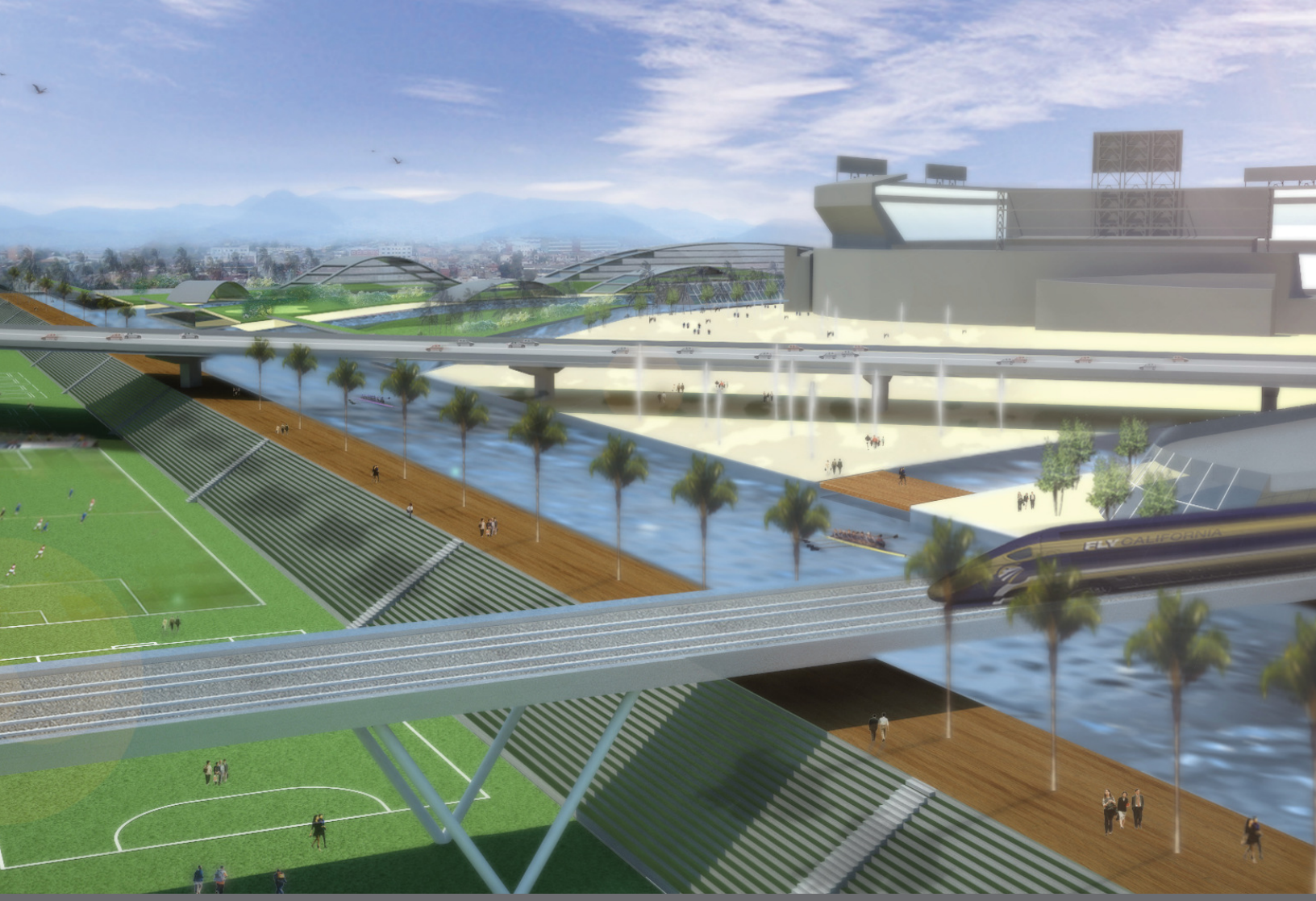


# HSR DEVELOPMENT

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Anastasia Loukaitou-Sideris, Ph.D.
Dana Cuff, Ph.D.
Harrison Higgins, AICP

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First published in the United States of America in 2013 by
Lewis Center
UCLA Luskin School of Public Affairs
3250 Public Affairs Building, Los Angeles, CA 90095
and
cityLAB
UCLA Department of Architecture + Urban Design
1317 Perloff Hall, Los Angeles, CA 90095-1467

www.lewis.ucla.edu
www.citylab.aud.ucla.edu

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Editors: Anastasia Loukaitou-Siders, Dana Cuff, Tim Higgins,
Design: Dan Oprea

Printed and bound in the USA

Funding for this project was provided by the California Department of Transportation

The project was directed by Anastasia Loukaitou-Sideris with Dana Cuff and Tim Higgins. Contributing UCLA Research Associates include Dave Dixon, Orly Linovski, Dan Oprea, Kimberly Williams, and Yeung Ho Main.

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# ACKNOWLEDGMENTS

The authors would like to gratefully acknowledge the following individuals who accepted our invitation to participate in interviews: Michael Litschi, Danny Wu, Jamie Lai, David Kennedy, Susan Kim, G.B. Arrington, Todd Osborne, Herman Howard, Jeff Carpenter, Alex Clifford, Patricia Diefenderfer, Joel Reynolds, Ron Ruiz, Federico Ramirez.

Marco Anderson, Javier Minjares, Mike Ainsworth, and Hao Cheng of the Southern California Association of Governments, provided us with important data for our case studies.

The entirety of the work would not have been realized without the assistance of our team of student researchers at UCLA. Dave Dixon, Orly Linovski, Kimberly Williams, Dan Oprea, and Yeung Ho Main provided important research assistance.

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# 1. INTRODUCTION

This study builds on our previous research of high-speed rail (HSR) stations around the world (Loukaitou-Sideris, Cuff, Higgins, and Linovski 2012) and our research on the potential for complimentary, collaborative planning among HSR station cities in California (Loukaitou-Sideris, Cuff, Higgins, and Wei 2012). Herein we identify the potential effects of HSR stations on Southern California communities and delineate some policy, planning, and urban design guidelines for positive development around the proposed Southern California HSR stations. HSR will link California's largest and most important urban centers (Los Angles, San Jose, San Francisco, and San Diego) to one another and to second-tier cities, both nearby and distant, increasing mobility and accessibility in an unprecedented way (Figure 1). Some HSR advocates have claimed that intensifying land use around HSR stations will not only support mobility and enhance accessibility but may also have positive impacts on local economies. Previous studies, however, have shown that economic development does not simply follow the building of a railway line, but requires important planning and policy efforts. Thus, providing guidelines that will achieve better integration of the station with its surrounding context, and connecting HSR stations to other transportation modes (including walking, biking, public transportation, and the highway system) are important first steps. Additionally, identifying a locality's existing competitive advantages, planning for development that takes advantage of local assets, and planning for complementary uses among stations are also important prerequisites.(See Figure 1 HSR Network Map)

Not all station-cities can benefit equally from the HSR, and not all development strategies should be the same. Our research on the effects of HSR on land use and development patterns suggests that the preconditions for successful development around stations differ for stations in first-tier cities and those in second-tier cities. We have found that—at least in European and Asian contexts—HSR stations in first-tier cities play a different role in catalyzing development than stations in second-tier cities, experience different positive and negative urban form impacts, and require different preconditions for successful development. Because localities are assuming a portion of the risk associated with large infrastructure projects like HSR, and because the ability to shoulder these risks is different for first-tier and second-tier cities, it is important to explore HSR's potential implications for California localities even if lessons from Europe or Asia are not perfectly transferable to the California context. Differences in land costs and housing affordability between first- and second-tier cities also point to new opportunities and potentially complementary roles for the density nodes that may develop around stations in these different types of places. At the same time the potential for negative results also exists, especially if appropriate land use regulations and design and development guidelines are not in place. In the absence of planning policy and design guidance, the HSR system may even encourage sprawl, if new housing developments are not concentrated in close proximity to stations or if the only way to access the HSR network is via the automobile. Furthermore, greater access to the more varied goods and services found in first-tier cities could challenge the viability of business providing similar services in second-tier cities.

Thus far, limited research exists to guide public policy efforts directing development around HSR stations. To date, the economic, urban design, real estate market, and municipal behavior variables that may influence urban change in the context of HSR remain largely understudied. In addition, many California municipalities have not yet started planning for high-speed rail. The few cities that have started the planning process seem to be planning only for stations as isolated entities on the system, often ignoring the possible complement that adjacent stations on the HSR corridor may provide. A regional look at the interrelationship of multiple stations on the network and an examination of possible complementary roles is all but missing. Research has, nevertheless, shown that pre-planning is essential if environmental, economic development and transportation goals are to be attained, and if the effects of transit on development patterns are to be positive and robust. Research has also shown that regional systems require regional planning practices.

### 1.1 STUDY OBJECTIVES AND RESEARCH QUESTIONS

The project area includes all proposed Phase 1 and Phase 2 HSR stations that fall within SCAG's planning jurisdiction. The stations are (from north to south): Palmdale, Sylmar, Burbank, Los Angeles, Norwalk, and Anaheim, Industry, Ontario, Riverside and Murietta (Figure 2). Station-areas are defined as areas within ½ mile from the stations. Table 1 gives some more details about each station area and its respective city.

Fig.1 HSR Network Map

The objectives of the research are:
1.to understand the socio-demographic context and economic conditions around the Southern California station-areas and identify their unique assets and possible competitive advantages;
2.to understand the plans, policies, and interventions of key municipal actors who influence land development and planning policy around the Southern California HSR stations; and
3.to propose policy and urban design recommendations that will increase the utility of HSR for Southern California municipalities.

The study seeks to answer the following questions:
1.What are important preconditions for positive station area development in HSR cities and station areas as indicated from examples in Europe and Asia, and are these relevant for California cities?
2.How are these preconditions different for the different types of station-cities in Southern California?
3.In what ways are Southern California station-cities preparing for the HSR?
4.What policy and design recommendations should be in place to foster positive development in Southern California's station-cities?

**1.2 SCOPE OF RESEARCH**

The study begins with a systematic review of the literature of the relationship between rail transportation investments and land use effects in the United States, detailed in chapter 2. In the US, most of this literature is based on observations of commuter rail systems. Nevertheless, we were able to discern--from a review of scholarship to date--the degree to which observers have identified the same or different preconditions for positive development as those found to affect development around HSR stations in other parts of the world. We also sought to identify and review

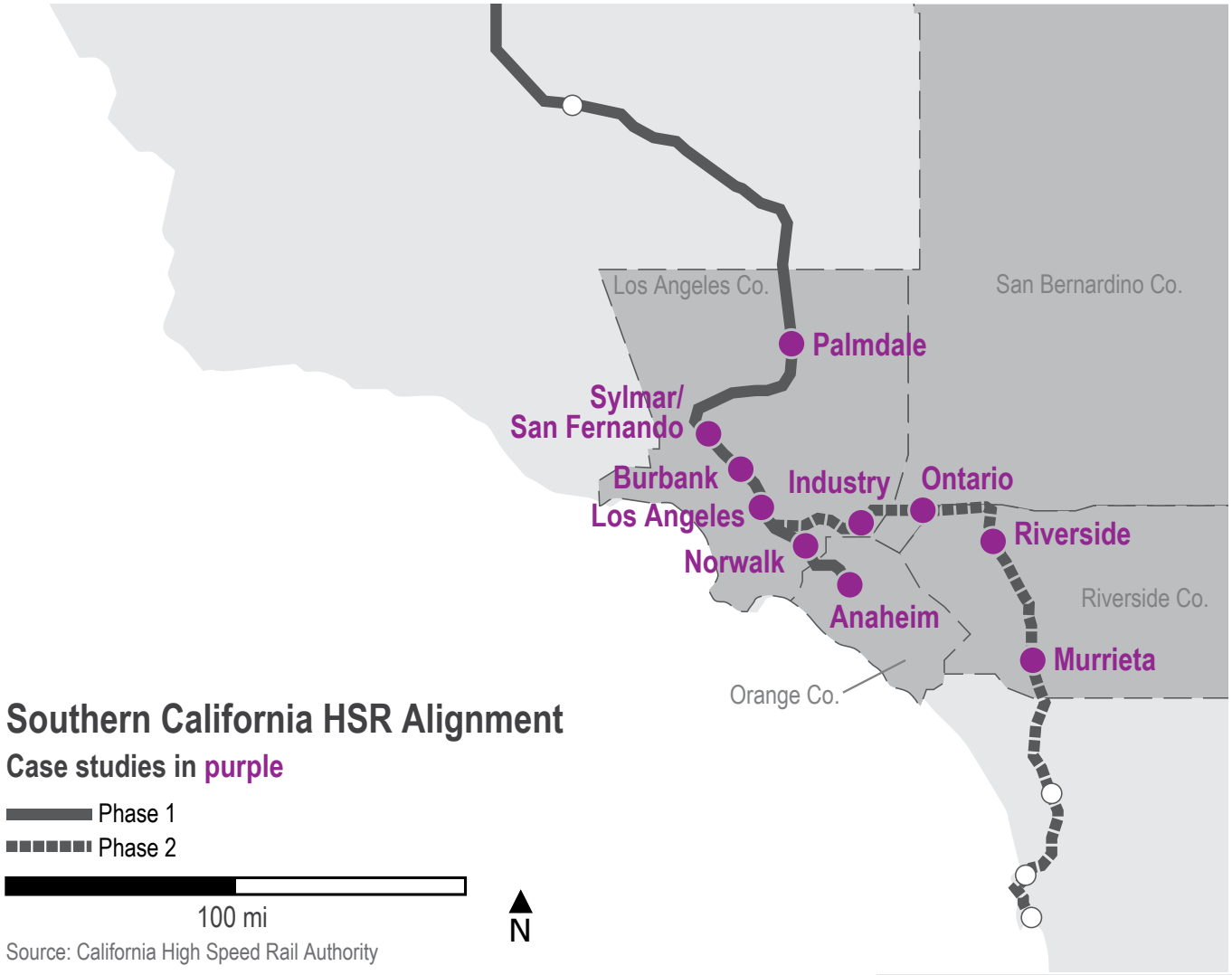



Fig.2 SCAG Juristiction HSR Network

studies that examine the regional effects of HSR corridors, the relationships between first-tier and second-tier cities along such corridors, the corresponding regional land use and transportation policies, and the degree to which they realize the benefits of "complementarity."

Chapter 2 also reports our findings from a survey of HSR experts from the fields of urban planning, urban design, economic development, and transportation planning who have studied changes in the countries of Europe and Asia where HSR currently operates. The survey gathered information on the characteristics and different types of urban development that has emerged around HSR stations in European and Asian cities and the prerequisite economic, real estate, policy, transportation, urban development, and municipal behavior variables that must be in place for appropriate, high-speed rail urbanism to develop.

Chapter 3 gives a detailed documentation of the socio-demographic and economic profiles of the ten Southern California cities, and reports on the attitudes and vision of their planners and policymakers. More specifically, we examined population, land use, transportation, and employment data in all ten cities, as well as the characteristics of the local economy both in terms of existing situations and changes that are forecasted to occur over the next several decades. We supplemented the analyses of these data with data gleaned through interviews with key actors in each locality responsible for the visioning, planning and development or redevelopment of station areas both in terms of the quality of the built environment and the characteristics of the local transportation system. These interviews shed light on the local development climate, as well as the market and public sector response thus far to development in proximity to proposed HSR stations. The interviews also helped us identify the perceived planning, policy, and financing opportunities as well as the perceived barriers to density node development around stations.

Based on the data gathered through the case studies, we developed a set of findings and recommendations for public policy, planning, and urban design guidance. We also created possible development scenarios for four station-areas: Anaheim, Norwalk, Burbank, and Palmdale, presented in chapter 4. These scenarios are illustrated through schematic land use and massing projections that model these various alternatives.

# 2. ECONOMIC AND SPATIAL IMPACTS OF HIGH SPEED RAIL: LITERATURE REVIEW

Contemporary high-speed rail (HSR) mega-projects are distinct from the major infrastructure building programs of the 1950s and 1960s, functioning largely as political symbols and support for the enhancement of local or regional economic "competiveness" (Van der Westhuizen 2007; Peters and Novy 2012). Thus, while the development of the interstate highway system in the US was justified in the name of civil defense and the ease of downtown traffic congestion (Chudacoff et al. 2010), champions of building HSR in the US tout the system's potential to produce economic benefits and alter the built environment in areas adjacent to stations, bringing benefits to local and metropolitan economies.

So far, however, most of the debate around the HSR mega-project in the US has centered on the rail's anticipated ridership, capital and operating costs, and fare structures. Less inquiry has focused on its potential economic development and spatial impacts. But since great hope and expectation are being placed on the rail's catalytic impacts for generating jobs and contributing to urban revitalization, it is important to take stock. Therefore, this chapter scans the literature to identify the economic and spatial impacts of HSR and also summarizes findings from a survey with a panel of HSR experts.

## 2.1 LITERATURE REVIEW

Existing studies on this topic are varied but can be categorized across two clusters: projective or predictive studies and empirical or observational studies. The projective literature seeks to predict the impacts on cities from the enhanced accessibility afforded by HSR. These studies differ in terms of their modeling rigor. Some simply offer an informed prediction about the magnitude of effects, while others use sophisticated forecasting models. Nevertheless, they nearly uniformly predict positive outcomes.

The empirical literature on the physical and economic effects of HSR on cities, on the other hand, tells us that their impacts are varied and largely contingent on a variety of planning, policy, and economic factors. Additionally, the time horizon for observing change in any of these arenas is often distant. Full realization of planning goals for station areas has seldom been observed within the first 20 years of rail station investments and may remain incomplete even at the 40-year mark. Research shows that pre-planning is essential if environmental, economic development, and transportation goals are to be attained, and if the effects of transit on development patterns are to be positive and robust.

We will first review studies that examine predicted HSR impacts related to job growth, population growth, real estate development, and other economic effects. Then we will turn to studies examining observed effects using the same categories.

### 2.1.1 Predicted Economic Effects

A number of scholars predict extensive impacts from HSR, such as regional restructuring, economic integration, worker and firm relocation, changes in travel patterns, and productivity shifts. The main reason for such impacts is the increase in accessibility of cities on the HSR network, which is typically described in terms of changes in their residents' and businesses' ability to access economic opportunities faster than the residents and businesses of cities without HSR.

#### Job Growth

Examining the potentials of Japan's Shinkansen and France's TGV HSR systems, Rietveld et al. (2001) argue that at the national and regional levels, HSR systems likely impact the spatial distribution of firms and workers; at the international level, improvement in accessibility may lead foreign firms to locate in a country, thus bringing new jobs.

A number of studies refer to the high expectations for economic development and job growth harbored by municipal and regional governments. For example, according to Bellet (2009), Spanish authorities originally expected that the opening of the Madrid-Seville line in 1992 would generate significant economic development and urban restructuring. Similarly, Bruyelle and Thomas (1994) discuss the expected effect of HSR on economic conditions in Nord-Pas-de-Calais, a region considered as the French rust-belt because of its decline of mining and manufacturing sectors and the ensued unemployment. Regional authorities believed in 1994 that the opening of an HSR station would allow the region to become a transportation and economic node, inducing more trade and economic exchange with Belgium and England. To this end, the region's government began collaborating with the British county of Kent on tourism development and actively planning its infrastructure growth.

Rietveld et al. (2001) employ rigorous modeling to project HSR's impacts on the spatial distribution of jobs. Their analysis leads them to argue that cities linked by HSR will face an increased demand for labor and lower unemployment rates compared to cities not on the HSR network. They expect that commuters would use HSR to travel greater distances to work. Thus, HSR may affect the spatial distribution of firms through a number of different effects, including a clustering effect comparable to the way in which firms locate around an airport.

While most of the studies predict agglomerative, re-centralizing effects in terms of HSR's impact on job growth, not all do. For instance, Kim (2000) projects changes in employment dynamics in and around Seoul as a result of the opening of a new HSR line to Pusan in the early 2000s. Using a number of different modeling techniques, and examining two different scenarios—high and low growth—to estimate the train's impact on employment, Kim (2000) predicts an outcome uncharacteristic of agglomeration economies, namely that employment patterns, which experienced a degree of dispersion between 1981 and 1991, would continue to disperse as a result of job opportunities along the new development corridor on the outskirts of Seoul.

**Population Growth**

On the other hand, Kim's (2000) modeling of population growth effects from HSR in South Korea's capital region finds that it would be significant and favor pre-existing concentrations. He argues that population growth will become more concentrated but less intense as time proceeds.

**Real Estate Markets**

A few studies look specifically at how HSR may affect local real estate markets. Rietveld et al. (2001) expect demand for housing and other real estate to increase in areas where accessibility is increased as a result of HSR. Van den Berg and Pol (1997) argue that, thanks to HSR, firms need not have an office in every European capital but can instead locate in the city where the business is most competitive and rely on HSR for travel. Focusing specifically on Amsterdam, Willigers (2008) argues that gains in accessibility due to HSR will be significant and expected to drive changes in the office market.

**Regional Restructuring**

Some scholars attempt to model regional economic impacts of HSR. These studies project the effects of HSR on the structure of urban agglomerations as well as how the relative position of cities within the urban structure and hierarchy may change with the addition of the new infrastructure.

Some exploratory and conjectural studies have anticipated the possibility of a broad transformation of the regional territory because of increases in accessibility and mobility patterns. A principal proponent of this hypothesis has been Peter Hall, who considers the space-time convergence created by HSR among the principal forces reshaping spatial structure and the city-system in Europe and leading to its internationalization, "information-alization," and decentralization (Hall 2009). Others, notably Garmendia et al. (2008), Horner (2000), Blum et al. (1997), Sasaki et al. (1997), and Bonnafous (1987), have echoed Hall's assertion that high-speed travel lessens the friction of distance, upending to some extent traditional theories of location and economic agglomeration. Blum et al. (1997), for instance, project the advent of corridor regions with integrated but dispersed labor and consumption markets. Sasaki et al. (1997) have modeled the potential for spatial dispersion of economic activities among Japanese HSR station-cities, and Garmendia et al. (2008) have hypothesized the integration of smaller cities into the metropolitan region, encouraging the further development of polycentric urban forms. Bruinsma and Rietveld (1993), on the other hand, have argued that an increased inequality between locations and increased centralization will emerge as a result of the differential increase in accessibility that accompanies HSR. In contrast, Knowles (2006) argues that telecommunications and roadway improvements could have much greater "shrinkage effects" than HSR, given the relatively small portion of the population that can access the HSR network. Indeed, the literature has not given a definitive answer if HSR facilitates decentralization and sprawl from metropolitan centers or concentration to them. Outcomes seem to depend on particular contexts, circumstances, and key variables such as station centrality, intermodality, city size, fare policy, and extent of the HSR network.

A number of studies attempt to model changes in accessibility. For example, Gutiérrez et al. (1996) argue that HSR in Europe will "have a re-structuring effect on community space by promoting regional development and encouraging interaction between regions." They look at the

effect of reduced travel time between places, and calculate an index of accessibility for a given node which takes into account economic activity (i.e., GDP) at a set of other regions and travel time required to reach those regions from the node. The authors argue that the contraction of space will not be uniform but instead will produce further imbalances between first-tier cities and their hinterlands. Vickerman (1997) concurs with this assessment of accessibility gains favoring big cities and argues that preliminary evidence about the effects of HSR in Europe indicates that big cities benefit, and their primacy increases.

Other scholars have theorized that the pattern of regional reshuffling from HSR will depend on the type of HSR network as well as the relative position of cities in the urban hierarchy. According to Blum et al. (1997), there are two main models describing HSR networks. One is a point-to-point model (e.g., the Tokyo to Osaka line), where HSR connects two cities; the other is a linear model (e.g. in Germany or Spain), where many cities are linked in a string-of-pearls pattern. Van den Berg and Pol (1997) discuss the two models used to describe a city's role in an urban hierarchy. One is the central-places model in which the position of a city is defined by the number of its functions, and the urban structure is dominated by a central city. In this model, cities not served by HSR stand to lose in attractiveness. By contrast, the network model involves a horizontally-oriented system in which the position of a city is defined by what that city offers but others do not.

Masson and Petiot (2009), on the other hand, deploy Krugman's core-periphery model to predict the impact of a proposed HSR link between Spain and France on tourism in Perpignan, France. They argue that there is a risk that Perpignan's vitality as a tourist center may decline with respect to that of Barcelona. This argument is based on the core-periphery model's assumption that as transportation costs decrease, the larger urban agglomeration stands to gain.

Only a few studies try to anticipate the overall impacts of HSR on the local economies of particular cities. For example, Gibb et al. (1990) examined Devon and Cornwall, two counties in Southwest England, which were to be bypassed by HSR. Looking at the expected impacts on the shipping economy of the two counties, the authors predicted that it would be unaffected by improvements in the freight service through the Channel, but expected a decline in international tourism, as the Southwest would become comparatively much further from Continental Europe compared to the Southeast.

In a recent study, Preston and Wall (2008) seek to anticipate HSR's impact in terms of economic activity, employment, population, and housing values on the city of Ashford, England. They argue that intermediate stations, like Ashford, may not gain significantly from HSR and may even experience decline. According to them, a city's success depends on whether many trains stop there, and whether people choose to take advantage of the new transportation system.

So far, we have reviewed studies that predicted HSR impacts related to job growth, population growth, real estate market, and other economic effects. These studies mostly take a sanguine view of the effects of HSR's ability to bestow the favors associated with growth and, thus, potentially regenerate central urban agglomerations across a range of indicators. Has this optimism panned out in practice? In the next section, we review studies that describe observed effects using the same categories.

### 2.1.2 Observed Economic Impacts

A number of empirical studies seek to evaluate a variety of economic impacts of HSR (e.g., job growth, population growth, increase in property values, increase in income). Two studies have attempted to synthesize a range of experiences across a spectrum of outcomes. Bruinsma (2009) provides a sampling of the range of analyses that can be undertaken and offers a review of the literature on the economic and urban impacts of railway developments. In his view, impact studies can take several forms: examination of accessibility (e.g., office location attractiveness), real estate values (e.g., a hedonic model), and what he calls "multi-functional land use," which examines such things as quality of place and the feasibility and safety of buildings constructed over the tracks. In an earlier study, Sands (1993) provides a broad review of impacts of HSR in Japan, France, and Germany on population and employment growth rates, ridership, business behavior, real estate values and activity, business and employment location, and residential location. He concludes that HSR effects are highly variable; it is impossible to make predictions about outcomes at any specific location without a detailed analysis. While it is possible to reinforce existing population and employment patterns and direct growth to areas around HSR stations, such effects are only likely to occur if the transportation agency takes the lead in developing station areas.

**Job Growth**

In general, scholars find that HSR-driven job growth has been the highest in central urban areas, and cities that have HSR stations have fared better in terms of job growth than those that do not. According to Haynes (1997), labor market impacts of HSR are point-specific, in spite of its corridor nature.

In reviewing the literature on HSR effects on job decentralization versus centralization, Garmendia et al. (2008) note that in France economies have trended towards centralization as firms from other cities have opened offices in Paris. However, Rietveld et al. (2001) find that fewer than expected Lyon-based firms relocated to Paris after the Paris-Lyon line was built. At the same time attracting firms around several second-tier HSR stations, like Lille and Le Creusot, has been more difficult than expected.

Examining the impacts of Japan's Shinkansen, Cervero and Bernick (1996) find that although the Shinkansen lines did not generate significant shifts of population or employment along its corridors by the early 1990s, the network strengthened the economic role and primacy of Tokyo and Osaka at the expense of the intermediate cities served by HSR. Nevertheless, in a later study, Banister and Berechman (2000) found that the line had, in fact, both local and regional economic development impacts on Japan's employment growth patterns and resulted in increased land values around station areas even in intermediate cities. Since then, Cervero (2009) has argued that the Tokyo-Osaka Shinkansen line has had a greater impact on the distribution of jobs than the distribution of residents and that employers have concentrated around the HSR stations in both Tokyo and Osaka. Reporting on the Shinkansen labor market effects, Rietveld et al. (2001) find that cities with a station fared better in employment growth than cities without a station. Growth has slowed since the opening of the line, but it is still higher in cities with stations. Similarly, looking at another economic indicator, Rietveld et al. (2001) find that cities visited by Japan's Shinkansen had a higher household income growth than cities without HSR. Haynes' (1997) analysis supports that of Rietveld et al. (2001) finding that employment growth in retail, industrial, construction, and wholesale in Japan grew between 16% and 34% more in cities with stations than in cities without stations.

Sasaki et al. (1997) present somewhat more ambiguous findings. They deploy an econometric model to estimate the dispersion effect of Japanese HSR improvements. By grouping cities into regions, the authors observe that HSR contributes somewhat to regional dispersion but such effects are small when compared to the degree to which HSR has reinforced the attractiveness of central regions by increasing access to them.

Looking explicitly at a second-tier city, Preston and Wall (2008) observe the effect of HSR in the economically depressed South East England. They find that because of major accessibility increases, employment growth in Ashford has outperformed its surrounding areas. Looking at Lyon, another second-tier city, Cervero and Bernick (1996) find that its firms benefited greatly by the enhanced accessibility because of their greater exposure and linkage to Parisian markets.

**Population Growth**

Three studies look at observed trends in population growth resulting from HSR development in Japan and Spain. Garmendia et al. (2008) focus on the impacts of HSR on small Spanish cities. They observe that expectations of rapid population growth there have not come to fruition, but their gradual decline has halted. Rietveld et al. (2001) indicate that population growth in cities with Japan's Shinkansen was higher than in cities without it. Similarly, Haynes (1997) finds that population growth in cities with HSR stations was only marginally higher than in cities without stations. Cities with high concentration of information exchange industries (e.g., business services, banking, and real estate development) experienced the highest growth rates. Meanwhile, cities served by HSR were constrained in terms of population growth if they had a high concentration of manufacturing employment and an aged population. Haynes also points out one problem with identifying economic impacts from HSR in Japan: the extent to which HSR induced such growth is unclear because the route was planned along a corridor where growth was forecasted.

**Real Estate Market**

Several studies look at HSR's effects on the demand for urban land and property values. In general, the demand for land is higher in locations closer to HSR, often thanks to successful value capture strategies employed by HSR developers. For example, Murakami and Cervero (2010) point to the Central Japan Railway Company as an agency which has successfully recaptured value, thus

catering to the increased demand for land around transit.

Some land uses appear to be popular around HSR, while others are not. Despite the oft-stated desire to leverage HSR investment to capture economic growth and employment, residential uses have flourished in several locations. For example, Cervero and Bernick (1996) list multi-family housing as the primary land use in areas adjacent to HSR stations. Yet a range of other uses is also possible. Thus in Lille, station development has driven regional development by adding convention, entertainment, and commercial spaces. The area around Lyon's Part-Dieu station has witnessed an increase in land values and a rising demand for office space (Cervero and Bernick 1996).
Rietveld et al. (2001) find evidence of residential location choice that takes into account the presence of HSR. This is especially apparent in the city of Vendôme, France (about 100 miles from Paris), where the construction of HSR was associated with a huge reduction in travel time to Paris and a large influx of Parisian workers. In addition, in Spain, Garmendia et al. (2008) find that Ciudad Real, which is served by HSR, has become a popular city for a range of uses that require cheap land, including multi-family housing. Nevertheless, the authors find that demand for housing around the train station depends on whether potential consumers are locals or immigrants (i.e., originally from another city), or whether they rent or own.

In terms of property values, the literature identifies a mix of effects related to HSR. Haynes (1997) observes that the opening of the TGV Atlantique line, which runs between Paris and Le Mans, has coincided with a major increase (100% in three years) in land values in Le Mans. The HSR line is seen as one of several contributors to this trend. Haynes' analysis of the German ICE is more limited because the lines are new. However, he notes that demand for office and retail space around the Kassel station, on the Hannover-Würzburg line, has increased by 20%. Meanwhile, Rietveld et al. (2001) indicate that land value growth was higher in cities with Japan's Shinkansen than in Japanese cities without HSR.

On the other hand, Ahlfeldt (2012) did not find any significant impact of Berlin's Hauptbahnhoff station on the real estate market of the station neighborhood or the city. Similarly, Andersson et al. (2010) did not find a noticeable effect of HSR on surrounding property values in the city of Tainan in Taiwan. They had originally hypothesized that Taiwan's new HSR line—a 345 km line running from Taipei down the west coast of Taiwan that opened in 2007—would increase property values as a result of greater accessibility in HSR station areas. The authors built a hedonic pricing model using data from the southern city of Tainan and examining the characteristics of property transactions from 2007. Because owner-occupied housing accounts for over 80% of Taiwan's housing stock, the authors employed sale prices instead of rents in their hedonic pricing models. The distance-to-HSR variable was found to be insignificant, which the authors attribute to expensive fares and the small number of people using HSR for commuting purposes. In addition, they argue that entrenched residential location patterns have prevented a reshuffling of housing markets.

**Tourism Impacts**

Some have examined the impacts of HSR on different economic sectors such as tourism. Several authors have examined the Paris-Lyon line because it has been in operation for almost thirty years. Haynes (1997) finds that on this line, summer tourism rose, but overnight stays in Lyon fell due to the city's enhanced proximity to Paris. Masson and Petiot (2009) find that the opening of the Paris-Lyon HSR line in 1983 strongly increased business tourism in Lyon (such as conference and meetings, exhibitions and trade fairs, corporate events, and business travel).

While the Paris-Lyon segment was the first HSR segment to open in France, the TGV expansion has allowed researchers to document impacts elsewhere. Masson and Petiot (2009) find that the HSR line heading southwest from Paris (called LGV Atlantique and opened in 1989) has significantly increased business travel in Le Mans and the number of Parisian visitors in Tours (cities along the line). The 2001 opening of the HSR link between Paris and Marseille (called LGV Méditerranée) did not lead to a noticeable effect on tourist volumes, but, on the Marseille end, it led to increases in short-stay travel (i.e., extended weekend trips) and increases in various subsectors of travelers (e.g., young adults and seniors). The authors observe that increases in local tourism also depend on the existence of local attractions, local attraction strategies, and development of travel infrastructure. In Spain, scholars have found that in the "big intermediate" cities of Zaragoza (along the Madrid-Barcelona line) and Cordoba (along the Madrid-Seville line), several business (i.e., meetings and consulting work) and tourism are rising, at the expense of the larger metropolises (Mason and Petiot, 2009).

Examining Japan, Cervero (2009) finds that "social-recreational" travel has similarly prospered along the Tokyo-Osaka Shinkansen line, leading to an increase in hotel and restaurant businesses around stations. Froïdh (2005) describes similar changes in travel behavior resulting from the development of a new HSR line in Sweden.

**Differential impacts**

In general, studies examining the observed economic impacts find mixed results depending on the type of impacts studied and the particular city or corridor. The literature indicates that the economic and development effects of HSR are interlinked over the long run, but these effects may be unevenly distributed among cities. As a result, scholars continue to debate whether HSR truly generates economic development or merely redistributes economic activity, moving it from locations bypassed by the rail to locations made more accessible because of HSR service.

While there is some evidence to the contrary, and while second-tier cities with HSR appear to have fared better economically than those without it, the scholarship that exists to date suggests that most growth and economic benefits from HSR accrue to the first-tier cities of the network, where firms are better positioned to expand their reach in secondary markets and smaller cities. In general, there does not appear to be agreement that all cities served by HSR see an impact in terms of development. Some authors find that HSR has created new opportunities for development, as private and public sectors capitalize on the higher demand for land. Other studies, however, document the absence of such an impact.

Despite the variety of outcomes, the persistence of the core-periphery dichotomy in HSR research has led some observers to argue that HSR facilitates the territorial polarization between central (first-tier) and peripheral (second-tier) cities. Nevertheless, examples of HSR-induced economic development in small and intermediate cites are also observed. For example, in France, the TGV HSR network has had catalytic effects in the growth and development of second-tier cities such as Lyon and Lille. In Germany, Ahlfeldt and Fedderson (2009) find that small cities along the Koln-Frankfurt HSR corridor saw substantial increases in their GDP compared to other local towns. In Spain, small cities on the HSR network, less than one hour away from major metropolitan centers, accrued population growth and some economic development benefits thanks to their integration to the larger metropolitan network, which helped them attract new economic activities and housing investments. For example, according to Garmendia et al. (2008) some workers now live in Ciudad Real, a small city fifty minutes from Madrid on the new Madrid-Seville HSR line, and commute to Madrid for work. Researchers point out that while larger metropolises are the primary beneficiaries of HSR, small cities may also benefit by acquiring greater visibility in the minds of people who live in metropolises (Garmendia et al. 2008). Indeed, according to Bertolini and Spit (1998), some of the benefits of HSR for second-tier cities relate to a revamped and more "modern" image and the increased visibility that this new transportation mode helps them acquire. Kasarda and Clark (2010) and Hall (2009) have also argued that HSR may extend the spatial reach and economic role of exurban "edge" cities, particularly where it combines with airport facilities.

### 2.1.3 Development Activity and Urban Form Impacts

Interestingly, the projective literature on the economic impacts of HSR has not been accompanied by a similarly projective literature on changes in urban form. Furthermore, empirical studies that examine the impacts of HSR on the urban development patterns of local and station-adjacent areas are rather few.

Hall (2009) provides a positive outlook of how HSR has stimulated development in some cities. Citing Lille, Brussels, London, Madrid, and Rotterdam as key examples, he argues that HSR lines have reinforced central business districts by encouraging development around new or upgraded stations. In other cases, like Zaragoza, urban transformation has been stimulated by a centrally-constructed HSR station and the relocation of a lot of rail infrastructure to peripheral areas. Some cities like Lleida are using their traditional stations as HSR stations, which has stimulated development in those stations' vicinity (Bellet 2009).

On the other hand, some scholars observe that in some cities, the building of an HSR station has not brought about any catalytic effects and has not been accompanied by significant development. Thus, Cervero and Bernick (1996) find only a negligible impact on development in Japanese cities, that had been well-served by rail prior to Shinkansen. Haynes (1997) observes that of three new stations built along the Paris-Lyon line, only Lyon Part-Dieu has had a significant effect on economic development. Berlin is still awaiting redevelopment around its Central Station

(Hauptbahnhof) (Peters 2009); the HSR station in Tours did little to regenerate the surrounding area, the Ashford station at Kent, UK, has thus far exhibited little in terms of development, and the Ebbsfleet International HSR station, ten miles outside London, has so far only witnessed the building of a park-and-ride facility, according to Hall (2009).

