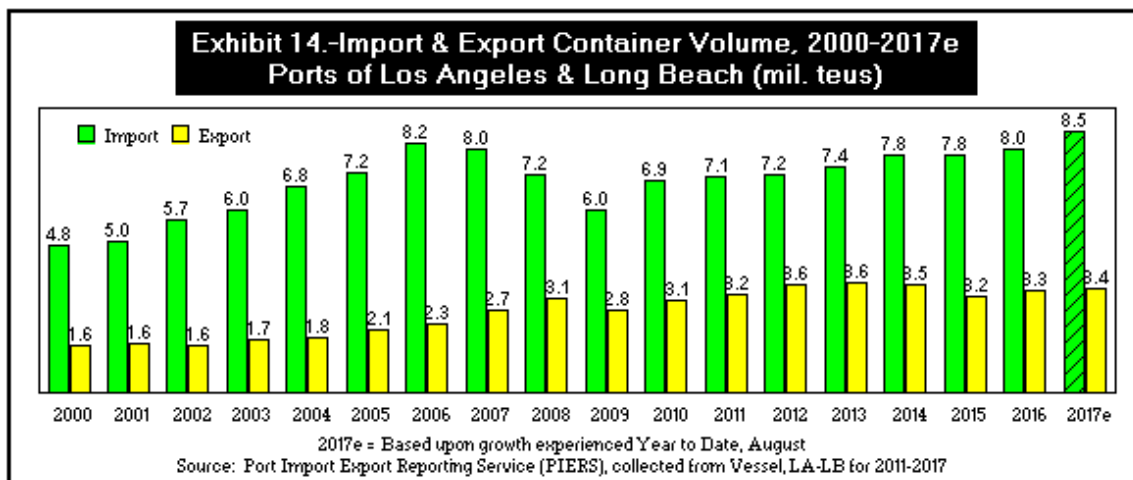
- o Unfortunately, a marginally educated population tends to correlate with high levels of poverty given the direction that technology is taking good paying jobs in the 21st Century. Thus in 2016, the share of Inland Empire residents living in poverty was 16.4%. Only the Central Valley has a worse level (20.8%). Meanwhile, nearly one in four inland area children under 18 were poor (23.5%). Again, only the Central Valley had a higher percent (29.0%) (*Exhibit 13*). Poverty also has an ethnic dimension. By group (*not shown*), those Inland Empire residents living in poverty were: African American (22.2%), Hispanic (19.3%), Asian (12.5%), White (11.7%). While all of these numbers have improved since 2015, these facts create enormous difficulties for the Inland Empire's quality of life. In particular, given the importance of children to the region's future labor force, the levels of childhood poverty represent a major barrier to the region's long term success.



II. Key Growth Industries More Thoroughly Discussed

A. Key Existing Industries

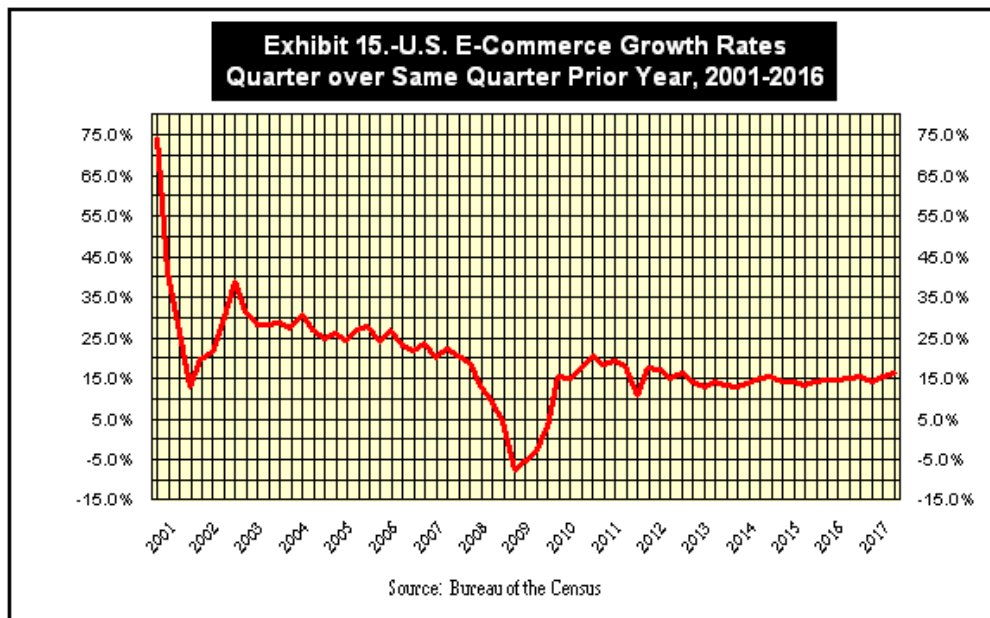
- **Logistics.** The Inland Empire’s logistics industry is driven by two major forces:
 - **International Trade.** The volume of international trade moving through the ports of Los Angeles and Long Beach has been the sector’s traditional driver (*Exhibit 14*). On the import side, loaded containers entering the U.S. soared to 8.2 million twenty foot container units (*teus*) in 2006. The volume declined roughly 25% to 6.0 million *teus* in 2009 due to the Great Recession. It has subsequently recovered and is on track as of August 2017 to reach a record 8.5 million *teus* for the year.



Exported load containers are less of a driver for the Inland Empire. However, they reached a record 3.6 million *teus* in 2012-2013, fell to 3.2 million *teus* in 2015 but are headed up to 3.4 million in 2017 with the high value of the dollar making U.S. exports more expensive to the rest of the world. Exports are an activity that will likely have an important future role for the inland area as immigrant manufacturers choose to locate near the ports and because of the importance of exports to the Coachella Valley’s farmers.

The facilities for handling this type of activity for international supply chain work are getting larger and larger due to the technology. The number of square feet per job in new conventional warehouses is running between 1,750-3,500 square feet.

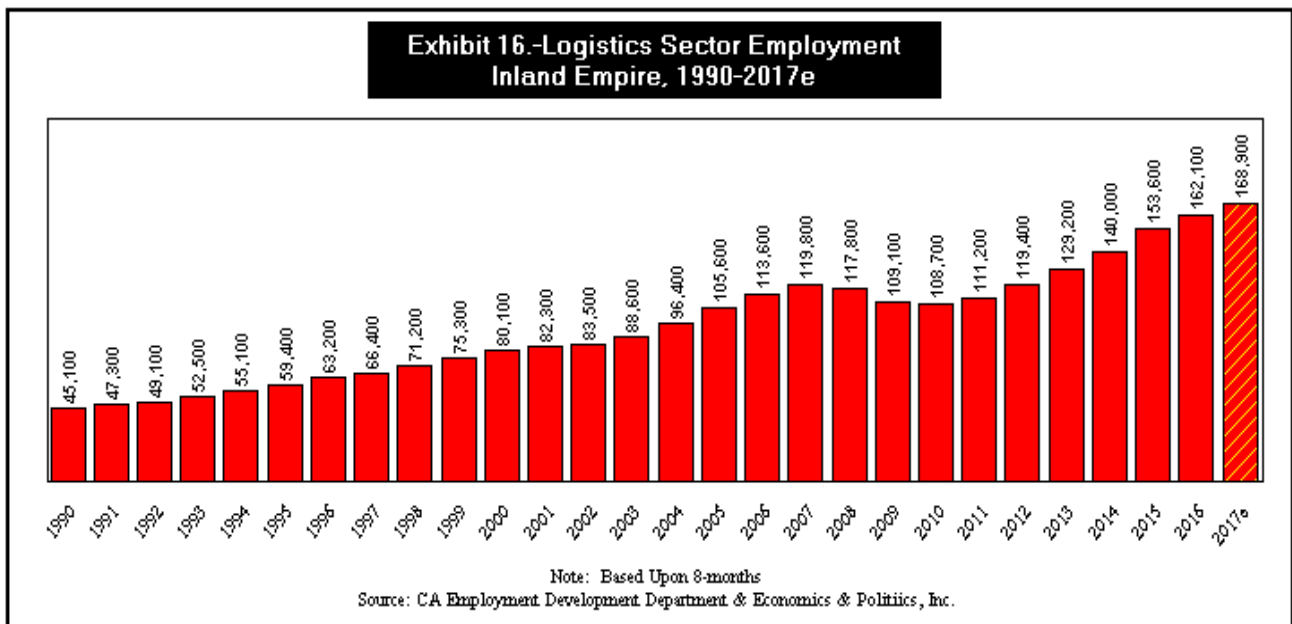
- Fulfillment Centers.** The newest phenomenon impacting the Inland Empire’s logistics sector is the entry into California of fulfillment centers. These facilities are being developed for retailers so they can respond to the increasing use of the e-commerce by consumers. The goal is 24-hour delivery. They are generally 750,000 to over 1,000,000 square feet in size and use from 750 to 1,250 square feet per job since the work is more labor intensive. That is roughly the land use ratios found with manufacturing. This is a long term growth factor for the region given that e-commerce is growing at roughly 15% compounded a year (*Exhibit 15*).



Another aspect of fulfillment centers is their retail sales tax potential for the cities where they locate. A one million square foot facility on 52 acres of land, conservatively assuming 50% of sales are to non-Californians, will generate as much as \$5 million a year to a municipal government under two conditions. It assumes the center’s sales per square foot are 75% of the Amazon.com average and it assumes that it is the *sole warehouse for an on-line retailer located in the state*.

- Forecast.** At the 4.2% growth rate through August 2017, the Inland Empire’s logistics sector is likely to create another 6,800 jobs in 2017 to reach 168,900 (*Exhibit 16*). To date, there appears to be no economic reason for its growth to be seriously imperiled for the foreseeable future. That is particularly true given that most of Southern California’s available industrially zoned land is located in the Inland Empire.