With respect to new town development, Cervero and Bernick (1996) find that it has not always coincided with the construction of HSR stations. They note that HSR in France has not been accompanied by new town growth, whereas such growth has been widespread in parts of France not served by HSR. In contrast, Hall (2009) finds that HSR development has created new commercial centers in a number of places, including in Osaka, Japan; Stratford, England; and Kassel, Germany. He writes that some HSR stations have induced the development of edge cities in peripheral urban areas, a model that originated in a Tokyo suburb and has since been replicated in Europe.

In Japan, Cervero and Bernick (1996) find that HSR-driven development outside traditional cities is widespread and can take different forms. In cities where an HSR station was placed in a suburban area (e.g., Kyoto), the result was to spur development around the station at the expense of central-city areas. Also, several new town developments have occurred around greenfield sites (e.g., Gifu), even though there was not a good feeder service to nearby cities. Growth has been significant at the Shin-Yokohama station, where substantial urban investment accompanied the development of a new feeder rail line on previously agricultural land.

#### 2.1.4 Planning Around HSR Stations

The accommodation and smooth integration of transport and urban development is not a simple undertaking. Bertolini and Spit (1998) attribute this to the dual nature of station areas which need to act as nodes accommodating both transport and non-transport networks, and as places hosting a variety of diverse uses. This generates a series of dilemmas: 1) a spatial dilemma because of the compressed nature of most sites which should accommodate both passengers and local residents and businesses; 2) a temporal dilemma because transport investments do not necessarily have the same time horizons as redevelopment plans; 3) a functional dilemma entailed in the requirement of achieving a multi-functional environment; 4) a financial dilemma because of the high cost of addressing technical difficulties and accommodating conflicting requirements; and lastly 5) a management dilemma which is inherent in the mix of public and private investments and properties and the heterogeneity of different stakeholders.

Nevertheless, many municipal governments are interested in attracting a HSR network because as de Ureña et al. (2009: 269) explain:

*"There are 3 reasons why HSR is often seen at the local level as an opportunity to transform the structure of the city center and also to change the overall city image by developing new urban projects and attracting high quality spaces: 1) local communities have become the real entrepreneurs behind attracting investment; ...Cities step up their efforts to attract investors, production activities and professional services; 2) HSR projects a high quality image and is often used in city marketing campaigns; 3) railway sites are generally large, centrally located and underused, so HSR provides an excellent opportunity to exploit the availability of such extensive and relatively vacant plots to develop the urban center."*

To these factors triggering planning for station area development, Bertolini and Spit (1998:35) add "the ongoing privatization process or at least the shift towards greater market-orientation of transportation, and most notably railway companies. Transportation infrastructure and service providers are increasingly seeking ways to recapture the accessibility premium they help to create. This implies the development of commercial activities within stations and redevelopment of land above or around stations."

In response to such factors, Bellet (2009) examines the urban development opportunities created by the construction of HSR lines in Spanish cities. She finds that their construction has encouraged cities to restructure land use. In some cities, like Ciudad Real, the construction of HSR has simultaneously been accompanied by the dismantling of another track, opening up huge swaths of land for redevelopment. Thus, while some have hailed station-induced redevelopment as a "rail renaissance," Peters and Novy (2012: 26) also point to the decline of lesser stations and respective station areas as the "dark side" of the same phenomenon.

**Factors that Define Good Station Area Planning**

What attributes contribute to good HSR station area planning? Nuworsoo and Deakin (2009) examine several planning projects in HSR station-areas and offer several recommendations. They suggest good intermodal connections, physical improvements (e.g., creating a greater concentration of retail establishments and cultural amenities), economic improvements (i.e., generation of more business activity), and social improvements (i.e., places for people to congregate). Cervero and Bernick (1996) add that good access to the stations for vehicles and pedestrians has been a catalyst for development.

The crucial question researchers ask is how to achieve such goals through the actions of governments and markets. According to Cervero and Bernick (1996), development around HSR has been highest in cities (e.g., Lille) with significant public sector involvement. However, Lille may be a unique case, because the city's central geographic position (in–between London, Paris, and Brussels) has certainly contributed to its exceptional growth after the coming of HSR (Bertolini et al. 2012). Smaller and intermediate cities with HSR stations have not experienced significant land use changes. Murakami and Cervero (2010) argue that without proactive public agencies and local champions pushing for investment around stations, the effects of new HSR on economic development are likely to be small.

Four studies give broad overviews of HSR planning processes in various European environments. Bertolini and Spit (1998) give detailed descriptions of several major redevelopment projects around HSR stations in Europe, describing the planning process, legal framework, and key actors. Hall (2009) provides an in-depth review of the HSR development and strategic planning that has occurred in the London suburbs of Ebbsfleet and Stratford, where the new international train stations are intended to act as economic development hubs supporting a series of redevelopment projects. Peters (2010) highlights several aspects of the planning process related to a large project in Berlin that involved the tunneling of a road and several train tracks. Priemus (2007) summarizes the process of planning a HSR line in the Netherlands.

**HSR Stations as Nodes and Places**

A subgroup of studies focuses on node-place dynamics --i.e., interactions among land-use development, transportation and other factors --and discuss how these dynamics affect several large-scale projects in Europe. Thus, Kloosterman and Trip (2006) examine the concept of quality of place, arguing that HSR stations function both as nodes and as places. The authors conduct two case studies, in Amsterdam and Rotterdam, to identify the different actors in station-area development and the extent to which the private and public sectors view themselves as creators of place quality.

Trip (2008) argues that while the South Axis project in Amsterdam is unrelated to HSR (HSR is an "added value," not an "essential precondition" for the project), projects in Lille and Rotterdam are in fact intricately related to HSR. For each of these places, Trip discusses the quality of place from various perspectives: urban structure, functional diversity, quality of functions, public space, and architectural expression.

Bertolini (2008) examines the forces behind station area development around Dutch train stations and discusses complications resulting from node-place dynamics. He describes a model in which different station areas vary in terms of their value as a node and a place. An area's value as a node is a function of the accessibility of its station or how easily one can reach other big cities on the HSR network. Value as a place, on the other hand, is a function of the intensity and diversity of activities in the station area.

Very few studies examine the aesthetics of HSR projects. An exception is Dovey (1998), who discusses the architecture and urban design complexities of an HSR station-area. Focusing on the development at Euralille, he examines how architect Rem Koolhaas has tried to build a new city geared toward a new sense of interacting at a global scale and the desire to travel everywhere fast.

**2.1.5 Literature Review Implications**

Despite the proliferation and importance of HSR projects, the literature that evaluates their economic and spatial effects is rather inconclusive. Nevertheless, some important implications can be drawn. The projective literature shows a marked, though not uniform, tendency towards sanguine predictions, with particular focus on HSR's potential to bestow the favors associated with growth in first-tier urban agglomerations. The observational literature presents a more nuanced but still incomplete picture of HSR outcomes. It remains difficult to quantify how much development is directly attributable

to the increased access afforded by a railway line or station or if it is a result of "synergistic adjacencies"– their location near other sites and structures with great potential for redevelopment (Peters and Novy 2012: 25). Indeed, the economic effects of HSR are difficult to isolate, even with advanced econometric models, because many other trends and forces occur contemporaneously with HSR capital investments and offer potential alternative explanations to the effects observed. As such, HSR's effect on economic development can be characterized as analogous to a fertilizer's effect on crop growth: it is one ingredient that could help the process, but others must also be present to stimulate the economy.

Thus, researchers remain at odds about the generative possibilities of HSR mega-projects, with some arguing that their effects are largely those associated with redistribution rather than generation. As a result, HSR potentially creates both winners and losers. Among the winners are existing central places that are the primary beneficiaries of the increased access that HSR provides. Among the losers are the various cities not served by HSR, those along lesser lines that become obsolete, or potentially, places served by HSR but peripheral to central cities. The observed economic impacts find mixed results depending on the variables studied, the particular city, or the particular rail corridor. In some cases, observers see no impacts at all. The scale at which observations are made—whether it is at the level of the nation, the region, the HSR corridor, or even the station-adjacent neighborhood—interacts in important ways with the measurements and the implications drawn from them. Other factors also come into play, including the extent of modal links across transportation networks and pre-existing economic and land market conditions. Thus, it comes as no surprise that scholars find that the economic development impacts of HSR are quite varied and mixed.

That HSR may potentially redistribute growth rather than generate it is also important, for it speaks to the central role of governance—public capital investment and urban planning—in realizing such potential. Yet questions around the role of these activities in determining the pattern of redistribution have only been asked by a few scholars. Limited research exists to guide public policy efforts directing development around HSR stations.

### 2.2 FINDINGS FROM A PANEL OF HSR EXPERTS

Our review of the literature indicated that there is little systematic evidence to address the following questions: What are the potential positive and negative impacts to cities from the HSR? What are the important preconditions that lead to positive development patterns around HSR stations? What should municipal governments in Southern California, interested in spurring development around new HSR stations, know from the experiences of other cities with HSR networks? Such questions become particularly critical for municipalities which are now embarking in planning for the accommodation of HSR facilities. We gave these questions to a panel of twenty-seven knowledgeable HSR planning experts from ten countries. In this section, we provide a brief summary of our survey findings, which appear in more detail in Loukaitou-Sideris et al. (2012).

#### 2.2.1 Positive Effects

The panel of experts identified several positive economic effects that the HSR can bring to station-cities.

These include:

1.Increased public sector investment, especially from the part of national governments, which typically accompanies the development of HSR stations and can give an economic boost to local areas;

2.Depending on station location, increased land values and rents (though this may bring along the negative byproduct of gentrification);

3.Increased productivity measured in per capita income;

4.Creation of new employment centers;

5.Increased regional significance of formerly remote cities;

6.Increased tourism or at least opportunities for development of tourism and the attraction of special events such as business conventions and conferences in peripheral cities, which experience an increase of their accessibility.

For both central and peripheral cities the most positive effect of HSR, as seen by the panel, is its potential for urban regeneration of station-adjacent areas. Some respondents emphasized that regeneration will only take place, in the presence of a robust economy and property market. Others disagreed, stressing that urban regeneration projects often take place with significant public funding, and such funding can override weak market conditions.

Under certain preconditions, which will be discussed below, respondents argued that the HSR station may act as a catalyst for additional development, giving momentum to preexisting urban dynamics or spurring new commercial development and major buildings in central cities as well as brownfield redevelopment in peripheral cities. The increased public sector investment typically accompanying HSR construction was also characterized as a significant positive effect of the HSR on local economies.

### 2.2.2 Negative Effects

HSR-related development is not only associated with positive effects, however. Respondents also listed a variety of negative physical, economic, and social outcomes. Physical adverse effects may include the tearing down of historic buildings to make room for expanded railway tracks, the creation of "a sea of parking lots" around the station, and the negative externalities of noise, toxic pollution, odors, and traffic congestion around station areas. Many also mentioned the "barrier effect" often created when railway infrastructure, parking lots, and bulky station buildings drastically segregate the station from adjacent neighborhoods.

Some pointed to the possible regional and economic imbalance that may accompany the building of a HSR network if the first-tier cities get strengthened at the expense of second-tier cities or cities bypassed by the train. Local negative economic impacts listed by respondents also included land speculation and decreased housing affordability, though some argued that housing values may lower in station-adjacent areas.

An adverse, and for some inevitable, social impact is displacement resulting from gentrification, which has been observed around HSR station neighborhoods in Shin-Osaka, Brussels Midi, and at King's Cross in London. Some feared that the HSR may entice sprawl in outlying areas, because of increasing rents and housing prices around central stations.

### 2.2.3 Important Preconditions

Survey participants discussed an array of preconditions that should be in place for positive development to occur in station areas. These included physical/environmental factors (central station location, station integration with surrounding area, high quality architecture and station design that accommodates multimodal facilities, adequate parking, and mix of other uses, station area improvements, etc.), economic/ market-related factors (significant public funding, active real estate market; area vitality prior to HSR development, public sector land ownership), transportation factors (location at a transportation node, good highway access and public transportation connections, competitive HSR fares, and good and frequent HSR service), and factors related to the political context and planning process (e.g. strong political will and vision, pre-planning for HSR, adjustment of plans to local conditions, coordination between public and private sectors with one public agency taking the lead, joint development activities, cooperation of local stakeholders, supportive state or national policies). The long list of responses to this question indicates that a number of items should be in place for positive development to happen.

Some pre-requisite conditions were considered the most critical. The location of a station was described as the most important precondition for subsequent development, according to the expert panel. It is important that such location is situated close to a city's central core to take advantage of pre-existing complementary development and services. Most participants agreed that new construction is less likely to occur around HSR stations located at the edge of first-tier cities.

Connectivity with other transportation modes was described as equally important for creating vibrant, transit-supportive density nodes around stations. The siting of the station at a transportation node with strong connections to other regional and interregional networks was listed as the most important prerequisite for its future development at peripheral cities, and the third most important precondition for central cities. According to the panel, an additional very important prerequisite for development appears to be the HSR station's good integration with its surroundings in spatial, visual, and psychological dimensions. Here good urban and architectural design are essential to make the station accessible to the city, give the travelers a good sense of orientation, and provide bridges (literally and metaphorically) to the surroundings. Most respondents agreed that high quality of station design and public spaces are likely to act as important catalysts for additional development.

Respondents also noted that a strong political will and vision are also critical for

successful development around HSR stations. Some argued that these should be combined with station area plans tailored to local conditions, a strategy of how the city could benefit from the HSR, and good coordination between public and private sectors. According to the panel, development will not happen in a vacuum but will require careful planning and policy intervention. Importantly, the quality and frequency of the HSR service was also described as a very important precondition for station-area development.

#### 2.2.4 Lessons for California

Outlining lessons that California can draw from the experiences of other countries, the panel emphasized the need to make the HSR station a well-connected and central node within the city. They argued that the most important lesson for California municipalities is that they should provide good connections of the new HSR system with other intra-urban and regional transportation systems (including local airports), and plan the station as an intermodal node.

Pre-planning in anticipation of the rail and the preparation of station urban design plans were stressed as important so as to avoid the barrier effect around stations, create a lively node with a mix of activities, and high-quality public spaces. Supportive land use policies and zoning regulations such as the increase of allowable densities in the HSR station area were seen as helpful in stimulating housing, mixed use, and commercial projects. Transportation planning of the station area was also deemed very important in enhancing station connectivity to different transportation modes, and proper siting of parking facilities. Lastly, but importantly, the panel encouraged processes that help create broad interest coalitions, and elicit community support through transparent meetings and hearings. How such preconditions are fulfilled by municipalities and transportation agencies will determine if the HSR becomes an urban catalyst or not.

# 3. CASE STUDIES

## INTRODUCTION

A number of scholars predict extensive economic impacts from HSR, including regional adjustment, economic integration, worker and firm relocation, and changes in travel patterns as a result of the increased accessibility the HSR network brings to station-cities. Certainly in California, the expectation is that HSR will foster economic development and job growth, especially among the state's smaller cities and those located in the state's Central Valley. However, the degree to which HSR will generate new growth and development, rather than redistribute it, is a question that the research to date has yet to resolve. Similarly, scholars are ambivalent whether or not redistribution of growth comes in the form of a benefit or cost to smaller localities or localities bypassed by the rail. Nevertheless, the effects of HSR on the state's largest metropolitan centers are likely to be different than the effects on its more peripheral cities and hinterlands. The question is what kind of policies and planning should be in place to enhance the likelihood that HSR will in fact generate growth that will benefit the state, including small and struggling localities, and how should these differ among the station- cities.

This section examines the particularities of planning for HSR in ten California cities as well as their existing assets and development potential. From ten possible "first phase" and four "second phase" HSR station-cities (Fig.3), we selected ten Southern California case studies: one first-tier, large metropolitan city: Los Angeles, and nine second-tier cities: Anaheim (suburban employment center); Burbank (suburban employment center); Industry (suburban employment center); Murrieta (exurban dormitory); Norwalk (suburban dormitory); Ontario (suburban employment center); Palmdale (exurban dormitory); Riverside (small metropolitan); and Sylmar/San Fernando (suburban dormitory). We examined these ten case studies through the development of station-city profiles (collections of socioeconomic statistics and projections as well as land use and travel data), and interviews with local stakeholders.

We collected data on city population, number of jobs, and commute travel patterns. The ten case study cities vary widely for most variables. In terms of population, they range from Industry with a population of 219 to Los Angeles with nearly 3.8 million (Figure 4). In terms of size, the case studies include three of the 15 most populous cities in California (Los Angeles, Anaheim, and Riverside) as well as two of the smallest (Industry and Sylmar/San Fernando). In the past ten years all but two of the station cities have experience positive growth. Some have experienced significant growth (e.g. Murrieta's population more than doubled), but two have lost population (Norwalk's population loss was 3.3% and Industry's 71.8%). In the next 25 years, all the cities are expected to grow, except Industry, with Murrieta projected to grow the fastest, facing a projected population increase of 143% (Source: Southern California Association of Governments).

The station areas themselves also vary. It should be noted that in some California cities, including in Los Angeles and San Jose, HSR stations will be located at existing, historic train stations or may involve the redevelopment of existing, more recently built, commuter rail stations. Many

### All Cities Comparison

| City | Type | 2010 Population | 2010 Jobs | Net commuter inflow/outflow |
|---|---|---|---|---|
| Anaheim | Suburban employment center | 336,265 | 175,310 | 20,672 |
| Burbank | Suburban employment center | 103,340 | 178,706 | 126,330 |
| Industry | Suburban employment center | 219 | 61,910 | 61,220 |
| Los Angeles | Large metropolitan | 3,792,621 | 1,604,925 | 164,237 |
| Murrieta | Exurban dormitory | 103,466 | 18,818 | -13,453 |
| Norwalk | Suburban dormitory | 105,549 | 21,284 | -20,389 |
| Ontario | Suburban employment center | 163,924 | 99,196 | 38,867 |
| Palmdale | Exurban dormitory | 152,750 | 32,923 | -17,826 |
| Riverside | Small metropolitan | 303,871 | 137,610 | 29,845 |
| Sylmar/San Fernando | Suburban dormitory | 103,340 | 27,320 | -12,256 |

Figure 3. Comparison of first and second phase cities in SCAG region (Data Source: US Census, LEHD)

of these stations already function as well-integrated transit hubs. In other locations, entirely new stations will need to be constructed. Thus, the level of investment, both in terms of redeveloping existing stations or developing new ones could vary significantly among station-cities.

More than 1.5 million residents currently live within five miles of the planned Los Angeles HSR portal at Union Station; 937,448 residents live within five miles of Anaheim's ARTIC, and 830,873 residents live within five miles of Norwalk's proposed station (Fig.5). By 2035, these figures are expected to be almost 1.7 million in the case of Union Station, more than one million for ARTIC, and over 900,000 for Norwalk. Yet only 189,145 residents live within five miles of the planned Riverside station today, and that number is expected to be little more than 300,000 by 2035.

While HSR is not envisioned to serve the needs of short-distance commuters, its smooth interface with other transportation modes will be crucial for the success of the system. With this assumption, we perceive that an examination of the number and type of jobs located within the 5-mile radius of the station can give us a clear picture of the area's existing assets and development potential. Not surprisingly, the number of jobs within 5 miles of each case-study station varies significantly. In Los Angeles, 685,772 jobs are located within 5 miles of Union Station but only 20,871 jobs are located within 5 miles of the planned station in Riverside (Figure 6). The current job situation is more similar among Anaheim, Burbank, Norwalk, and Ontario. But our forecasts suggest different rates of growth among them, with Burbank and Ontario exhibiting potential for significant job growth. Each station area also exhibits significant specialization in terms of employment (Figure 7). Downtown Los Angeles, with a number of educational institutions within the 5-mile range from Union Station (such as the University of Southern California, the California State University at Los Angeles, and numerous professional, community, and technical colleges) has a significant number of jobs in the education sector. Burbank displays the highest degree of specialization, buoyed by a range of information jobs associated with media and the film industry. Ontario supports manufacturing and transportation jobs associated with the nearby airport; Norwalk/ Santa Fe Springs also specializes in manufacturing; and Riverside supports retail services. Despite this variety, all station areas exhibit high demand for mobility among workers. We found that few residents of the station areas also work within them, with the vast majority working at locations beyond five miles of the station. Conversely, the vast majority of those who work within five miles of the stations live outside of the area.

All station areas are well-connected to the automobile network, including the Interstate Highway system, but the level of access to other transportation modes (public transit, air travel) varies widely. While all the cities exhibit some degree of multi-modalism, some have more robust systems with better connectivity and access than others, with the largest cities, Los Angeles and Anaheim, being the most multimodal.

**Station City Population Growth Comparisons**

| Station City | Population | | | City Size Rank | % Change | |
|---|---|---|---|---|---|---|
| | 2000 | 2010 | 2035 | 2010 | 2000-2010 | 2010-2035 |
| Anaheim | 320,070 | 336,265 | 413,923 | 10 | 5.1% | 23.1% |
| Burbank | 100,316 | 103,340 | 110,900 | 63 | 3.0% | 7.3% |
| Industry | 777 | 219 | (1,176) | >100 | -71.8% | -637.0% |
| Los Angeles | 3,694,820 | 3,792,621 | 4,439,645 | 1 | 2.6% | 17.1% |
| Murrieta | 44,282 | 103,466 | 251,426 | 62 | 133.7% | 143.0% |
| Norwalk | 109,182 | 105,549 | 120,409 | 58 | -3.3% | 14.1% |
| Ontario | 158,007 | 163,924 | 178,717 | 29 | 3.7% | 9.0% |
| Palmdale | 116,670 | 152,750 | 242,950 | 32 | 30.9% | 59.1% |
| Riverside | 255,166 | 303,871 | 425,634 | 12 | 19.1% | 40.1% |
| Sylmar/San Fernando* | 23,564 | 23,645 | 23,848 | >100 | 26.1% | 0.9% |

*Data reflects population growth for the City of San Fernando

Figure 4. Population growth among case study cities (Data Source: US Census, SCAG)

# 3.1 METHODS

Development of station-city profiles: To develop the station-city profiles, we collected data from the US Census; the report of Longitudinal Employer-Household Dynamics (LEHD) in 2002 and 2009; regional demographic and employment projections prepared by the Southern California Area Governments (SCAG); regional and local transportation, land use plans, and redevelopment plans; digital aerial photography; county assessor records; and data from local economic development authorities and chambers of commerce.

In order to understand the economic development potential and comparability of each station area, we computed several new variables. For projected populations within our study areas (an area within five miles of the planned location of the HSR station platform), we relied on projections by regional councils of government. The variety of methods employed by those agencies for aggregating information on current and future jobs resulted in our developing independent

**Station Area Population Growth Comparisons**

| Station Areas | Population | | | % Change | |
|---|---|---|---|---|---|
| | 2000 | 2010 | 2035 | 2000-2010 | 2010-2035 |
| Anaheim 5 Mile | 843,709 | 937,448 | 1,027,148 | 11.1% | 9.6% |
| Anaheim Half Mile | 15,170 | 25,035 | 41,677 | 65.0% | 66.5% |
| Burbank 5 Mile | 631,164 | 661,270 | 731,704 | 4.8% | 10.7% |
| Burbank Half Mile | 15,456 | 16,073 | 17,627 | 4.0% | 9.7% |
| Industry 5 Mile | 410,565 | 439,000 | 548,605 | 6.9% | 25.0% |
| Industry Half Mile | 13,693 | 14,163 | 16,260 | 3.4% | 14.8% |
| Los Angeles 5 Mile | 1,378,539 | 1,514,569 | 1,658,524 | 9.9% | 9.5% |
| Los Angeles Half Mile | 32,734 | 36,180 | 39,948 | 10.5% | 10.4% |
| Murrieta 5 Mile | 170,935 | 222,529 | 280,153 | 30.2% | 25.9% |
| Murrieta Half Mile | 31,040 | 48,536 | 61,285 | 56.4% | 26.3% |
| Norwalk 5 Mile | 765,354 | 830,873 | 909,415 | 8.6% | 9.5% |
| Norwalk Half Mile | 31,092 | 33,609 | 37,425 | 8.1% | 11.4% |
| Ontario 5 Mile | 427,655 | 496,728 | 700,196 | 16.2% | 41.0% |
| Ontario Half Mile | 20,871 | 21,008 | 24,937 | 0.7% | 18.7% |
| Palmdale 5 Mile | 146,058 | 208,896 | 413,763 | 43.0% | 98.1% |
| Palmdale Half Mile | 13,951 | 24,730 | 57,831 | 77.3% | 133.8% |
| Riverside 5 Mile | 148,725 | 189,145 | 303,678 | 27.2% | 60.6% |
| Riverside Half Mile | 17,941 | 28,735 | 62,196 | 60.2% | 116.4% |
| Sylmar/San Fernando 5 Mile | 496,535 | 520,052 | 571,154 | 4.7% | 9.8% |
| Sylmar/San Fernando Half Mile | 32,085 | 33,379 | 36,060 | 4.0% | 8.0% |

Fig.5 Population growth among case study station ares (Data Source: SCAG)

**Job Growth Comparisons within 5 Miles of Station Areas**

| Station Areas | Jobs | | | Job Density | Gap Index Score* | |
|---|---|---|---|---|---|---|
| 5 Mile | 2002 | 2009 | 2035 | (2009 Jobs/Sq. Mile) | 2009 | 2035 |
| Anaheim | 363,578 | 344,558 | 338,221 | 4,386 | .121 | .115 |
| Burbank | 265,451 | 297,825 | 460,870 | 2,810 | .12 | .21 |
| Industry | 88,552 | 94,377 | 136,076 | 890 | - .12 | .01 |
| Los Angeles | 586,511 | 685,772 | 923,079 | 8,730 | .256 | .213 |
| Murrieta | 41,860 | 51,786 | 105,439 | 489 | .06 | .04 |
| Norwalk | 248,171 | 242,675 | 282,823 | 3,089 | .023 | .084 |
| Ontario | 162,673 | 174,077 | 262,133 | 1,642 | .16 | .32 |
| Palmdale | 21,894 | 24,830 | 42,852 | 234 | - .26 | - .24 |
| Riverside | 17,208 | 20,871 | 45,590 | 197 | - .38 | - .28 |
| Sylmar/San Fernando | 71,359 | 75,711 | 106,904 | 714 | - .37 | - .3 |

*Scores closer to 1 indicate a higher jobs to workers ratio while scores closer to -1 indicate a higher workers to jobs ratio

Figure 6. Job growth among case study station ares (Data Source: LEHD)

extrapolations using OLS regression using annual employment data gathered in the LEHD from 2002-2009. We aggregated this data from the census block level to the five-mile station area and assumed a linear growth pattern. Based on this linear growth model, we developed job and worker projections for 2010-2035.

Drawing on the methods of Murakami and Cervero,(2010) to describe the potential competitive advantages among HSR station cities, we calculated location quotients for jobs and workers according to grouped North American Industry Classification System (NAICS) employment sectors. We also computed gap indexes for each grouped NAICS employment sector and for each station area. The research team also developed location quotient (LQ) scores to characterize the degree of job or worker specialization in a station area. In order to calculate this variable, we aggregated employment data from 20 work sectors, based on NAICS codes, into nine groupings, using the groupings employed by ABAG. We then computed location quotients of jobs and workers in the five-mile station area for 2009 and 2035. Each location quotient was computed as follows:

$LQ = (x1 / y1) / (x2 / y2)$

Where x1 = the number of jobs or workers in a sector grouping within the 5-mile station area
x2 = the number of jobs or workers in a sector grouping in California
y1 = the total number of jobs or workers within the 5-mile station area
y2 = the total number of jobs or workers in California

Using NAICS employment data aggregated to the aforementioned nine groupings, we then

**Job Sector Growth Comparisons within 5 Miles of Station Areas**

| Station Areas | Job Sector Growth 2009-2035** | | | Job Sector Specialization | |
|---|---|---|---|---|---|
| 5 Mile | 1st | 2nd | 3rd | Highest Specialization | 2009 Location Quotient*** |
| Anaheim | Educational Services | Professional and Information | Retail | Management and Administration | 1.14 |
| Burbank | Health Services | Agriculture and Natural Resources | Educational Services | Professional and Information | 3.13 |
| Industry | Health Services | Agriculture and Natural Resources | Recreation and Hospitality Services | Educational Services | 1.37 |
| Los Angeles | Agriculture and Natural Resources | Educational Services | Management and Administration | Educational Services | 1.67 |
| Murrieta | Educational Services | Professional and Information | Health Services | Recreation and Hospitality Services, and Retail | 1.59 |
| Norwalk | Health Services | Recreation and Hospitality | Retail | Manufacturing, Wholesale, and Transportation | 1.80 |
| Ontario | Health Services | Professional and Information | Retail | Manufacturing, Wholesale, and Transportation | 1.72 |
| Palmdale | Management and Administration | Professional and Information | Manufacturing, Wholesale, and Transportation | Retail | 1.59 |
| Riverside | Agriculture and Natural Resources | Management and Administration | Manufacturing, Wholesale, and Transportation | Retail | 1.96 |
| Sylmar/San Fernando | Professional and Information | Health Services | Management and Administration | Manufacturing, Wholesale, and Transportation | 1.67 |

**Largest % Growth
***Higher Scores indicate a higher degree of job specialization

Figure 7. Job sector growth and specialization among case study station areas (Data Source: LEHD)

calculated gap index scores to indicate the balance of jobs and workers within each sector of the station area and computed a score for the station area as a whole. Gap index (GI) scores range from -1 to 1 with scores closest to -1 suggesting a worker-dominated sector or region and scores closest to 1 suggesting a job-dominated sector or region. Scores of 0 suggest a perfect balance of jobs and workers. The gap index was computed as follows:

$$GI = (a - b) / (a + b)$$

Where a = the number of jobs in a sector or station area
b = the number of workers in a sector or station area

**Interviews**

We conducted a series of interviews with knowledgeable public- and private-sector participants in the HSR planning process in each of the case study cities to better understand how each of them prepares for the coming of the HSR, the city vision and perceived benefits from the system, the faced challenges, as well as the process of local planning. We interviewed a total of 28 people, including planners from local redevelopment, transportation, and planning agencies, city managers, members of the city council, and private design and planning consultants (see Appendix for list of interviewees). While this is certainly not an all-inclusive list, we sought to contact and interview some of the most knowledgeable actors involved in the planning for HSR in all phase one cities (Anaheim, Burbank, Los Angeles, Norwalk, Palmdale, and Sylmar/San Fernando) and two phase two cities (Riverside and Murrieta).

The following sections summarize the socio-demographic, economic, and jobs profiles of the ten case-study cities, as well as the information gathered from interviews.

# 3.2 ANAHEIM

**Introduction**

The portal for HSR in Anaheim is planned to be located at the Anaheim Regional Transportation Intermodal Center (ARTIC), a new, major transportation hub in Orange County. ARTIC is to be located on a site along the Santa Ana River, within the city's fast growing Platinum Triangle redevelopment area that also includes Angels Stadium, Honda Center and The Grove of Anaheim (Figures 8 and 9). Plans for the area anticipate its transformation from a low-density, commercial and industrial zone into a more urban environment with high-density housing, commercial office towers, and retail space. The Platinum Triangle is adjacent, on its western boundary to the Anaheim Resort, an area that includes Disneyland, the Anaheim Convention Center (the largest convention center on the West Coast), and several dozen hotels.

Figure 8. Map of Anaheim HSR Station

Figure 9. Aerial Photograph of Anaheim HSR Station

**Population**

As of the 2010 Census, Anaheim's population was 336,265, making it the second largest city in Orange County (after Irvine). Anaheim accounts for 11.2% of the county's population, and is the tenth largest city in California. Population density is 6,618 persons per square mile. Anaheim is a minority-majority city, with non-Hispanic white residents accounting for 27.5% of the population. The remaining residents are comprised of Hispanics of all races (52.8%), Asians (14.6%), Blacks (2.4%), and other minorities. Between 2000 and 2010, the total population of the City of Anaheim increased by 2.5%, a rate that is lower than the Orange County rate of 5.8% and the statewide rate of 10%. Between 2010 and 2035, the city's population is projected to increase, however, by 23% to 413,923.(U.S. Census 2010) Median household income in Anaheim in 2009 was $57,870, 96%

**Residential Population and Population Density Projections within 5 Miles of Anaheim Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Orange County | 3,059,957 | 3,314,952 | 3,451,759 | 3,533,956 | 3,586,291 | 3,629,538 | 3,653,988 |
| Anaheim 5 Mile Station Area | 877,626 | 937,448 | 960,936 | 984,279 | 1,002,011 | 1,015,658 | 1,027,148 |
| Anaheim Half Mile Station Area | 15,730 | 25,035 | 27,190 | 34,869 | 40,671 | 41,107 | 41,677 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Orange County | 3,832 | 4,151 | 4,322 | 4,425 | 4,491 | 4,545 | 4,575 |
| Anaheim 5 Mile Station Area | 8,126 | 8,680 | 8,898 | 9,114 | 9,278 | 9,404 | 9,511 |
| Anaheim Half Mile Station Area | 2,383 | 3,793 | 4,120 | 5,283 | 6,162 | 6,228 | 6,315 |

Figure 10. Residential Population and Population Density Projections within 5 Miles of Anaheim Station (Data Source: SCAG)

of the median household income of Californians.(U.S. Census 2010) The median home price in the city in 2010 was $362,000 or 108% of the statewide median home price, having fallen from $492,000 (then 113% of the statewide median) in 2008.(Source: Yahoo Prices.)

In 2010, 937,448 residents lived in census tracts (both within Anaheim and adjacent communities, including the City of Orange) located entirely or containing portions within a radius of five miles around the station area (Figures 10 and 11).(Source: Southern California Association of Governments). The population density of those census tracts was an average of 8,680 persons per square mile.(Source: Southern California Association of Governments) Within census tracts located entirely or containing portions within half mile of the station area, the 2010 population was 25,035 with an average population density of 3,793 persons per square mile.(Source: Southern California Association of Governments) SCAG projects that residential population within five miles of the station will increase to 1,027,148 residents or by 9.6% between 2010 and 2035.(Source: Southern California Association of Governments) Within half mile of the station, the residential population is expected to increase by 66% to 41,667 within the same period, largely as a result of redevelopment in the area.