- Caution.** That said, both CARB and AQMD are discussing an “indirect source rule” whereby new logistics facilities would be charged fees based upon the truck traffic they “lure” to the Inland Empire. If successful, their attempt to become part of local planning decisions could slow the sector’s inland growth. Another potential difficulty is the new Panama Canal which will have an indeterminate impact on goods arriving at the ports of Los Angeles and Long Beach. That is being offset to an extent by the huge size of new ships of 14,000 teus and above that cannot go through the new canal. However, their size is straining the ability of the ports to unload them. In addition, to date, cargo has not been loaded on them in a logical way in Asia to permit easy unloading and movement away from the ports, straining their throughput capacity.

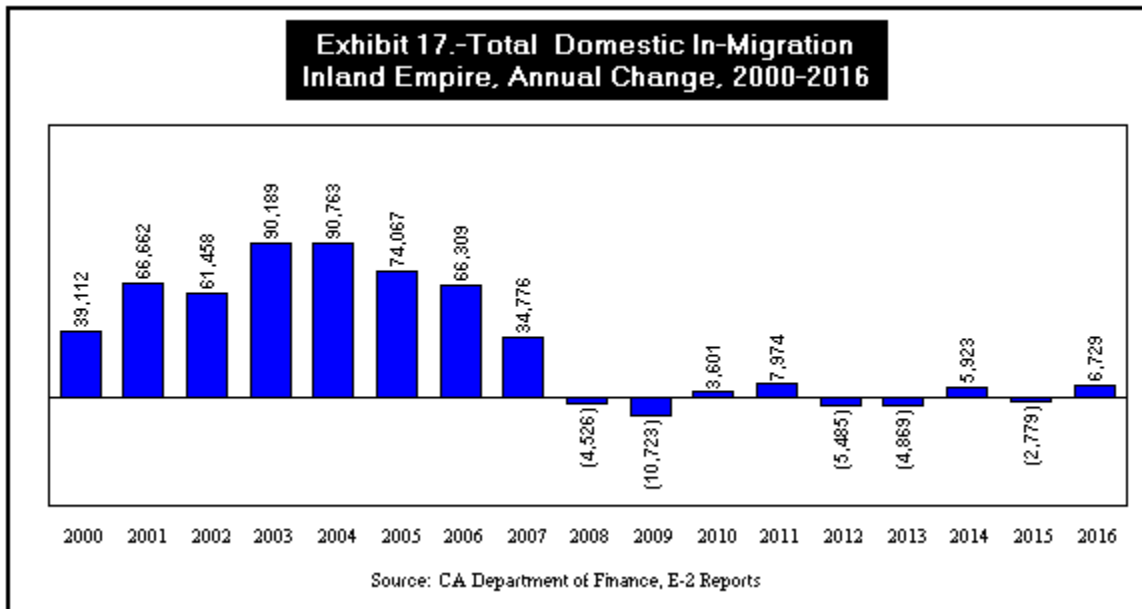


- Health Care.** Four factors will drive the demand for health care in the Inland Empire and the sector’s resulting employment level:

- Population Growth.** For the past few years, the recession has restrained residential development and therefore population growth in the inland area. From 2000 through 2006, the inland counties added over 100,000 people a year with domestic in-migration responsible for over 60,000 new residents. First soaring home prices and the Great Recession changed this picture dramatically, slowing annual growth to an average of about 40,000 people a year with domestic net migration essentially staying just below zero (*Exhibit 17*).

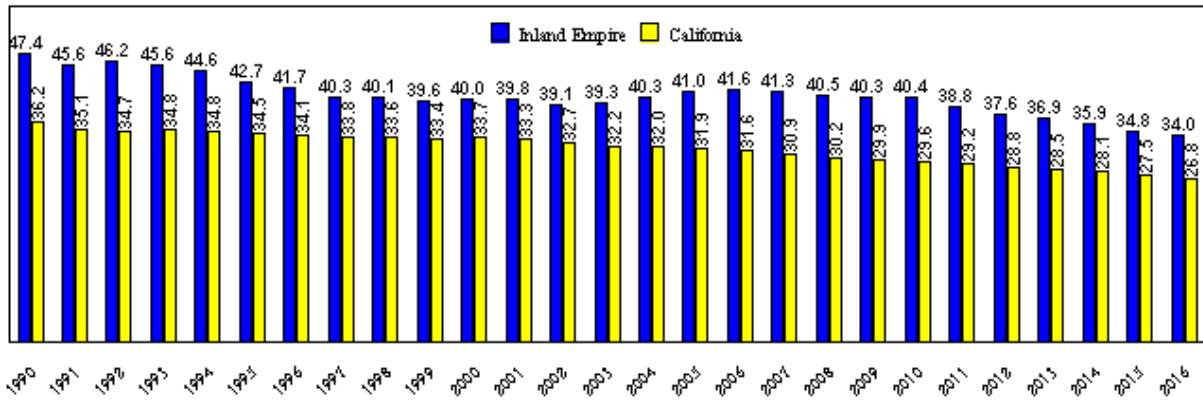
This is poised to change with the acceleration in the recovery of Southern California’s economy. Also as stated, the share of families in Orange (21%), San Diego (26%) and Los Angeles (28%) counties who can afford a local home has fallen far more than the 43% in the Inland Empire. As more aggressive population expansion in the Inland Empire resumes, the demand for health

professionals will rise. Contributing to this phenomenon is the fact that the California legislature has so far been unwilling to amend the CA Environmental Quality Act (*CEQA*) which is being used by NIMBYs in the coastal counties to nearly stopped the construction of homes that the workforce population in that area can afford.



- **Affordable Care Act.** In 2012, the American Community Survey found that 28.8% or 750,957 of the Inland Empire’s non-institutionalized adults had no health insurance. In 2016, those figures were down to 12.4% and 336,238. That was a reduction of -346,843 adults or -55.2%. This represents a substantial increase in demand for health care services. The sector’s employment has not adjusted as rapidly in part because local out-patient and in-patient care facilities are still working through the process of how to gear up for the increase in demand.
- **Health Care Workers Per Capita.** While demand for health care and the number of workers is rising in the inland counties, the region remains underserved. In 2016, there were 26.8 people for each health care worker in California (*Exhibit 18*). In the Inland Empire, it was 34.0. The region thus had 27.1% more people for each health care worker. The good news is that in 2010, there were 36.3% more people per worker than the state, so the situation is improving. In terms of physicians per 100,000 people, San Bernardino County ranked 39th of 58 counties for primary care physicians; Riverside County ranked 49th. In terms of specialty doctors, San Bernardino County ranked 34th of 58 counties for primary care physicians; Riverside County ranked 41st.

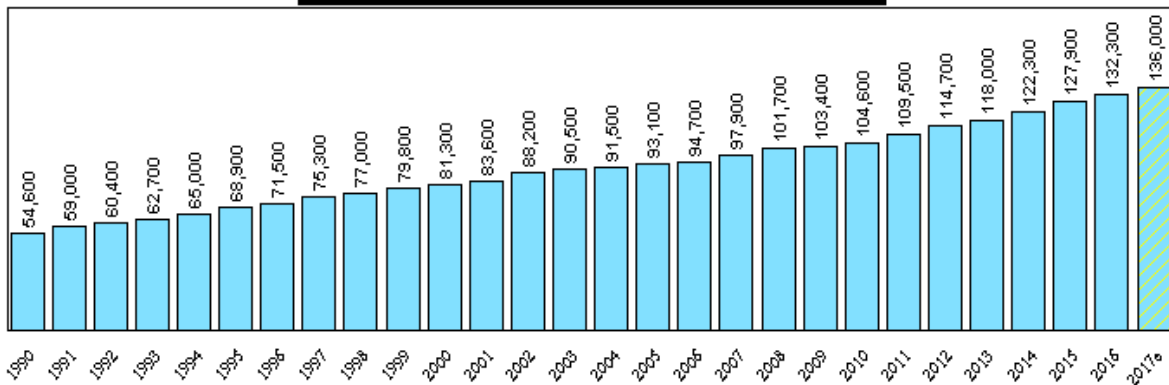
**Exhibit 18.-Number of People Per Health Care Worker
Inland Empire & California, 1990-2016**



Source: CA Department of Finance, California Employment Development Department

- Aging Population.** In 2015, there were 1,040,569 people aged 55 and over in the Inland Empire. They constituted 23.2% of its population. In 2016, this was up to 1,073,526 and 23.7%. Many in this group are already in ages that disproportionately use medical care including assisted living facilities. The number is set to grow as the baby boomers in this group continue aging.

**Exhibit 19.-Health Care Sector Employment
Inland Empire, 1990-2017e**

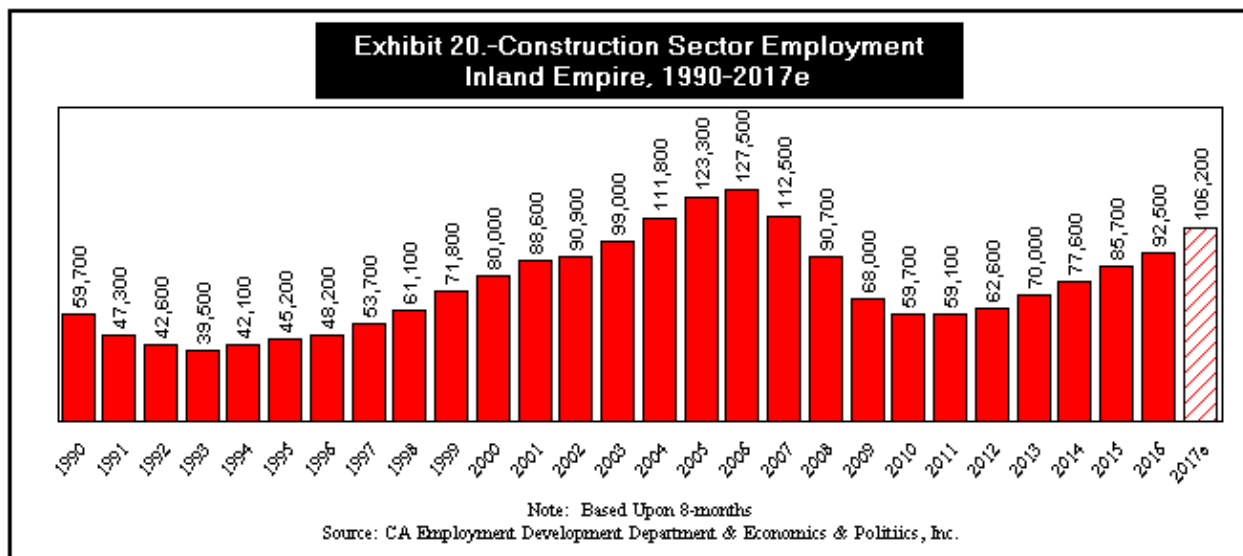


Note: Based Upon 8-months

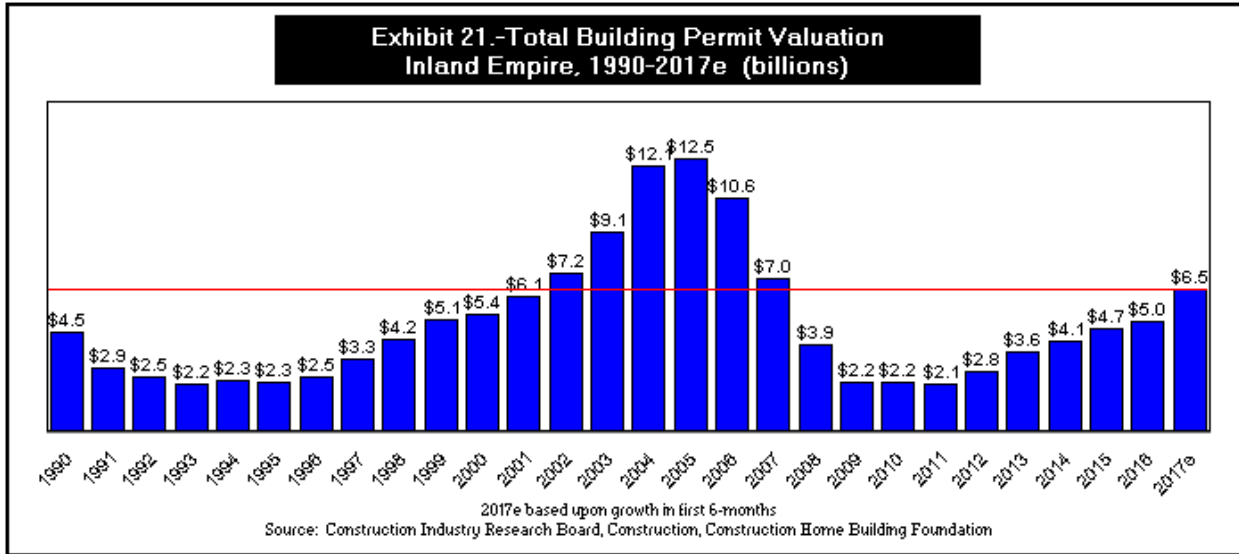
Source: CA Employment Development Department & Economics & Politics, Inc.

- Forecast.** The Inland Empire’s health care sector was unique in growing straight through the Great Recession. In 2016, the sector maintained that record adding 4,400 jobs (3.4%) to reach 132,300. For 2017, the area is on track to add another 3,700 positions (2.8%) to total 136,000 (*Exhibit 19*).
- Caution.** The key worry for health care providers is the lack of a training pipeline to give them the staffing they will need to keep up with the potential for rapidly expanding demand. Fortunately, the Inland Empire has three medical schools starting to deal with this imbalance: Loma Linda University Medical Center (*non-*

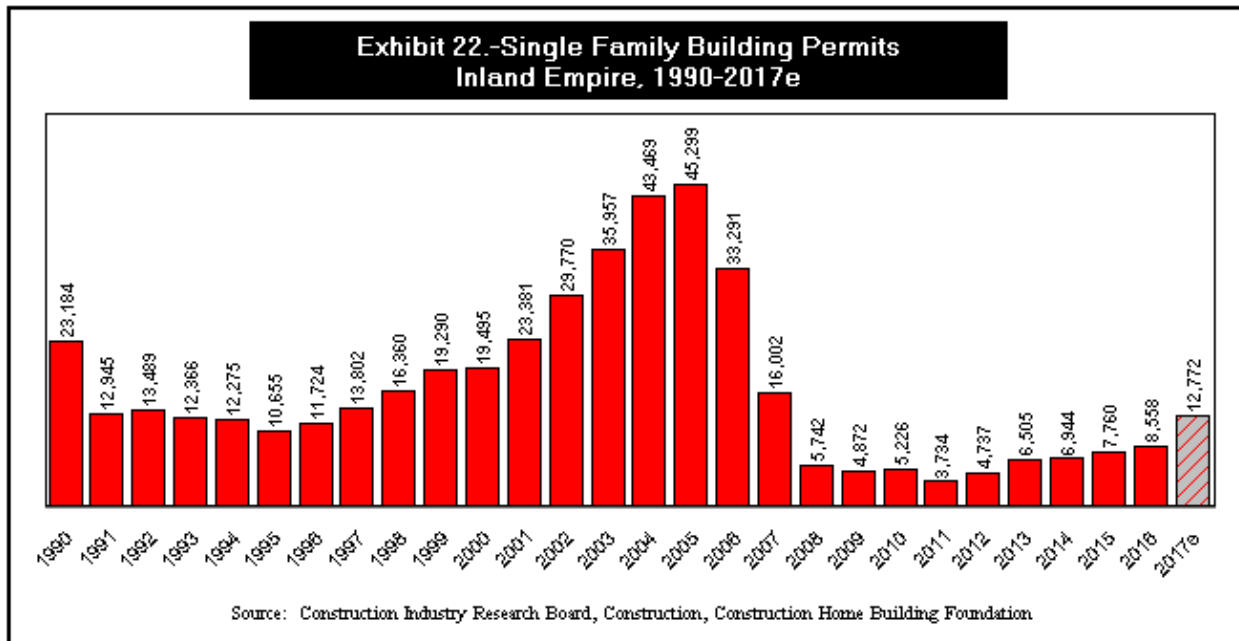
profit), University of California Riverside Medical Center (*public*) and Western University of Health Sciences (*private*). A fourth, California University of Science and Medicine will be located next to Arrowhead Medical Center in San Bernardino County. It is being organized and awaiting accreditation. Loma Linda has also opened its San Manuel training facility to help entry level workers enter the field. However, to a large extent, the backbone of the system is found among nurses and a very wide variety of technicians. Here, the difficulty will be the inability of public educational institutions including the community colleges and regional occupational programs to handle the required volume as such training is inordinately expensive for them.



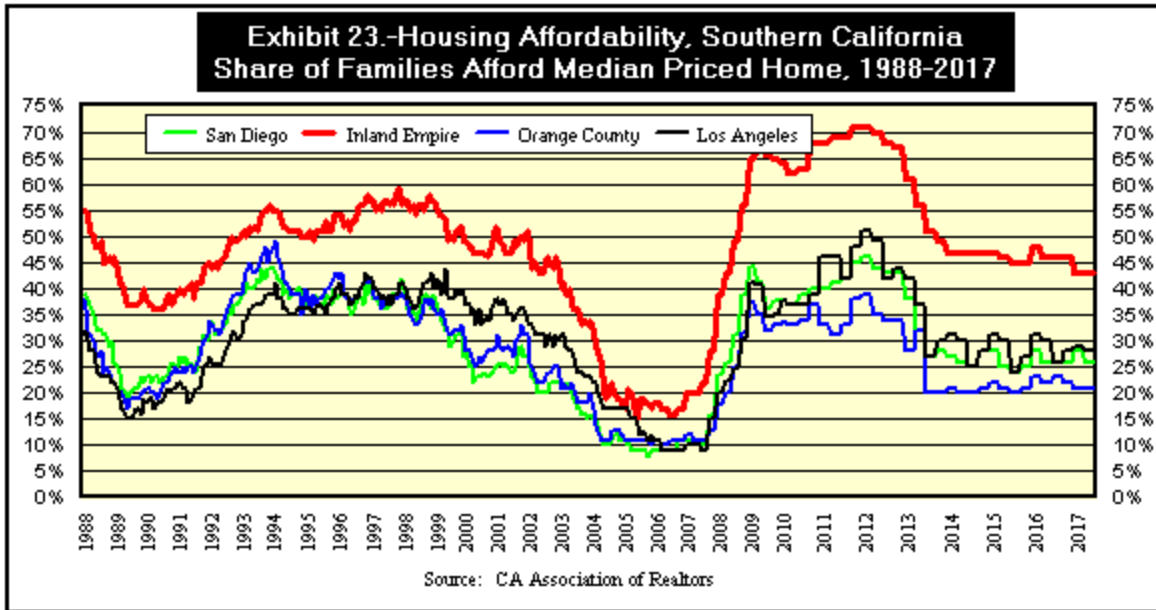
- **Construction.** For the Inland Empire, the lagging link in the recovery has been residential construction. After peaking at 127,500 workers in 2006, the mortgage crisis sent employment in the overall construction sector down to 59,100 jobs in 2011 (*Exhibit 20*). It has since been growing.
 - **Forecast.** In 2016, construction firms added 6,800 jobs (7.9%). That brought employment to 92,500. EDD has estimated a 14.8% growth rate for 2017. If that extremely fast rate holds up for the year, 13,700 more jobs will be added in 2017 bringing the total to 106,200. The metrics driving the sector include:
 1. **Permits.** Importantly, the total value of construction permits has begun to increase. For a low of \$2.1 billion in 2011, the level reached \$4.7 billion, up 13.4% in 2015. It reached \$5.0 billion in 2016, up 7.2% (*Exhibit 21*). In 2017, they are on track to grow 29.9% to 6.5 billion. While still low by the standards of the last decade, the direction is positive as residential projects together with numerous industrial and some retail projects are being started. This does not include the public sector financed infrastructure projects under construction, thanks to local tax measures plus federal and state transportation funding.