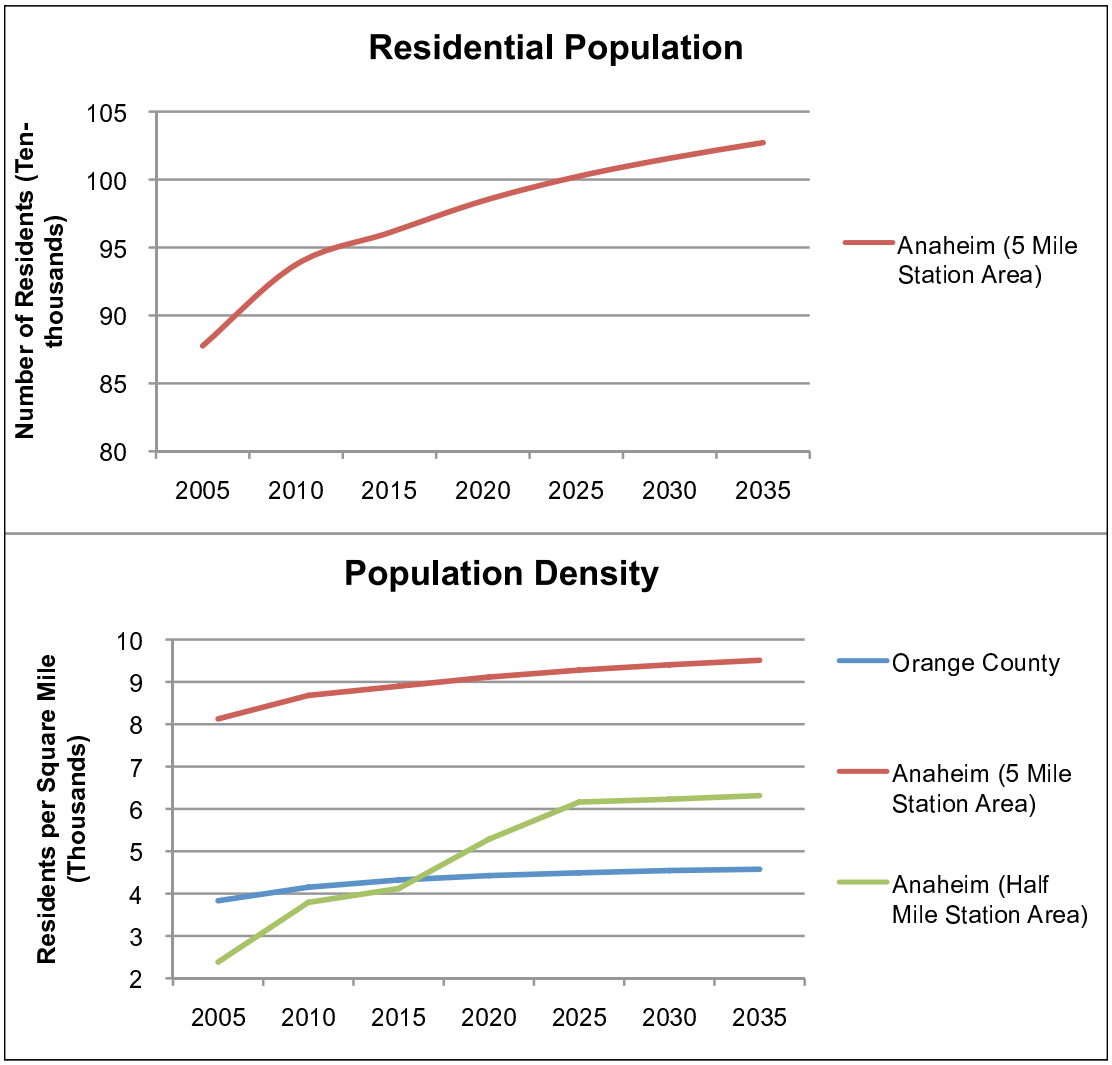



Figure 11. Residential Population and Population Density Projections within 5 miles of Anaheim HSR Station, 2005-2035 (Data Source: SCAG)

**Jobs**

A significant percentage (11.6%) of jobs in Orange County is located in the City of Anaheim. The jobs-housing balance in the city (0.61 jobs for every resident) is higher than the statewide proportion (0.46). Anaheim's best-known industry is tourism. The Anaheim Convention Center hosts many national conferences, and the Walt Disney Company, owners and operators of Disneyland, is the city's largest employer, employing an estimated 21,000 people. An ever-growing number of visitors has resulted in the building of a growing number of hotels, motels, restaurants, and retail centers to meet their demands. At the time of Disneyland's opening in 1955, Anaheim had only 87 hotel or motel rooms; currently, these numbers have grown to nearly 20,000. Nevertheless, the city has an increasingly diverse economic base, including new manufacturing activities. The Anaheim Canyon business park makes up 63% of Anaheim's industrial space and is the largest industrial district in Orange County, housing 2,600 businesses that employ over 50,000 workers. The largest job sector in Anaheim in 2009 was manufacturing, wholesale, and transportation with nearly 30% of all employment. Other sectors include recreation and hospitality services (18.4%), management and administration (13.1%), and health services (11.0%)(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). We estimated that the area within five miles of the station contained 344,558 jobs in 2009 or 24.4% of all the jobs in Orange County (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Within the same area, we predict the number of jobs to decrease by 2035 to 338,221 or by 1.8% (Figure 10). In 2009 there was a high number of jobs in this area in the recreation and hospitality services sectors,

**Anaheim 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 383,026 | 364,315 | 359,096 | 353,877 | 348,658 | 343,439 | 338,221 | -7.2% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 1,100 | 681 | 127 | -427 | -982 | -1,536 | -2,090 | -406.9% |
| Manufacturing, Wholesale, and Transportation | 99,004 | 88,738 | 80,849 | 72,961 | 65,072 | 57,183 | 49,294 | -44.4% |
| Retail | 33,417 | 34,212 | 35,512 | 36,813 | 38,113 | 39,413 | 40,713 | 19.0% |
| Financial and Professional Services | 31,856 | 24,077 | 21,629 | 19,180 | 16,731 | 14,282 | 11,833 | -50.9% |
| Professional and Information | 27,103 | 28,011 | 30,237 | 32,463 | 34,688 | 36,914 | 39,140 | 39.7% |
| Management and Administration | 84,487 | 71,473 | 64,469 | 57,465 | 50,461 | 43,457 | 36,453 | -49.0% |
| Educational Services | 22,671 | 28,628 | 33,300 | 37,971 | 42,643 | 47,314 | 51,986 | 81.6% |
| Health Services | 33,596 | 36,395 | 38,781 | 41,168 | 43,555 | 45,941 | 48,328 | 32.8% |
| Recreation and Hospitality Services | 49,792 | 52,099 | 54,192 | 56,285 | 58,378 | 60,471 | 62,564 | 20.1% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.11 | 0.08 | 0.02 | -0.06 | -0.14 | -0.23 | -0.33 | -513.6% |
| Manufacturing, Wholesale, and Transportation | 1.04 | 1.08 | 1.08 | 1.07 | 1.05 | 1.02 | 0.97 | -9.5% |
| Retail | 0.80 | 0.90 | 0.98 | 1.06 | 1.15 | 1.25 | 1.34 | 49.6% |
| Financial and Professional Services | 1.33 | 1.15 | 1.10 | 1.03 | 0.96 | 0.86 | 0.76 | -34.2% |
| Professional and Information | 0.69 | 0.71 | 0.75 | 0.78 | 0.82 | 0.86 | 0.90 | 26.2% |
| Management and Administration | 1.38 | 1.21 | 1.11 | 1.00 | 0.89 | 0.78 | 0.66 | -45.4% |
| Educational Services | 0.66 | 0.80 | 0.89 | 0.97 | 1.06 | 1.14 | 1.22 | 52.4% |
| Health Services | 0.91 | 0.92 | 0.92 | 0.92 | 0.93 | 0.95 | 0.97 | 5.0% |
| Recreation and Hospitality Services | 1.21 | 1.28 | 1.30 | 1.33 | 1.36 | 1.39 | 1.42 | 10.8% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 0.17 | 0.15 | 0.15 | 0.14 | 0.13 | 0.12 | 0.12 | -25.6% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.42 | -0.55 | -0.88 | -1.76 | -12.55 | 2.89 | 1.39 | -350.9% |
| Manufacturing, Wholesale, and Transportation | 0.10 | 0.11 | 0.12 | 0.14 | 0.16 | 0.19 | 0.23 | 113.4% |
| Retail | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 3.3% |
| Financial and Professional Services | 0.24 | 0.14 | 0.08 | 0.02 | -0.05 | -0.13 | -0.23 | -261.3% |
| Professional and Information | 0.12 | 0.09 | 0.08 | 0.08 | 0.07 | 0.06 | 0.06 | -32.6% |
| Management and Administration | 0.28 | 0.24 | 0.23 | 0.21 | 0.18 | 0.15 | 0.11 | -56.5% |
| Educational Services | 0.10 | 0.16 | 0.19 | 0.21 | 0.23 | 0.25 | 0.26 | 65.9% |
| Health Services | 0.25 | 0.19 | 0.16 | 0.13 | 0.10 | 0.08 | 0.06 | -70.3% |
| Recreation and Hospitality Services | 0.24 | 0.22 | 0.20 | 0.19 | 0.17 | 0.16 | 0.15 | -32.0% |

Figure 12. Anaheim 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

management and administration, and financial, insurance, and real estate sectors (location quotient = 1.37, 1.14 and 1.13, respectively), relative to the rest of the state (Figures 12 and 14). By 2035, we predict that job specialization will shift to the retail sector, although recreation and hospitality will remain a significant job specialization (location quotient = 1.34 and 1.42, respectively). Between 2009 and 2035, the greatest percentage of growth in jobs will occur within the educational services, professional and information services, and health services sectors (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). This area tends to be jobs-rich, with the number of jobs exceeding the number of workers for every sector in 2009 except agriculture and natural resources (gap index = -0.37 for this sector). This

**Top 100 Worker Origins by ZIP Code - Anaheim**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 92804 | 8,039 | 2.3% | 26 | 92646 | 3,096 | 0.9% | 51 | 90621 | 1,840 | 0.5% | 76 | 91766 | 1,037 | 0.3% |
| 2 | 92805 | 7,839 | 2.3% | 27 | 92882 | 3,046 | 0.9% | 52 | 92648 | 1,808 | 0.5% | 77 | 90815 | 1,013 | 0.3% |
| 3 | 92801 | 6,376 | 1.8% | 28 | 92630 | 2,940 | 0.8% | 53 | 92835 | 1,659 | 0.5% | 78 | 92335 | 1,010 | 0.3% |
| 4 | 92840 | 6,271 | 1.8% | 29 | 92647 | 2,878 | 0.8% | 54 | 92604 | 1,647 | 0.5% | 79 | 92505 | 1,004 | 0.3% |
| 5 | 92704 | 5,968 | 1.7% | 30 | 92841 | 2,875 | 0.8% | 55 | 92844 | 1,637 | 0.5% | 80 | 90720 | 975 | 0.3% |
| 6 | 92867 | 5,822 | 1.7% | 31 | 92831 | 2,821 | 0.8% | 56 | 92509 | 1,630 | 0.5% | 81 | 92880 | 975 | 0.3% |
| 7 | 92683 | 5,366 | 1.5% | 32 | 92865 | 2,708 | 0.8% | 57 | 92649 | 1,629 | 0.5% | 82 | 91744 | 969 | 0.3% |
| 8 | 92870 | 5,072 | 1.5% | 33 | 90630 | 2,636 | 0.8% | 58 | 92620 | 1,620 | 0.5% | 83 | 91745 | 966 | 0.3% |
| 9 | 92806 | 5,036 | 1.4% | 34 | 90650 | 2,367 | 0.7% | 59 | 92656 | 1,597 | 0.5% | 84 | 92860 | 944 | 0.3% |
| 10 | 92802 | 5,016 | 1.4% | 35 | 92866 | 2,348 | 0.7% | 60 | 92612 | 1,529 | 0.4% | 85 | 92606 | 939 | 0.3% |
| 11 | 92869 | 4,862 | 1.4% | 36 | 92808 | 2,329 | 0.7% | 61 | 92782 | 1,481 | 0.4% | 86 | 90605 | 937 | 0.3% |
| 12 | 92705 | 4,840 | 1.4% | 37 | 92821 | 2,270 | 0.7% | 62 | 92677 | 1,470 | 0.4% | 87 | 92861 | 926 | 0.3% |
| 13 | 92807 | 4,716 | 1.4% | 38 | 92832 | 2,252 | 0.6% | 63 | 92845 | 1,463 | 0.4% | 88 | 92553 | 921 | 0.3% |
| 14 | 92703 | 4,668 | 1.3% | 39 | 91709 | 2,216 | 0.6% | 64 | 92653 | 1,449 | 0.4% | 89 | 91761 | 900 | 0.3% |
| 15 | 92843 | 4,304 | 1.2% | 40 | 92691 | 2,142 | 0.6% | 65 | 90805 | 1,410 | 0.4% | 90 | 92504 | 886 | 0.3% |
| 16 | 92886 | 4,266 | 1.2% | 41 | 90680 | 2,125 | 0.6% | 66 | 92679 | 1,358 | 0.4% | 91 | 92675 | 864 | 0.2% |
| 17 | 92706 | 4,113 | 1.2% | 42 | 92626 | 2,112 | 0.6% | 67 | 90703 | 1,320 | 0.4% | 92 | 91762 | 847 | 0.2% |
| 18 | 92780 | 4,007 | 1.2% | 43 | 90638 | 2,082 | 0.6% | 68 | 91765 | 1,210 | 0.3% | 93 | 92570 | 810 | 0.2% |
| 19 | 92833 | 3,924 | 1.1% | 44 | 92503 | 2,075 | 0.6% | 69 | 90604 | 1,169 | 0.3% | 94 | 92672 | 805 | 0.2% |
| 20 | 92707 | 3,922 | 1.1% | 45 | 92887 | 2,023 | 0.6% | 70 | 92530 | 1,146 | 0.3% | 95 | 91730 | 795 | 0.2% |
| 21 | 92701 | 3,848 | 1.1% | 46 | 92879 | 2,012 | 0.6% | 71 | 92614 | 1,110 | 0.3% | 96 | 90813 | 783 | 0.2% |
| 22 | 92708 | 3,559 | 1.0% | 47 | 91710 | 1,961 | 0.6% | 72 | 91748 | 1,080 | 0.3% | 97 | 90803 | 780 | 0.2% |
| 23 | 90631 | 3,532 | 1.0% | 48 | 92627 | 1,959 | 0.6% | 73 | 92881 | 1,075 | 0.3% | 98 | 92663 | 778 | 0.2% |
| 24 | 90620 | 3,312 | 1.0% | 49 | 92688 | 1,909 | 0.5% | 74 | 92660 | 1,069 | 0.3% | 99 | 91789 | 752 | 0.2% |
| 25 | 92868 | 3,153 | 0.9% | 50 | 92692 | 1,887 | 0.5% | 75 | 90808 | 1,068 | 0.3% | 100 | 91764 | 749 | 0.2% |

**Top 100 Worker Destinations by ZIP Code - Anaheim**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 92705 | 4,540 | 3.8% | 26 | 92870 | 1,054 | 0.9% | 51 | 92648 | 437 | 0.4% | 76 | 90241 | 276 | 0.2% |
| 2 | 92701 | 4,323 | 3.6% | 27 | 92647 | 1,006 | 0.8% | 52 | 90638 | 426 | 0.4% | 77 | 90650 | 276 | 0.2% |
| 3 | 92868 | 3,986 | 3.3% | 28 | 92841 | 1,006 | 0.8% | 53 | 91710 | 412 | 0.3% | 78 | 92879 | 268 | 0.2% |
| 4 | 92802 | 3,976 | 3.3% | 29 | 92706 | 985 | 0.8% | 54 | 92835 | 402 | 0.3% | 79 | 92844 | 267 | 0.2% |
| 5 | 92806 | 3,504 | 2.9% | 30 | 92683 | 933 | 0.8% | 55 | 90720 | 395 | 0.3% | 80 | 91789 | 264 | 0.2% |
| 6 | 92805 | 3,008 | 2.5% | 31 | 92606 | 921 | 0.8% | 56 | 92833 | 394 | 0.3% | 81 | 92507 | 258 | 0.2% |
| 7 | 92626 | 2,833 | 2.4% | 32 | 92869 | 826 | 0.7% | 57 | 92656 | 390 | 0.3% | 82 | 92677 | 258 | 0.2% |
| 8 | 92618 | 2,788 | 2.3% | 33 | 90620 | 803 | 0.7% | 58 | 90621 | 382 | 0.3% | 83 | 90248 | 257 | 0.2% |
| 9 | 92867 | 2,647 | 2.2% | 34 | 90630 | 763 | 0.6% | 59 | 91748 | 381 | 0.3% | 84 | 91706 | 256 | 0.2% |
| 10 | 92704 | 2,645 | 2.2% | 35 | 92627 | 751 | 0.6% | 60 | 90045 | 376 | 0.3% | 85 | 92602 | 255 | 0.2% |
| 11 | 92614 | 2,460 | 2.0% | 36 | 92804 | 723 | 0.6% | 61 | 91730 | 352 | 0.3% | 86 | 92408 | 244 | 0.2% |
| 12 | 92612 | 2,437 | 2.0% | 37 | 92832 | 700 | 0.6% | 62 | 90015 | 336 | 0.3% | 87 | 92880 | 242 | 0.2% |
| 13 | 92780 | 2,088 | 1.7% | 38 | 92653 | 691 | 0.6% | 63 | 90017 | 333 | 0.3% | 88 | 90807 | 235 | 0.2% |
| 14 | 92865 | 1,842 | 1.5% | 39 | 92691 | 669 | 0.6% | 64 | 92688 | 333 | 0.3% | 89 | 92651 | 232 | 0.2% |
| 15 | 92660 | 1,773 | 1.5% | 40 | 90670 | 668 | 0.6% | 65 | 90071 | 324 | 0.3% | 90 | 91773 | 229 | 0.2% |
| 16 | 92807 | 1,762 | 1.5% | 41 | 90703 | 665 | 0.6% | 66 | 90680 | 324 | 0.3% | 91 | 91746 | 223 | 0.2% |
| 17 | 92801 | 1,673 | 1.4% | 42 | 92703 | 651 | 0.5% | 67 | 92675 | 319 | 0.3% | 92 | 90740 | 222 | 0.2% |
| 18 | 92821 | 1,526 | 1.3% | 43 | 92663 | 631 | 0.5% | 68 | 90220 | 309 | 0.3% | 93 | 90501 | 220 | 0.2% |
| 19 | 92831 | 1,369 | 1.1% | 44 | 91761 | 582 | 0.5% | 69 | 92610 | 308 | 0.3% | 94 | 90503 | 220 | 0.2% |
| 20 | 92708 | 1,353 | 1.1% | 45 | 90806 | 545 | 0.5% | 70 | 92604 | 307 | 0.3% | 95 | 92882 | 220 | 0.2% |
| 21 | 92840 | 1,198 | 1.0% | 46 | 90012 | 525 | 0.4% | 71 | 92782 | 297 | 0.2% | 96 | 92646 | 216 | 0.2% |
| 22 | 92843 | 1,168 | 1.0% | 47 | 90631 | 522 | 0.4% | 72 | 90040 | 296 | 0.2% | 97 | 92121 | 208 | 0.2% |
| 23 | 92707 | 1,128 | 0.9% | 48 | 92649 | 486 | 0.4% | 73 | 92886 | 296 | 0.2% | 98 | 92808 | 207 | 0.2% |
| 24 | 92866 | 1,063 | 0.9% | 49 | 90802 | 480 | 0.4% | 74 | 92887 | 280 | 0.2% | 99 | 92861 | 206 | 0.2% |
| 25 | 92630 | 1,055 | 0.9% | 50 | 90245 | 451 | 0.4% | 75 | 90505 | 278 | 0.2% | 100 | 92620 | 203 | 0.2% |

Figure 13. Top 100 Worker Origins and Destinations (Data Source: LEHD)

trend will likely remain through 2035, although the number of workers in financial and professional services are projected to exceed the number of jobs in this sector (gap index = -0.23 for this sector), and the retail sector will approach equilibrium of jobs and workers (gap index = 0.05 for this sector).

Of those employed within five miles of the station, 79% live outside of the same area. Of those employed persons living within five miles of the station, nearly 74% work outside the same area, suggesting high rates of worker mobility both into and outside of the station area for work. Figures 13 and 15 illustrate the top 100 work origins and destinations for the station area by zip code. Of all commuters who work in the station area, 2.3% originated in the top ranking ZIP code (92804, Southwest Anaheim), while the top destination for jobs (92705, North Tustin) attracted 3.8% of commuters. Geographically, the ZIP codes of worker origin are more dispersed and farther away than job destinations in the station area.

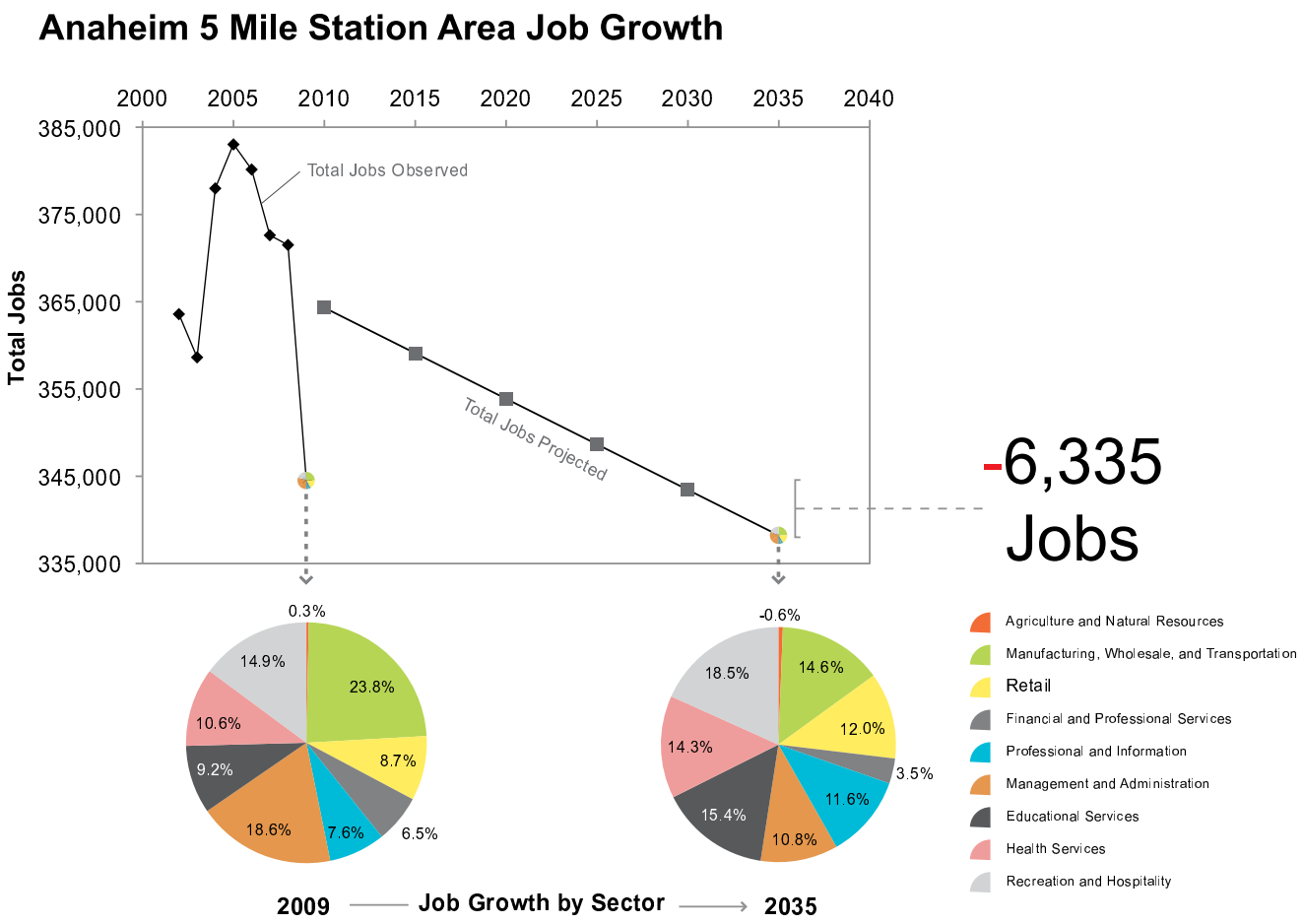



Figure 14. Job Growth Projections (Data Source: LEHD)

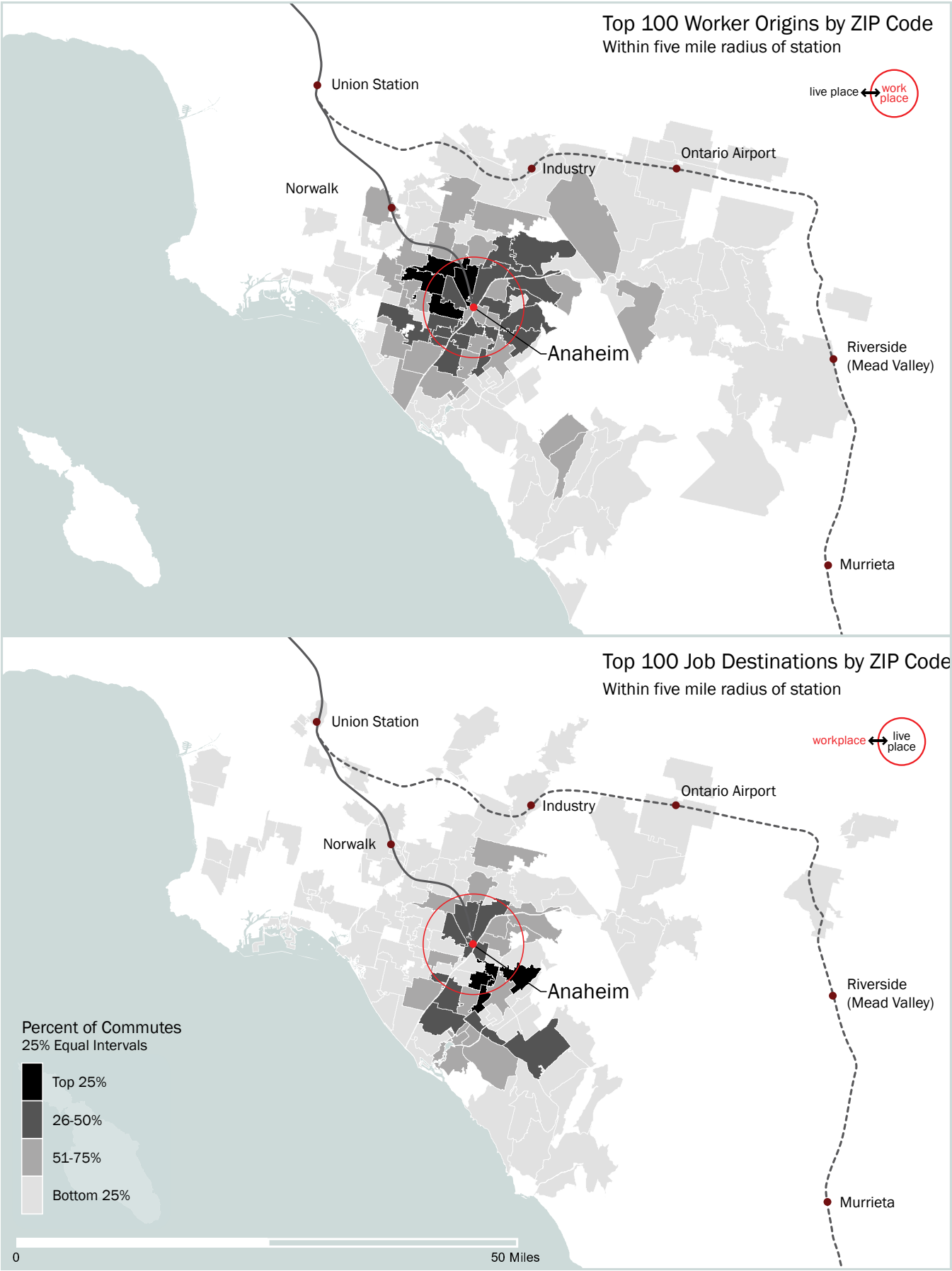



Figure 15. Anaheim Commute Map (Data Source: LEHD)

**Current Land Use**

Land use within half mile of the station area is dominated by commercial and retail uses (39%--including the professional sports facilities), industrial uses (21%), and offices (15%.) Only 4% of land is occupied with residential uses, almost all of it being multiple family housing. Very little vacant land was identified so most of the space for development in the area must come from redeveloping existing areas and finding higher and better uses for the vast areas of surface parking that support, among other things, the professional sports venues. In 2008, Anaheim city planners announced an expansion of the initial Platinum Triangle proposal, doubling the amount of housing units and commercial office space from the original plans. Currently, 16 projects are either planned or currently under construction for a total of 18,363 homes, 5,700,000 square feet of commercial space and 16,800,000 square feet of office space (Figure 16).

**Subdivision Pattern**

The area around the station was originally agricultural land and has for many years been characterized by low density industrial and commercial uses, interrupted by the introduction of a limited access roadway system from the 1950s onward. Parcel sizes in the area range from 0.03 to 251.2 acres, with the largest number of parcels being in the 1.1 to 5 acres, though many parcels greater than 10 acres also exist (Figure 17). The largest parcels are currently occupied by Angel Stadium and the Honda Center.

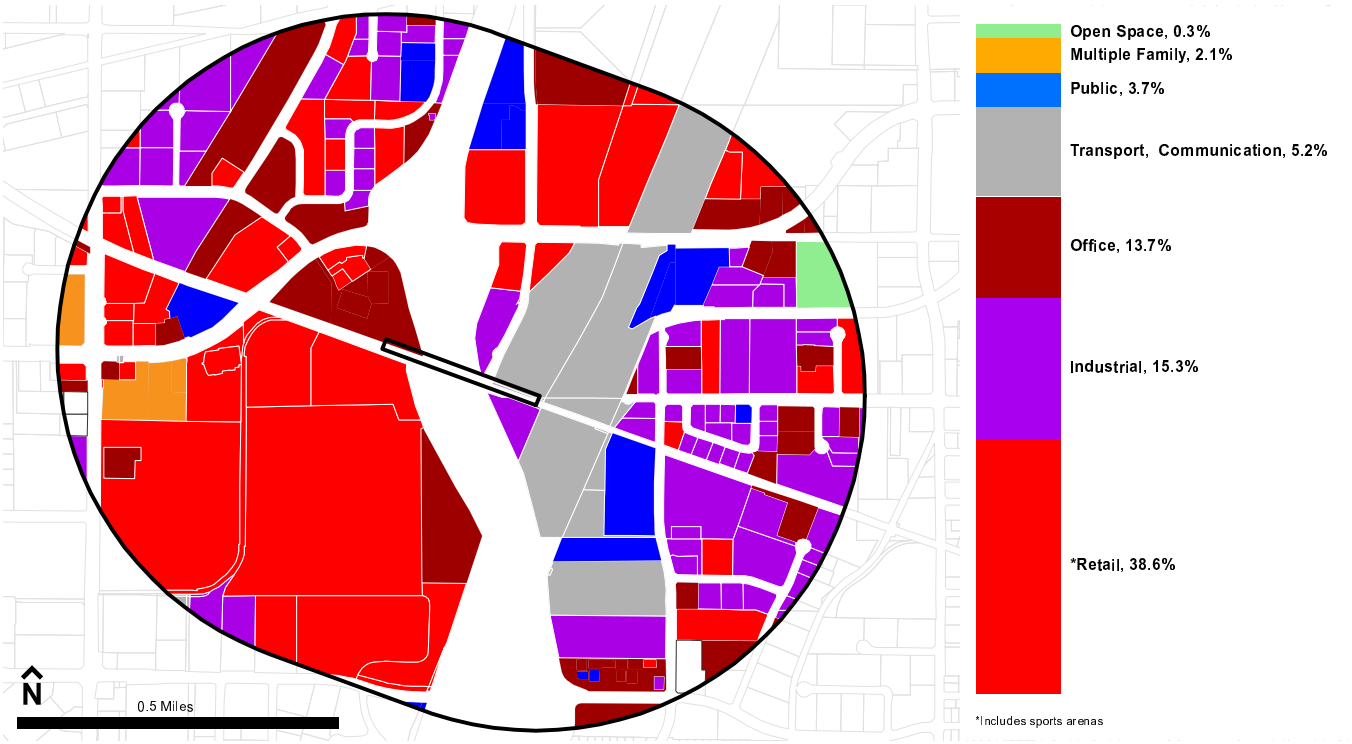



Figure 16. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Anaheim HSR Station (Data Source: SCAG)

**Major Destinations**

The Honda Center, Angels Stadium, and the Grove of Anaheim are all within a mile from the station area (Figures 18 and 19). The Block of Orange (a retail and office center), Chapman University, Old Town Orange, and the Main Place (a retail center) are all within two miles of the station area. Major visitor destinations and accommodations, including the Anaheim Hilton, the Anaheim Convention Center, and the various parks and resort uses associated with Disneyland are within three miles of ARTIC.

## Parcel Characteristics within Half Mile of Anaheim Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.03 | 251.2 | >10 |

Figure 17. Subdivision of parcels (Data Source: SCAG)

### Activity and Employment Centers within 5 Miles of Anaheim Station

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Activity | Anaheim Convention Center | 2.5 | 9,100 per event |
| Employment | Downtown (Old Town) Santa Ana | 3.8 | 50,000-400,000 (annually) |
| Activity | Anaheim Stadium | 0.3 | 45,050 (on game days) |
| Employment/Activity | Disneyland (including California Adventure Park, Downtown Disney, and Resorts) | 2.5 | 23,105 visitors/15,890 employees |
| Employment | Honda Center | 0.3 | 17,174 - 18,900 |
| Entertainment | Grove of Anaheim | 0.3 | 1,700 per event |
| Retail | Main Place | 2.0 | 7,500 |
| Employment/Retail | Old Town Orange | 2.0 | 5,500 |
| Employment/Retail | The Block of Orange | 1.5 | 4,600 |
| Education | Chapman University | 1.7 | 1,200 |
| Employment | Anaheim Memorial Medical Center | 4.0 | 1,185 |
| Employment | Anaheim Hilton | 2.5 | 1,000 |
| Activity | MUZEO | 2.8 | 1,000 |

Figure 18. Destinations

Figure 19. Map of Activity and Employment Centers within 5 miles of Anaheim HSR Station

**Transportation and Transit Networks**

Orange County's transportation network is extensive (Figure 20). John Wayne Airport is located at an unincorporated portion of the county near Santa Ana, approximately eleven miles to the south of the proposed HSR station at ARTIC. The station area is accessible from the Santa Ana Freeway (I-5), the major north-south artery in California, and the Orange Freeway (State Route 57). ARTIC will serve as a node for the network of transit choices in Orange County, including Metrolink commuter trains, Amtrak and local and express bus routes operated by the Orange County Transit Authority. ARTIC will also accommodate plans for the future Anaheim Rapid Connection (ARC) as

**Transit Network within Half Mile of Anaheim ARTIC Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| Orange Freeway (Route 57) | Orange County Transportation Authority (OCTA): Lines 430 (Stationlink), 50 (Local), 57 (Local), 757 (Intercounty Express)<br><br>Anaheim Resort Transit (ART): Route 15 | Amtrak Pacific Surfliner | Metrolink-Orange County Line | None | 1 Class I Bike Path and 1 on-street Class II bike lane | 69, Somewhat Walkable |

Figure 20. Transit Connectivity

well as high speed trains. Redevelopment of the area will be necessary to make it more accessible to travelers using non-motorized modes. Currently the walkability of the area is limited, compared to other areas of Anaheim, as a result of large block sizes, the vast amount of parking, and a street grid interrupted not only by the network of limited access expressways but also by the Santa Ana River.

Seventy-three percent of commuters at the city level drove alone to work in 2007, up 15% from 2000. Although down 4% from 2000, carpooling was the second most common mode at 15.1%, and 5% of commuters took public transit. Walking to work became more popular over the seven year period, increasing 31% although only 2.7% of commuters were pedestrians. Bicycle or motorcycling accounted for 1.6% of commutes, and 2.6% of employees worked at home (Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

| **Commutes** | **2000** | | **2007** | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 139,345 | 100.0 | 155,509 | 100.0 | 12% | Yes |
| Drove alone | 99,060 | 71.1 | 113,449 | 73.0 | 15% | Yes |
| Carpooled | 24,420 | 17.5 | 23,544 | 15.1 | -4% | No |
| Public transit | 6,305 | 4.5 | 7,800 | 5.0 | 24% | Yes |
| Walked | 3,150 | 2.3 | 4,137 | 2.7 | 31% | No |
| Taxi, motorcycle, bike, other | 3,115 | 2.2 | 2,501 | 1.6 | -20% | Yes |
| Worked at home | 3,295 | 2.4 | 4,078 | 2.6 | 24% | Yes |

Figure 21. Modal Split: City of Anaheim (Data Source: AASHTO/CTPP)

**Real Estate Market Values and Trends**

Existing real estate market values in the station area are consistently the highest among studied cities (Figure 22). Within 2.5 miles of the station, office sales averaged around $360 per square foot for properties sold since 2006, the highest in that category. Average leases for office space per square foot per year are $18.43, more affordable than Norwalk and more expensive than Burbank. Retail spaces lease for an average of $25.00, the second most expensive among station areas behind Burbank.

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | **$360** | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | **19.0%** |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | **$25.12** | $273,569 | **$213,168** | 28.3% |
| Sylmar/San Fernando | **$28.33** | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | **$107** | **$12.52** | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | **$8.17** | $160 | $24.02 | **$123,572** | **$74,106** | **66.8%** |
| Murrieta | $21.23 | $270 | $21.92 | **$295,833** | $180,469 | 63.9% |

**Category High**/**Category Low**

Source: Loopnet.com, Geographic Research Inc.

Figure 22. Real Estate Market Values

In 2010, median home values in census tracts located partially or entirely within a half mile of the station were $261,116, a 48.3% increase from 2000 (Source: Loopnet.com, Geographic Research Inc. 2011). As noted in the land use and subdivision section above, only multiple family dwellings currently exist in the half mile station area.

**Development Potential**

The increased accessibility provided by HSR should enhance Anaheim's popularity as an entertainment, leisure and convention destination, building on its current visitor and tourist infrastructure. Home to one of the most visited amusement parks in the world (Disneyland is second only to Disneyworld in Orlando in terms of attendance) and already a major convention destination and professional sports venue, Anaheim's enhanced access to markets in Northern California (and Las Vegas should high-speed connections to that city be realized) would most likely generate growth and development in the station area and city. Anaheim's redevelopment plans have focused on adding residential and commercial uses to areas near the station. However, the links to the station area and district with other outlying areas and poles in Anaheim have to be considered. Currently, both the Santa Ana River and the intersection of the Santa Ana Freeway and the Orange Freeway present barriers to the links between the proposed station area and other parts of the city, including the resort areas. Nevertheless, the opportunity for regeneration of the area is palpable, especially given that ownership is highly consolidated in large parcels. And Disneyland's reputation for transportation innovation (its monorail system opened in 1959) could be leveraged to overcome local accessibility problems.

**Local Perspectives**

We conducted interviews with representatives from the Orange County Transportation Authority (OCTA), Anaheim Department of Public Works, Anaheim Planning Department, as well as with planning and design consultants hired by the city in order to complement the information presented in the previous section.

Among all the cities that are expected to host a HSR station, Anaheim is arguably the most pro-active in planning and preparing for the rail. In fact, the HSR is only one part of an ambitious master-planning effort undertaken by the city for its Platinum Triangle, the 820-acre site at the confluence of the I-5 and SR-57 freeways (Figure 23). The area is envisioned as hosting about 3.3 million square feet of office, 2.25 million square feet of retail, and over

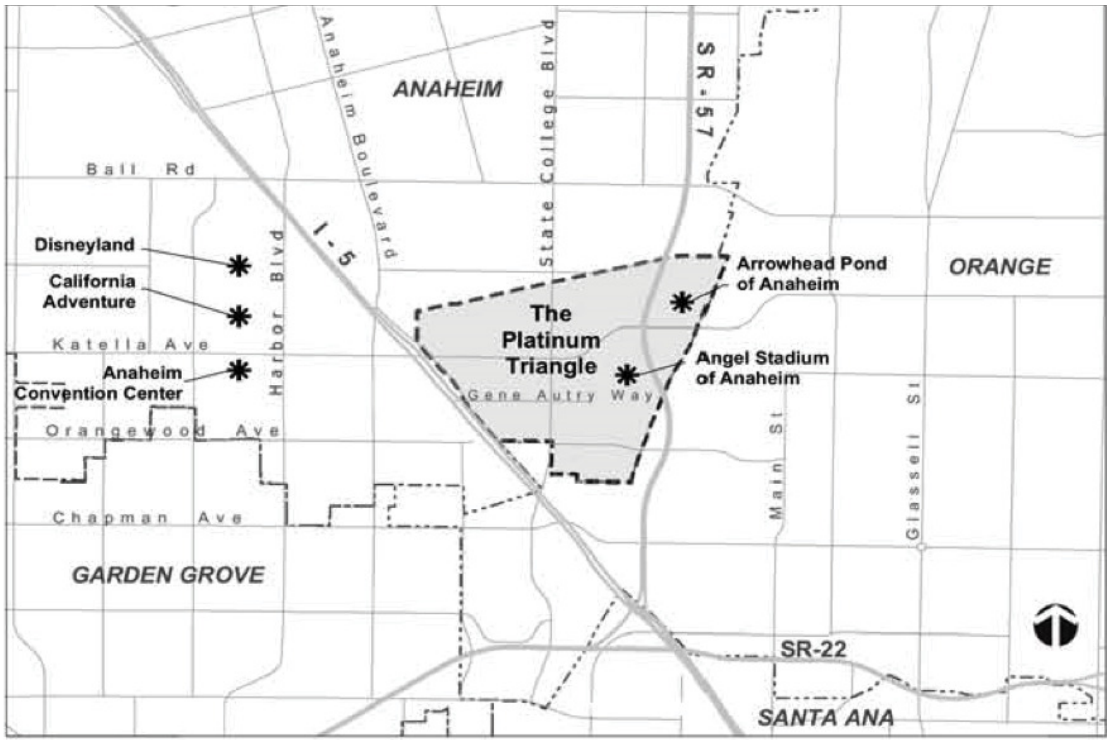



Figure 23. The Platinum Triangle

10,000 dwelling units (City of Anaheim, Platinum Triangle Master Land Use Plan. 2007).