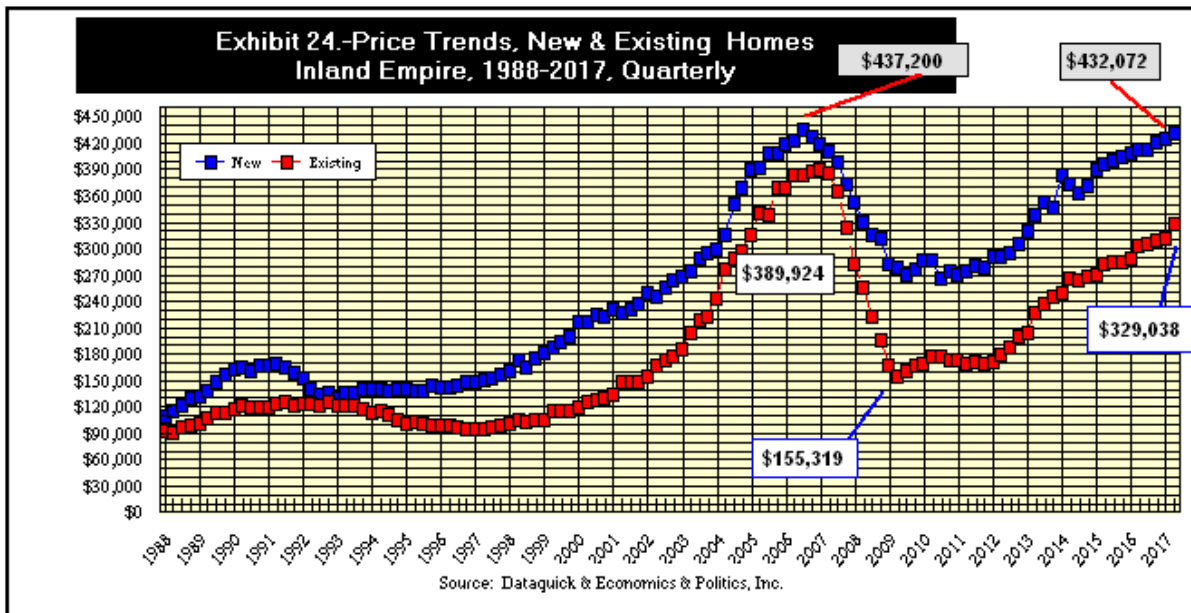
2. Housing. The major problem for the construction sector has been the very slow recovery in residential activity. The number of single family permits fell from 45,299 in 2005 to 3,734 in 2011. Subsequently, the market has grown to an estimated 12,772 single family detached permits based upon activity in the first six months of 2017, which was up by 49.2% over that period of 2016 (*Exhibit 22*). That is the highest level since the recession but still historically low.



3. Affordability. As has been noted several times, the Inland Empire’s residential markets are a bargain compared to the coastal counties. Affordability for local residents at the area’s median income is 43%. That compares to Los Angeles (28%), San Diego County (26%) and Orange County (21%) (*Exhibit 23*). This will tend to drive buyers to the inland area.



- 4. Price Recovery.** Very importantly, residential prices in the Inland Empire have seen a significant recovery since the mortgage meltdown. In the existing home market, the second quarter 2016 median price was \$329,038, up 111.8% from the low of \$155,319 in second quarter 2009 though -15.6% below the all time high. The median new home price was at \$432,072, up 61.1% from the low of \$268,155 and just -1.2% below the pre-recession record (*Exhibit 24*). Neither price needs to reach their all time highs for most inland homeowners to be out of trouble since many of those who bought at price peaks have long since lost their houses.



5. Demand Preferences. An additional fact that will ultimately encourage the Inland Empire's detached single family housing market is found in surveys conducted over a five year period by the Western Riverside Council of Governments. They twice interviewed commuters driving from that county to Los Angeles, Orange and San Diego about their housing preferences. The responses to two questions were quite revealing:

- As a homeowner, would you prefer to move closer to work if it involved a townhouse or condo? **Answer: 87.5% said NO.**
- As a renter would you prefer to move closer to work if it involved a townhouse or condo? **Answer: 72.3% said NO.**

Further, a 2016 survey by the Demand Institute found that:

1. 84% of millennials either already own a home or that is their desire.

There thus appears to be a stronger preference than expected for the kind of single family detached homes for which only the Inland Empire in Southern California has the undeveloped property to accommodate.

6. Non-Residential Construction. Non-residential activity (including multi-tenant) has fewer problems than single family housing. Here, the situation is seen in the metrics for several types of activity:

- Industrial vacancy was 3.0% in third quarter 2017 and is only that high because construction on several new projects has been completed. Currently, 27.6 million square feet is underway, the highest construction level for any U.S. industrial market. As stated earlier, in the most recent four quarters, logistics firms occupied a net of 18.2 million square feet.
 - Office vacancy was 11.7%, down from a recent high of 24.2%. However, it is still far above the low of 7.0% in 2003 when construction activity last restarted. Currently, no projects are being built.
 - Retail vacancy was 7.8% in third quarter 2017 v. 8.8% in 2009. The sector is moving in 2017 though e-commerce is having an impact. It had 691,652 square feet of net absorption in the first nine months of 2017 with 458,725 square feet under construction in September 2017.
 - Apartment vacancies were 4.3% the Inland Empire in June 2017. Tenants paying a record \$1,601 per month for class A units. This segment is building again due to the lack of supply in detached homes for sale as well as the inability or unwillingness of many families to obtain home loans.
- **Caution.** There continues to be a host of issues facing the rejuvenation of the Inland Empire's construction sector. In the residential market, people remain hesitant to commit to new purchases in the inland counties. That will likely change

as the very high costs of coastal county homes bars them from investing there. The multitenant market is strong given the increased demand from the large number of families that cannot obtain financing for single family homes.

Industrial construction will remain a force given the demand for facilities because of rising international trade with the strong dollar and the explosive growth of e-commerce. Public construction should remain strong because both inland counties have passed local sales tax measures for street and road construction.

Office construction will lag until a resurgence in demand occurs. That will require office based operations that retrenched in the Great Recession to return to the inland area. Some retail construction is now underway given that the Inland Empire's 2016 taxable retail sales reached \$71.1 billion and exceeded the 2006 record \$61.1 by 16.3%. That growth however did not exceed the inflation increase of 18.4% between 2006-2016 meaning that the actual volume of goods being sold are just below the 2006 inflation adjusted maximum.

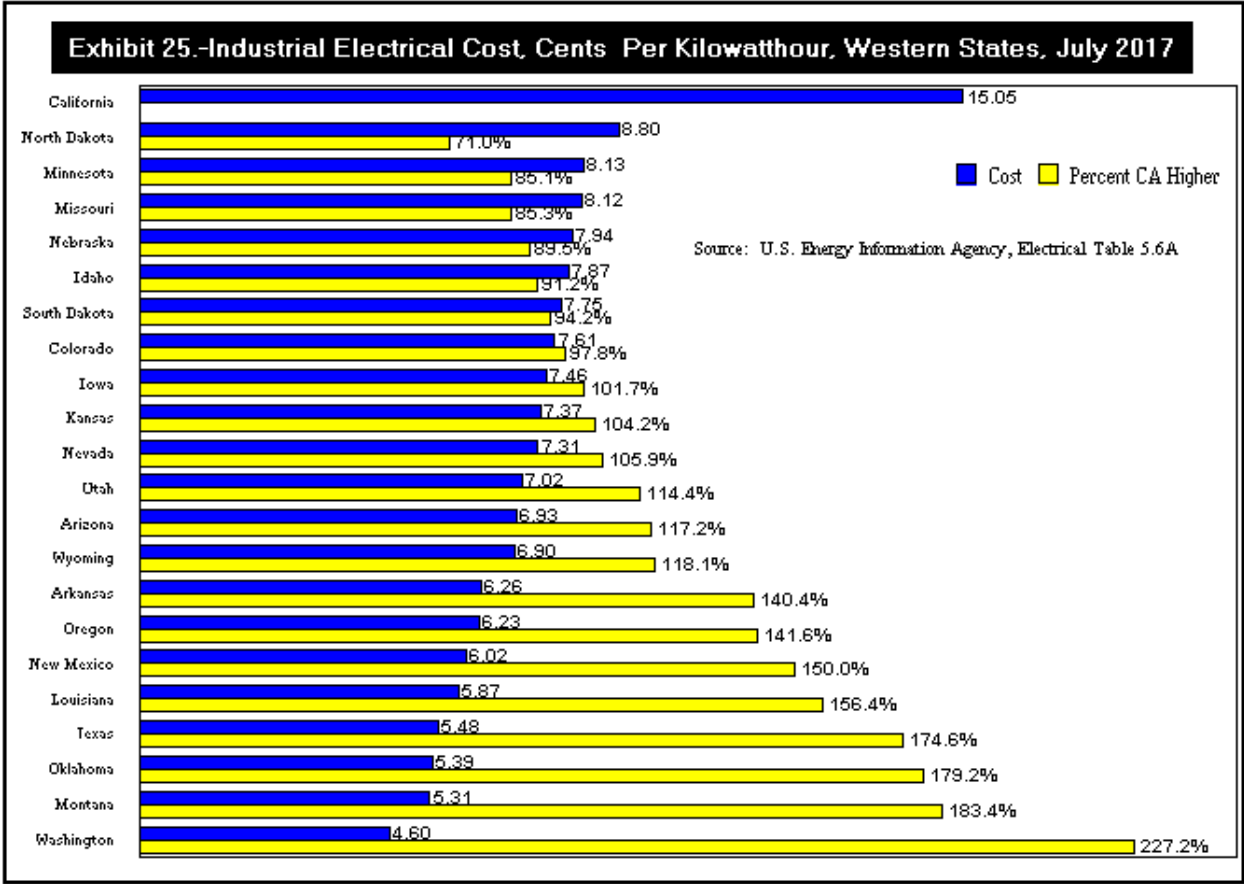
- **Manufacturing.** For the Inland Empire, the manufacturing sector continues to represent a largely missed opportunity. There are three reasons for this:

- **National v. State Manufacturing Growth.** In recent decades, international competition and lower costs in countries like China and India have hurt U.S. manufacturing employment. In addition, a good deal of research indicates that a reason for jobs losses in the sector is due to the domestic adoption of technology that has replaced workers. From 2010 to mid-2017, a resurgence has been underway in this country. This occurred as some firms have been hurt because the off-shoring of production decreased their quality controls. Also, foreign labor costs have risen, particularly in China, reducing the incentive for U.S. firms to maintain production offshore. And, American firms have become much more productive, giving them a competitive edge for goods they sell in this country.

Still, U.S. seasonally adjusted manufacturing employment has risen by 827,000 jobs from January 2010 to August 2017, up 7.9%. The sad fact is that California has added just 48,000 jobs in this period, a 3.9% growth rate. The state has thus been responsible for only 5.9% of national growth (*Exhibit 10 above*). When asked about these data, the state's economic development group (*Go-Biz*) responded that despite the lack of job growth, the state's manufacturing output grew rapidly. However, this begs the question of why it is good to see output rise with minimal benefit to the state's workers.

- **Energy Costs.** California has put in place strong policies aimed at increasing the state's use of renewable energy. However for manufacturers and their workers, this has caused electrical costs to soar, making them uncompetitive versus nearby states (*Exhibit 25*). Thus, California's average industrial electricity rate was 15.05¢ per kilowatt hour in July 2017. That was 71.0% higher than North Dakota (8.80¢), the

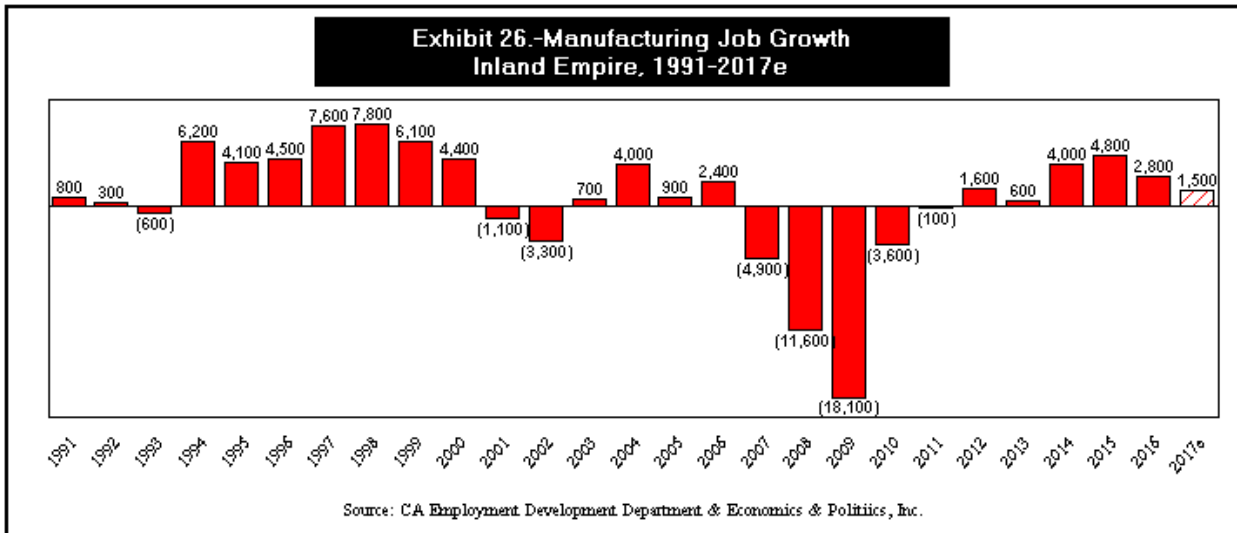
second most expensive western state. Locally, it was 105.9% more expensive than Nevada (7.31¢) and 117.2% above Arizona (6.93¢). The passage of SB 350 with its mandate of 50% renewables by 2030 will undoubtedly exacerbate this cost disadvantage.



- Regulatory Climate.** Meanwhile, Southern California’s regulatory climate has negatively impacted its manufacturing sector in several ways. First, because the AQMD and CARB rules are continuously changed, it is very difficult for companies in places like the Inland Empire to forecast their cost structures for any realistic time horizon. As firms typically invest while looking at least five years ahead, this inhibits local expansions. Second, firms find they are often layered with regulatory costs because they must install new pollution control technologies as soon as the agency requires them to do so. Sometimes, this is before they have paid for the last round of required technology.

An example of the uncertainty that AQMD injects into the manufacturing process is seen in the agency’s declared statement that it must “electrify” the basin to meet its air quality mandates. To manufacturers, this means having to consider having to use electricity even when natural gas, for which Southern California has a far better competitive situation, is available.

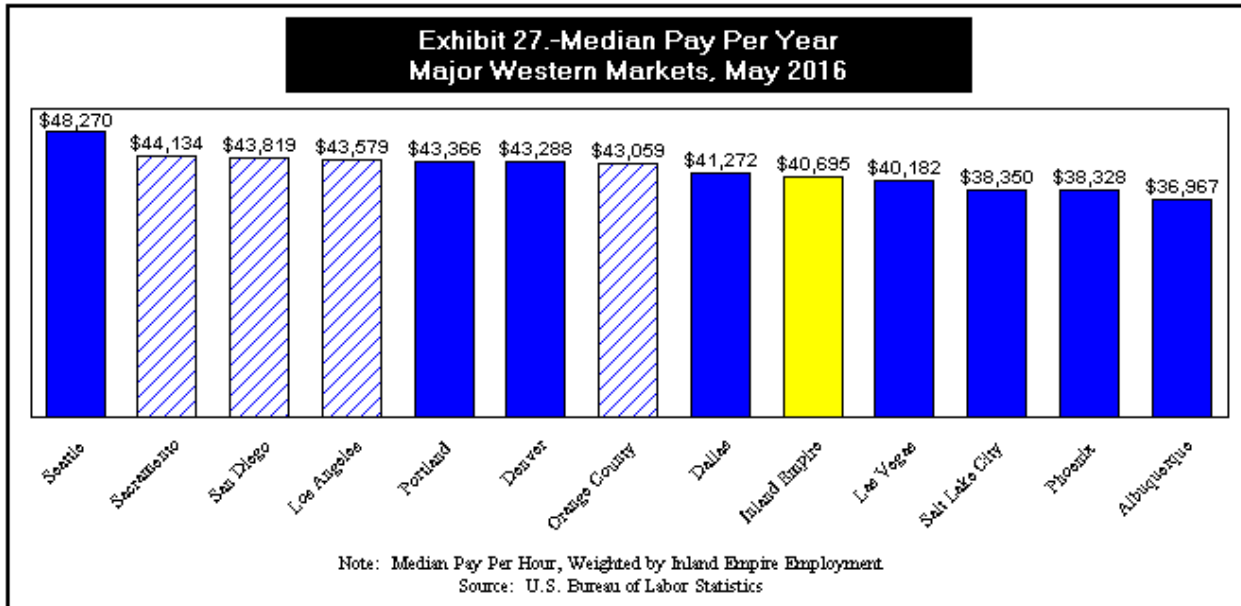
- Forecast.** Given these facts, the prognosis for manufacturing job growth in the Inland Empire is unfortunately weak. From 2007-2011, the sector had a net loss of -33,400 jobs (-28.2%). With the Great Recession over, the sector has slowly grown, adding 13,800 jobs during 2012-2016 taking it to 98,900 workers. This included 2,800 jobs in 2016 (2.9%). That is still -24,500 or -19.9% below its 2006 pre-recession level of 123,400. Given that the sector is on track to grow by 1.5% this year, it added another 1,500 jobs in 2017 taking it to 100,400 jobs (*Exhibit 26*).



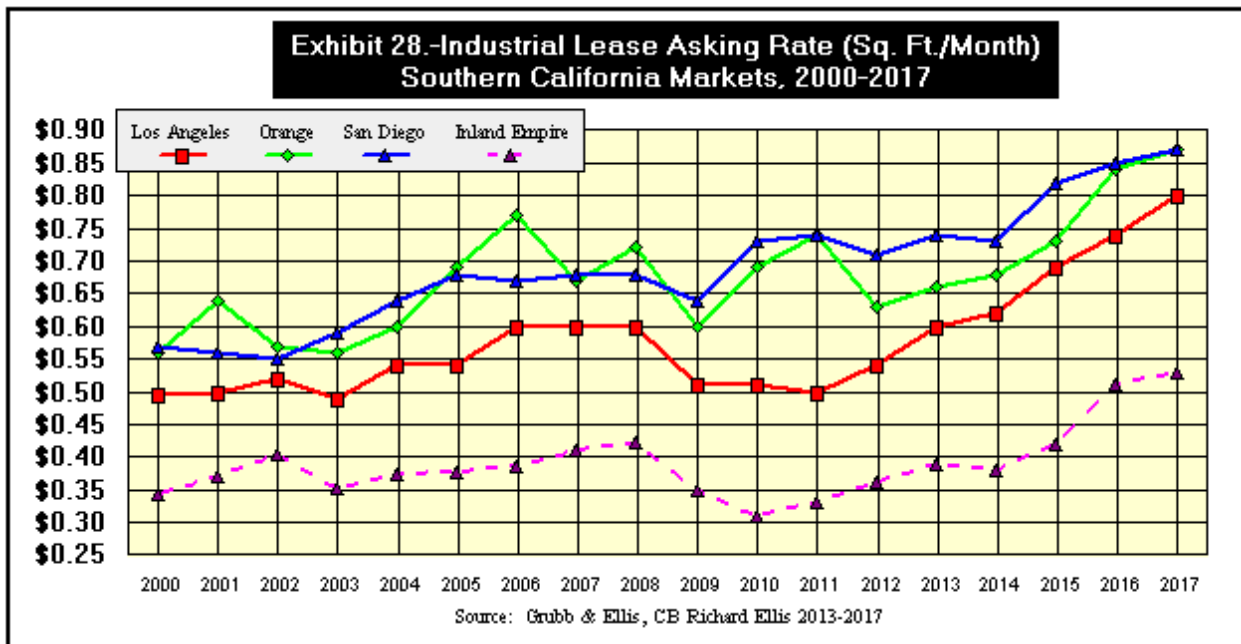
In talks with executives, it is difficult to find a scenario that will improve what should be a strong Inland Empire sector given its competitive space and labor costs. Here, a typical response came from a major local aerospace manufacturer. Their processes require precision work by small machine shops that should be located nearby. Instead, they remain scattered throughout Southern California because owners are unwilling to move for fear it would invoke dealing with AQMD. A major heavy manufacturer indicates that California’s electrical costs put it at a \$25 million competitive disadvantage to its U.S. competitors.