An essential component of the plan is the development of the Anaheim Regional Transportation Intermodal Center (ARTIC) on a 16-acre site owned by the Orange County Transportation Authority (OCTA) and the city of Anaheim. The city has been planning the $184-million transit center for a number of years to replace the existing Amtrak and Metrolink stations and host the new HSR station. Anaheim views the coming of the HSR as an identity- and marketing-enhancing opportunity, which can help the city boost its sport and entertainment venues and augment its reputation as the "top family destination" in the country (A Gateway to the Future: The Anaheim Regional Transportation Intermodal Center, http://www.articinfo.com/PDF/ARTIC_factsheet%203-9-11%20FINAL.pdf).

**Perceived Benefits**

Our interviewees were unanimous in their belief that the HSR will serve as the gateway to Anaheim and Orange County. They are projecting that by 2035, the ARTIC station would carry more people annually than the John Wayne airport. They see the station not only providing transportation benefits for Anaheim residents, who will be given more transportation options to access other parts of the state, but more importantly boosting Anaheim as an important destination for visitors. According to Anaheim design consultants Osborne and Howard, about 50,000 passengers per day are estimated to go through ARTIC station's four tracks and two platforms. According to OCTA manager Michael Litschi, the increased connectivity that the station will provide would bring more visitors to Disneyland, Anaheim Convention Center, Angel Stadium, and the Honda Center (Figure 24).

Anaheim planners also expect that ARTIC would provide an economic stimulus for the local economy. In addition to visitors, tourists, and conventioneers, they are anticipating that the station's construction would add about 5,000 new jobs.(City of Anaheim, Platinum Triangle Master Land Use Plan. 2007)

Other than visitors and jobs, planners also expect that the station would trigger new development opportunities. As explained by Susan Kim, senior planner in Anaheim's City

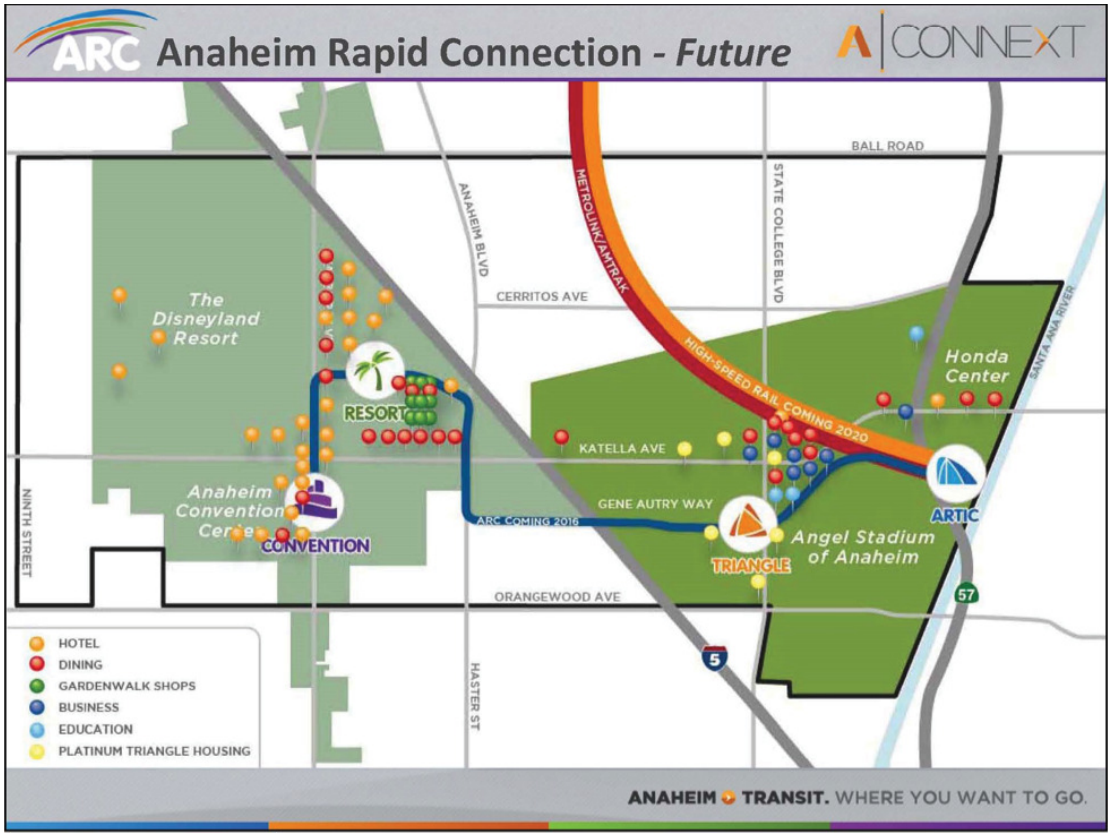



Figure 24. ARTIC Station and Surrounding Poles

Planning Department: "We have proactively planned pretty high density development around the location of the train station, and so we are ready when the market is ripe to take advantage of it." Anaheim planners envision the expansion of the convention center to accommodate demands for meetings and conventions, plenty of new hotels, and a lot of transit-oriented development around the existing station and the Anaheim stadium. They expect that the ARTIC "will change the landscape of the area in Anaheim" (Litschi interview). In addition to triggering new development, Kim expects a synergy developing between the HSR and important activity poles in Anaheim. As she explains, "The HSR will support other existing uses. For folks who are coming here for conventions and for the Disney theme parks, as well as the Honda Center, and the Angels Stadium, HSR could really support those uses for the city."

**Vision**

These perceived benefits from HSR lead Anaheim planners to dream of a com-plete transformation of the area around the station. The city's website boasts that "TODs in the immediate area will integrate with ARCTIC to form a vibrant Southern California community. Together, it will represent Orange County's con-tinuing transformation from rural farmland and suburban community to a thriving metropolis"(A Gateway to the Future, 2011). As Kim explains, "You are going to see the whole area very much reconfigured, and I think depending on the timing of high-speed rail as well as our other transit investments, it will most likely be a highly active, transit-oriented-development district on that property, especially if you are going 20 years out."

Being at the southern terminus of HSR's first phase, the Anaheim station is envisioned by local officials and planners as a multi-modal hub, "where people would move seamlessly between transit services to reach Southern California activity centers and business districts," but also as a "destination in and of itself, like a European station with restaurants and shops where you can pleasantly spend a couple of hours" (Litschi interview).

**Challenges and Concerns**

Despite their optimism about the expected benefits from HSR for Anaheim, local planners outlined a number of challenges and concerns. A first concern has to do with the major physical impacts that a 100-ft trench, containing four tracks and two platforms, and its associated parking facilities would have on the adjacent area. The CAHSRA is considering two possible options for the Anaheim HSR alignment. One option would run on tracks separate from the Metrolink and Amtrak rails, while the other option would have all three systems sharing the same tracks. The exclusive track option would allow the HSR to run faster and go over or under streets but it requires more space, faces higher costs and complications of crossing the SR-57 Freeway(A Gateway to the Future, 2011). Kim argues that it is premature to assess the overall urban form impact of the station, since it is not clear yet if a maintenance yard would be located in Anaheim. Nevertheless, she expects that the urban form impact of station facilities would be substantial:

*"Since this would be the terminus, we are looking a lot where the maintenance facility would be; where trains would be stored. Depending on how these are located, it could impact the area differently…. Depending on which option is used, whether it is the shared track option or the tunnel option – it could have impacts to our historical area within the city. There are a lot of cul-de-sacs that are proposed-- street-closures effectively-- that could divide a community, if they are not done properly. We also have some recent development near the tracks that could be impacted, depending on which alternative they go with"* (Kim interview).

G.B. Arrington of Parsons-Brickerhoff (a consulting firm hired by Anaheim to supervise the master planning and building of ARTIC and by the CASHRA to create design guidelines for the HSR) agrees, adding that "if not designed right, the station could be very hostile to the local community." And indeed, residents of Anaheim neighborhoods have been coming out to meetings and voicing their concerns, according to Kim.

Accommodation of parking is another major concern for local planners since surface parking occupies significant amounts of land and results in dead spaces. At present, there is a big discrepancy between the numbers of parking that the CAHSRA anticipates for Anaheim as a terminal station (10,000 spaces), and what the city of Anaheim offers (1000 spaces). According to our interviewees, Anaheim is interested in building parking structures, but at the moment there are

no good available locations within the city boundaries.

Despite the fact that ARTIC is on public land (occupying a former county maintenance yard that OCTA has purchased), there are still challenges in trying to create a vibrant pedestrian-oriented setting. As Litschi explains:

*"It may be difficult to develop around stations because of the historic development patterns that treated station areas as 'backsides' of the city. Things were not built around the rail line; the line was where you put the back of your business or the industrial area. As a result, stations are surrounded by light industrial uses, and walking is difficult"* (Litschi interview).

Additional development challenges include the relative lack of developable land. As Arrington argued, "Anaheim is challenged due to space, with freeways, a baseball station, and the river. It is blessed by accessibility, but doesn't have a lot of land for development available." Other than the station, the only other redevelopment area is the Stadium District. Planners expressed frustration regarding their relative lack of control to influence station-compatible and TOD uses in private development projects.

Lastly, our interviewees referred to two perceptual issues that may present important hurdles for the project. The first one has to do with the mindset of Southern California residents that is geared towards private automobile use and anxiety of using public transit. As argued by Litschi:

*"I think that the largest barrier for people using transit, especially in Southern California, is fear—fear of how do I buy my ticket, how do I transfer, what if the train is late. So if we can eliminate some of those unknowns, and make it easy for people to get to and from the station, I think we can have a pretty successful system"* (Litschi interview).

The second hurdle relates to the phased nature of the HSR project and the accompanying level of uncertainty about future development, especially for cities located not on the first leg. This sentiment was echoed by Kim: *"I think what will be really important is to keep the project alive now that we aren't the first leg."*

Figure 25. Rendering of ARTIC Station Building

**Planning and Design**

As emphasized by our interviewees, in contrast to many other cities, Anaheim has been planning for a major multi-modal transportation hub for some time and is at present in the process of working through its design plans for ARTIC to expand this facility and accommodate the HSR. The city has hired the firm HOK, which has prepared conceptual renderings that show a futuristic plan composed of a massive shell for the station, running parallel to the river, and fronting a landscaped plaza (Figures 25, 26, and 27). The design outcome seems like the offspring of the marriage between a 19th century grand station and a shopping mall -- something like an airport hybrid, with scales that are not quite pedestrian, but with plans that clearly bring multiple modes of mobility to a nexus.

While the land between the freeway and the station is private, the city envisions joint development opportunities for the provision of hotels, commercial buildings, and transit-oriented development. As listed on the project's website:

*"ARTIC will be an iconic regional landmark. The station will accommodate passenger arrivals, departures, and transfers with supporting retail, restaurants and passenger services within the building… Some key design elements include the exterior shell of the building; a public plaza surrounding the building including opportunities for retail space; landscaping; amenities; bicycle access to the Santa Ana River Trail; improved pedestrian access along Douglass Road and connection under the SR-57 to Angel Stadium; a public art component; and an integrated signage and way-finding program."*(A Gateway to the Future, 2011)

It is interesting to note that the city of Anaheim in collaboration with OCTA, Metrolink, and Amtrak, is forging ahead with the development of the station structure, and expects to have the building ready by 2014. As Kim argued,

*"The building is going to be an inter-modal building for the expansion of Metrolink and Amtrak, as well as a lot of bus service and other uses. But we are making sure that things are expandable so*

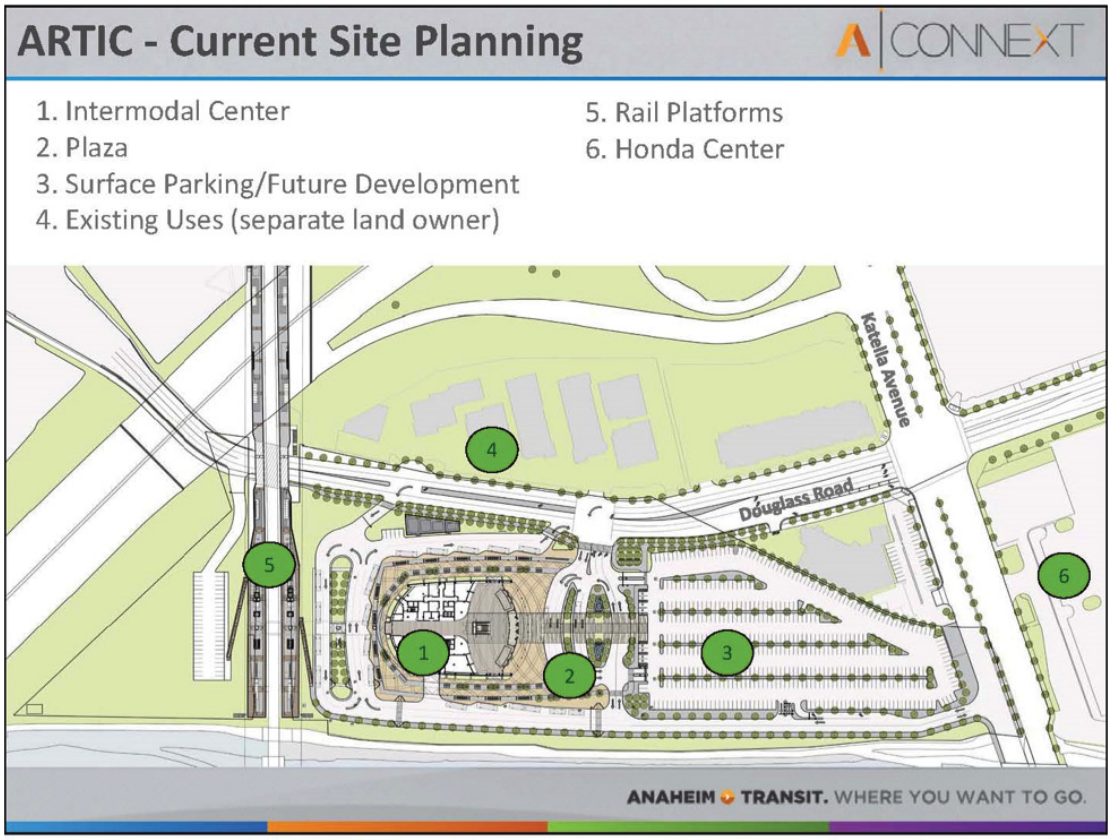



Figure 26. Site Planning of ARTIC Site

*if and when HSR comes in, we are ready to accommodate that service. So that is the pro-active planning we are doing right now"* (Kim interview).

A consideration for the design of such a major transportation hub has to do with connectivity between the different modes but also good linkages between the station and its surroundings. Both Kim and Litschi emphasized this point:

*"We've been working with the OCTA on the GoLocal program for connections to Metrolink; I think these will also correspond with high speed rail. We are looking at a fixed guideway connection to the Anaheim Resort and Convention Center to provide a better connectivity for that last leg of the trip. In addition, we will have bus rapid transit, and shuttle service to surrounding workforce and surrounding areas. We are also making sure we have good connections to bikeways" (Kim interview).*

*"We design the station so that it is truly a multimodal hub, easily accessible to all modes of transit, and with easy access from one mode to the other (HSR, Amtrak, Metrolink, OC buses, local and inner-county express). We want to minimize the time and distance required to transfer from one mode to the other. … We have tried hard to increase bus connections to stations, and have services like Stationlink – buses going to major employment centers timed to meet Metrolink rains in the morning and afternoon"* (Litschi interview).

To respond to the parking challenge and avoid the sea of surface parking lots surrounding the station, Anaheim planners are looking across the river to the city of Orange, which provides some possibilities for the building of parking structures. However, they will not be able to completely avoid surface parking because the Angeles Stadium management has agreements in place that retain the stadium's surface parking.

Figure 27. Rendering showing station and surrounding features

# 3.3 BURBANK

**Introduction**

The City of Burbank is a major regional employment and activity center hosting an airport, and major retail, entertainment, and office clusters. The portal for HSR in Burbank is planned to be located near Burbank Bob Hope Airport, the area's major domestic air travel hub, eleven miles from Los Angeles Union Station and 422 miles from San Francisco along the proposed HSR route (Figures 28 and 29).

Figure 28. Map of Burbank HSR Station

Figure 29. Aerial Photograph of Burbank HSR Station

**Population**

With 108,029 residents in 2010 according to the US Census, Burbank is the 15th largest city in Los Angeles County and the 63rd largest in California. The city's population density (6,252 persons per square mile) can be characterized as moderate by national standards. Burbank accounts for 1.0% of all residents in Los Angeles County. Non-Hispanic white residents account for 56.9% of the population, while the remaining 43.1% of the city's residents are comprised of Hispanics of all races (25.4%), Asians (10.7%), Blacks (2.0%), and other minorities (4.7%). Between 2000 and 2010, Burbank's total population increased by 8,153, reaching 108,496 in 2010. The resulting 8.1% growth rate was higher than the Los Angeles County rate of 3.1% but lower than the statewide growth rate of 10%. Between 2010 and 2035, the city's population is projected to increase by 19% to 133,393. Median household income in Burbank in 2010 was $68,517 or 89% of the median

**Residential Population and Population Density Projections within 5 Miles of Burbank Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 10,230,219 | 10,645,211 | 11,005,955 | 11,368,021 | 11,720,520 | 12,061,511 | 12,387,715 |
| Burbank 5 Mile | 641,681 | 661,270 | 675,273 | 690,179 | 704,569 | 718,430 | 731,704 |
| Burbank Half Mile | 15,625 | 16,073 | 16,402 | 16,725 | 17,037 | 17,338 | 17,627 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 2,502 | 2,604 | 2,692 | 2,781 | 2,867 | 2,950 | 3,030 |
| Burbank 5 Mile | 5,734 | 5,909 | 6,034 | 6,167 | 6,296 | 6,420 | 6,538 |
| Burbank Half Mile | 4,945 | 5,086 | 5,191 | 5,293 | 5,391 | 5,487 | 5,578 |

Figure 30. Residential Population and Population Density Projections within 5 Miles of Burbank Station (Data Source: SCAG)

household income among all Californians (U.S. Census 2010). The median home price in the city in 2010 was $472,408, or 129% of the statewide median home price, having fallen from $504,900 (then 138% of the statewide median) in 2008 (Source: Yahoo Prices.). The homeownership rate (42.5%) is low when compared to the rate of homeownership statewide (57.8%).

In 2010, 661,270 residents lived in census tracts located entirely or containing portions within five miles of the station (Figure 30)(Source: Southern California Association of Governments). The population density of these census tracts was an average of 5,498 persons per square mile, below the average population density citywide (Figure 31)(Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half mile of the station, the 2010 population was 16,073 with an average population density of 5,086 persons per square mile (Source: Southern California Association of Governments). The Southern California Association of Governments (SCAG) projects that residential population within five miles of the station will increase to 731,704 residents by 2035 or by 6.9% between 2010 and 2035. Within half mile of the station the residential population is expected to increase to 17,627 by 2035 or by 8.8% within the same period (Source: Southern California Association of Governments).

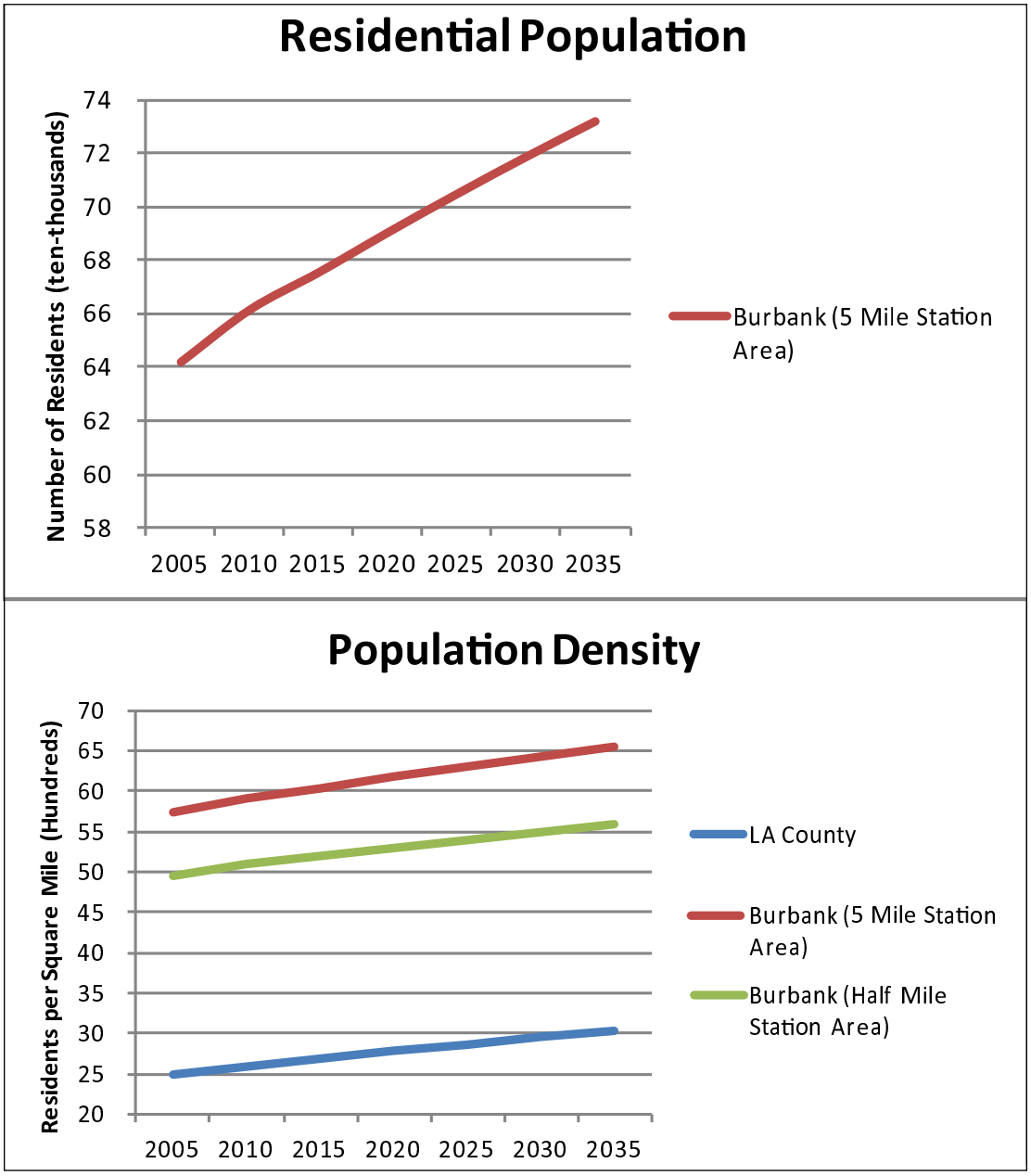



Figure 31. Residential Population and Population Density Projections within 5 miles of Burbank HSR Station, 2005-2035 (Data Source: SCAG)

## Jobs

Job totals in Burbank account for 2.1% of the jobs in Los Angeles County. The jobs-housing balance in the city (0.85 jobs for every resident) is higher than the statewide proportion (0.46). Most Burbank residents work at jobs within Los Angeles County, with only 3.1% commuting outside the county for work each day. The city has a homogeneous economic base with a dominant professional and information sector that accounts for 55% of total jobs in the city. Other large sectors include management and administration (17.2%) and health services (7.4%).

We estimated that the area within five miles of the station contained 297,825 jobs in 2009 or just less than 7% of all the jobs in Los Angeles County. (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.) Within the same area, we predict the number of jobs to increase to 460,870 by 2035 or by over 50% (Figure 32). (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.) The job market here features a higher proportion of professional and information sector jobs than the California norm (location quotient = 3.57). This trend will be sustained through 2035 with the financial services sector also exceeding the state equivalent. The health services sector, although just below the state norm, will witness the largest growth (in terms of positive percent change) of all sectors in the area (Figure 34).

**Burbank 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 275,013 | 307,027 | 337,796 | 368,564 | 399,333 | 430,101 | 460,870 | 50.1% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 301 | 426 | 502 | 577 | 653 | 728 | 804 | 88.7% |
| Manufacturing, Wholesale, and Transportation | 46,811 | 45,191 | 43,463 | 41,734 | 40,006 | 38,277 | 36,548 | -19.1% |
| Retail | 20,857 | 23,176 | 25,465 | 27,755 | 30,044 | 32,333 | 34,622 | 49.4% |
| Financial and Professional Services | 11,033 | 14,833 | 17,886 | 20,939 | 23,992 | 27,045 | 30,098 | 102.9% |
| Professional and Information | 111,543 | 118,420 | 130,204 | 141,988 | 153,771 | 165,555 | 177,339 | 49.8% |
| Management and Administration | 35,916 | 43,961 | 51,716 | 59,472 | 67,227 | 74,983 | 82,738 | 88.2% |
| Educational Services | 6,930 | 9,813 | 12,061 | 14,309 | 16,557 | 18,805 | 21,052 | 114.5% |
| Health Services | 18,982 | 26,806 | 33,067 | 39,328 | 45,590 | 51,851 | 58,112 | 116.8% |
| Recreation and Hospitality Services | 22,640 | 24,401 | 23,432 | 22,463 | 21,494 | 20,525 | 19,557 | -19.9% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.04 | 0.06 | 0.07 | 0.07 | 0.08 | 0.09 | 0.09 | 50.0% |
| Manufacturing, Wholesale, and Transportation | 0.69 | 0.65 | 0.62 | 0.59 | 0.57 | 0.55 | 0.53 | -18.5% |
| Retail | 0.69 | 0.72 | 0.75 | 0.77 | 0.79 | 0.82 | 0.84 | 16.7% |
| Financial and Professional Services | 0.64 | 0.84 | 0.97 | 1.08 | 1.20 | 1.31 | 1.42 | 69.0% |
| Professional and Information | 3.98 | 3.57 | 3.41 | 3.28 | 3.17 | 3.07 | 2.98 | -16.5% |
| Management and Administration | 0.82 | 0.88 | 0.94 | 0.99 | 1.03 | 1.07 | 1.10 | 25.0% |
| Educational Services | 0.28 | 0.33 | 0.34 | 0.35 | 0.36 | 0.36 | 0.36 | 9.1% |
| Health Services | 0.71 | 0.80 | 0.83 | 0.85 | 0.85 | 0.85 | 0.85 | 6.3% |
| Recreation and Hospitality Services | 0.77 | 0.71 | 0.60 | 0.51 | 0.44 | 0.38 | 0.33 | -53.5% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 0.11 | 0.14 | 0.16 | 0.17 | 0.19 | 0.20 | 0.21 | 50.0% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.65 | -0.61 | -0.62 | -0.63 | -0.63 | -0.64 | -0.64 | 4.9% |
| Manufacturing, Wholesale, and Transportation | 0.05 | 0.08 | 0.11 | 0.13 | 0.16 | 0.20 | 0.24 | 200.0% |
| Retail | -0.02 | 0.02 | 0.05 | 0.08 | 0.10 | 0.12 | 0.14 | 600.0% |
| Financial and Professional Services | -0.14 | 0.01 | 0.10 | 0.18 | 0.24 | 0.30 | 0.34 | 3300.0% |
| Professional and Information | 0.40 | 0.41 | 0.41 | 0.42 | 0.43 | 0.43 | 0.43 | 4.9% |
| Management and Administration | 0.00 | 0.03 | 0.06 | 0.08 | 0.09 | 0.10 | 0.11 | 266.7% |
| Educational Services | -0.33 | -0.23 | -0.20 | -0.18 | -0.17 | -0.16 | -0.15 | -34.8% |
| Health Services | -0.04 | 0.05 | 0.09 | 0.12 | 0.14 | 0.15 | 0.17 | 240.0% |
| Recreation and Hospitality Services | -0.02 | 0.01 | -0.03 | -0.06 | -0.10 | -0.14 | -0.17 | -1800.0% |

Figure 32. Burbank 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

Additionally, educational services, financial and professional services, management and administration, and agriculture sectors will experience significant job growth in the station area between 2009 and 2035 (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). During the same period, recreation and hospitality and manufacturing sectors are expected to experience job loss. This station area is jobs-rich, exhibiting a relatively high gap index (0.14 in 2010 and 0.21 in 2035) compared to the other station areas of this study.

Of those employed within five miles of the station, about 80% live outside of the same area. Of those employed persons living within five miles of the station, more than 73% work outside the same area, suggesting high rates of worker mobility both into and outside of the station area. Figures 31 and 33 illustrate the top 100 work origins and destinations for the station area by zip code. Of all commuters who work in the station area, 2% originated in the top ranking ZIP code (91605, North Hollywood), while the top destination for jobs (91505, Burbank) attracted 4.2% of commuters. Both length of trip and geographic dispersion are similar for workers going to jobs outside the station area and for job destinations inside the station area.

**Top 100 Worker Origins by ZIP Code - Burbank**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91605 | 5,942 | 2.0% | 26 | 90028 | 2,389 | 0.8% | 51 | 91201 | 1,543 | 0.5% | 76 | 91104 | 1,108 | 0.4% |
| 2 | 91331 | 5,918 | 2.0% | 27 | 91403 | 2,344 | 0.8% | 52 | 91214 | 1,536 | 0.5% | 77 | 91436 | 1,062 | 0.4% |
| 3 | 91601 | 5,636 | 1.9% | 28 | 90004 | 2,312 | 0.8% | 53 | 91325 | 1,519 | 0.5% | 78 | 90403 | 987 | 0.3% |
| 4 | 91352 | 5,602 | 1.9% | 29 | 91042 | 2,109 | 0.7% | 54 | 90042 | 1,513 | 0.5% | 79 | 91384 | 981 | 0.3% |
| 5 | 91606 | 5,541 | 1.9% | 30 | 90039 | 2,069 | 0.7% | 55 | 90049 | 1,509 | 0.5% | 80 | 91364 | 957 | 0.3% |
| 6 | 91604 | 4,944 | 1.7% | 31 | 91506 | 2,036 | 0.7% | 56 | 91316 | 1,482 | 0.5% | 81 | 93551 | 947 | 0.3% |
| 7 | 91607 | 4,723 | 1.6% | 32 | 90025 | 1,978 | 0.7% | 57 | 90029 | 1,478 | 0.5% | 82 | 91355 | 937 | 0.3% |
| 8 | 91342 | 4,657 | 1.6% | 33 | 91040 | 1,957 | 0.7% | 58 | 91367 | 1,413 | 0.5% | 83 | 90064 | 923 | 0.3% |
| 9 | 91401 | 4,526 | 1.5% | 34 | 90019 | 1,954 | 0.7% | 59 | 90291 | 1,341 | 0.5% | 84 | 91107 | 910 | 0.3% |
| 10 | 90046 | 4,161 | 1.4% | 35 | 90066 | 1,936 | 0.7% | 60 | 91340 | 1,335 | 0.4% | 85 | 91307 | 907 | 0.3% |
| 11 | 91602 | 3,853 | 1.3% | 36 | 90069 | 1,890 | 0.6% | 61 | 93063 | 1,314 | 0.4% | 86 | 91354 | 868 | 0.3% |
| 12 | 90027 | 3,831 | 1.3% | 37 | 91206 | 1,874 | 0.6% | 62 | 91001 | 1,312 | 0.4% | 87 | 90016 | 858 | 0.3% |
| 13 | 91423 | 3,732 | 1.3% | 38 | 91304 | 1,871 | 0.6% | 63 | 90405 | 1,269 | 0.4% | 88 | 90032 | 830 | 0.3% |
| 14 | 91405 | 3,616 | 1.2% | 39 | 90034 | 1,862 | 0.6% | 64 | 90035 | 1,202 | 0.4% | 89 | 91390 | 826 | 0.3% |
| 15 | 91402 | 3,588 | 1.2% | 40 | 91311 | 1,859 | 0.6% | 65 | 91345 | 1,202 | 0.4% | 90 | 93535 | 826 | 0.3% |
| 16 | 91344 | 3,258 | 1.1% | 41 | 90048 | 1,824 | 0.6% | 66 | 91351 | 1,183 | 0.4% | 91 | 90210 | 821 | 0.3% |
| 17 | 91504 | 3,257 | 1.1% | 42 | 91411 | 1,741 | 0.6% | 67 | 90045 | 1,162 | 0.4% | 92 | 91106 | 818 | 0.3% |
| 18 | 91505 | 3,180 | 1.1% | 43 | 93550 | 1,714 | 0.6% | 68 | 91356 | 1,159 | 0.4% | 93 | 90031 | 814 | 0.3% |
| 19 | 90026 | 3,076 | 1.0% | 44 | 91205 | 1,677 | 0.6% | 69 | 90024 | 1,147 | 0.4% | 94 | 90230 | 813 | 0.3% |
| 20 | 91335 | 3,002 | 1.0% | 45 | 93065 | 1,672 | 0.6% | 70 | 91324 | 1,144 | 0.4% | 95 | 90292 | 802 | 0.3% |
| 21 | 91406 | 3,002 | 1.0% | 46 | 91326 | 1,655 | 0.6% | 71 | 91350 | 1,140 | 0.4% | 96 | 91207 | 796 | 0.3% |
| 22 | 91501 | 2,880 | 1.0% | 47 | 90065 | 1,638 | 0.5% | 72 | 91502 | 1,131 | 0.4% | 97 | 90006 | 792 | 0.3% |
| 23 | 90068 | 2,701 | 0.9% | 48 | 90038 | 1,613 | 0.5% | 73 | 91321 | 1,125 | 0.4% | 98 | 90020 | 792 | 0.3% |
| 24 | 91343 | 2,542 | 0.9% | 49 | 91202 | 1,606 | 0.5% | 74 | 91387 | 1,122 | 0.4% | 99 | 90018 | 781 | 0.3% |
| 25 | 90036 | 2,413 | 0.8% | 50 | 91306 | 1,593 | 0.5% | 75 | 90041 | 1,115 | 0.4% | 100 | 91208 | 781 | 0.3% |

**Top 100 Worker Destinations by ZIP Code - Burbank**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91505 | 9,551 | 4.2% | 26 | 91203 | 2,060 | 0.9% | 51 | 91325 | 1,125 | 0.5% | 76 | 90245 | 672 | 0.3% |
| 2 | 91504 | 9,481 | 4.2% | 27 | 91405 | 2,051 | 0.9% | 52 | 91602 | 1,120 | 0.5% | 77 | 91208 | 637 | 0.3% |
| 3 | 90015 | 6,569 | 2.9% | 28 | 91423 | 2,026 | 0.9% | 53 | 91343 | 1,086 | 0.5% | 78 | 90232 | 631 | 0.3% |
| 4 | 91502 | 6,380 | 2.8% | 29 | 91342 | 2,025 | 0.9% | 54 | 90404 | 1,071 | 0.5% | 79 | 93065 | 615 | 0.3% |
| 5 | 90012 | 5,396 | 2.4% | 30 | 91401 | 1,996 | 0.9% | 55 | 90064 | 1,034 | 0.5% | 80 | 91344 | 611 | 0.3% |
| 6 | 91605 | 5,060 | 2.2% | 31 | 91331 | 1,973 | 0.9% | 56 | 91501 | 1,026 | 0.5% | 81 | 91303 | 581 | 0.3% |
| 7 | 90067 | 4,810 | 2.1% | 32 | 91204 | 1,864 | 0.8% | 57 | 90045 | 1,003 | 0.4% | 82 | 90014 | 566 | 0.3% |
| 8 | 91506 | 4,457 | 2.0% | 33 | 90036 | 1,843 | 0.8% | 58 | 91324 | 1,001 | 0.4% | 83 | 90029 | 562 | 0.2% |
| 9 | 90230 | 3,928 | 1.7% | 34 | 90069 | 1,780 | 0.8% | 59 | 90010 | 980 | 0.4% | 84 | 90040 | 558 | 0.2% |
| 10 | 91352 | 3,698 | 1.6% | 35 | 91607 | 1,752 | 0.8% | 60 | 91340 | 953 | 0.4% | 85 | 91103 | 545 | 0.2% |
| 11 | 91608 | 3,165 | 1.4% | 36 | 91355 | 1,726 | 0.8% | 61 | 90016 | 935 | 0.4% | 86 | 90004 | 523 | 0.2% |
| 12 | 90028 | 2,756 | 1.2% | 37 | 90017 | 1,706 | 0.8% | 62 | 91364 | 918 | 0.4% | 87 | 90005 | 519 | 0.2% |
| 13 | 91606 | 2,672 | 1.2% | 38 | 90046 | 1,625 | 0.7% | 63 | 90007 | 914 | 0.4% | 88 | 91301 | 518 | 0.2% |
| 14 | 90038 | 2,529 | 1.1% | 39 | 91403 | 1,624 | 0.7% | 64 | 91202 | 814 | 0.4% | 89 | 91106 | 517 | 0.2% |
| 15 | 91311 | 2,518 | 1.1% | 40 | 91402 | 1,564 | 0.7% | 65 | 90039 | 805 | 0.4% | 90 | 91362 | 503 | 0.2% |
| 16 | 91201 | 2,499 | 1.1% | 41 | 90071 | 1,448 | 0.6% | 66 | 90021 | 795 | 0.4% | 91 | 90013 | 501 | 0.2% |
| 17 | 90048 | 2,485 | 1.1% | 42 | 91206 | 1,395 | 0.6% | 67 | 91304 | 787 | 0.3% | 92 | 90057 | 491 | 0.2% |
| 18 | 90024 | 2,390 | 1.1% | 43 | 90210 | 1,335 | 0.6% | 68 | 91335 | 771 | 0.3% | 93 | 90405 | 487 | 0.2% |
| 19 | 91601 | 2,318 | 1.0% | 44 | 90025 | 1,308 | 0.6% | 69 | 91105 | 768 | 0.3% | 94 | 90023 | 485 | 0.2% |
| 20 | 91406 | 2,308 | 1.0% | 45 | 91411 | 1,302 | 0.6% | 70 | 91316 | 756 | 0.3% | 95 | 90065 | 479 | 0.2% |
| 21 | 91604 | 2,307 | 1.0% | 46 | 91205 | 1,280 | 0.6% | 71 | 90058 | 754 | 0.3% | 96 | 92626 | 465 | 0.2% |
| 22 | 90049 | 2,185 | 1.0% | 47 | 90068 | 1,256 | 0.6% | 72 | 90401 | 729 | 0.3% | 97 | 90503 | 457 | 0.2% |
| 23 | 90027 | 2,164 | 1.0% | 48 | 90212 | 1,244 | 0.6% | 73 | 91345 | 712 | 0.3% | 98 | 90020 | 452 | 0.2% |
| 24 | 91367 | 2,115 | 0.9% | 49 | 91101 | 1,166 | 0.5% | 74 | 90211 | 687 | 0.3% | 99 | 90041 | 448 | 0.2% |
| 25 | 91436 | 2,088 | 0.9% | 50 | 91356 | 1,148 | 0.5% | 75 | 91302 | 685 | 0.3% | 100 | 91107 | 448 | 0.2% |

Figure 33. Top 100 Worker Origins and Destinations (Data Source: LEHD)

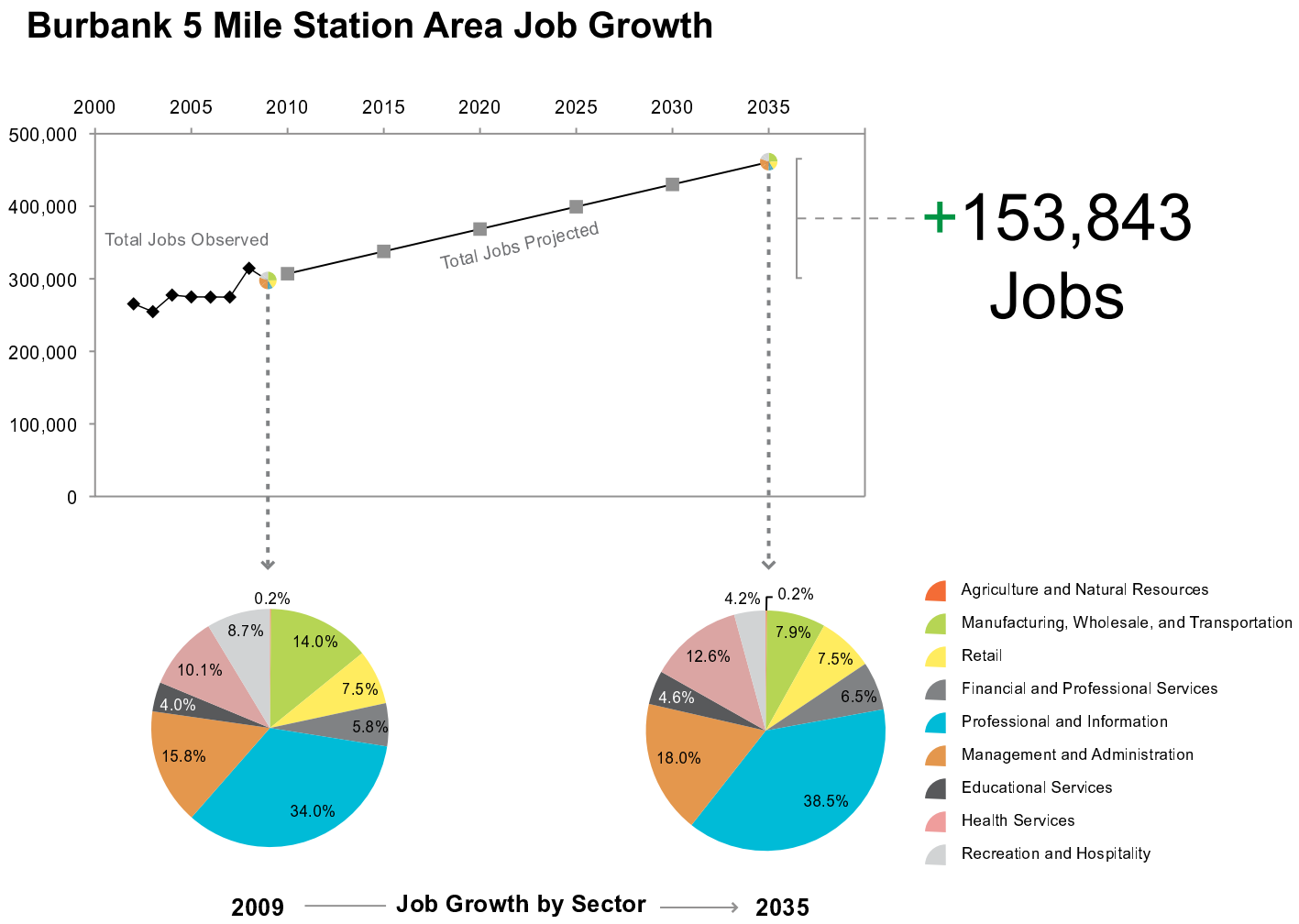



Figure 34. Job Growth Projections (Data Source: LEHD)

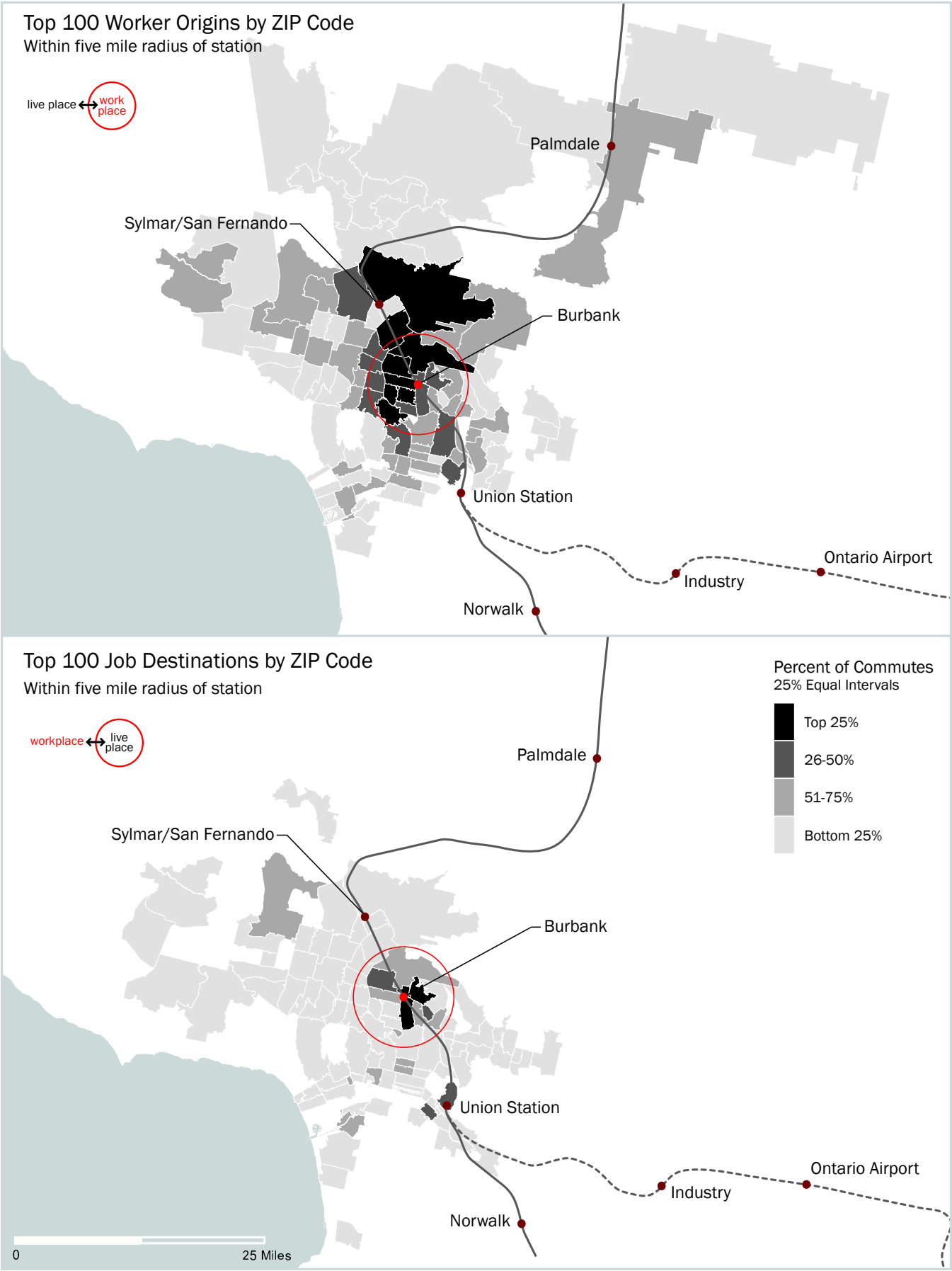



Figure 35. Burbank Commute Map (Data Source: LEHD)

**Current Land Use**

Land use within half mile of the station area is dominated by transportation uses (52%) related to the functioning of Burbank Bob Hope Airport. Open space occupies 15% of land, however 11.7% of that is occupied by a cemetery. Industrial uses account for 12.6%. Ten percent of land is occupied by residential uses, with single family residences occupying 7.3% of that total. Two percent of the land is currently vacant (Figure 36).

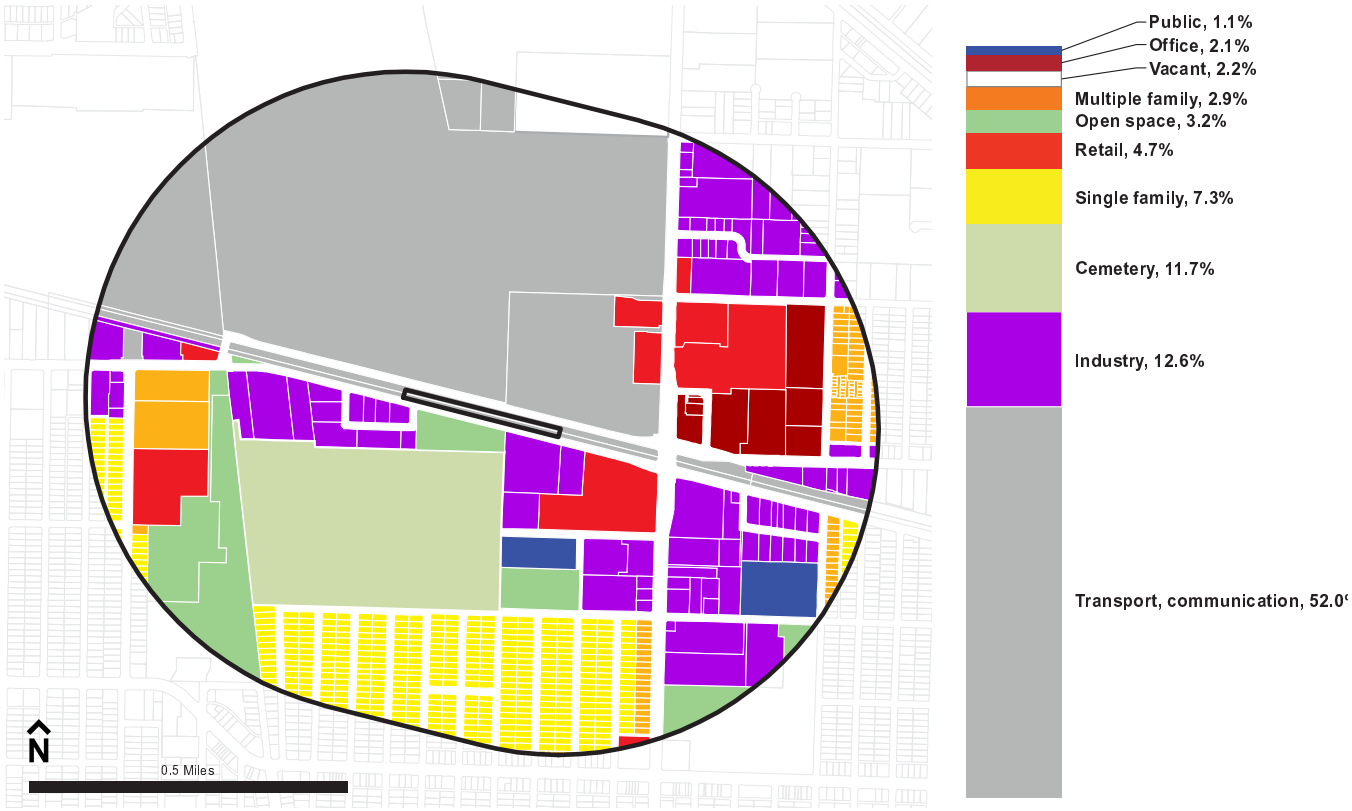



Figure 36. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Burbank HSR Station (Data Source: SCAG)

**Subdivision Pattern**

Large singularly used land tracts characterize the half mile area around the station. Historical Sanborn maps show the airport and other aviation related activities north of the station and the Valhalla memorial cemetery to the south existing since the 1920s. The result is a few large parcels (>80 acres) to the west and north of the station area with smaller commercial and industrial parcels to the east. The grid was diagonally split by the introduction of the railroad in the nineteenth century. Parcel sizes in the area range from 0.006 to 261 acres, with the largest number of parcels being in the 0.11 to 0.25 acres range (Figure 37). The largest parcels are currently occupied by airport or aviation uses.

## Parcel Characteristics within Half Mile of Burbank Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.026 | 251.2 | 0.11 to 0.25 |

Figure 37. Subdivision of parcels (Data Source: SCAG)

**Major Destinations**

Downtown Burbank, within three miles of the station platform, is the largest employment and activity destination, attracting an estimated 29,800 employees per day (Figures 38 and 39). Congruent with employment sector findings, entertainment industry professional headquarters, such as NBC/Universal, Disney, and Warner Brothers, are between two and four miles away. An office campus housing Yahoo!, Technicolor Inc, and various smaller corporations, less than one mile away, is the closest employment destination. Entertainment and recreation centers are abundant, with the popular tourist attractions of Universal City (City Walk and Universal Studios), the Los Angeles Zoo, and Griffith Park lying just within the five miles of the station. Proximate public institutions include Los Angeles Valley College, Woodbury University, and Providence/St. Joseph's Hospital.

## Activity and Employment Centers within 5 Miles of Burbank Station

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Employment | Downtown Burbank | 3.00 | 29,800 |
| Education | Los Angeles Valley College | 3.80 | 18,550* |
| Entertainment | Universal City (CityWalk and Universal Studios) | 5.00 | 13,700** |
| Employment | Walt Disney Company | 2.80 | 7,900 |
| Employment | Warner Brothers | 3.00 | 7,400 |
| Recreation | Los Angeles Zoo | 4.80 | 4,190 |
| Employment | Providence/St. Joseph Hospital | 2.40 | 2,850 |
| Transportation | Bob Hope Airport | 0.50 | 2,400 |
| Employment | Burbank Unified School District | Various | 1,800 |
| Employment | City of Burbank | 5.00 | 1,700 |
| Education | Woodbury University | 1.80 | 1,540* |
| Recreation | Griffith Park | 4.50 | 1,370 |
| Employment | NBC/Universal | 2.80 | 1,300 |
| Employment | Yahoo! | 1.00 | 1,200 |
| Employment | Foto-Kem | 3.00 | 600 |
| Employment | Crane/Hydro-Air Company | 0.80 | 600 |
| Employment | Magnolia Park | 3.00 | - |

*Total number of students

**Based on an estimated 5 million visitors per year

Figure 38. Destinations

Figure 39. Map of Activity and Employment Centers within 5 miles of Burbank HSR Station

## Transportation and Transit Networks

The Burbank station area is well integrated into Los Angeles County's broad transportation network. Within walking distance (<1000') is the Burbank Bob Hope Airport passenger terminal. High-speed trains would share an existing platform with Metrolink and Amtrak commuter and long distance passenger lines, which currently connect to the regional and nationwide network at Union Station, only 8 minutes away by HSR. Approximately one mile north of the station is Interstate 5, a major coastal and inland north–south automobile link to Northern California and the U.S./Mexico border. In

**Transit Network within Half Mile of Burbank Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| None | Metro Local: 94, 152, 164, 165, 169, 222; Metro Rapid: 794<br>Burbank Bus: Blue and Yellow Lines | Amtrak Pacific Surfliner and Coast Starlight Lines | Metrolink: Ventura County Line | None | 1 Class II Bike Lane and 1 Class III Bike Route | 52, Somewhat Walkable |

Figure 40. Transit Connectivity

addition, a major freeway interchange servicing the 101 and 405 interstates is 3.75 miles south of the station. The Los Angeles County Metropolitan Transportation Authority runs multiple rapid and local bus lines that stop at-site or within the half mile area (Figure 40). The station area is less walkable when compared to other areas within Burbank and Los Angeles, but is connected to the local bicycle network via Class I and II bike lanes on Hollywood Way, a north/south arterial immediately east of the station.

In 2007, workers driving alone made up the majority of all commutes in the City of Burbank (81.3%) (Figure 39). Carpooling was the second most common mode with 6.7% of trips, while 3.2% of commute trips were made on public transit. The largest increase in commute mode occurred in bicycle or motorcycle riding (114%), although only 3.1% of people commute this way. Even fewer people worked at home (2.9%) or walked to work (2.9%)(Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

| **Commutes** | **2000** | | **2007** | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 48,430 | 100.0 | 50,824 | 100.0 | 4.9% | Yes |
| Drove alone | 37,555 | 77.5 | 41,296 | 81.3 | 10.0% | Yes |
| Carpooled | 5,705 | 11.8 | 3,417 | 6.7 | -40.1% | Yes |
| Public transit | 1,189 | 2.5 | 1,604 | 3.2 | 34.9% | No |
| Walked | 1,330 | 2.7 | 1,476 | 2.9 | 11.0% | No |
| Taxi, motorcycle, bike, other | 735 | 1.5 | 1,576 | 3.1 | 114.4% | Yes |
| Worked at home | 1,915 | 4.0 | 1,455 | 2.9 | -24.0% | Yes |

Figure 41. Modal Split: City of Burbank (Data Source: AASHTO/CTPP)

**Real Estate Market Values and Trends**

Burbank's existing real estate market values are consistently the highest among station cities (Figure 40). Within 2.5 miles of the station, office sales averaged around $350 per square foot for properties sold since 2006, just below sales prices in Anaheim ($360). Average leases for office space per square foot per year are more affordable than other areas at $17.25, lower than Palmdale but higher than Ontario Station area. Retail spaces lease for an average of $25.12, the highest among studied station areas.

In 2010, the median home value in census tracts located partially or entirely within a half mile of the station was $213,168, a 28.3% increase from 2000 (Source: Loopnet.com, Geographic Research Inc. 2011). As noted in the land use and subdivision section above, single family dwellings outnumber multiple family dwellings (71.6% and 28.4% respectively) within a half mile of the station.

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | **$360** | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | **19.0%** |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | **$25.12** | $273,569 | **$213,168** | 28.3% |
| Sylmar/San Fernando | **$28.33** | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | **$107** | **$12.52** | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | **$8.17** | $160 | $24.02 | **$123,572** | **$74,106** | **66.8%** |
| Murrieta | $21.23 | $270 | $21.92 | **$295,833** | $180,469 | 63.9% |

**Category High**/**Category Low**

Source: Loopnet.com, Geographic Research Inc.

Figure 42. Real Estate Market Values

**Development Potential**

Burbank has branded itself the "Media Capital of the World", which reflects the agglomeration of media and entertainment companies headquartered there. Development in Burbank occurs in two distinct nodes, in and around its traditional downtown, nestled in the foothills of the Verdugo Mountains, and in the flatlands of the eastern San Fernando Valley, where the Bob Hope Airport is located. Transit hubs have developed in both locations, and both locations have been considered as possible sites for a San Fernando Valley high speed rail station. Conversations with local planning officials reveal that over time a high speed rail station in the vicinity of airport node has been deemed increasingly plausible. The airport, located three miles northwest of the central business district of Burbank, serves a broad swath of the Los Angeles area, including Glendale, Pasadena, and the San Fernando Valley. It is also closer to Greater Hollywood and areas of eastern Los Angeles than is Los Angeles International Airport (LAX), and is the only airport in the greater Los Angeles area with a direct rail connection, via Metrolink, to downtown Los Angeles. Non-stop flights from the airport go mostly to destinations within the western United States, but service also includes national destinations like Dallas/Fort Worth and New York City. The airport is owned by the Burbank-Glendale-Pasadena Airport Authority, which is controlled by the governments of the three cities in its name.

While airport expansion has been a very contentious issue in Burbank for well over a decade, airport redevelopment, including the development of an intermodal transportation center and perhaps the relocation and redevelopment of the terminal are once again being discussed. In addition, the airport holds in trust large developable tracts of vacant land.

Both the airport and Burbank's agglomeration of entertainment and media companies create an ideal location for high speed rail. HSR will provide opportunities for business workers to engage in more face-to-face communication both locally and throughout California. Although high speed rail in close proximity to the airport remains politically contentious, connecting HSR to the Burbank airport will increase accessibility to eastern Los Angeles (including downtown Los Angeles), the San Gabriel Valley and the San Fernando Valley.

**Local Perspectives**

Burbank, a first ring suburb of Los Angeles, may host the only stop of high-speed trains travelling southward, before Union Station. Burbank is an important employment center for the region with three major studios, ancillary media related companies, a regional airport, and available parking space at or near the airport. Therefore, Burbank planners feel that their city is well-positioned to attract a HSR station.

The desire to attract a station is not unanimously shared by Burbank residents or even all city council members (Kriske interview; Forbes interview). Nevertheless, as the HSR route will most likely pass from Burbank, city of Burbank planner Michael Forbes believes that it would be much preferable for the city to benefit from than be bypassed by the rail:

*"I think from my point of view, if the rail line goes through and we don't get a station, then we would get all the negatives and none of the positives because we are going to get the noise from the trains going through, and whatever disruption is going to occur during construction. We know from the route they are showing that it is going to come through Burbank, whether there is a station here or not, so it is just a question of will we have an opportunity to reap the benefits from it or is it just going to be another set of rails going through the city that we don't really get any direct benefit from?"* (Forbes interview)

Consistent to its vision to build a downtown-to-downtown system, the HSRA initially favored a downtown location. However, the Burbank City Council lobbied and eventually succeeded to have the site near the airport as the preferred option. The City Council's

stance was based on the following reasoning: 1) a multi-modal transportation station integrating existing railway facilities, a bus terminal, and car rental services is under construction near the site; 2) the airport already has parking facilities that can accommodate 6,500 cars; and 3) an HSR station located at this site which is surrounded by industrial land uses and warehouses would have less adverse effects on residential neighborhoods. Additionally, the location is favored by the airport authority which finds a significant complementarity between an HSR station and the airport. As Dan Feger, executive director of the Burbank airport stated:

*"We have had a lot of discussions with the HSRA about considering the airport as a station for HSR… We as an airport embrace HSR. We don't look at it as being a significant deterrent to our business. We see it as a way to improve mobility within Southern California, and to get people from our catchment area to the airport. Our catchment area extends out to Bakersfield, Santa Clarita, Lancaster. We have a very distant catchment with over 3 million people. HSR will actually enhance our ability to get our passengers out of their cars and here by a different mode"* (Feger interview).

City planners, on the other hand, are more skeptical about the merits of a location near the airport arguing that it would counteract efforts to create urban ambience and build residential and mixed-use developments around the station. As argued by Burbank transportation planner David Kriske and city planner Michael Forbes:

*"The City Council asked the HSRA to study the airport site. …I think most of the Council sees this station more as an airport where you put this huge thing out on the fringe and everyone drives to it or somehow gets to it and then gets on the train. They don't realize that maybe rail stations are a little bit different from airports and that they are more in the central city, and that maybe that's more advantageous. They ironically may be getting more traffic impacts by putting it out by the airport than if they were to have it in downtown"* (Kriske interview).

*"Personally, I am intrigued by going downtown. …And I think it would be a better environment for what I describe as my utopia with people stepping out of the station at a place where they want to be and want to stay and do things; I think downtown is much more suited to that. I think it would be interesting to see the interplay between residential and HSR"* (Forbes interview).

**Perceived Benefits**

Despite their skepticism about the location choice, Burbank planners expect that an HSR station will boost economic activity in their city, especially around the station area. As emphasized by Forbes:

*"I think the positive impacts would be just the amount of people and business activity that the station would draw because we would expect quite a bit of economic activity sprouting up around the stations. So it would be a good opportunity for economic development and attracting some more commercial office and corporate tenants… There would be opportunities for redevelopment in the form of office buildings, probably traveler serving amenities – hotels, restaurants, convention facilities, those types of things. At the airport location, the railroad runs down the middle of the street, San Fernando Blvd, and there are two halves to the boulevard and the train tracks run down the middle. So the facility location would actually go in the middle of the roadway and probably be cantilevered over the roadway. Then we have a lot of redevelopment opportunity because a lot of what is out there is old industrial that is remaining from the Lockheed days and is ripe for redevelopment."*

David Kriske expects that the building of an HSR station is likely to increase land values, while the enhanced connectivity will make Burbank an even more popular place for business location. In his view, a station would give a competitive advantage to the city, if fuel prices skyrocket in the future and airline travel becomes an economically viable

option only for long distance, out of state travel. Nevertheless, he admits that this is not how all of his fellow citizens are thinking:

*"A lot of cities in this economic downturn would see an HSR station as a huge economic development tool and would be ecstatic to have it. Burbank possibly because we are fiscally pretty well off… because we had it good for awhile economically, we can think, maybe we don't need this … because we're just fine the way we are. But, fifteen, twenty years ago, Burbank was in a different position when Lockheed Aircraft left the city. They were our primary employer for decades. They left the city and there was a huge depressed economic environment that resulted from that. And there was a long-term economic effort to turn the city around that took almost ten years…. We are doing well now but we have to constantly look forward to see how we can maintain our success, and to just slough off something like high-speed rail may be a mistake in the long-term"* (Kriske interview).

Kriske also believes that the expansion of the city's commute shed will give opportunities for increased complementarity between Burbank and other cities in the region. As he argues:

*"We are a huge employment generator and we already have a lot of folks coming in from Santa Clarita, Antelope Valley, from cities from the San Fernando Valley. A station would extend the viable commute shed for Burbank and expand it to be farther than it is. We have Disney's headquarters here in Burbank, and they have a huge presence in Anaheim, because of Disneyland. With high-speed rail, it would be a 20-minute trip from Anaheim to Burbank. That would have a dramatic change on whose coming in and out of our city… High-speed rail is being looked at as a state-wide system for the most part but it is effectively also a regional system. Connections from Burbank to Palmdale, Orange County, the Inland Empire are really going to have a dramatic change on how folks commute around the region."* (Kriske interview).

According to Forbes, Burbank's perceived benefits from the HSR would rely on three important issues:
1.the state of the economy, which will affect the willing-ness of commercial developers to build around the station;
2.the fare policy, which will determine if the system can compete with the car for shorter trips (e.g. from Burbank to Anaheim); and
3.fuel pricing and how it relates to air travel, which would determine if the HSR can compete with the airline industry. As Forbes argued:

*"It is going to be a wait and see about what is going to be cheaper – rail or air – and what is going to be more convenient. Rail presumably is going to have fewer security screening requirements and it is going to be easier to hop on but you don't know if that is going to last over the long term or not. And I think this may affect or delay the willingness of developers to build around the stations, if the system starts operating but it is not entirely clear if it is going to be successful or if people are going to stop using the airport or not, that could delay or discourage developers, thinking do we want to put our money into this and then no one takes the HSR"* (Forbes interview).

**Vision: A Small Aerotropolis**

Because Burbank's location for a station is next to the airport, the planners' envision the development of a small aerotropolis -- an urban form whose layout and economy would be centered on the airport and HSR station. As explained by Forbes and Kriske:

*"An activity center is the first thing that comes to mind but that is not a good way to describe it. A bunch of commercial buildings, office buildings, some corporate headquarters or larger office tenants, traveler services – hotels, convention centers, restaurants, some retail – and all of it organized into a little city so that you can come*

*out of the train station and walk to a number of places in the immediate area or have very easy access to local transit services, if you want to go out of the local area. Parking structures should be hidden to the degree possible and scattered throughout the area so that you don't have all parking on one end, and all commercial on another end. This way, you are also forcing people to walk through the area to get to parking and hopefully stopping and shopping along the way"* (Forbes interview).

*"From a land use perspective I see more density and intensification around the station. Probably not super high rises but Burbank's type of development--six to eight story buildings, office TODs, hotels, traveler services. Burbank would never want a Century City mushrooming out from here… I think it's important that we see good connections with ground transportation. We want to make sure all the local buses and the Metrolink trains all serve it seamlessly, hoping that we can minimize the parking to some degree because that is going to be the way we minimize traffic impacts"* (Kriske interview).

Describing their vision for the station, Burbank planners were quick to distinguish it from an airport. As Kriske emphasized, "Hopefully, it doesn't look like an airport where you've got massive parking lots and swathes of open land and folks driving here." Added Forbes: "I envision the station as a place that people want to be in. Unlike airports, where your primary objective is to get in and out quickly, hopefully the station is not a place you need to get out of immediately; or maybe where you want to go is there."

**Challenges and Concerns**

The accommodation of a high speed rail station in the city is not without challenges. Some of the challenges are physical: how to fit the new infrastructure into the existing built environment. As discussed by Forbes:

*"It is definitely not going to be easy fitting the train into the built environment… The infrastructure of a HSR station is going to be massive. They've told us that just the platform is a quarter mile long. The station itself and the parking facilities would be substantial buildings plopped down in the city. So it would definitely change the face of Burbank, and that could be good or bad depending on your perspective…. At least through Burbank the HSR would follow the existing rail corridor that runs parallel to the I-5. The rail corridor and the I-5 divided the city years ago, so having another set of railroad tracks is not like creating a new division through the middle of the city; so we are fortunate from that perspective"* (Forbes interview).

An additional concern is the amount of traffic that the station will generate. According to Forbes, the HSRA expects a demand of up to 12,000 parking spaces, which is about double the amount of parking currently available at the Burbank airport. As emphasized by Kriske, "traffic impacts are a very big concern of the city right now and how all this would change travel patterns in Burbank and add to the traffic because we would essentially be adding another regional trip generator in the city in addition to our airport."

Another environmental concern is the noise that 86 trains per day passing through the city at about 140 miles per hour will generate. As Kriske underlined, such noise impacts would affect the city regardless of the presence of a HSR station, because the trains will pass through Burbank even if they don't stop there.

In addition to the physical/environmental challenges, the slow-growth sentiments espoused by some Burbank residents represent a challenge for planners favoring the HSR project. Similar sentiments and concerns about the negative externalities (noise, traffic, pollution) stemming from a transportation infrastructure have surfaced in the past in response to attempts to expand the Burbank airport. As explained by Kriske:

*"There is definitely a slower growth sentiment. Folks appreciate the fact that we are not very dense; we are not Los Angeles. So I see that if this facility were to be put in place, there is a concern about what it will do to the intensity and use around*

*the station .... It is definitely not a local but a regional land use .... Intensifying the area around the station is going to conflict with the prevailing sentiment right now, which is to keep density lower and to keep growth a little bit lower. It is going to be a challenge to advocate for the necessary policies for parking and densification when the prevailing political sentiment is for the opposite"* (Kriske interview).

The third type of challenge, outlined by the interviewees, is economic. In a market-driven economy, the private sector's role is essential in driving development. Under the current economic depression, however, there is fear that developers are unwilling or unable to invest. As argued by Forbes:

*"In Burbank, we have been fortunate that we haven't been hit as hard economically as other regions have. Nevertheless, we have high office vacancy right now because of two recently built huge buildings that don't have tenants yet. There is a real possibility with the timing of the rail that you could end up with nobody wanting to build anything, or the situation we are in now, where they didn't quite gamble right with their timing and they've got huge empty buildings. And the huge empty buildings sitting next to the rail station for too long could adversely affect people's willingness to use HSR or the desirability for companies to come in when the market does pick up, or the buildings could end up being converted to an unintended use and the area doesn't go the way you intended it to go. So that's definitely a concern"* (Forbes interview).

Another economic concern involves the funding required by local municipalities like Burbank for station area planning, redevelopment, and building of parking structures. As argued by Kriske and Feger:

*"Even wealthier cities like Burbank that would have the ability to buy and acquire some land... can't purchase a swath of land a quarter mile around the station and direct what they want. ... It sounds like the HSRA is making a bit of a change from their initial stance that they were only building the platforms and that's it. It seems they may offer some assistance to help the local agencies do what is required to plan and facilitate redevelopment around a station"* (Kriske interview).

*"The problem with CAHSR is that they expect the cities to accommodate the parking needs... They say they need 12,000 spaces for Burbank. A 12,000-space parking structure would cost $2 million. Cities just don't have that kind of money"* (Feger interview).

**Planning and Design**

Burbank has not yet prepared a master plan for a HSR station area since the municipality is not yet certain if the train will stop there. Such an effort has also been hindered by the existence of two distinct sites within Burbank, which could potentially accommodate a station. The latter issue is now resolved, with the airport site gaining the approval of the HSRA (if a station is built at Burbank). However, and as of this writing, the final site for the San Fernando Valley station is still in question.

At present two activities, one undertaken by the city's planning department and the other by the Airport Authority, are happening independent of the HSR project, but may have an influence on it. The City is updating its General Plan, while the Airport Authority is constructing an inter-modal transportation center.

As part of the General Plan update, Burbank planners are lowering the city's residential densities and focusing intensification around transportation hubs. At the moment, they are suggesting policies that preserve some of the manufacturing land uses around the airport area. If, however, a high-speed rail station is to be constructed there, then the land use plan will have to be changed again to accommodate higher densities and more intense development (Kriske interview). As reasoned by Kriske:

*"The city has an obligation to make sure that we have appropriate planning tools in place*

*to address that change. The airport site presents some challenges because it is already of lower intensity. [If the HSR station comes to Burbank] we will have a lot of turnover from manufacturing and warehouse and industrial uses to office and travel-related services. So that would be a very dramatic change, and the city is going to have to do some sound land use planning… There is a need for policy direction especially about how land uses convert over from low industrial to higher density around the station. We should have zoning and a land use General Plan or specific plan policies in place to try to concentrate density around the station and to keep the possibility open of arriving to the station by modes other than car… I think it would be to the detriment of the community if we put the station in place and didn't have some of those policies, because it would cause more traffic generation and more negative effects."* (Kriske interview).

The Airport Authority in collaboration with the city is building a regional intermodal transportation center to better connect the airport to the Metrolink line (connecting to Ventura) and Amtrak line (connecting to Union Station). The center would link the existing train station, a bus station (for Metro buses), a consolidated rail car facility, and a rental car facility with a moving sidewalk connecting to the terminal (Feger interview). While the transportation center is being built independent of the HSR "they've already got visions in their mind about connecting to a HSR station" (Forbes interview). As detailed by Feger:

*"The planning of the multi-modal station at the airport is proceeding fairly independently of high-speed rail and is intended to be operational by 2012. There are two railroad tracks that join in the city of Burbank, one on the north side of the airport and one on the south side. The south side track runs out to Ventura; the track on the north side is the proposed route of HSR and that is the route that goes out to Antelope Valley. The transit center is on the south side of the airport near the existing passenger terminal, and it serves the Ventura line. It is not physically situated near the CA HSR line. Linking the two would require that we have a people-mover that connects the south end of the airport to the north end"* (Feger interview).

According to Kriske, seamless connectivity of the HSR station to the rest of the region through transit is an essential matter of planning for high-speed rail and should involve regional transportation agencies such as Metro.

Unlike Anaheim, which has already developed a vision for HSR station design, Burbank has not yet been engaged in such a process. Burbank planners note with relief that the HSRA has abandoned previous plans to elevate the station 100 feet in the air and create "a major scar in the middle of the city," and now consider putting the train on surface and possibly elevating the Metrolink track at one segment (Forbes interview). Not wanting to expend energy and resources planning for a station that may or may not come to their town, Burbank planners are guardedly monitoring the situation. As reasoned by Forbes, "If we think there is a real potential for development then we have that opportunity to bring our redevelopment agency in and inject some money into it, if we think that is an appropriate thing to do to kick start something."

# 3.4 INDUSTRY

**Introduction**

The City of Industry is a manufacturing oriented municipality in Los Angeles County The city presents a major imbalance in its residents-to- jobs ratio , as just over two hundred people reside within the city boundaries while the same geography accommodates over 60,000 jobs. Well connected to the regional interstate network, Industry is the destination of a widely distributed regional workforce. The city houses a significant portion of Los Angeles County's manufacturing economy, and promotes a business and job-friendly identity. A station in the city of Industry is proposed for phase II of the HSR project (Figure 43). The proposed portal for HSR would be located among manufacturing warehouses and corporate office parks (Figure 44).

Figure 43. Map of Industry HSR Station

Figure 44. Aerial Photograph of Industry HSR Station

**Population**

With only 219 residents in 2010 according to the US Census, Industry is the second smallest city in Los Angeles County outside of Vernon (112), and the third smallest in California. Industry's population density (18 persons per square mile) is also incomparably small relative to other station cities. Hispanics of all races account for 52.5% of the population, while the remaining 47.5% of the city's residents are comprised of Whites (25.4%),

**Residential Population and Population Density Projections within 5 Miles of Industry Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 10,230,219 | 10,645,211 | 11,005,955 | 11,368,021 | 11,720,520 | 12,061,511 | 12,387,715 |
| Industry 5 Mile Station Area | 419,147 | 439,000 | 464,302 | 486,230 | 507,815 | 528,750 | 548,605 |
| Industry Half Mile Station Area | 13,848 | 14,163 | 14,648 | 15,063 | 15,481 | 15,882 | 16,260 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 2,502 | 2,604 | 2,692 | 2,781 | 2,867 | 2,950 | 3,030 |
| Industry 5 Mile Station Area | 3,445 | 3,608 | 3,816 | 3,996 | 4,174 | 4,346 | 4,509 |
| Industry Half Mile Station Area | 2,417 | 2,472 | 2,556 | 2,629 | 2,702 | 2,772 | 2,838 |

Figure 45. Residential Population and Population Density Projections within 5 Miles of Industry Station (Data Source: SCAG)

Asians (8.2%), Blacks (0.5%), and other minorities (0.9%). Between 2000 and 2010, Industry's total population decreased by 71.8%, a dramatic loss compared to the Los Angeles County increase of 3.1% or the statewide growth rate of 10%. Between 2010 and 2035, the city's population is projected to remain stable, adding only 44 people for an increase of 16.9%. Median household income in Industry in 2010 was $49,423 or 84% of the median household income among all Californians (Source: U.S. Census 2010). The median home price in the city in 2010 was $246,000, or 51.4% of the statewide median home price (Source: Yahoo Prices.). The homeownership rate (31.9%) is low when compared to the rate of homeownership statewide (57.8%).