Caution. There is a remote scenario under which the manufacturing sector could expand faster. This is because of the competitive advantages the sector does have vis-à-vis the balance of Southern California. Two factors illustrate this:

- Lower Median Pay.** In May 2016, the median pay for all Inland Empire occupations was \$40,695 an hour. Compared to the coastal counties that was a bargain: San Diego (\$43,819; 7.7% higher), Los Angeles (\$43,579; 7.1% higher), Orange (\$43,059; 5.8% higher). For consistency, the pay for each occupational group in each area was weighted by the number of jobs in that group in the Inland Empire (*Exhibit 27*). The differentials are logical given that 21.6% of the workforce commuted outside the area in 2009-2013 and will tend to work for a little less to avoiding having to do so.



- Low Space Cost.** In third quarter 2017, industrial space in the Inland Empire leased for \$0.53 per square foot. Space in the coastal counties has always cost significantly more and differences have grown recently. Currently, the savings are: Los Angeles (\$0.80; 50.9% higher), Orange (\$0.87; 64.2% higher), San Diego (\$0.87; 64.2% higher) (Exhibit 28).

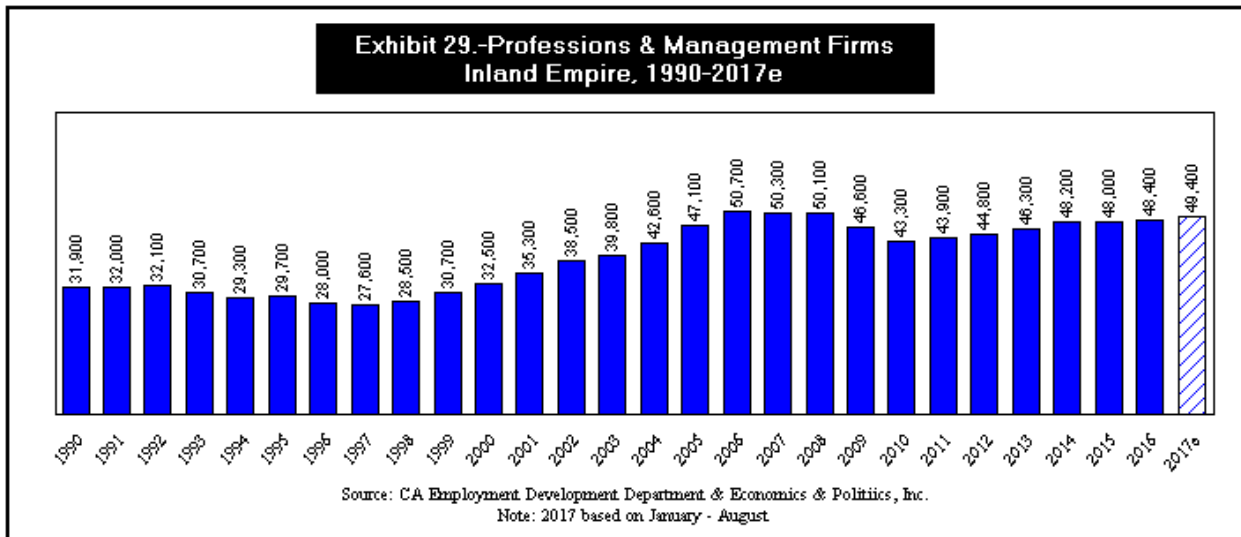


These competitive advantages may still allow some manufacturing growth in the Inland Empire. In any case, it will be subdued. This is particularly true given the area's lower worker pay scales compared to most of the metropolitan areas in California or nearby states.

6. Professional, Management & Scientific Work. Recently, another potential sector could start driving the Inland Empire’s economic base. This is the combination of high-end professional, scientific, technical and management companies (*Exhibit 29*). From 2011 through 2016, they added 5,100 jobs. This includes growth of 400 jobs (0.8%) in 2016 bringing the total to 48,400. Growth through August 2017 indicates the sector will add (2.1%) or 1,000 jobs to bring the group to 49,400. That will be below the pre-recession high of 50,700 by -2.6%.

This growth potential has been aided by the fact that there has been a serious migration of well educated workers into the western edge of the Inland Empire near Los Angeles and Orange counties. There have been similar movements out of San Diego County in to the Temecula-Murrieta area. The Redlands-Loma Linda area has also attracted such activity to the location of ESRI, the University of Redlands and Loma Linda University Medical Center (*Exhibit 11, above*).

Traditionally, the edge areas of Southern California have seen the migration of first workers followed later by their employers as housing prices and the availability of land have dictated the pattern of worker migration. The Inland Empire has reached a point in its development that this is occurring for well-paid workers due to the absence of affordable upscale housing elsewhere in Southern California. Also, these sectors should be growing as the recession has ended and professionals need to migrate inland to support the housing sector and to serve the 4.54 million people and 114,631 firms in the region. Given Southern California’s traffic condition, it will become increasingly difficult to do so from coastal county offices.



7. Other Sectors. It is difficult to see any other sectors driving the Inland Empire’s economic base in a major way because of the educational level of the great mass of the area’s labor force. Ultimately, there will be significant growth in population-serving sectors like consumer services and eating and drinking, but that will be a reaction to the funds flowing inland because of the expansion of the sectors

discussed above. Also, there should be growth in sectors related to construction now that the sector is reemerging. That is the case because its growth will impact finance, insurance and real estate activity. But again, these are not fundamentally the part of the region's economic base that brings fresh dollars into it.

III. Occupational & Industry Pay

A. Occupational Forecasts from EDD

1. From 2014-2024 EDD forecasts that the top 50 growing Inland Empire occupations will add 79,530 jobs. Assuming full time work, they will have weighted annual median pay of \$34,739 at 2016 levels (*Exhibit 32*). Looking at pay levels (*Exhibit 30*):
 - o Assuming full time work at 2,080 hours a year, the 13 lowest paying occupations (26.0%) will account for 45,280 new jobs (56.9%) and pay \$20,000 to \$29,999.

Exhibit 30.-Income Levels, 2014-2024 Top 50 Growth Occupations				
Income Level	Occupations	Share	New Jobs	Share
Under \$20,000	0	0.0%	0	0.0%
\$20,000-29,999	13	26.0%	45,280	56.9%
\$30,000-\$39,999	9	18.0%	9,500	11.9%
\$40,000-\$49,999	7	14.0%	10,270	12.9%
\$50,000-\$79,999	14	28.0%	11,630	14.6%
\$80,000 & Up	7	14.0%	2,850	2.6%
Totals	50	100.0%	79,530	100.0%

- o The nine second lowest paying occupations (18.0%) will account for 9,500 new jobs (11.9%) and pay \$30,000 to \$39,999.
 - o The seven mid- paying occupations (14.0%) will account for 10,270 new jobs (12.9%) and pay \$40,000 to \$49,999.
 - o The 14 second highest paying occupations (28.0%) will account for 11,630 new jobs (14.6%) and pay \$50,000 to \$79,999.
 - o The seven highest paying occupations (14.0%) will account for 2,850 new jobs (2.6%) and pay \$80,000 and above.
2. By sector, the 79,530 gains predicted by EDD in the fastest growing 50 occupations were primarily employed in six sectors (*Exhibit 31*):
 - o Construction would see 28,570 new jobs (35.9%) in 22 occupations (44.0%)
 - o Health care would see 23,430 new jobs (29.5%) in 11 occupations (22.0%)
 - o Food & Drink would see 21,880 new jobs (27.5%) in 5 occupations (10.0%)
 - o Information Tech would see 3,030 new jobs (3.8%) in 6 occupations (12.0%)
 - o Manufacturing would see 1,400 new jobs (1.8%) in 3 occupations (6.0%)
 - o Consumer services would see 1,220 new jobs (1.5%) in 3 occupations (6.0%)

- o Interestingly, EDD forecasts that none of the new jobs will be in the Inland Empire's fastest growing sector ... Logistics.

Exhibit 31.-Sectors & Job Growth, 2014-2024				
Sectors of 1,500 Job Growth or More				
Sectors	Job Growth	Share	Occupations	Share
Construction	28,570	35.9%	22	44.0%
Health Care	23,430	29.5%	11	22.0%
Food & Drink	21,880	27.5%	5	10.0%
Infor Technology	3,030	3.8%	6	12.0%
Manufacturing	1,400	1.8%	3	6.0%
Consumer Service	1,220	1.5%	3	6.0%
Totals	79,530	100.0%	50	100.0%

Exhibit 32.-Fifty Fastest Growing Occupations, Inland Empire, 2014-2024									
SOC Code	Occupational Title	2014	2024	Decade Growth	Average Annual Gain	Median Annual Pay	Entry Level Education	Work Experience	On-the-Job Training
47-2171	Reinforcing Iron and Rebar Workers	800	1,360	70.0%	7.0%	\$67,743	7	None	APP
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	410	680	65.9%	6.6%	\$33,744	8	None	ST OJT
47-2181	Roofers	1,610	2,600	61.5%	6.1%	\$51,795	8	None	MT OJT
47-2051	Cement Masons and Concrete Finishers	2,040	3,150	54.4%	5.4%	\$47,222	8	None	MT OJT
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	1,230	1,850	50.4%	5.0%	\$20,328	8	None	ST OJT
47-2121	Glaziers	630	930	47.6%	4.8%	\$40,056	7	None	APP
31-2022	Physical Therapist Aides	410	600	46.3%	4.6%	\$27,778	7	None	ST OJT
29-1071	Physician Assistants	640	930	45.3%	4.5%	\$105,568	2	None	None
47-3013	Helpers--Electricians	490	710	44.9%	4.5%	\$30,644	7	None	ST OJT
29-1171	Nurse Practitioners	940	1,360	44.7%	4.5%	\$109,413	2	None	None
47-2141	Painters, Construction and Maintenance	5,010	7,210	43.9%	4.4%	\$39,934	8	None	MT OJT
47-2081	Drywall and Ceiling Tile Installers	2,870	4,130	43.9%	4.4%	\$50,606	8	None	MT OJT
47-2082	Tapers	1,060	1,520	43.4%	4.3%	\$45,433	8	None	MT OJT
47-2031	Carpenters	16,340	23,120	41.5%	4.1%	\$45,585	7	None	APP
35-2014	Cooks, Restaurant	10,510	14,850	41.3%	4.1%	\$23,994	8	<5 years	MT OJT
47-2044	Tile and Marble Setters	850	1,200	41.2%	4.1%	\$55,637	8	None	LT OJT
47-2111	Electricians	5,350	7,520	40.6%	4.1%	\$56,613	7	None	APP
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	2,670	3,740	40.1%	4.0%	\$47,725	5	None	LT OJT
43-4121	Library Assistants, Clerical	780	1,080	38.5%	3.8%	\$23,496	7	None	ST OJT
47-2061	Construction Laborers	14,380	19,870	38.2%	3.8%	\$35,564	8	None	ST OJT
31-1011	Home Health Aides	1,920	2,650	38.0%	3.8%	\$24,137	8	None	ST OJT
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	610	840	37.7%	3.8%	\$30,705	7	None	ST OJT
15-1134	Web Developers	830	1,140	37.3%	3.7%	\$56,345	4	None	None
47-2161	Plasterers and Stucco Masons	1,180	1,620	37.3%	3.7%	\$36,265	8	None	LT OJT

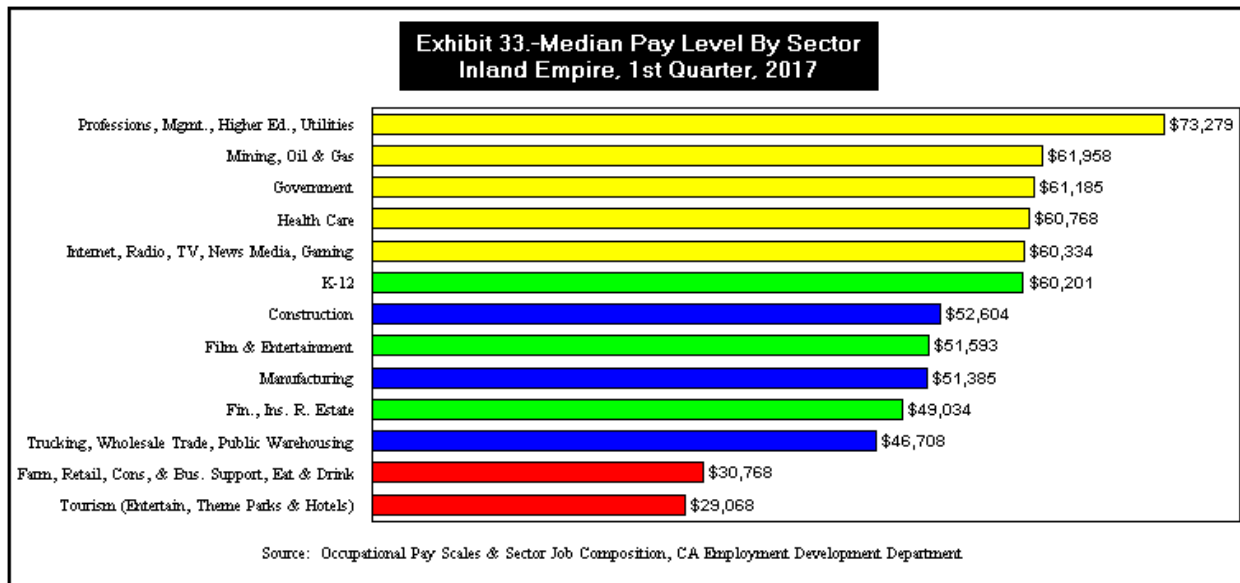
39-9021	Personal Care Aides	48,730	66,900	37.3%	3.7%	\$21,098	8	None	ST OJT
47-2071	Paving, Surfacing, and Tamping Equipment Operators	630	860	36.5%	3.7%	\$84,218	7	None	MT OJT
47-2221	Structural Iron and Steel Workers	960	1,310	36.5%	3.6%	\$73,079	7	None	APP
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	34,390	46,790	36.1%	3.6%	\$20,068	8	None	ST OJT
29-1067	Surgeons	450	610	35.6%	3.6%	N/A	1	None	I/R
47-2152	Plumbers, Pipefitters, and Steamfitters	3,890	5,260	35.2%	3.5%	\$50,383	7	None	APP
13-1051	Cost Estimators	2,440	3,290	34.8%	3.5%	\$62,813	3	None	None
53-3041	Taxi Drivers and Chauffeurs	870	1,170	34.5%	3.4%	\$24,541	8	None	ST OJT
47-2041	Carpet Installers	790	1,060	34.2%	3.4%	\$49,641	8	None	ST OJT
31-2021	Physical Therapist Assistants	410	550	34.1%	3.4%	\$65,008	4	None	None
31-9092	Medical Assistants	7,750	10,360	33.7%	3.4%	\$28,787	5	None	None
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	4,760	6,360	33.6%	3.4%	\$67,560	7	≥5 years	None
29-2032	Diagnostic Medical Sonographers	450	600	33.3%	3.3%	\$73,814	4	None	None
15-1132	Software Developers, Applications	2,530	3,360	32.8%	3.3%	\$98,020	3	None	None
29-2056	Veterinary Technologists and Technicians	590	780	32.2%	3.2%	\$36,491	4	None	None
49-9043	Maintenance Workers, Machinery	870	1,150	32.2%	3.2%	\$41,020	7	None	MT OJT
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	8,680	11,470	32.1%	3.2%	\$28,522	7	<5 years	None
29-1123	Physical Therapists	1,210	1,590	31.4%	3.1%	\$89,783	1	None	None
49-9041	Industrial Machinery Mechanics	2,040	2,680	31.4%	3.1%	\$50,436	7	None	LT OJT
13-1161	Market Research Analysts and Marketing Specialists	2,920	3,810	30.5%	3.0%	\$52,672	3	None	None
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	1,020	1,330	30.4%	3.0%	\$36,931	7	None	MT OJT
53-7063	Machine Feeders and Offbearers	1,580	2,060	30.4%	3.0%	\$24,551	8	None	ST OJT
35-3011	Bartenders	4,180	5,430	29.9%	3.0%	\$20,578	8	None	ST OJT
15-1121	Computer Systems Analysts	1,850	2,390	29.2%	2.9%	\$76,888	3	None	None
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	3,780	4,880	29.1%	2.9%	\$20,099	8	None	None
27-4011	Audio and Video Equipment Technicians	520	670	28.8%	2.9%	\$30,364	5	None	ST OJT
	TOTAL: 79,530 New Jobs	211,850	291,380	37.5%	3.2%	\$34,739			

Source: Standard Occupational Code descriptions and forecasts, CA Employment Development Department

B. Median Pay by Sector

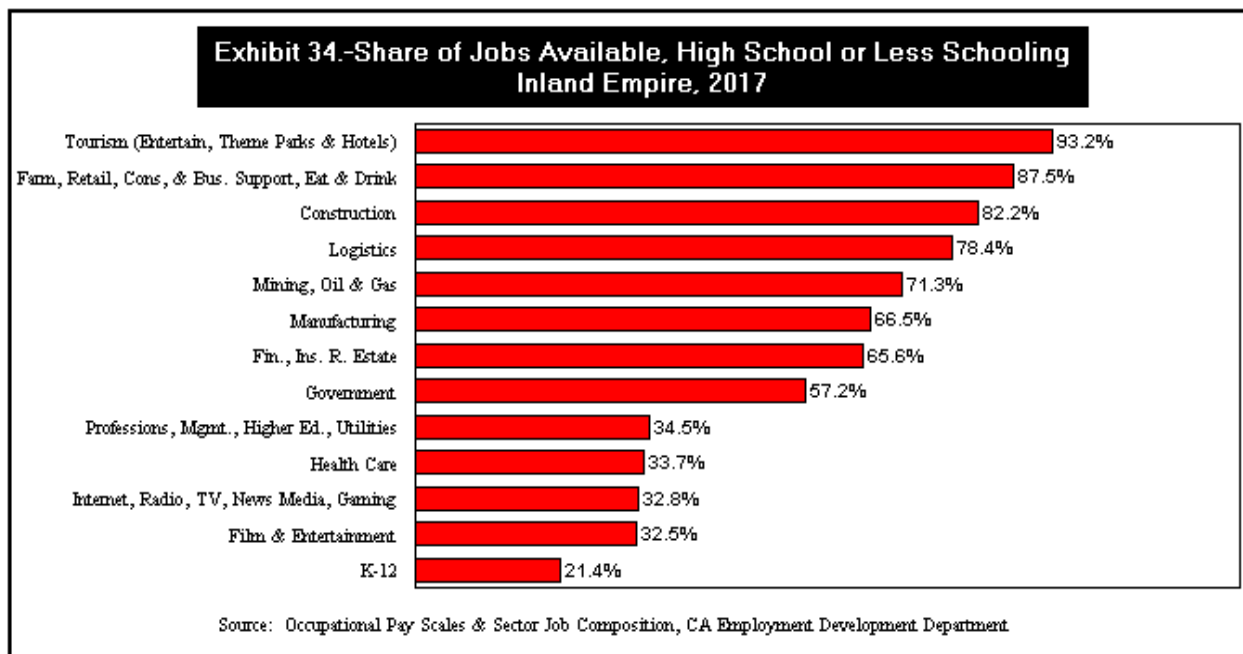
1. A key Inland Empire need is for sectors that offer primary wage earners access to middle class earnings. Three steps are needed to determine median pay by sector:
 - Median pay by standard occupational code for the Inland Empire in first quarter 2017 was downloaded from EDD.
 - The group of occupational codes in each sector for California was downloaded from EDD together with employment in each occupation for each sector. These data were not publically available for sectors within the state's various jurisdictions.