In 2010, 439,000 residents lived in census tracts located entirely or containing portions within five miles of the station (Source: Southern California Association of Governments). The population density of these census tracts was an average of 3,608 persons per square mile, much higher than the average population density in the city (Figure 45)(Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half mile of the station, the 2010 population was 14,163 with an average population density of 2,472 persons per square mile (Source: Southern California Association of Governments). The Southern California Association of Governments (SCAG) projects that residential population within five miles of the station will increase to 548,605 residents by 2035 or by 20% between 2010 and 2035 (Figure 46). Within half mile of the station the residential population is expected to increase by 2,097 or by 14.8% within the same period (Source: Southern California Association of Governments).

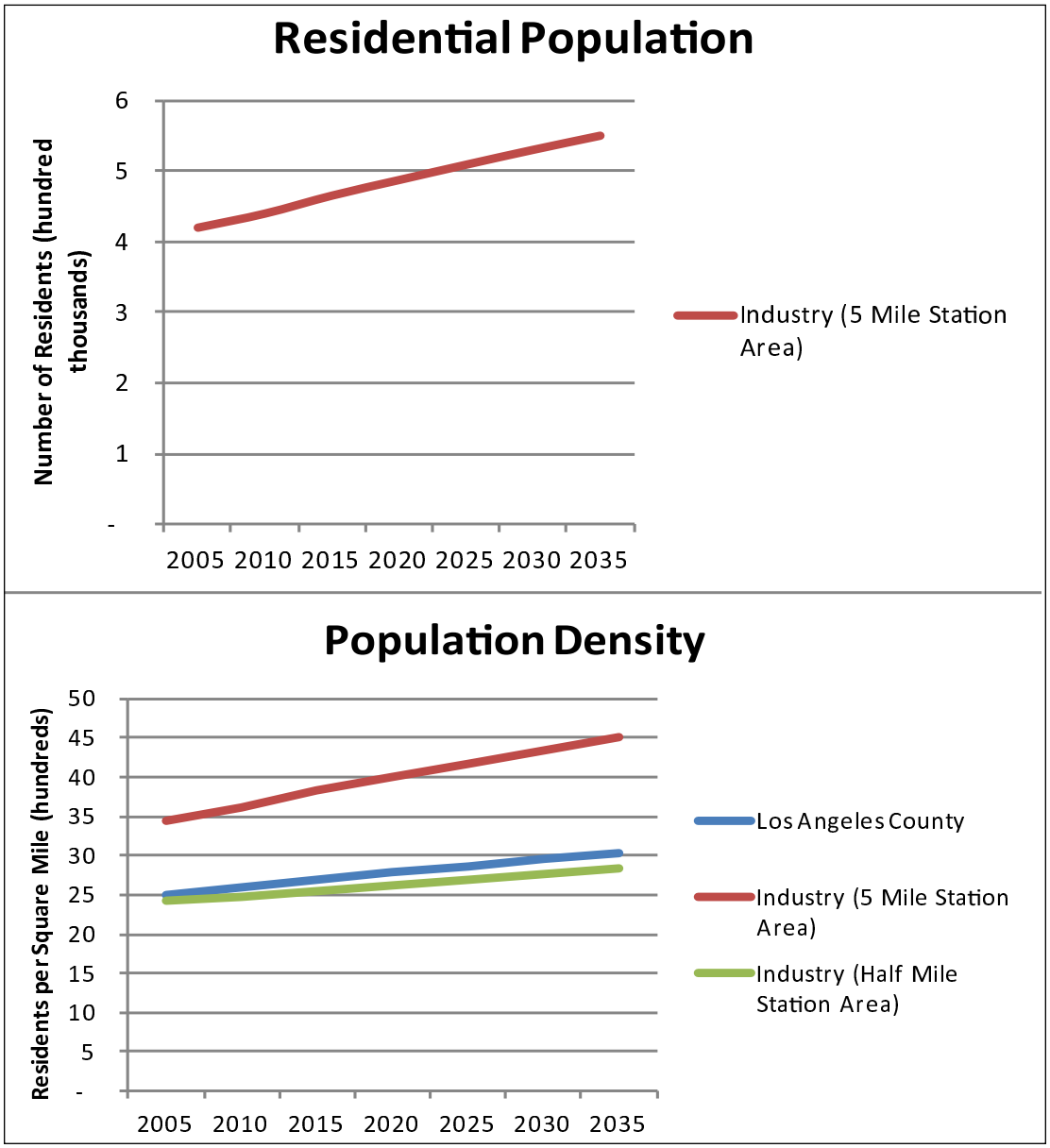



Figure 46. Residential Population and Population Density Projections within 5 miles of Industry HSR Station, 2005-2035 (Data Source: SCAG)

**Jobs**

Job totals in Industry account for 3.1% of all manufacturing jobs in Los Angeles County, and 1.6% of all county jobs. The jobs-housing balance in the city (0.004 jobs for every resident) is radically lower than the statewide proportion (0.46). Most Industry residents work at jobs within Los Angeles County (69.4%), while 14.3% commute to Orange County, and 9% to San Bernardino County. With the city's economy dedicated to manufacturing, most employees (53%) work in this sector. The other significant sector is retail (16.6%), followed by management and administration (8.4%).

We estimated that the area within five miles of the station contained 94,377 jobs in 2009 or 2.3% of jobs in Los Angeles County (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.).

**Industry 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 93,009 | 100,865 | 107,907 | 114,949 | 121,991 | 129,034 | 136,076 | 34.9% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 89 | 162 | 217 | 273 | 328 | 383 | 438 | 169.7% |
| Manufacturing, Wholesale, and Transportation | 31,557 | 28,779 | 26,704 | 24,628 | 22,553 | 20,477 | 18,402 | -36.1% |
| Retail | 11,453 | 11,539 | 11,995 | 12,451 | 12,907 | 13,363 | 13,819 | 19.8% |
| Financial and Professional Services | 6,877 | 7,296 | 7,901 | 8,506 | 9,112 | 9,717 | 10,322 | 41.5% |
| Professional and Information | 5,124 | 5,613 | 6,345 | 7,078 | 7,811 | 8,544 | 9,277 | 65.3% |
| Management and Administration | 14,702 | 16,957 | 18,435 | 19,912 | 21,389 | 22,866 | 24,344 | 43.6% |
| Educational Services | 9,957 | 11,959 | 13,115 | 14,271 | 15,427 | 16,583 | 17,739 | 48.3% |
| Health Services | 4,129 | 8,292 | 11,762 | 15,232 | 18,703 | 22,173 | 25,643 | 209.2% |
| Recreation and Hospitality Services | 9,121 | 10,269 | 11,434 | 12,598 | 13,763 | 14,928 | 16,093 | 56.7% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.04 | 0.07 | 0.09 | 0.11 | 0.13 | 0.15 | 0.17 | 150.2% |
| Manufacturing, Wholesale, and Transportation | 1.37 | 1.26 | 1.19 | 1.11 | 1.04 | 0.97 | 0.90 | -28.3% |
| Retail | 1.12 | 1.09 | 1.10 | 1.11 | 1.11 | 1.12 | 1.13 | 3.6% |
| Financial and Professional Services | 1.19 | 1.26 | 1.34 | 1.41 | 1.49 | 1.57 | 1.64 | 30.4% |
| Professional and Information | 0.54 | 0.51 | 0.52 | 0.52 | 0.53 | 0.53 | 0.53 | 2.7% |
| Management and Administration | 0.99 | 1.04 | 1.05 | 1.07 | 1.08 | 1.09 | 1.10 | 5.7% |
| Educational Services | 1.20 | 1.21 | 1.17 | 1.13 | 1.09 | 1.06 | 1.04 | -14.3% |
| Health Services | 0.46 | 0.76 | 0.93 | 1.05 | 1.15 | 1.22 | 1.27 | 68.3% |
| Recreation and Hospitality Services | 0.92 | 0.91 | 0.92 | 0.92 | 0.91 | 0.91 | 0.91 | -0.5% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | -0.12 | -0.08 | -0.06 | -0.04 | -0.02 | 0.00 | 0.01 | -117.8% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.81 | -0.75 | -0.72 | -0.70 | -0.69 | -0.68 | -0.67 | -10.2% |
| Manufacturing, Wholesale, and Transportation | -0.06 | -0.07 | -0.08 | -0.09 | -0.10 | -0.11 | -0.13 | 93.0% |
| Retail | -0.11 | -0.08 | -0.06 | -0.04 | -0.01 | 0.01 | 0.03 | -137.7% |
| Financial and Professional Services | -0.05 | 0.00 | 0.04 | 0.07 | 0.10 | 0.12 | 0.15 | 3470.8% |
| Professional and Information | -0.28 | -0.23 | -0.17 | -0.13 | -0.08 | -0.04 | -0.01 | -96.7% |
| Management and Administration | -0.11 | -0.07 | -0.06 | -0.04 | -0.03 | -0.02 | -0.01 | -83.1% |
| Educational Services | -0.02 | 0.06 | 0.08 | 0.11 | 0.13 | 0.15 | 0.16 | 187.6% |
| Health Services | -0.46 | -0.23 | -0.13 | -0.06 | -0.01 | 0.02 | 0.05 | -121.4% |
| Recreation and Hospitality Services | -0.11 | -0.06 | -0.04 | -0.01 | 0.00 | 0.02 | 0.03 | -155.9% |

Figure 47. Industry 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

Within the same area, we predict the number of jobs to increase to 136,076 by 2035, or by over 44% (Figure 49)(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamicspartnership, http://lehdmap.did.census.gov.). The job market here features a higher proportion of educational services, manufacturing and wholesale, and retail jobs than the California norm (location quotient = 1.37, 1.27, and 1.12 respectively). By 2035, the financial and professional and health services sectors will grow, while manufacturing and wholesale will still exceed the statewide equivalent (Figure 47). The health services sector is projected to remain the fastest growing sector, while agriculture will also add about 256 jobs (Figure 49). Manufacturing and wholesale will be the only sector in the station area exhibiting negative growth, maintaining the trend seen from 2002-2009 (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). In 2009, areas within a five mile radius of the HSR portal were slightly jobs-poor (gap index = -0.08 in 2009), but will eventually gain more jobs than workers by 2035 (gap index = 0.01).

**Top 100 Worker Origins by ZIP Code - Industry**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91789 | 4,025 | 4.30% | 26 | 91746 | 599 | 0.60% | 51 | 92882 | 341 | 0.40% | 76 | 90805 | 239 | 0.30% |
| 2 | 91748 | 3,520 | 3.80% | 27 | 92335 | 595 | 0.60% | 52 | 92801 | 340 | 0.40% | 77 | 92887 | 238 | 0.30% |
| 3 | 91765 | 3,048 | 3.30% | 28 | 91724 | 576 | 0.60% | 53 | 90640 | 338 | 0.40% | 78 | 91803 | 229 | 0.20% |
| 4 | 91744 | 2,977 | 3.20% | 29 | 91770 | 568 | 0.60% | 54 | 90660 | 330 | 0.40% | 79 | 90602 | 227 | 0.20% |
| 5 | 91709 | 2,912 | 3.10% | 30 | 91701 | 567 | 0.60% | 55 | 92807 | 327 | 0.40% | 80 | 92802 | 227 | 0.20% |
| 6 | 91766 | 2,203 | 2.40% | 31 | 91740 | 553 | 0.60% | 56 | 91010 | 325 | 0.30% | 81 | 90703 | 224 | 0.20% |
| 7 | 91792 | 1,906 | 2.00% | 32 | 91763 | 544 | 0.60% | 57 | 90638 | 320 | 0.30% | 82 | 92683 | 224 | 0.20% |
| 8 | 91745 | 1,737 | 1.90% | 33 | 92870 | 517 | 0.60% | 58 | 91737 | 316 | 0.30% | 83 | 92780 | 221 | 0.20% |
| 9 | 91710 | 1,491 | 1.60% | 34 | 91776 | 491 | 0.50% | 59 | 90601 | 313 | 0.30% | 84 | 92835 | 221 | 0.20% |
| 10 | 91791 | 1,217 | 1.30% | 35 | 91723 | 483 | 0.50% | 60 | 92805 | 302 | 0.30% | 85 | 92504 | 220 | 0.20% |
| 11 | 91767 | 1,213 | 1.30% | 36 | 92509 | 477 | 0.50% | 61 | 92503 | 296 | 0.30% | 86 | 92831 | 219 | 0.20% |
| 12 | 91790 | 1,166 | 1.20% | 37 | 92336 | 469 | 0.50% | 62 | 91016 | 293 | 0.30% | 87 | 91739 | 217 | 0.20% |
| 13 | 91768 | 1,150 | 1.20% | 38 | 92886 | 460 | 0.50% | 63 | 92345 | 291 | 0.30% | 88 | 91752 | 213 | 0.20% |
| 14 | 91706 | 1,024 | 1.10% | 39 | 91741 | 455 | 0.50% | 64 | 91006 | 283 | 0.30% | 89 | 90630 | 211 | 0.20% |
| 15 | 91786 | 958 | 1.00% | 40 | 91784 | 442 | 0.50% | 65 | 92324 | 283 | 0.30% | 90 | 91755 | 210 | 0.20% |
| 16 | 91762 | 893 | 1.00% | 41 | 90650 | 432 | 0.50% | 66 | 90606 | 279 | 0.30% | 91 | 92806 | 210 | 0.20% |
| 17 | 91761 | 870 | 0.90% | 42 | 92821 | 427 | 0.50% | 67 | 92337 | 273 | 0.30% | 92 | 92557 | 209 | 0.20% |
| 18 | 91702 | 858 | 0.90% | 43 | 91801 | 417 | 0.40% | 68 | 91731 | 271 | 0.30% | 93 | 92407 | 206 | 0.20% |
| 19 | 91711 | 806 | 0.90% | 44 | 91733 | 416 | 0.40% | 69 | 90604 | 263 | 0.30% | 94 | 90620 | 203 | 0.20% |
| 20 | 91773 | 799 | 0.90% | 45 | 92804 | 401 | 0.40% | 70 | 92630 | 260 | 0.30% | 95 | 91107 | 202 | 0.20% |
| 21 | 91730 | 788 | 0.80% | 46 | 91732 | 400 | 0.40% | 71 | 91007 | 259 | 0.30% | 96 | 92507 | 199 | 0.20% |
| 22 | 91750 | 763 | 0.80% | 47 | 92376 | 370 | 0.40% | 72 | 92553 | 256 | 0.30% | 97 | 92867 | 197 | 0.20% |
| 23 | 90631 | 726 | 0.80% | 48 | 92833 | 361 | 0.40% | 73 | 90605 | 255 | 0.30% | 98 | 92860 | 195 | 0.20% |
| 24 | 91764 | 715 | 0.80% | 49 | 91780 | 350 | 0.40% | 74 | 91775 | 246 | 0.30% | 99 | 92392 | 194 | 0.20% |
| 25 | 91722 | 676 | 0.70% | 50 | 91754 | 343 | 0.40% | 75 | 92879 | 243 | 0.30% | 100 | 90022 | 188 | 0.20% |

**Top 100 Worker Destinations by ZIP Code - Industry**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91748 | 5,627 | 5.1% | 26 | 91792 | 751 | 0.7% | 51 | 91776 | 507 | 0.5% | 76 | 91107 | 334 | 0.3% |
| 2 | 91789 | 4,674 | 4.2% | 27 | 91770 | 747 | 0.7% | 52 | 90640 | 499 | 0.5% | 77 | 90230 | 327 | 0.3% |
| 3 | 90012 | 3,103 | 2.8% | 28 | 92806 | 695 | 0.6% | 53 | 91007 | 496 | 0.4% | 78 | 90024 | 321 | 0.3% |
| 4 | 91745 | 2,368 | 2.1% | 29 | 91754 | 660 | 0.6% | 54 | 91764 | 484 | 0.4% | 79 | 90650 | 321 | 0.3% |
| 5 | 91765 | 2,298 | 2.1% | 30 | 91750 | 658 | 0.6% | 55 | 92626 | 484 | 0.4% | 80 | 92867 | 317 | 0.3% |
| 6 | 91768 | 2,144 | 1.9% | 31 | 90601 | 643 | 0.6% | 56 | 91711 | 482 | 0.4% | 81 | 92870 | 317 | 0.3% |
| 7 | 92821 | 2,033 | 1.8% | 32 | 91709 | 637 | 0.6% | 57 | 92807 | 482 | 0.4% | 82 | 90007 | 315 | 0.3% |
| 8 | 91710 | 2,021 | 1.8% | 33 | 92705 | 629 | 0.6% | 58 | 91741 | 458 | 0.4% | 83 | 90630 | 313 | 0.3% |
| 9 | 91706 | 2,005 | 1.8% | 34 | 91016 | 626 | 0.6% | 59 | 91724 | 450 | 0.4% | 84 | 91105 | 313 | 0.3% |
| 10 | 91746 | 1,869 | 1.7% | 35 | 91101 | 610 | 0.6% | 60 | 90638 | 449 | 0.4% | 85 | 90660 | 311 | 0.3% |
| 11 | 91761 | 1,720 | 1.6% | 36 | 90631 | 606 | 0.5% | 61 | 90245 | 433 | 0.4% | 86 | 91803 | 310 | 0.3% |
| 12 | 91744 | 1,500 | 1.4% | 37 | 92802 | 584 | 0.5% | 62 | 90703 | 427 | 0.4% | 87 | 90503 | 309 | 0.3% |
| 13 | 91766 | 1,494 | 1.3% | 38 | 91786 | 582 | 0.5% | 63 | 92801 | 422 | 0.4% | 88 | 90023 | 305 | 0.3% |
| 14 | 90670 | 1,370 | 1.2% | 39 | 91010 | 581 | 0.5% | 64 | 92335 | 405 | 0.4% | 89 | 92701 | 304 | 0.3% |
| 15 | 91723 | 1,252 | 1.1% | 40 | 92868 | 570 | 0.5% | 65 | 92614 | 401 | 0.4% | 90 | 90605 | 301 | 0.3% |
| 16 | 91773 | 1,252 | 1.1% | 41 | 91801 | 567 | 0.5% | 66 | 90606 | 388 | 0.4% | 91 | 91755 | 296 | 0.3% |
| 17 | 91731 | 1,127 | 1.0% | 42 | 91740 | 563 | 0.5% | 67 | 92835 | 382 | 0.3% | 92 | 92780 | 290 | 0.3% |
| 18 | 91733 | 1,093 | 1.0% | 43 | 90071 | 561 | 0.5% | 68 | 91732 | 372 | 0.3% | 93 | 90033 | 285 | 0.3% |
| 19 | 90015 | 1,056 | 1.0% | 44 | 90017 | 559 | 0.5% | 69 | 92612 | 365 | 0.3% | 94 | 92660 | 282 | 0.3% |
| 20 | 91790 | 1,048 | 0.9% | 45 | 91763 | 550 | 0.5% | 70 | 90045 | 364 | 0.3% | 95 | 90806 | 273 | 0.2% |
| 21 | 91767 | 999 | 0.9% | 46 | 92831 | 549 | 0.5% | 71 | 92408 | 359 | 0.3% | 96 | 91103 | 273 | 0.2% |
| 22 | 91791 | 939 | 0.8% | 47 | 91722 | 543 | 0.5% | 72 | 91006 | 358 | 0.3% | 97 | 92507 | 273 | 0.2% |
| 23 | 91730 | 869 | 0.8% | 48 | 92618 | 527 | 0.5% | 73 | 90620 | 344 | 0.3% | 98 | 92832 | 272 | 0.2% |
| 24 | 91702 | 857 | 0.8% | 49 | 92805 | 526 | 0.5% | 74 | 90021 | 338 | 0.3% | 99 | 90248 | 262 | 0.2% |
| 25 | 90040 | 814 | 0.7% | 50 | 90058 | 525 | 0.5% | 75 | 91762 | 336 | 0.3% | 100 | 90022 | 261 | 0.2% |

Figure 48. Top 100 Worker Origins and Destinations (Data Source: LEHD)

Of those employed within five miles of the station, 82.2% live outside of the same area. Of those employed persons living within five miles of the station, more than 85% work outside the same area, suggesting high rates of worker mobility both into and outside of the station area for work. Figures 48 and 50 illustrate the top 100 work origins and destinations for the station area by zip code. Of all workers in the station area, 4.3% originated in the top ranking ZIP code (91789, Walnut/Industry/ Diamond Bar), while the top ZIP code for job destinations outside the station area (91748, Rowland Heights) attracted 5.1% of station area workers. Geographically, ZIP codes of origin for workers commuting to the five mile station area are farther away and more dispersed than ZIP codes of job destinations outside the station area.

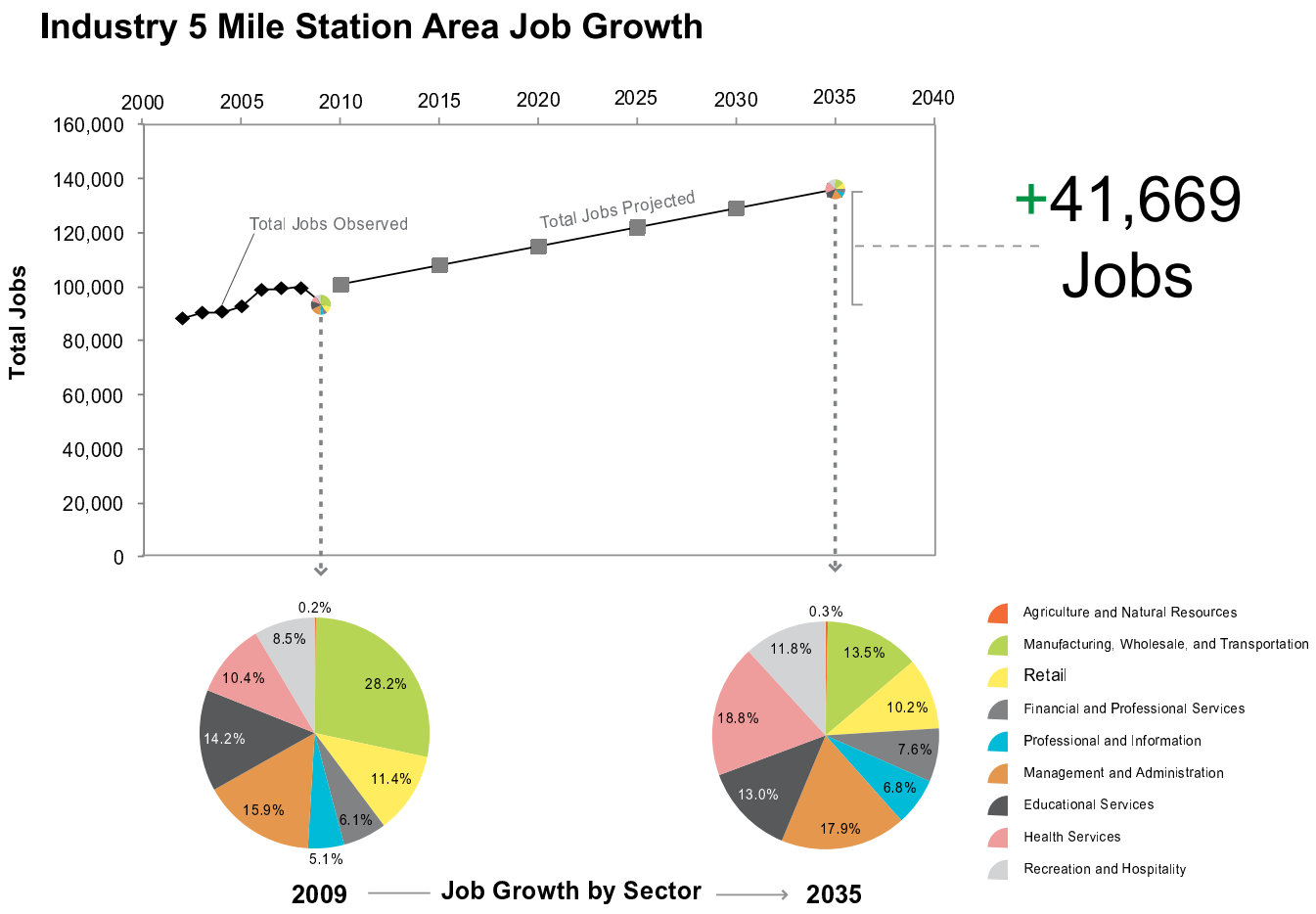



Figure 49. Job Growth Projections (Data Source: LEHD)

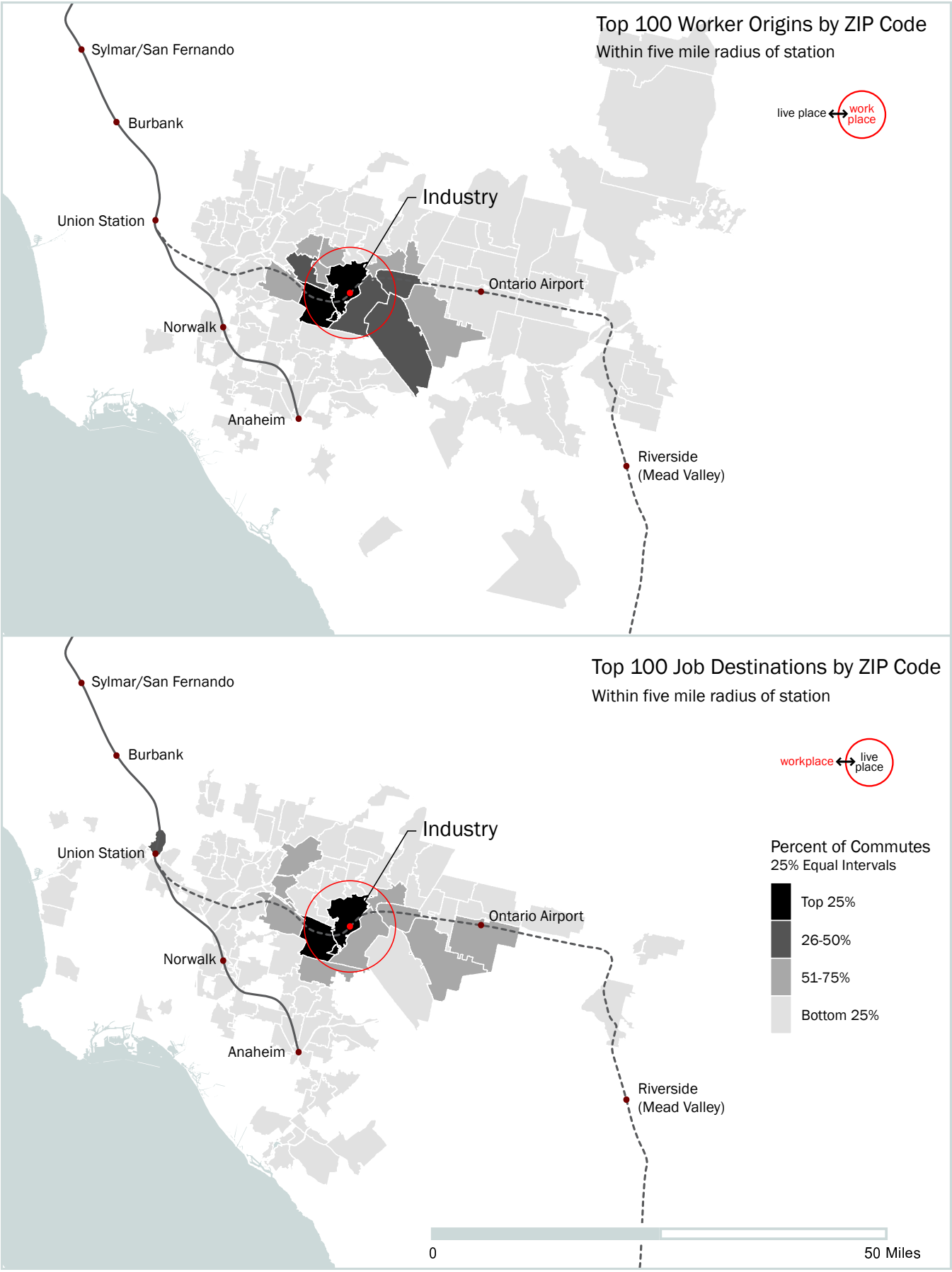



Figure 50. Industry Commute Map (Data Source: LEHD)

**Current Land Use**

Industrial uses (75.3%) dominate the land use pattern within half mile of the station area. Vacant tracts occupy 13% of land and another 6.8% is occupied by uses related to transportation, communication, or power infrastructure. Single family residential uses account for 3.5%, and office and retail commercial combine for 1.1% of the land area. A small multiple family housing development occupies 0.3% of the half mile area (Figure 51).

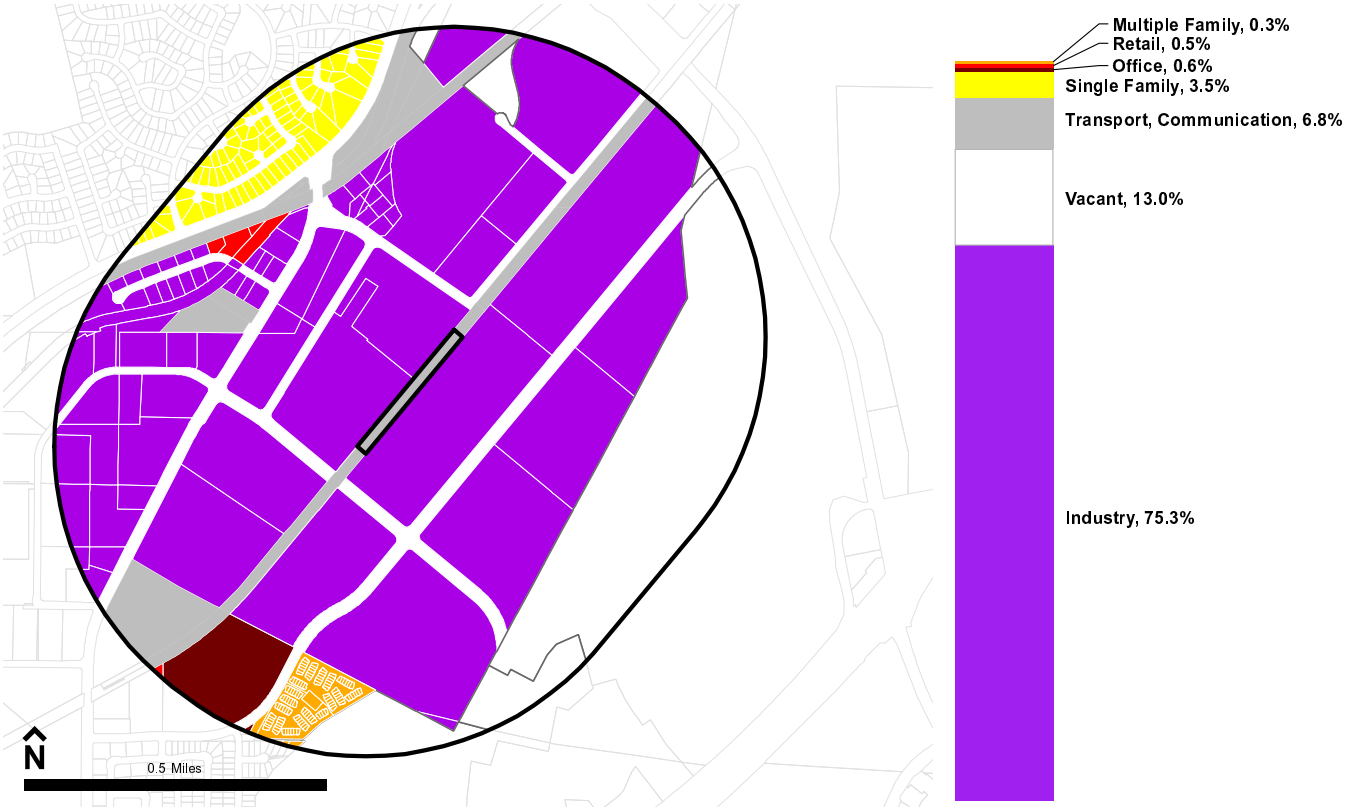



Figure 51. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Industry HSR Station (Data Source: SCAG)

**Subdivision Pattern**

Large single-use industrial land tracts distinguish the half mile station area. Historically a haven for business, Industry and the immediate station area have avoided the rapid population growth of the surrounding San Gabriel Valley, opting rather to preserve land for manufacturing and commercial expansion that accommodated the entrance of the still existing railroad. As a result, several large parcels (>20 acres) of warehouses, office parks and corporate headquarters follow the rail right of way as it meanders through the city and station area. Patches of smaller residential neighborhoods exist on the half mile area's periphery within the neighboring cities of Walnut and Diamond Bar. Parcel sizes in the station area range from 0.04 to 344 acres, the largest tract being hillside open space east of the station. Most parcels range in size from 0.26 to 0.5 acres, a size typical of manufacturing and warehousing sites (Figure 52).

**Major Destinations**

The City of Industry is home to several major manufacturing and transport related corporations many of which are within five miles of the proposed station, including food services giant Alta Dena Dairy and technology company CSC Enterprises (Figure 53). Local educational

## Parcel Characteristics within Half Mile of Industry Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.04 | 344 | 0.25-0.5 |

Figure 52. Subdivision of parcels (Data Source: SCAG)

institutions in the outlying area, however, are the most prominent centers of activity. The California State Polytechnic University at Pomona and Mt. San Antonio College accommodate an estimated combined total of 111,000 students and staff, making them the largest point-source employers in the area. Medical, government, and corporate office centers surround the proposed HSR portal in nearby Diamond Bar, Walnut, and Pomona. Elsewhere, major retail destinations such as the Puente Hills Mall and various regional big box retailers including Wal-Mart exist near the station. The Pacific Palms Resort (a major hotel, conference center, golf, and spa complex) lies partially within the five mile commuter shed (Figure 54).

**Activity and Employment Centers within 5 Miles of Industry Station**

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Education | Cal Poly Pomona | 2.75 | 69,000* |
| Education | Mt, San Antonio College | 2.00 | 42,000* |
| Retail | Puente Hills Mall | 5.00 | 5,000 |
| Civic | City of Diamond Bar Administrative Center | 1.00 | 2,630 |
| Health | American Red Cross Health Center | 3.00 | 1,135 |
| Manufacturing | Alta Dena Dairy | 4.75 | 630 |
| Health | Pomona Regional Healthcare Center | 1.25 | 600 |
| Manufacturing | CSC Enterprises | 4.50 | 370 |
| Recreation/Hospitality | Pacific Palms Resort | 5.00 | - |
| Retail | Walmart Center | 3.75 | - |

*Student and staff estimates

Figure 53. Destinations

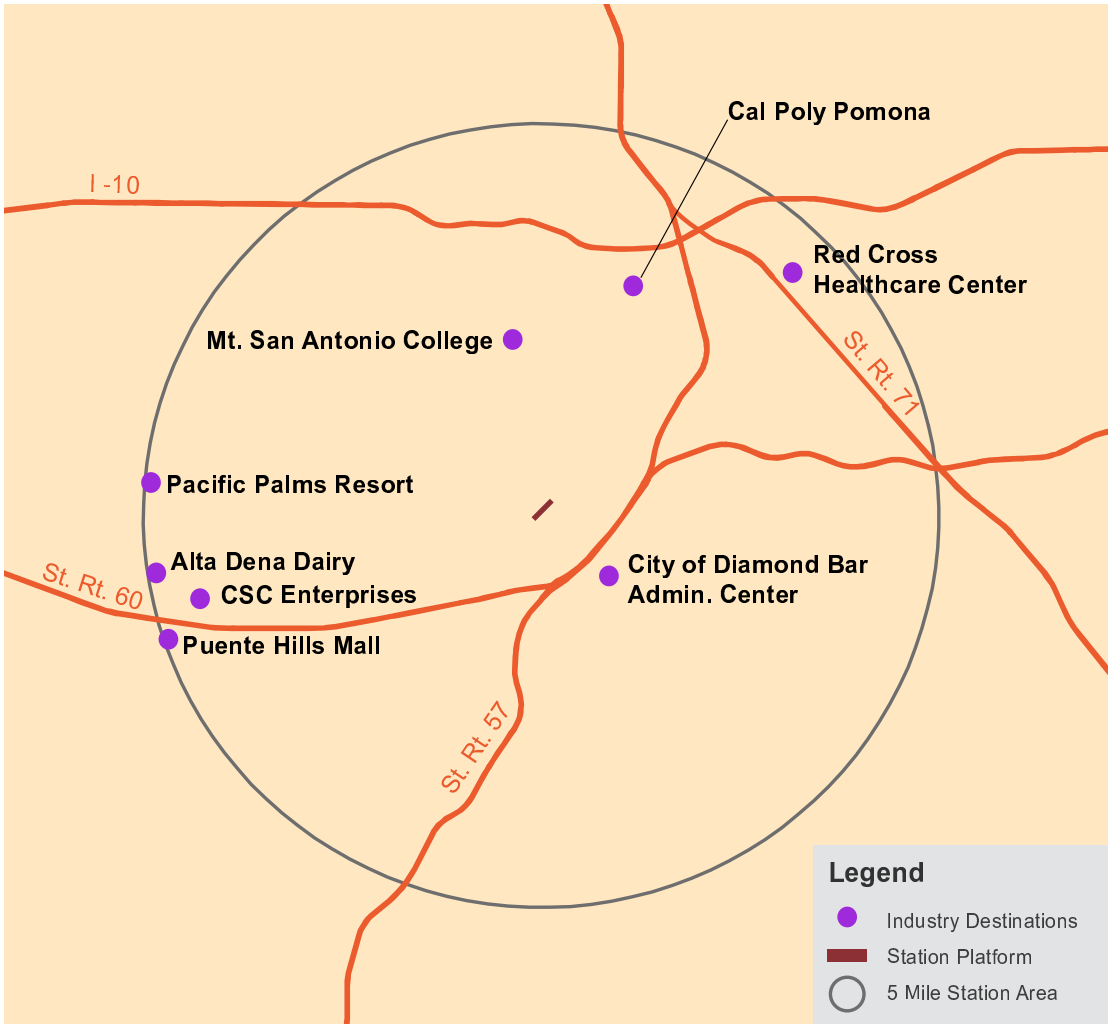



Figure 54. Map of Activity and Employment Centers within 5 miles of Industry HSR Station

### Transportation and Transit Networks

The HSR station in Industry, although well linked to the regional interstate system, is less connected to public transportation networks than other proposed station sites, The closest transit node within half mile of the station is the Industry Metrolink station, 2,650 feet to the west. Express and local buses currently connect riders to Downtown Los Angeles and nearby communities, although large unbroken blocks limit pedestrian mobility to these bus stops (Figure 55). The area is car-dependent, with few nearby amenities, limited pedestrian infrastructure, and no bicycle lanes.