- The occupational array and the Inland Empire’s median pay levels were combined to show the weighted array of jobs and their median pay by sector in first quarter 2017 in the inland area.
2. The results from this array are as follows (*Exhibit 33*):
- **High Paying Sectors (yellow).** The five highest paying categories had median pay levels from \$60,201 to \$73,279 in 2017. These included five private sector groups most notably health care as well as higher education and all levels of government. They were responsible for 32,100 new jobs in the 2011-2017 recovery and expansion or 11.0% of the growth. Some jobs in these sectors offer opportunities for which the marginally educated can be trained.
 - **Median Paying Sectors (blue & green).** Six mid-range sectors had median pay levels from \$46,708 to \$60,201 in 2017. They included the three essentially blue collar or technical sectors responsible for 121,833 or 41.6% of new jobs from 2011-2017. There were also two office based groups (*finance, insurance & real estate; film & entertainment*) plus K-12 education that were responsible for 21,967 new jobs or 7.5% of the total. Marginally educated workers can succeed in these sectors.
 - **Lower Paying Sectors (red).** Lower paying sectors had median pay levels ranging from \$29,068 to \$30,768. These population-serving and business servicing sectors saw 116,679 new jobs from 2011-2017 or 39.9% of the area’s total growth. These sectors can help secondary wage earners move families into the middle class.



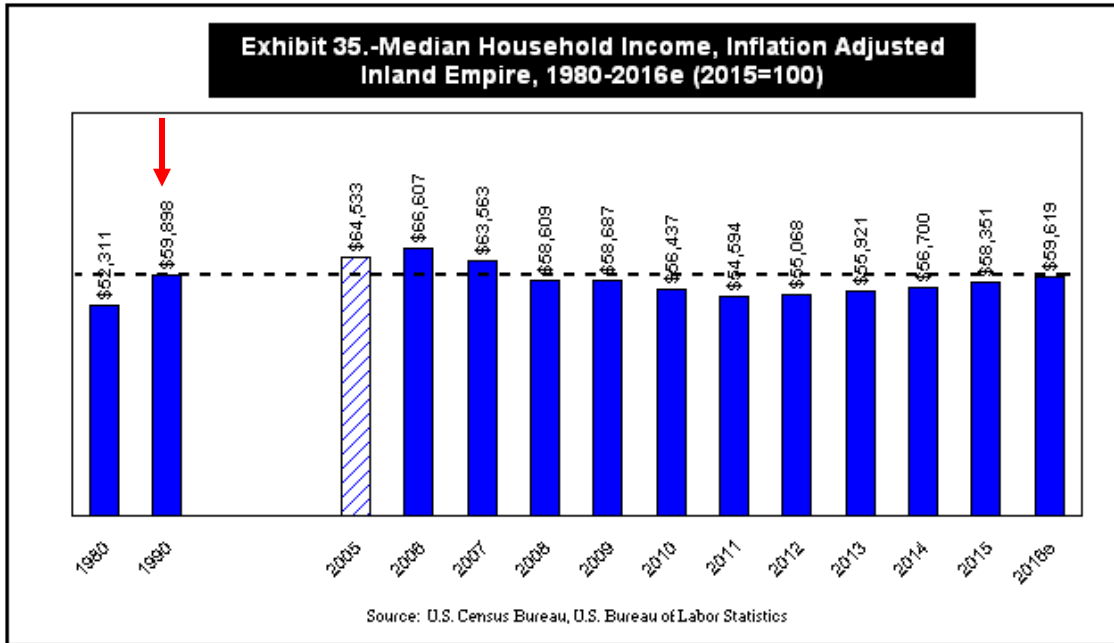
C. Status of Sectors Requiring Lower Levels of Education. A second Inland Empire need is for sectors that offer workers with high school or less educations the ability to start work. EDD’s data on qualifications to enter work in occupations shows that numerous sectors allow people to do so (*Exhibit 34*). Two are low paying but would help a family’s secondary wage earner, the rest can apply to a family’s principal income producer:

1. **Tourism** (*median income: \$29,066*) allows 93.2% of workers to have marginal educations. While growth will be rapid, there are not many good paying jobs.
2. **Broad Group of Low Income Sectors** (*median income: \$30,768*) allows 87.5% of workers to enter with high school or less schooling. These sectors will also grow rapidly but offer relatively few good paying jobs.
3. **Construction** (*median pay: \$52,604*) has 82.2% of workers in jobs requiring minimal levels of formal education, though apprenticeship is necessary for many types of work. The sector is finally beginning to add employees but is having trouble finding them.
4. **Logistics** (*median pay: \$46,708*) has 78.4% of its workers in jobs requiring high school or less schooling. The sector has been the fastest growing in the Inland Empire. This should continue.
5. **Finance, Insurance & Real Estate** (*median pay: \$49,034*) will grow as the real estate market recovers. In this sector, 65.6% of workers are in jobs requiring minimal entry level educations though many require specific state certifications.
6. **Manufacturing** (*median pay \$51,385*) will offer only a little job growth. However, industry leaders indicate that a large share of their existing technicians are starting to retire. Of workers in the sector, 66.5% needed high school or less schooling. However, technical skills training is a necessity.
7. **Health Care** (*median pay: \$60,768*) has a smaller share of workers in jobs with minimal educational requirements (33.7%). However, the sector is expected to grow rapidly, and those getting certification to work within it will often find themselves interested in moving up within the sector.

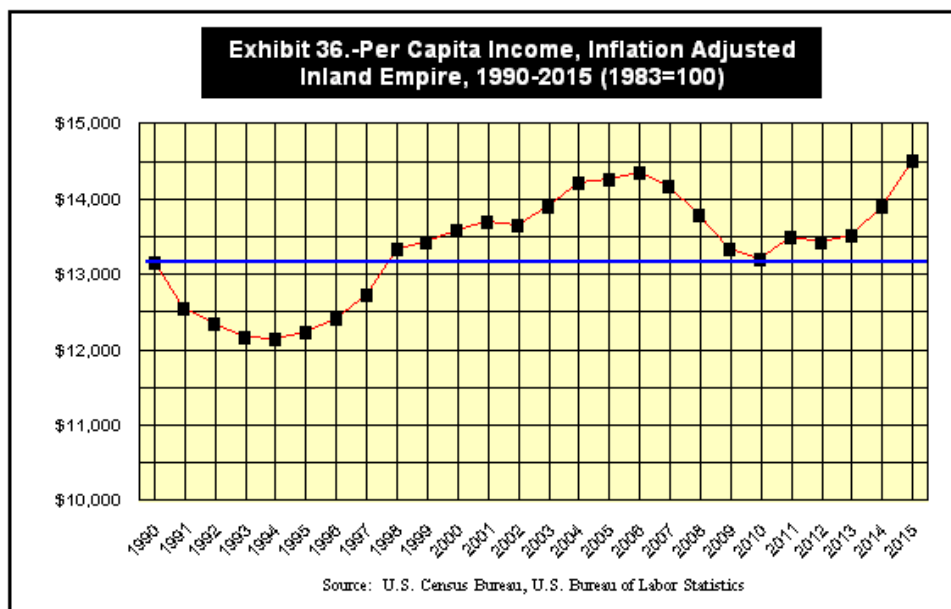


IV. Income Trends

Households in the Inland Empire have generally not been seeing increased prosperity:



A. Median Income. Median household income is still down slightly since 1990. Using median incomes adjusted to 2015 price levels, the 1990 level was \$59,898. In the early 2000s, the trend for the Inland Empire’s household purchasing power was up reaching a peak during the mortgage boom at \$66,607 in 2006. That was 11.2% over the 1990 level. The Great Recession and its aftermath saw household purchasing power trend down to 2011 reaching \$54,594 or -8.9% below the 1990 level. Since then, there has been a slow recovery taking the level to \$59,619 in 2016, still -0.5% below the 1990 level (*Exhibit 35*).



B. Per Capita Income. The trend for the Inland Empire’s per capita income adjusted to 2015 prices showed that the purchasing power of average individuals declined significantly from \$13,160 in 1990 to \$12,161 in 1994 (-7.6%) with the aerospace/defense recession (*Exhibit 36*). From there, per capita income rose to a record \$14,361 peak in 2006 or 18.1% over the 1994 low. With the Great Recession, the purchasing power of an average person fell to \$13,212 by 2010, off -8.0% from the 2006 peak. More recently, a gain to a record level of \$14,517 in 2015 pushed per capita income to 0.5% above the 2006 high. This made it 5.7% above its 1990 level. Unfortunately, per capita income as opposed to median income has the disadvantage of being biased to the high side by people with very high incomes.

C. Income Distribution. Finally, the Inland Empire has not been immune to the imbalance in income distribution that has plagued the nation. The share of its 1,348,213 households earning under \$25,000 in 2015 was 20.7% with an income share of just 3.9% (*Exhibit 37*). Another 22.6% earned \$25,000-\$49,999 with only a 11.7% income share. Middle class households included the 18.1% earning \$50,000-\$74,999 with 15.5% of income, and 13.0% making \$75,000-\$99,999 with 15.6% of income. The well-off were the 14.8% making \$100,000-\$149,999 with a 25.4% income share and the 10.9% earning over \$150,000 with 27.8% of income.

Note: The 25.6% of earning over \$100,000 captured a combined 53.2% of income. The 43.3% of families earning below \$50,000 had a 15.6% share of the area’s income.