The U.S. Census does not collect data on city level modal split because the city of Industry has a very limited number of resident workers commuting within municipal boundaries.

### Real Estate Market Values and Trends

Existing real estate market conditions in the Industry station area are generally stable, with no extreme highs or lows (Figure 56). Office space is relatively affordable to buy or lease, in part because of city imposed tax breaks for businesses. Within 2.5 miles of the station, average leases for office space are $14 per square foot per year, higher only to Palmdale's and Riverside's. In the same geography, office sales average around $270 per square foot, comparable to prices in

**Transit Network within Half Mile of Industry Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| 57 Freeway (Orange County), 60 Pomona Freeway | Metro express line: 484 (Downtown LA), Metro local line 190/194 (El Monte/Cal Poly)<br><br>Foothill Transit local line 482 (Industry/Pomona) | None | Metrolink-Riverside Line (Downtown LA/Riverside) | None | None | 45, Car Dependent |

Figure 55. Transit Connectivity

Murrieta (Source: Loopnet.com, Geographic Research Inc. 2011). Loopnet's multiple listing service indicates no leasable retail space within the station area, due to a lack of local retail land uses.

In 2010, median home values in census tracts located entirely or partially within a half mile radius of the station were $225,622, a 29.2% increase from 2000. There are few residential properties within a half mile radius, with most housing concentrated in a single family neighborhood to the north and a multiple family development south of the proposed HSR platform, immediately adjacent to the existing Metrolink station.

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | **$360** | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | **19.0%** |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | **$25.12** | $273,569 | **$213,168** | 28.3% |
| Sylmar/San Fernando | **$28.33** | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | **$107** | **$12.52** | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | **$8.17** | $160 | $24.02 | **$123,572** | **$74,106** | **66.8%** |
| Murrieta | $21.23 | $270 | $21.92 | **$295,833** | $180,469 | 63.9% |

**Category High/Category Low**

Source: Loopnet.com, Geographic Research Inc.

Figure 56. Real Estate Market Values

**Development Potential**

Unsurprisingly, Industry is devoted to industrial activities. The city dedicates 92 percent of its land to industry, has few residents, and no business taxes. The City of Industry appears to position itself as a gateway to the San Gabriel Valley. In some ways it has already achieved this, having become a popular investment area for Chinese-American and Chinese businesses. In the process, the city has also emerged as a high-tech import/export center for computer parts, with business links to the Asian marketplace. For convenience, many Chinese entrepreneurs and staff live in nearby Rowland Heights, Hacienda Heights, West Covina, Diamond Bar and Walnut. Industry is also one of the candidates for the location of a proposed Los Angeles Stadium, though if this project were to be realized, it would most likely be located in downtown Los Angeles near Staples Center.

# 3.5 LOS ANGELES

**Introduction**

The portal for HSR in Los Angeles is planned to be located in or near Union Station, the city's major passenger rail terminal and transit station (Figures 57 and 58). Over time, Union Station and its environs have become largely cut off from the downtown area because of the introduction of interstate highway arteries. The central business district of downtown Los Angeles is located close to the geographic center of the metropolitan area. In the period following World War I and accelerating after WW II, first residential development, then shopping, and finally employment became largely decentralized in Los Angeles. While downtown remains the region's largest and densest employment center and its most important administrative, financial, and cultural hub, other important centers of employment have developed in Hollywood, Beverly Hills, Westwood, West Los Angeles and in smaller municipalities around the city. In recent years, downtown Los Angeles has witnessed significant residential growth, adding 27,000 inhabitants and 17,000 housing units since 1999, and advancing towards the promise of becoming a 24-hour urban center.

Figure 57. Map of Los Angeles HSR Station

Figure 58. Aerial Photograph of Los Angeles HSR Station

**Population**

With almost four million residents in 2010 according to the US Census, Los Angeles is the largest city in Los Angeles County and the State of California and the second largest city in the United States, after New York. It will be the largest city served by California HSR. Densely populated (7,528 persons per square mile) by national standards (but far from being as densely populated as New York City or the City of San Francisco), the City of Los Angeles accounts for 39% of all residents in Los Angeles County and 21% of all residents in the six county (Los Angeles,

**Residential Population and Population Density Projections within 5 Miles of Union Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 10,230,219 | 10,645,211 | 11,005,955 | 11,368,021 | 11,720,520 | 12,061,511 | 12,387,715 |
| Los Angeles 5 Mile Station Area | 1,476,835 | 1,514,569 | 1,544,003 | 1,574,168 | 1,603,392 | 1,631,554 | 1,658,524 |
| Los Angeles Half Mile Station Area | 35,405 | 36,180 | 36,791 | 37,598 | 38,395 | 39,194 | 39,948 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 2,502 | 2,604 | 2,692 | 2,781 | 2,867 | 2,950 | 3,030 |
| Los Angeles 5 Mile Station Area | 14,479 | 14,849 | 15,137 | 15,433 | 15,720 | 15,996 | 16,260 |
| Los Angeles Half Mile Station Area | 10,961 | 11,201 | 11,390 | 11,640 | 11,887 | 12,131 | 12,368 |

Figure 59. Residential Population and Population Density Projections within 5 Miles of Industry Station (Data Source: SCAG)

Imperial, Orange, Riverside, San Bernardino and Ventura) metropolitan area. Los Angeles is a minority-majority city, with non-Hispanic white residents accounting for 28.7% of the population. The remaining 71.4% of the city's residents are comprised of Hispanics of all races (48.5%), Asians (11.1%), Blacks (9.2%), and other minorities (2.6%). Between 2000 and 2010, the total population of the City of Los Angeles increased by 97,879, reaching 3,792,621 in 2010. The resulting 2.6% growth rate was lower than the Los Angeles County rate of 3.1% and the statewide growth rate of 10%. Between 2010 and 2035, the city's population is projected to increase by 17% to 4,439,645. Median household income in Los Angeles in 2010 was $48,617 or 83% of the median household income among all Californians (Source: U.S. Census 2010). The median home price in the city in 2010 was $401,000, or 120% of the statewide median home price, having fallen from $521,000 (then 120% of the statewide median) in 2008 (Source: Yahoo Prices.). The homeownership rate (37.9%) is low when compared to the rate of homeownership statewide (57.8%).

In 2010, 1,514,569 residents lived in census tracts located entirely or containing portions within five miles of the station (Source: Southern California Association of Governments). The population density of these census tracts was an average of 14,849 persons per square mile, nearly

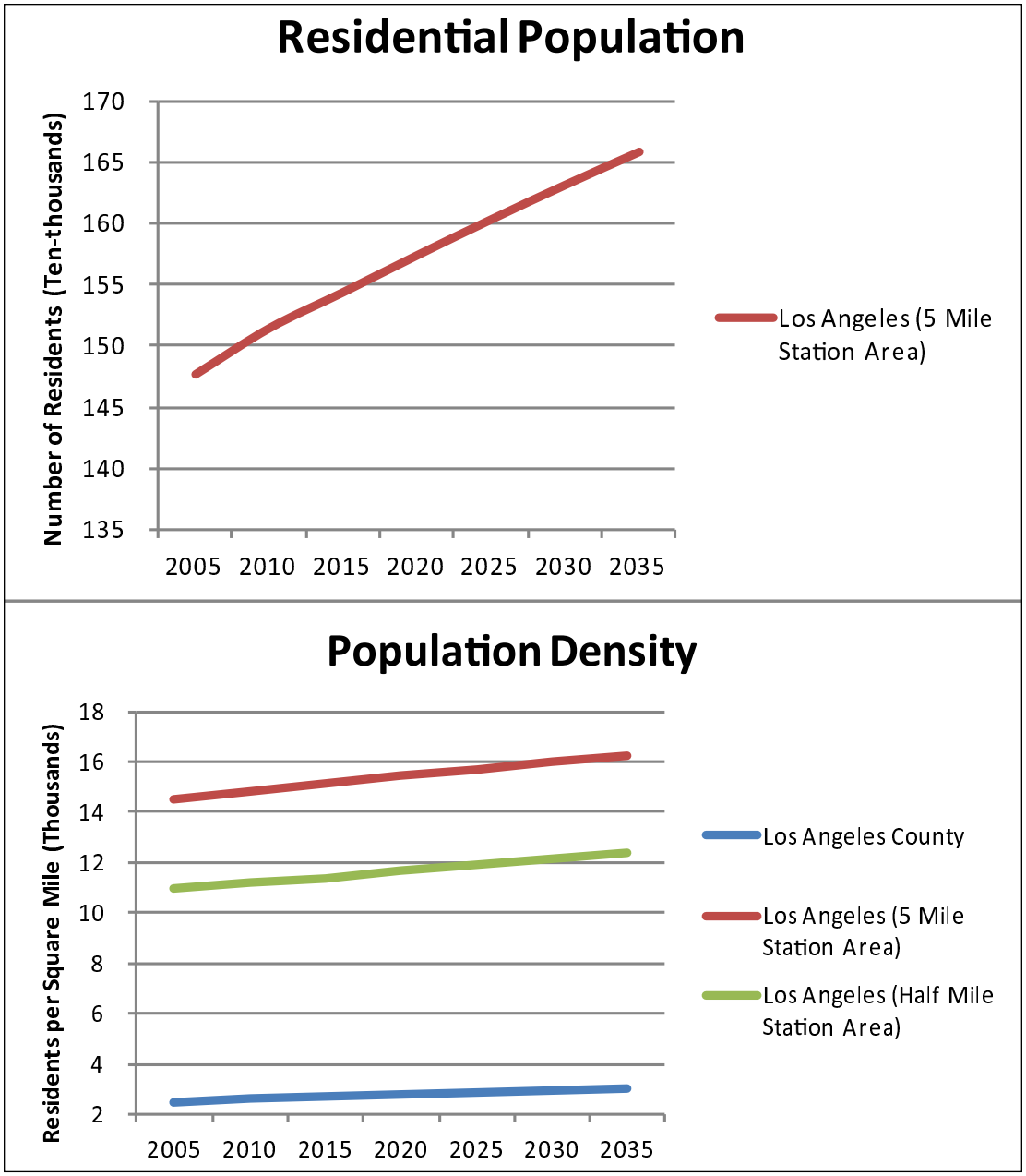



Figure 60. Residential Population and Population Density Projections within 5 miles of Los Angeles HSR Station, 2005-2035 (Data Source: SCAG)

twice the average population density citywide (Figures 59 and 60)(Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half mile of the station, the 2010 population was 36,180 with an average population density of 11,201 persons per square mile (Source: Southern California Association of Governments). The Southern California Association of Governments (SCAG) projects that residential population within five miles of the station will increase to 1,658,524 residents by 2035 or increase by 9.5% between 2010 and 2035. Within half mile of the station the residential population is expected to reach 39,948 or increase by 10.4% within the same period (Source: Southern California Association of Governments).

**Jobs**

A large percentage (40.2%) of the jobs in Los Angeles County are located in the City of Los Angeles. The jobs-housing balance in the city (0.46 jobs for every resident) is akin to the statewide proportion (0.46). Most Angelinos work at jobs within Los Angeles County, with only 3.7% commuting outside the county for work each day. The city has a diverse economic base with the largest sector being education and healthcare, accounting for 24.4 % of total jobs in the city.

Other large sectors include professional and management (17.2%), leisure and hospitality (9.5%), and retail (9.1%). The leading industry clusters, as opposed to job sectors, are tourism and hospitality; professional and business services; entertainment (including motion picture, television, and music production); wholesale distribution; and health services and biomedical. Los Angeles

**Los Angeles 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 613,758 | 703,776 | 793,793 | 883,811 | 973,828 | 1,063,846 | 1,153,863 | 64.0% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 448 | 809 | 1,162 | 1,515 | 1,868 | 2,221 | 2,574 | 218.3% |
| Manufacturing, Wholesale, and Transportation | 174,233 | 154,758 | 137,014 | 119,270 | 101,527 | 83,783 | 66,040 | -57.3% |
| Retail | 38,078 | 40,040 | 41,972 | 43,904 | 45,835 | 47,767 | 49,699 | 24.1% |
| Financial and Professional Services | 38,260 | 41,512 | 45,305 | 49,098 | 52,891 | 56,683 | 60,476 | 45.7% |
| Professional and Information | 52,814 | 60,533 | 67,452 | 74,371 | 81,289 | 88,208 | 95,127 | 57.1% |
| Management and Administration | 105,211 | 144,227 | 167,233 | 190,240 | 213,247 | 236,254 | 259,261 | 79.8% |
| Educational Services | 95,614 | 102,320 | 125,105 | 147,889 | 170,674 | 193,458 | 216,243 | 111.3% |
| Health Services | 60,266 | 65,925 | 71,606 | 77,286 | 82,967 | 88,648 | 94,329 | 43.1% |
| Recreation and Hospitality Services | 48,834 | 53,730 | 58,850 | 63,970 | 69,090 | 74,210 | 79,330 | 47.6% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.03 | 0.05 | 0.07 | 0.09 | 0.11 | 0.13 | 0.15 | 186.5% |
| Manufacturing, Wholesale, and Transportation | 1.14 | 1.03 | 0.92 | 0.81 | 0.70 | 0.59 | 0.48 | -53.6% |
| Retail | 0.57 | 0.58 | 0.58 | 0.58 | 0.59 | 0.59 | 0.60 | 4.2% |
| Financial and Professional Services | 1.00 | 1.09 | 1.16 | 1.22 | 1.29 | 1.35 | 1.42 | 30.2% |
| Professional and Information | 0.84 | 0.84 | 0.83 | 0.83 | 0.82 | 0.81 | 0.80 | -5.3% |
| Management and Administration | 1.08 | 1.34 | 1.44 | 1.53 | 1.60 | 1.66 | 1.72 | 28.4% |
| Educational Services | 1.74 | 1.57 | 1.68 | 1.75 | 1.80 | 1.84 | 1.86 | 18.4% |
| Health Services | 1.02 | 0.91 | 0.85 | 0.80 | 0.76 | 0.72 | 0.69 | -24.5% |
| Recreation and Hospitality Services | 0.74 | 0.73 | 0.71 | 0.70 | 0.68 | 0.67 | 0.66 | -9.1% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 0.27 | 0.25 | 0.24 | 0.23 | 0.22 | 0.22 | 0.21 | -14.6% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -1.00 | -1.00 | -0.99 | -0.99 | -0.99 | -0.99 | -0.98 | -1.1% |
| Manufacturing, Wholesale, and Transportation | -0.91 | -0.91 | -0.92 | -0.92 | -0.93 | -0.94 | -0.95 | 4.4% |
| Retail | -0.95 | -0.95 | -0.95 | -0.94 | -0.94 | -0.94 | -0.94 | -1.1% |
| Financial and Professional Services | -0.92 | -0.91 | -0.90 | -0.89 | -0.88 | -0.87 | -0.86 | -5.1% |
| Professional and Information | -0.93 | -0.93 | -0.92 | -0.92 | -0.92 | -0.92 | -0.92 | -0.8% |
| Management and Administration | -0.91 | -0.89 | -0.87 | -0.86 | -0.85 | -0.84 | -0.83 | -6.0% |
| Educational Services | -0.86 | -0.87 | -0.85 | -0.84 | -0.83 | -0.83 | -0.82 | -5.4% |
| Health Services | -0.92 | -0.92 | -0.92 | -0.93 | -0.93 | -0.93 | -0.93 | 1.0% |
| Recreation and Hospitality Services | -0.94 | -0.94 | -0.94 | -0.93 | -0.93 | -0.93 | -0.93 | -0.4% |

Figure 61. Los Angeles 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

County remains the largest manufacturing center in the U.S., employing 433,200 workers in 2008. The most important manufacturing sectors are: apparel with 55,000 workers; computer and electronic products with 54,100 workers; transportation equipment with 50,500 workers; fabricated metal products with 48,900 workers; and food products with 41,900 workers. The "new economy" of Los Angeles County is expected to be largely driven by technology and supported by the research capabilities of the array of nationally important research universities located in the region.

We estimated that the area within five miles of the station contained 685,772 jobs in 2009 or just less than 17% of all the jobs in Los Angeles County (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Within the same area, we predict the number of jobs to increase to 923,079 by 2035 or increase by over 34% (Figure 61) (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamicspartnership, http://lehdmap.did.census.gov.). The job market here features a higher proportion of educational services and management and administration sector jobs than the California norm (location quotient = 1.67 and 1.35, respectively). This

**Top 100 Worker Origins by ZIP Code - Los Angeles**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 90011 | 11,985 | 1.7% | 26 | 90057 | 4,792 | 0.7% | 51 | 91745 | 3,186 | 0.5% | 76 | 91304 | 2,538 | 0.4% |
| 2 | 90026 | 10,146 | 1.5% | 27 | 90047 | 4,736 | 0.7% | 52 | 91352 | 3,127 | 0.5% | 77 | 91776 | 2,466 | 0.4% |
| 3 | 90004 | 8,133 | 1.2% | 28 | 90043 | 4,630 | 0.7% | 53 | 91744 | 3,077 | 0.4% | 78 | 91042 | 2,380 | 0.3% |
| 4 | 90032 | 6,679 | 1.0% | 29 | 90005 | 4,547 | 0.7% | 54 | 90262 | 3,050 | 0.4% | 79 | 90015 | 2,369 | 0.3% |
| 5 | 90063 | 6,673 | 1.0% | 30 | 90039 | 4,497 | 0.7% | 55 | 91344 | 3,033 | 0.4% | 80 | 91406 | 2,363 | 0.3% |
| 6 | 90006 | 6,669 | 1.0% | 31 | 90007 | 4,402 | 0.6% | 56 | 90036 | 3,026 | 0.4% | 81 | 91405 | 2,356 | 0.3% |
| 7 | 90027 | 6,522 | 0.9% | 32 | 90034 | 4,400 | 0.6% | 57 | 91107 | 2,902 | 0.4% | 82 | 90220 | 2,327 | 0.3% |
| 8 | 90037 | 6,483 | 0.9% | 33 | 91331 | 4,362 | 0.6% | 58 | 91206 | 2,897 | 0.4% | 83 | 91601 | 2,265 | 0.3% |
| 9 | 90044 | 6,448 | 0.9% | 34 | 90016 | 4,351 | 0.6% | 59 | 91402 | 2,876 | 0.4% | 84 | 90241 | 2,259 | 0.3% |
| 10 | 90019 | 6,428 | 0.9% | 35 | 90660 | 4,164 | 0.6% | 60 | 91343 | 2,873 | 0.4% | 85 | 90028 | 2,229 | 0.3% |
| 11 | 90033 | 6,398 | 0.9% | 36 | 90012 | 4,133 | 0.6% | 61 | 90025 | 2,861 | 0.4% | 86 | 90631 | 2,189 | 0.3% |
| 12 | 90042 | 6,304 | 0.9% | 37 | 90201 | 3,954 | 0.6% | 62 | 91001 | 2,847 | 0.4% | 87 | 91710 | 2,132 | 0.3% |
| 13 | 90022 | 6,051 | 0.9% | 38 | 90650 | 3,703 | 0.5% | 63 | 90731 | 2,813 | 0.4% | 88 | 90744 | 2,131 | 0.3% |
| 14 | 90023 | 5,959 | 0.9% | 39 | 90062 | 3,656 | 0.5% | 64 | 90045 | 2,802 | 0.4% | 89 | 90035 | 2,119 | 0.3% |
| 15 | 90255 | 5,892 | 0.9% | 40 | 91770 | 3,646 | 0.5% | 65 | 91606 | 2,796 | 0.4% | 90 | 91790 | 2,117 | 0.3% |
| 16 | 91801 | 5,778 | 0.8% | 41 | 90001 | 3,641 | 0.5% | 66 | 91104 | 2,795 | 0.4% | 91 | 91106 | 2,115 | 0.3% |
| 17 | 90065 | 5,751 | 0.8% | 42 | 91605 | 3,598 | 0.5% | 67 | 90059 | 2,735 | 0.4% | 92 | 90230 | 2,111 | 0.3% |
| 18 | 90280 | 5,715 | 0.8% | 43 | 91754 | 3,554 | 0.5% | 68 | 91214 | 2,715 | 0.4% | 93 | 91780 | 2,091 | 0.3% |
| 19 | 90018 | 5,701 | 0.8% | 44 | 90066 | 3,437 | 0.5% | 69 | 90745 | 2,709 | 0.4% | 94 | 91706 | 2,076 | 0.3% |
| 20 | 90020 | 5,567 | 0.8% | 45 | 90041 | 3,383 | 0.5% | 70 | 90270 | 2,703 | 0.4% | 95 | 90247 | 2,071 | 0.3% |
| 21 | 90003 | 5,282 | 0.8% | 46 | 91803 | 3,381 | 0.5% | 71 | 90250 | 2,643 | 0.4% | 96 | 90017 | 2,067 | 0.3% |
| 22 | 90031 | 5,235 | 0.8% | 47 | 91335 | 3,335 | 0.5% | 72 | 91205 | 2,632 | 0.4% | 97 | 91709 | 2,045 | 0.3% |
| 23 | 90640 | 5,141 | 0.7% | 48 | 90008 | 3,272 | 0.5% | 73 | 91030 | 2,625 | 0.4% | 98 | 90221 | 2,032 | 0.3% |
| 24 | 90029 | 4,874 | 0.7% | 49 | 90805 | 3,235 | 0.5% | 74 | 90046 | 2,613 | 0.4% | 99 | 93550 | 2,004 | 0.3% |
| 25 | 91342 | 4,849 | 0.7% | 50 | 90002 | 3,193 | 0.5% | 75 | 90038 | 2,572 | 0.4% | 100 | 91775 | 1,987 | 0.3% |

**Top 100 Worker Destinations by ZIP Code - Los Angeles**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 90015 | 21,815 | 5.3% | 26 | 90057 | 3,317 | 0.8% | 51 | 90046 | 1,953 | 0.5% | 76 | 91205 | 1,344 | 0.3% |
| 2 | 90012 | 18,633 | 4.5% | 27 | 90013 | 3,276 | 0.8% | 52 | 90404 | 1,946 | 0.5% | 77 | 91201 | 1,341 | 0.3% |
| 3 | 90058 | 8,855 | 2.1% | 28 | 90022 | 3,059 | 0.7% | 53 | 90020 | 1,877 | 0.5% | 78 | 91367 | 1,328 | 0.3% |
| 4 | 90017 | 6,780 | 1.6% | 29 | 90640 | 2,880 | 0.7% | 54 | 90255 | 1,866 | 0.5% | 79 | 90042 | 1,311 | 0.3% |
| 5 | 90021 | 6,516 | 1.6% | 30 | 90026 | 2,876 | 0.7% | 55 | 91105 | 1,864 | 0.5% | 80 | 91206 | 1,304 | 0.3% |
| 6 | 90007 | 6,441 | 1.6% | 31 | 90031 | 2,840 | 0.7% | 56 | 91801 | 1,839 | 0.4% | 81 | 91733 | 1,295 | 0.3% |
| 7 | 90010 | 5,726 | 1.4% | 32 | 90014 | 2,800 | 0.7% | 57 | 91203 | 1,826 | 0.4% | 82 | 90034 | 1,287 | 0.3% |
| 8 | 90027 | 5,614 | 1.4% | 33 | 90038 | 2,776 | 0.7% | 58 | 90019 | 1,806 | 0.4% | 83 | 90211 | 1,287 | 0.3% |
| 9 | 90023 | 5,603 | 1.4% | 34 | 91101 | 2,747 | 0.7% | 59 | 90201 | 1,785 | 0.4% | 84 | 90035 | 1,263 | 0.3% |
| 10 | 90040 | 5,374 | 1.3% | 35 | 90670 | 2,727 | 0.7% | 60 | 90032 | 1,774 | 0.4% | 85 | 90068 | 1,261 | 0.3% |
| 11 | 90048 | 5,137 | 1.2% | 36 | 90069 | 2,721 | 0.7% | 61 | 91608 | 1,751 | 0.4% | 86 | 90301 | 1,261 | 0.3% |
| 12 | 91504 | 4,985 | 1.2% | 37 | 90210 | 2,676 | 0.6% | 62 | 90063 | 1,741 | 0.4% | 87 | 91746 | 1,261 | 0.3% |
| 13 | 90045 | 4,769 | 1.2% | 38 | 90039 | 2,615 | 0.6% | 63 | 91506 | 1,712 | 0.4% | 88 | 90066 | 1,233 | 0.3% |
| 14 | 90024 | 4,472 | 1.1% | 39 | 91754 | 2,548 | 0.6% | 64 | 90220 | 1,709 | 0.4% | 89 | 90250 | 1,226 | 0.3% |
| 15 | 90071 | 4,263 | 1.0% | 40 | 90004 | 2,538 | 0.6% | 65 | 90037 | 1,704 | 0.4% | 90 | 91103 | 1,224 | 0.3% |
| 16 | 90028 | 4,152 | 1.0% | 41 | 90049 | 2,510 | 0.6% | 66 | 90245 | 1,669 | 0.4% | 91 | 91107 | 1,206 | 0.3% |
| 17 | 90067 | 3,991 | 1.0% | 42 | 90016 | 2,369 | 0.6% | 67 | 90401 | 1,663 | 0.4% | 92 | 90660 | 1,171 | 0.3% |
| 18 | 90230 | 3,985 | 1.0% | 43 | 90212 | 2,320 | 0.6% | 68 | 91731 | 1,493 | 0.4% | 93 | 90703 | 1,167 | 0.3% |
| 19 | 91505 | 3,896 | 0.9% | 44 | 91204 | 2,312 | 0.6% | 69 | 90001 | 1,470 | 0.4% | 94 | 91761 | 1,147 | 0.3% |
| 20 | 90036 | 3,870 | 0.9% | 45 | 90232 | 2,301 | 0.6% | 70 | 91706 | 1,420 | 0.3% | 95 | 91106 | 1,142 | 0.3% |
| 21 | 90033 | 3,699 | 0.9% | 46 | 90025 | 2,258 | 0.5% | 71 | 90280 | 1,414 | 0.3% | 96 | 90405 | 1,133 | 0.3% |
| 22 | 90005 | 3,578 | 0.9% | 47 | 90065 | 2,120 | 0.5% | 72 | 91803 | 1,408 | 0.3% | 97 | 90505 | 1,130 | 0.3% |
| 23 | 90011 | 3,549 | 0.9% | 48 | 90248 | 2,028 | 0.5% | 73 | 91770 | 1,404 | 0.3% | 98 | 91355 | 1,087 | 0.3% |
| 24 | 91502 | 3,432 | 0.8% | 49 | 90029 | 1,988 | 0.5% | 74 | 91030 | 1,370 | 0.3% | 99 | 90041 | 1,086 | 0.3% |
| 25 | 90006 | 3,322 | 0.8% | 50 | 90064 | 1,979 | 0.5% | 75 | 90018 | 1,346 | 0.3% | 100 | 91436 | 1,061 | 0.3% |

Figure 62. Top 100 Worker Origins and Destinations (Data Source: LEHD)

trend will be sustained through 2035 (Figure 63). Agriculture and natural resource sector jobs in this area are just above the California average, but this sector will witness the largest growth (in terms of positive percent change) of all sectors in the area, most likely in relationship to the area's traditional role as distribution center. Additionally, educational services and management and professional sectors will also experience job growth in the station area between 2009 and 2035 (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamicspartnership, http://lehdmap.did.census.gov.). This area is jobs-rich and features the highest gap index (0.25 in 2009 and 0.21 in 2035) of all the station areas under study.

Of those employed within five miles of the station, just over 80% live outside of the same area. Of those employed persons living within five miles of the station, more than 66% work outside the same area, suggesting high rates of worker mobility both into and outside of the station area for work. Figures 62 and 64 illustrate the top 100 work origins and destinations for the station area by zip code. Of all workers in the station area, 1.7% originated in the top ranking ZIP code (90011, South Central Los Angeles), while the top ZIP code for job destinations outside the station area (90015, Downtown Los Angeles) attracted 5.3% of station area workers. Geographically, origin ZIP codes of workers commuting to the five mile station area are farther away and more dispersed than ZIP codes of job destinations outside the station area.

**Current Land Use**

Land uses within a half mile of the station area are dominated by transportation, communication and power uses (39.1%) related to the functioning of Union Station and nearby freight operations (Figure 65). Public uses associated with the civic center of downtown Los Angeles and county administrative offices occupy almost a quarter of the total land. Other uses include commercial office (17%), and industrial activities (8.7%). Three percent of land is currently vacant and 2.6% is used for residential facilities, all of which are multiple family dwellings. Three parcels categorized as open space account for 1.5% of total land.

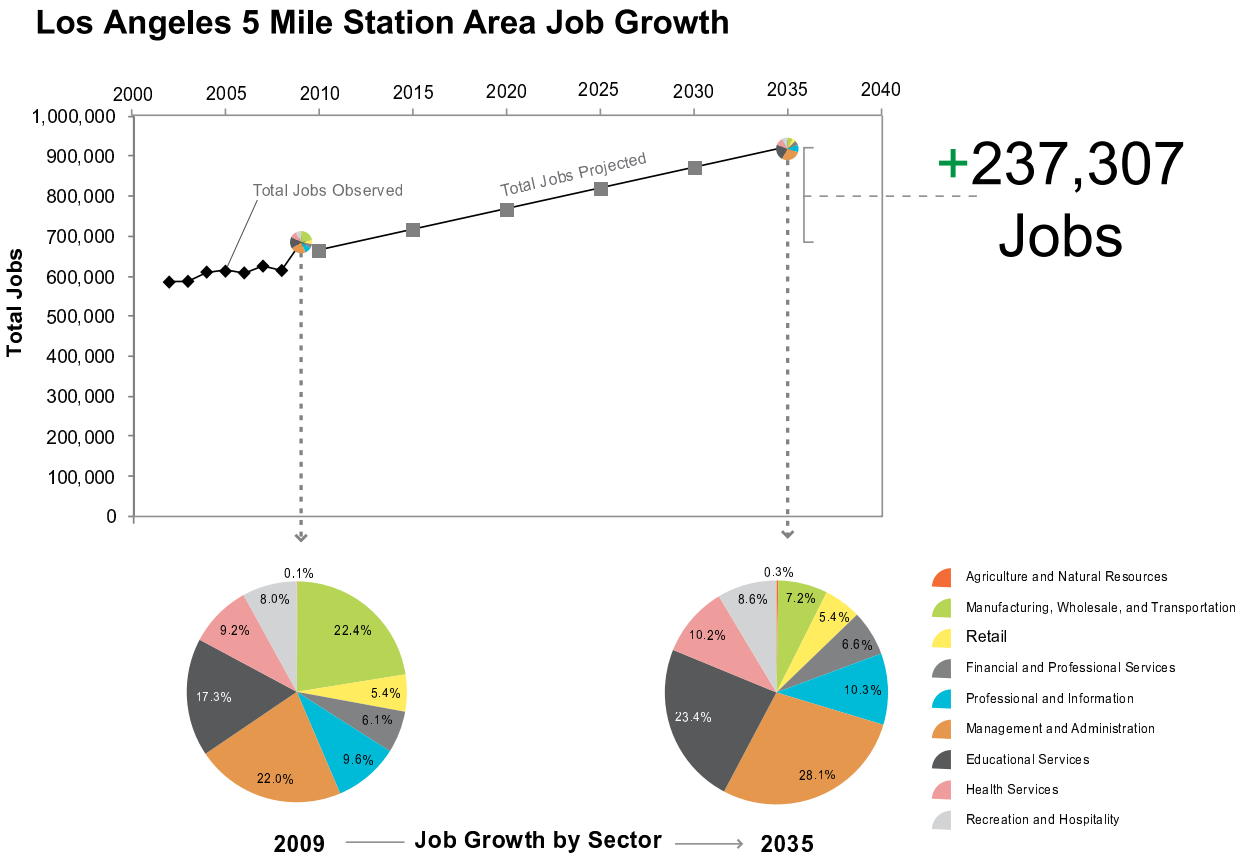



Figure 63. Job Growth Projections (Data Source: LEHD)

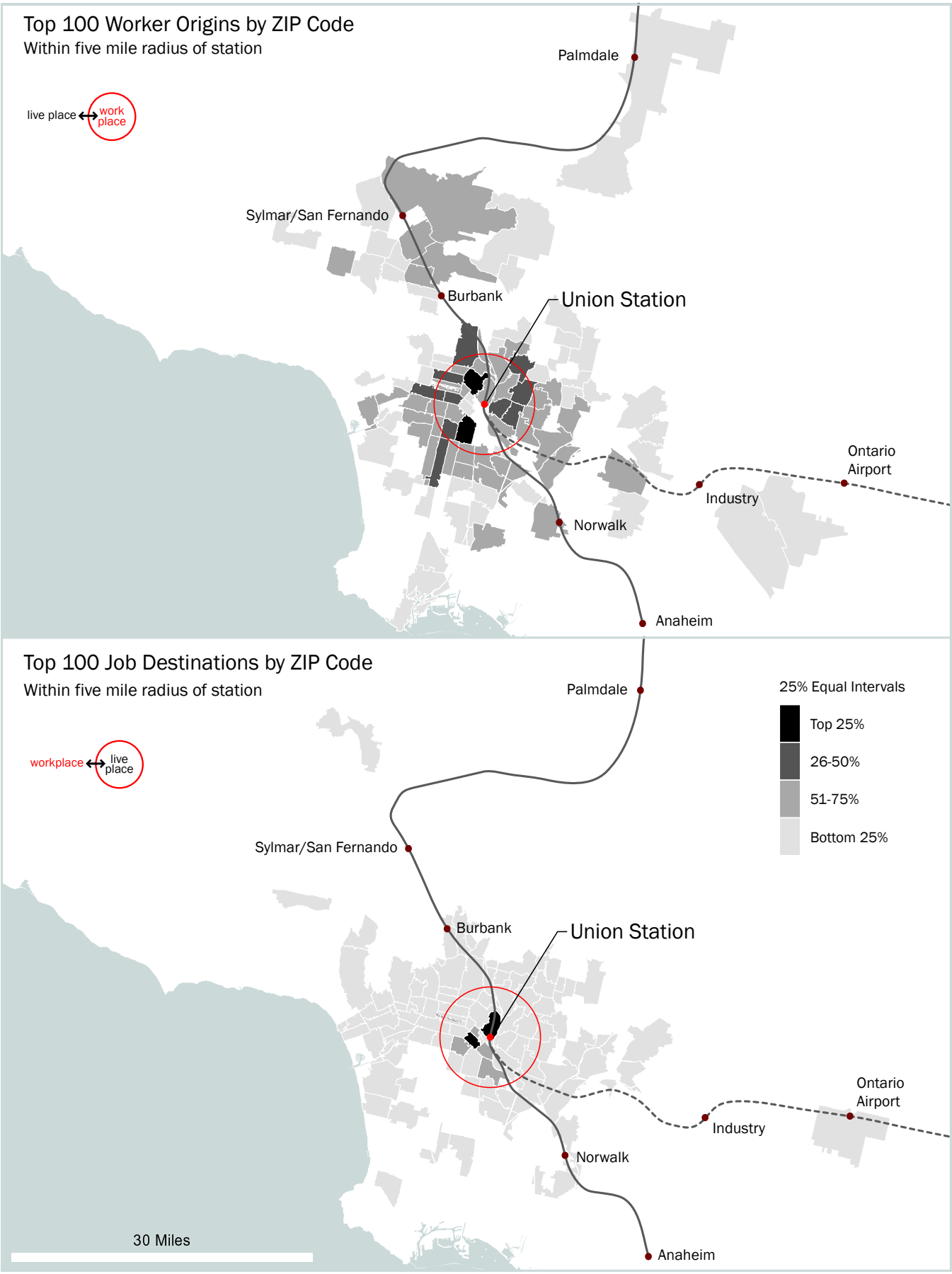



Figure 64. Los Angeles Commute Map (Data Source: LEHD)

**Subdivision Pattern**

The half mile area around the station includes the area's original colonial settlement, the Pueblo de Los Angeles. Several periods of urban development and redevelopment have left their trace in the varying orientation of the street grids and block sizes. These grids, in turn, have been interrupted by the introduction of the railroad in the nineteenth century and the freeway system in the century that followed. Land in the area has also been the subject of subdivision and reassembly from the time of the original Spanish land grant to the present. Parcel sizes in the area range from 0.001 to 80.1 acres, with the largest number of parcels being in the 0.11 to 0.25 acres range (Figure 66). The largest parcels are currently occupied by railroad or highway rights-of-way.

**Major Destinations**

The Los Angeles Civic Center, including major city, county, and state administrative offices, is located within half mile of Union Station (Figures 67 and 68). The Grand Avenue cultural complex, including the Los Angeles Music Center, Disney Hall, Disney Hall, the Museum of Contemporary Art, and the new Broad Museum, is within a mile of the station. Dodger Stadium, the Los Angeles Convention Center, the Staples Center, and LA Live are within two miles, as are several important employment sub-centers and the Los Angeles County-USC Medical Center. The University of Southern California and California State University at Los Angeles are within four miles of Union Station.

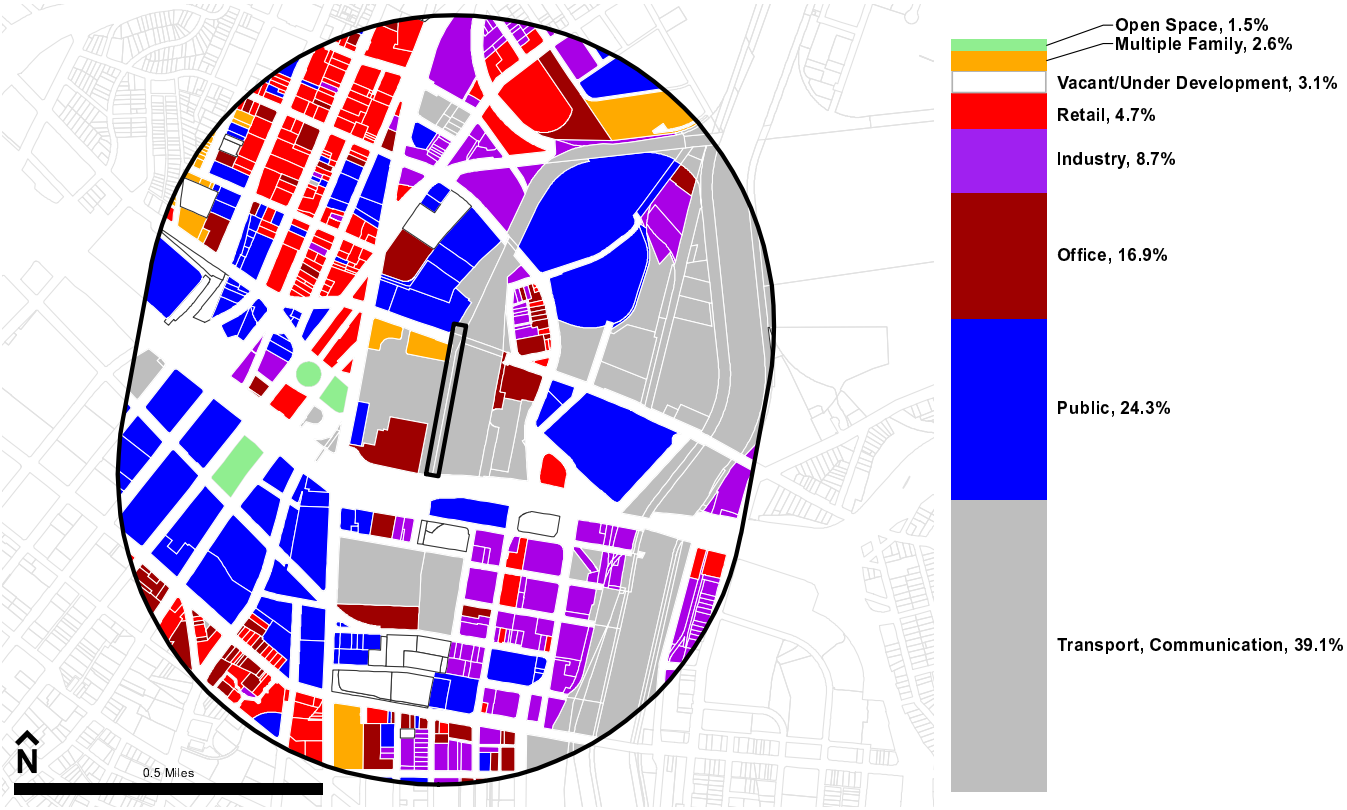



Figure 65. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Los Angeles HSR Station (Data Source: SCAG)

## Parcel Characteristics within Half Mile of Los Angeles Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.001 | 80.1 | >10 |

Figure 66. Subdivision of parcels (Data Source: SCAG)

**Activity and Employment Centers within 5 Miles of Los Angeles Station**

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Activity | LA Coliseum | 4.10 | 93,607 (on event days) |
| Employment | Civic Center | 0.50 | 56,200 |
| Activity | Dodger Stadium | 1.20 | 56,000 (on game days) |
| Employment/Activity | Downtown Financial District | 1.60 | >36,000 |
| Education | Cal State LA | 3.90 | 21,000 |
| Employment/Education | University of Southern California | 3.80 | 13,000 |
| Activity | Staples Center | 2.00 | 10,959 |
| Activity | Natural History Museum of LA (Exposition Park) | 4.00 | 10,959 |
| Activity | LA Convention Center | 2.30 | 6,849 |
| Retail | Fashion District | 1.80 | 4,110 |
| Activity | The Music Center/Disney Hall | 0.60 | 3,562 |
| Employment/Health | LAC+USC | 1.70 | 2,504 |
| Activity | MOCA | 0.80 | 647 |

Figure 67. Destinations

Figure 68. Map of Activity and Employment Centers within 5 miles of Los Angeles HSR Station

**Transportation and Transit Networks**

Los Angeles County's transportation network is extensive. In addition to the ports and the Los Angeles International Airport (LAX), there are two other busy commercial airports (Bob Hope [in Burbank] and Long Beach). LAX is located approximately nineteen miles to the southwest of the proposed high-speed rail station in downtown Los Angeles. The Burbank Airport is less than fourteen miles from the high-speed rail station and may also be accessible from the high-speed rail network. The Santa Ana Freeway (U.S. Route 101) and Interstate 5 remain major coastal and inland north–south links to San Francisco and beyond, and can both be accessed near the proposed high speed rail station. The Santa Monica Freeway (Interstate 10), a major national east-west artery, and State Route 110 and Interstate 110, which connect downtown Los Angeles to Pasadena and the Port of Los Angeles respectively, are also within close proximity of the proposed station. In addition, there are many public transit options that can be accessed in or near Union Station, including Amtrak, Metrolink (commuter heavy rail), and MetroRail (subway and light rail) and various express and local bus options (Figure 69). In all, eighty-three bus lines and nineteen rail lines can be accessed in the downtown area. Downtown Los Angeles is more walkable when compared to many other parts of the city and relatively bike-friendly.

At the city level, most commuters (67.3%) drove alone to work in 2007, a 17% increase from 2000 (Figure 70). Carpooling (11.3% of commute trips) was the second most common mode, although down 12.6% over the seven year period. At 11%, rates of public transit ridership were the highest among studied cities. Walking constituted 3.5% of commutes, while bicycle or motorcycle commutes increased dramatically since 2000 (41%) this mode only accounted for 1.7% of all trips. Working at home, preferred by 4.7% of workers, became significantly more popular at the city level (Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

**Transit Network within Half Mile of Los Angeles Union Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| Hollywood Freeway (Route 101) | Metro Express: Lines 439 442, 485, 487, and 489; Metro Local: 33 (Weeknights), 40, 42, 45, 55, 50, 68, 70, 71, 76, 78, 79, 83, 84, 378; Metro Rapid: 704, 728, 733, 740, 745, and 770<br><br>Foothill Transit: Lines 481, 493, 497, 498, 499, 699<br><br>Santa Monica Big Blue Bus: Line 10<br><br>Torrance Transit Lines 1 and 2<br><br>LADOT Dash: Lines B and D (Weekdays only); DD (Weekends only) | Amtrak Pacific Surfline Line | Metrolink-Antelope Valley Line, Orange County Line, Riverside Line, San Bernardino Line, Ventura County Line, and 91 Line | Metro Rail: Gold Line, Red Line, Purple Line, and Silver Line | 2 Class III Bike Route | 86, Very Walkable |

Figure 69. Transit Connectivity

| Commutes | 2000 | | 2007 | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 1,494,895 | 100.0 | 1,708,190 | 100.0 | 14.3% | Yes |
| Drove alone | 982,735 | 65.7 | 1,149,669 | 67.3 | 17.0% | Yes |
| Carpooled | 220,405 | 14.7 | 192,572 | 11.3 | -12.6% | Yes |
| Public transit | 150,700 | 10.1 | 187,880 | 11.0 | 24.7% | Yes |
| Walked | 53,385 | 3.6 | 60,365 | 3.5 | 13.1% | Yes |
| Taxi, motorcycle, bike, other | 25,975 | 1.7 | 36,707 | 2.1 | 41.3% | Yes |
| Worked at home | 61,695 | 4.1 | 80,997 | 4.7 | 31.3% | Yes |

Figure 70. Modal Split: City of Los Angeles (Data Source: AASHTO/CTPP)

**Real Estate Market Values and Trends**

Commercial and residential property values remained generally stable between 2000 and 2010 despite dramatic increases and decreases associated with economic recession. Commercial real estate leases for properties within 2.5 miles of the proposed HSR portal are $25.24 per square foot per year, second only to the Sylmar/San Fernando station area (Figure 71). In the same geography, office sales averaged around $253 per square foot for properties sold since 2006, more expensive than sales prices in Ontario, Riverside, and Palmdale, and $10 below the county average. Retail space leases for an average of $24.75, second only to Burbank and Anaheim.

In 2010, the median home value in census tracts located partially or entirely within a half mile of the station was $165,000, a 20% increase over the past decade (Source: Loopnet.com, Geographic Research Inc. 2011). Multiple family dwellings are the only housing types in the half mile station area.

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | **$360** | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | **19.0%** |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | **$25.12** | $273,569 | **$213,168** | 28.3% |
| Sylmar/San Fernando | **$28.33** | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | **$107** | **$12.52** | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | **$8.17** | $160 | $24.02 | **$123,572** | **$74,106** | **66.8%** |
| Murrieta | $21.23 | $270 | $21.92 | **$295,833** | $180,469 | 63.9% |

**Category High**/**Category Low**

Source: Loopnet.com, Geographic Research Inc.

Figure 71. Real Estate Market Values

**Development Potential**

As illustrated above, the Los Angeles station area is a major employment center with an existing concentration of knowledge-based jobs in educational services, management and public administration. Given that HSR systems have already been observed to benefit places that are well connected to global business activity, growth concentrated around Union Station is likely. While increased regional accessibility may not affect public sector administrative employment, the potential to attract financial, informational and business service firms as a result of accessibility and agglomeration benefits appears tangible. Hotels, retail, and other amenities—now located at a distance from the Union Station area—should be part of any plans for its high-end redevelopment. Historically, regeneration has been focused on the western part of downtown, and most recently on leisure and entertainment activities. The regeneration of Union Station will, therefore, represent a change in focus for the city's redevelopment apparatus. At the same time, pressures on the state's publicly funded urban redevelopment infrastructure, resulting from diminished local and state revenues, will mean that in the near and midterm, regeneration of the area around Union Station will have to be either largely private or achieved through public-private partnerships in which the private sector has a large role. The recent purchase of Union Station by the Los Angeles County Metropolitan Transportation Authority from Catellus Operating Limited suggests that the future planning for the station, including its expansion and adaptive re-use and the redevelopment of its environs will largely be in the hands of the transit agency and its private sector partners. While the area already includes an active, multimodal transit hub, particular attention will need to be paid to stitching together the western, northern, and eastern portions of downtown that are currently separated by infrastructure and topography. Expanding the Santa Ana Freeway near Union Station should be realized to achieve these connections.

As the interviews indicated, Union Station presents some unique challenges:

1.It is a big historical facility and transportation hub that should be significantly expanded to accommodate a new transportation mode;

2.it needs significant engineering and urban design ingenuity and economic resources to re-stitch the area to its larger urban fabric; and

3.it requires savvy land use policies and incentives to trigger private development interest and re-energize a rather atrophic real estate market in the adjacent area. Nevertheless, and despite these challenges, local planners cannot afford to turn their back to Union Station because as city planner Patricia Diefenderfer emphasized: "Union Station is a landmark; it is the regional transportation center in the largest city in the region, where the most jobs are. It is everybody's station."

**Local Perspectives**

Interviews with representatives from the Community Redevelopment Agency of Los Angeles, Los Angeles County Metropolitan Transportation Authority, Los Angeles Department of City Planning, and the Natural Resources Defense Council complemented the profile of the Los Angeles station case study and gave information about how the city prepares for the HSR. Unlike San Jose, Anaheim, or Fresno where local planners hope that the HSR would increase their prominence, Los Angeles is already a global city. According to our interviewees, the mayor is supportive of the HSR project because he believes it will be a vital economic development tool and will provide better connections between Los Angeles and other parts of the state. Nevertheless, Los Angeles has not jumped into the HSR "bandwagon" as proactively or enthusiastically as San Jose, Fresno, or Anaheim, which have already prepared station area plans and hired design consultants. According to Patricia Diefenderfer, a city planner in the Los Angeles Department of City Planning who oversees long-range planning for the Central City community plan area, the city is still at "the very early phases of planning; we are actually just kind of getting into this now, evaluating how the project will get integrated into the landscape." Attributing this relative lack of action to a "bare bones staff" and bad economic climate, she admits that the city has not yet considered how to better facilitate development around Union Station (Diefenderfer interview).

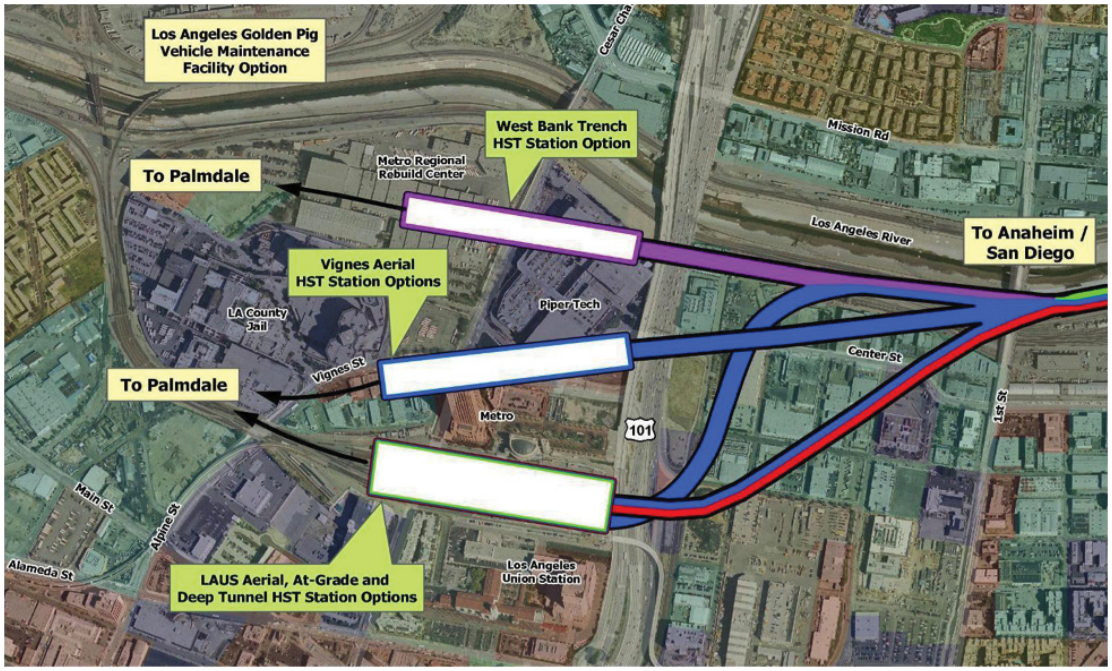



Figure 72. HSR at Union Station Alternative Locations

**Perceived Benefits**

The city is particularly interested in two possible alternatives for a Downtown Los Angeles station location:

1.an aerial station built atop the existing rail tracks at Union Station; or

2.an aerial or trench station to the east of Union Station, identified as the Union Station East/Vignes option (Figure 72). A third alternative identified by the CAHSRA, the so-called "West Bank" option, even further to the east of Union Station and along the western edge of the Los Angeles River, is not recommended by the city because of anticipated adverse effects on existing rail and city services. According to Diefenderfer:

*"Both preferred options would provide tremendous potential for the City to realize economic development goals for the surrounding area. ...The improved transportation services will support citywide economic development activities and related economic development revitalization initiatives. ...We all believe that it will have a positive impact on the economy if it is done right and is well connected to other transit, and well integrated into the larger urban form... Improving mobility is going to generate jobs and help the economy"* (Diefenderfer interview).

Currently, Union Station is cut off from the rest of the downtown fabric by freeway ramps and railroad tracks, while the land around the station is occupied by low density industrial and institutional uses. Jeff Carpenter of the city's Community Redevelopment Agency (CRA) believes that "The land would have significant economic value in the long term and it could possibly be redeveloped, if it were carefully done as a comprehensive project." As discussed by Diefenderfer, the coming of the HSR would create new development sites and generate opportunities for joint development projects. It may even help "re-stitch Union Station back into downtown. This would involve some reconfiguration of streets and freeway ramps, so you can envision a whole new little neighborhood cropping up that would infill the area from Civic Center to Union Station" (Diefenderfer interview).

**Vision**

The issue of urban form connectivity resonates with Joel Reynolds of the Natural Resource Defense Council, who views the HSR terminal not only as a catalyst for a greater transportation network but as one piece of a downtown patchwork quilt that includes mixed uses, parklands, a restored river, and a transportation hub. Diefenderfer believes that this can happen if the Union Station HSR project is designed in creative ways through consolidating existing railway tracks, trenching and covering to better access the LA River, and creating new open spaces and pedestrian ways. This vision that requires a strong urban design intervention would create a much different urban form from the car-centric and fragmented current milieu. Jeff Carpenter of CRA agrees, calling this vision "European" - a place where you can walk around and where you would live a very active civic life, and which is connected comfortably and unobtrusively to the rest of downtown.

*"There is a fairly strong focus and conviction that Union Station is to be a contemporary, urban rail transit hub, and in that sense it needs to be a very pedestrian friendly, livable urban space. It needs to be an area that is much more person- and patron-centric than perhaps has often been the case with transportation planning in the US in the previous decades"* (Carpenter interview).

The downtown-to-downtown connection is indeed an advantage of HSR over airline travel, touted by the CAHSRA. According to Carpenter, the effort should focus on "being able to travel the length and breadth of the state by simply walking down the street, and walking into the station with your bag and taking an escalator up to a platform." For this reason, he disagrees with those consultants who tend to think of designing HSR stations like designing airports. As he explained:

*"The designs that we were presented with, the design orientation or approach that was explained to us is really taking a lot of lessons from airports (like moving sidewalks and long pedestrian linkages that have to be handled). ...Emphasis is placed on very large parking structures and rental car facilities above all else, which strikes me as not the right approach, not the right emphasis. The design needs to be much more*

*focused on what is the potential of the urban realm, what is the potential of all the alternative modes of access at Union Station. That's really the reason we are going to Union Station to take advantage of all those connections. If we really wanted to have a giant car park, we obviously should not be taking it to Union Station; we should be taking it to some peripheral location"* (Carpenter interview).

While there is considerable desire among planners in station-cities to produce a high-density, mixed use and transit-oriented station environment, Carpenter is quick to point out that first and foremost designs should fit the particular local contexts and needs. As he emphasized:

*"We are at a point where transit-oriented development is really being challenged to become more deep and variegated as opposed to more of a gloss outlook of just densifying around transit stations. I think any HSR terminal has a potential to become a hub of commerce and activity but that really needs to respond to a greater vision of what the community needs. In a Central Valley community that is essentially a rural hub, that locale has to use this mode of transportation to create an impetus to use alternative forms of transportation. It may be the one viable place where bus transit can come together, where there could be other community transportation operations concentrated, where there could also be certain residential and village-scale development. You aren't going to build high-rise office buildings in Turlock but you could use the stimulus of high-speed rail, along with other investments in alternative mobility and pedestrian-oriented design to create a very lively focus of activity and a village atmosphere where the unique environment for commerce as well as living in a community would be present. The CAHSRA is saying to every community to find a way to capture the economic and social impetus that this provides, and respond to it with a proactive land use initiative that's appropriate to your community. While the visions that they put out tend to be stereotypical high density, highly urbanized visions, I wouldn't want to accuse them of besmirching every community with a single design. I think they are really challenging each individual locality"* (Carpenter interview).

**Challenges and Concerns**

Our interviewees discussed three types of challenges and concerns that the planning and design of an HSR station at Union Station would need to address—physical and aesthetic challenges relating to a difficult site carved up by railway tracks and freeways; transportation challenges relating to circulation and parking; and procedural and policy challenges relating to relationships with the CAHSRA and the perceived lack of power by local agencies to influence such a complex project.

One major physical challenge that the HSR development encounters at Union Station is that the land is already encircled and cut off from the rest of downtown by existing railway tracks serving Amtrak and Metro, and by the 101 Freeway (Figure 13). As Carpenter noted:

*"That's an area where we should manage to sort out a myriad of engineering conundrums of how those tracks emerge, at what height and at what trajectory, and should manage to actually connect it in the manner that we would like to see the rail operation function. There is the fear that they could slice through that area in just the worst possible way, slice completely across the existing street system, and make large sections of that district unusable. Without significant mitigation effects for the fact that there will be this gradient coming down that will be a barrier at various levels and various points. So it would be a street and circulation system that would have to be completely reoriented towards that particular piece of infrastructure"* (Carpenter interview).

Another concern is that the HSR tracks will provide an additional physical barrier that will cut off access to the river, which runs on the east of Union Station. As Diefenderfer explained:

*"We are trying to break down the barriers to the LA River and some are concerned that the HSR will be another layer of infrastructure along the river, another barrier between the river and the surrounding communities. How can we minimize the impact? They are proposing to do a tunnel to the north. And if they trench the HSR tracks, could*

*they do the same for Metrolink and Amtrak to consolidate them as much as possible? ...How can the HSR pass through the city so that it has the least impact in terms of the river, and surrounding land uses? We also have a number of historic bridges that cross the river. If they could keep the tracks either at grade or trenched in such a way so they go under the bridges, the bridges would be saved. How do you make sure that the land underneath the elevated tracks is still usable land? In some cases they will have to close streets. How is this going to affect the urban form and the people who are using the area?"* (Diefenderfer interview).

The obtrusiveness and aesthetic impact of creating an elevated viaduct as the HSR rail tracks approach Union Station from the south is also a concern. The alternative option, that of a long tunnel coming in from as far back as the intersection of the 710 and 10 freeways, may be aesthetically more acceptable but significantly more costly, according to Joel Reynolds.

There is also the issue of traffic aggravation that the new station would create in the adjacent neighborhoods, and which Alex Clifford of the Los Angeles County Metropolitan Transportation Authority does not think can be easily sustained by the existing street network. Parking accommodation – the 6,000 spaces requested by the CAHSRA -- gives local planners an additional headache. They want to provide significantly less spaces so that they can lower the development costs and enable more intense development around the station. As Clifford explained:

*"One of the things we here at Metro and the city are working with the Authority is to figure out how to pare that number down significantly because, after all, this is a public transportation hub. People would hopefully come to the station using the various modes available: bus, light rail, heavy rail and subway. So we're trying to work with them to see if that structure can be something significantly less than 1,000 parking spaces"* (Clifford interview).

Less parking would mean more land available for development. Nevertheless, Carpenter emphasized the difficulty of land assembly and acquisition:

*"As powerful as redevelopment agencies seem to be, eminent domain is a tool that is very circumscribed and very protracted, and we will not always prevail. So it is very difficult at the moment often to conduct the land assembly that probably needs to take place for the welfare of almost everybody involved. I would say that is a basic problem. ...The dilemma is that we can't go to the first step in acquiring what would be a reasonable perimeter of land, even to just get basic access provided for, much less create the desired, district-level development."* (Carpenter interview).

In addition to the physical and transportation challenges, our interviewees commented on the challenges posed by CAHSRA's having a small staff and the necessity and associated ambiguity of dealing with a variety of external consultants. They lamented the lack of empowerment on behalf of local agencies to intervene and significantly influence the process

**Planning and Design**

A specific plan—the Alameda District Specific Plan – governs the area around Union Station. The plan allows for intense development, up to11 million sq. ft of predominantly office space with a small residential component. It was put in place in 1995 but nothing much has happened in the area because of the recession. Some of our interviewees emphasized that the plan needs to be updated to reflect the reality of HSR and to encourage a more significant mixed-use and residential component. As stated by Diefenderfer, "Ideally we will have an opportunity to look at the surrounding area more holistically and think how we can use the incentives to encourage development." She emphasized the importance of expanding the Union Station's footprint, strategically placing parking and auxiliary uses, creating access points to the station from different locations, and better integrating the station with its surroundings and the rest of downtown. Nevertheless, in the absence of a specific urban design plan, these ideas appear still quite general. This sentiment was echoed in Carpenter's comments:

*"We have these very generalized, high density, highly urbanized visions of how things evolve around transit stations. ...The challenge will be to get planning and design processes, on the one hand, and an understanding of the real estate development opportunities on the other, much better understood and much more in the eye of the general public, and the stakeholders and constituents that need to be engaged around each one of these stations... We have learned that TOD is not magic; that it does not immediately pop out of the ground the day a rail system starts operation"* (Carpenter interview).

To trigger development, Diefenderfer raised the idea of instigating minimum development standards:

*"In the Planning Department we are broadly considering this idea so that people don't take valuable transit oriented sites and under-develop them. We don't have minimum development requirements now, and you may get nothing (no development) by implementing them. But we may have to "stick to our guns." We may want to insist upon a certain level of devel-opment even if we get no development in the next 5-10 years"* (Diefenderfer interview).

Carpenter seemed to disagree, stressing instead the necessity of a more sequential development that follows the whims of the real estate market:

*"Certain very important segments of development opportunity really won't become feasible perhaps for a decade or so. Somehow we have to be patient about allowing for that, maybe having some interim or placeholder development. We really need to accelerate as much as we can our understanding about how the real estate market can best respond; and really start to develop some science so the development community can better partner with the public sector on helping realize our best designs"* (Carpenter interview).

# 3.6 MURRIETA

**Introduction**

The southernmost HSR station in the SCAG region, Murrieta is located between proposed Phase II stops at Riverside and Escondido near the intersection of two regional interstates (Figure 73). A rural municipality in southern Riverside County, Murrieta is a rapidly growing dormitory to Inland Empire and San Diego County employment centers. The portal for HSR will exist near the juncture of interstates 15 and 215 on an alignment passing through suburban housing developments, office parks, and regional retailing centers (Figure 74). The station's proximity to a highly desirable cleft of land next to the busy freeway juncture known locally as the "Golden Triangle" could intensify this station's potential to become a catalyst for regional development.

Figure 73. Map of Murrieta HSR Station

Figure 74. Aerial Photograph of Murrieta HSR Station

**Population**

With 103,466 residents in 2010 according to the US Census, the City of Murrieta is the fourth largest city in Riverside County, and the 62nd largest in California, just larger than Burbank. Murrieta's population density (3,078 persons per square mile) is high for the county (297 persons per square mile) but low relative to other station cities. Whites account for 55.7% of the population, while the remaining 44.3% of the city's residents are comprised of Hispanics of any race (25.9%), Asians (9%), Blacks (5%), American Indian and Alaska Native

**Residential Population and Population Density Projections within 5 Miles of Murrieta Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Riverside County | 2,077,135 | 2,406,774 | 2,696,165 | 3,025,263 | 3,334,957 | 3,609,583 | 3,882,136 |
| Murrieta 5 Mile Station Area | 197,572 | 222,529 | 235,784 | 249,897 | 261,781 | 270,823 | 280,153 |
| Murrieta Half Mile Station Area | 41,387 | 48,536 | 51,746 | 54,498 | 57,193 | 59,159 | 61,285 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Riverside County | 285 | 330 | 369 | 415 | 457 | 494 | 532 |
| Murrieta 5 Mile Station Area | 688 | 775 | 822 | 871 | 912 | 944 | 976 |
| Murrieta Half Mile Station Area | 3,379 | 3,962 | 4,224 | 4,449 | 4,669 | 4,829 | 5,003 |

Figure 75. Residential Population and Population Density Projections within 5 Miles of Murrieta Station (Data Source: SCAG)

(0.4%) and other minorities (4%). Between 2000 and 2010, Murrieta's total population increased by about 130%, a remarkable growth rate compared to the statewide (10%) or county (41.7%) rates. Between 2010 and 2035, the city's population is projected to increase at an even faster rate of 153%, adding an estimated 157,000 people. Median household income in Murrieta in 2010 was $75,102 or 127% of the median household income among all Californians ($58,925)(Source: U.S. Census 2010). The median home price in the city in 2010 was $265,828, or 90% of the statewide median home price (Source: Yahoo Prices.). The homeownership rate (70.6%) is much higher than the rate of homeownership statewide (57.8%).

In 2010, 222,529 residents lived in census tracts located entirely or containing portions within five miles of the station (Source: Southern California Association of Governments). The population density of these census tracts was an average of 775 persons per square mile, much lower than the average population density within city boundaries (Figures 75 and 76)(Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half mile of the station, the 2010 population was 48,536 with an average population density of 3,962 persons per square mile, more consistent with city-level figures.(Source: Southern California Association of Governments) The Southern California Association of Governments (SCAG) projects that residential population within five miles of the station will increase to 280,153 residents or by 25.9% between 2010 and 2035. Within half mile of the station the residential population is expected to increase by 12,750 people or by 26.3% within the same period (Source: Southern California Association of Governments).

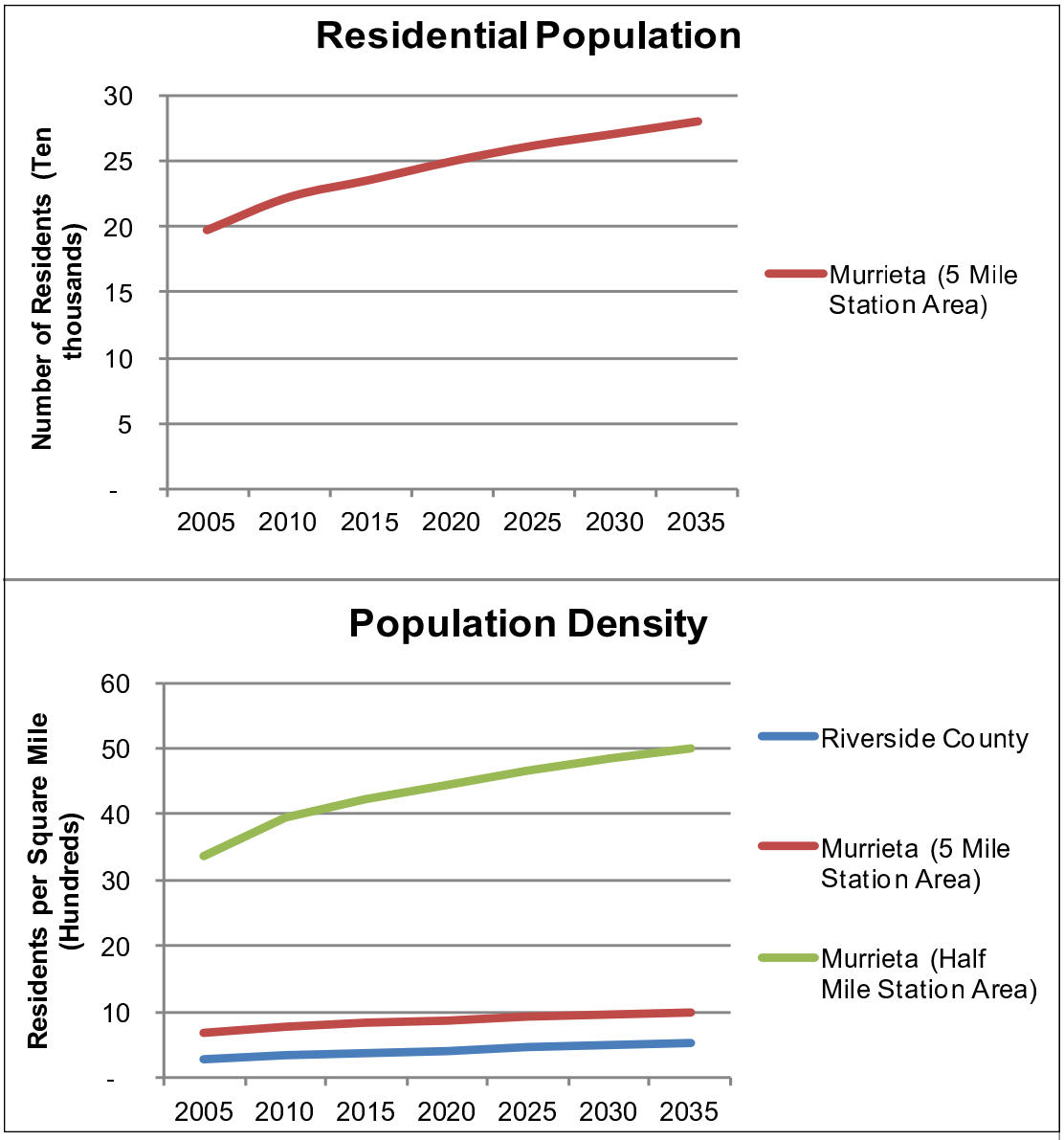



Figure 76. Residential Population and Population Density Projections within 5 miles of Murrieta HSR Station, 2005-2035 (Data Source: SCAG)

**Jobs**

Job totals in the City of Murrieta (17,854) account for 3.3% of all jobs in Riverside County (537,534). The jobs-housing balance in the city (0.17 jobs for every resident) is lower than the statewide proportion (0.46). Most employees in the city work at jobs within Riverside County (67.3%), while 9.9% commute to San Diego County, 8% work in Los Angeles County, 6.6% commute to Orange County, and 4.7% commute to San Bernardino County. The city has a diverse economic base, with recreation and hospitality (19.2% of jobs) as the largest employment sector.

We estimated that the area within five miles of the station contained 51,786 jobs in 2009 or 9.6% of jobs in Riverside County (Source: Longitudinal Employer Household Dynamics, Local

**Murrieta 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 56,027 | 61,029 | 69,911 | 78,793 | 87,675 | 96,557 | 105,439 | 72.8% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 649 | 1,111 | 1,531 | 1,952 | 2,373 | 2,794 | 3,214 | 189.4% |
| Manufacturing, Wholesale, and Transportation | 18,067 | 14,531 | 12,699 | 10,867 | 9,035 | 7,204 | 5,372 | -63.0% |
| Retail | 8,833 | 9,442 | 10,759 | 12,077 | 13,394 | 14,712 | 16,029 | 69.8% |
| Financial and Professional Services | 3,179 | 3,241 | 3,635 | 4,029 | 4,424 | 4,818 | 5,212 | 60.8% |
| Professional and Information | 3,572 | 4,009 | 5,018 | 6,028 | 7,038 | 8,047 | 9,057 | 125.9% |
| Management and Administration | 7,853 | 9,078 | 10,629 | 12,180 | 13,731 | 15,281 | 16,832 | 85.4% |
| Educational Services | 3,655 | 5,122 | 6,667 | 8,212 | 9,758 | 11,303 | 12,848 | 150.9% |
| Health Services | 3,949 | 5,714 | 7,466 | 9,217 | 10,968 | 12,719 | 14,470 | 153.2% |
| Recreation and Hospitality Services | 6,270 | 8,782 | 11,506 | 14,231 | 16,955 | 19,679 | 22,403 | 155.1% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.45 | 0.77 | 0.97 | 1.15 | 1.31 | 1.47 | 1.61 | 109.6% |
| Manufacturing, Wholesale, and Transportation | 1.30 | 1.05 | 0.87 | 0.72 | 0.58 | 0.46 | 0.34 | -67.6% |
| Retail | 1.44 | 1.48 | 1.52 | 1.57 | 1.61 | 1.65 | 1.70 | 14.7% |
| Financial and Professional Services | 0.91 | 0.93 | 0.95 | 0.98 | 1.01 | 1.04 | 1.07 | 15.7% |
| Professional and Information | 0.63 | 0.61 | 0.64 | 0.65 | 0.66 | 0.66 | 0.67 | 9.6% |
| Management and Administration | 0.88 | 0.92 | 0.94 | 0.95 | 0.96 | 0.97 | 0.98 | 6.6% |
| Educational Services | 0.73 | 0.86 | 0.91 | 0.95 | 0.96 | 0.97 | 0.97 | 13.1% |
| Health Services | 0.73 | 0.86 | 0.91 | 0.93 | 0.94 | 0.93 | 0.93 | 7.6% |
| Recreation and Hospitality Services | 1.05 | 1.29 | 1.42 | 1.51 | 1.57 | 1.61 | 1.63 | 26.5% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 0.10 | 0.07 | 0.06 | 0.05 | 0.04 | 0.04 | 0.04 | -46.5% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.14 | -0.03 | 0.03 | 0.07 | 0.09 | 0.11 | 0.13 | -528.7% |
| Manufacturing, Wholesale, and Transportation | 0.18 | 0.09 | 0.01 | -0.08 | -0.18 | -0.29 | -0.42 | -599.3% |
| Retail | 0.25 | 0.24 | 0.25 | 0.26 | 0.26 | 0.27 | 0.27 | 12.4% |
| Financial and Professional Services | 0.13 | 0.11 | 0.11 | 0.12 | 0.12 | 0.12 | 0.12 | 7.5% |
| Professional and Information | 0.06 | 0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.04 | -3179.8% |
| Management and Administration | 0.08 | 0.08 | 0.09 | 0.09 | 0.10 | 0.10 | 0.11 | 41.9% |
| Educational Services | -0.14 | -0.09 | -0.07 | -0.05 | -0.04 | -0.03 | -0.02 | -73.0% |
| Health Services | 0.05 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 41.3% |
| Recreation and Hospitality Services | 0.00 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 77.4% |

Figure 77. Murrieta 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

Employment Dynamics partnership, http://lehdmap.did.census.gov.). Within the same area, we predict the number of jobs to increase to 105,439 by 2035, or by 103% (Figure 77)(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). The job market here features a higher proportion of recreation and hospitality, retail, and agricultural jobs than the California norm (location quotient = 1.59, 1.59, and 1.45 respectively). The same sectors will remain strong in 2035, with the financial and professional services sector also exceeding the statewide equivalent (Figure 79). Job growth is projected for all jobs sectors except manufacturing, wholesale, and transportation, which will lose jobs by 2035 following current trends. Within 5 miles of the proposed station, the most rapid growth is expected in the educational services and recreation/hospitality sectors, while management/administration, health services and professional/information are also predicted to grow in the next twenty-five years (Figure 79)(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). In 2009, areas within a five mile radius of the HSR portal were balanced, if not slightly jobs-rich (gap index = 0.05), and despite adding many more jobs relative to workers, this trend will remain constant through 2035 (gap index = 0.04).

**Top 100 Worker Origins by ZIP Code - Murrieta**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 92562 | 5,469 | 10.6% | 26 | 92503 | 259 | 0.5% | 51 | 92804 | 113 | 0.2% | 76 | 92501 | 86 | 0.2% |
| 2 | 92592 | 4,741 | 9.2% | 27 | 92557 | 257 | 0.5% | 52 | 92881 | 113 | 0.2% | 77 | 92040 | 85 | 0.2% |
| 3 | 92591 | 3,381 | 6.5% | 28 | 92027 | 255 | 0.5% | 53 | 92021 | 111 | 0.2% | 78 | 92201 | 85 | 0.2% |
| 4 | 92563 | 2,410 | 4.7% | 29 | 92056 | 249 | 0.5% | 54 | 92220 | 109 | 0.2% | 79 | 92223 | 85 | 0.2% |
| 5 | 92595 | 1,829 | 3.5% | 30 | 92057 | 242 | 0.5% | 55 | 91710 | 108 | 0.2% | 80 | 92407 | 84 | 0.2% |
| 6 | 92530 | 1,649 | 3.2% | 31 | 92882 | 238 | 0.5% | 56 | 92064 | 104 | 0.2% | 81 | 92677 | 84 | 0.2% |
| 7 | 92584 | 1,174 | 2.3% | 32 | 92084 | 212 | 0.4% | 57 | 91910 | 101 | 0.2% | 82 | 92009 | 83 | 0.2% |
| 8 | 92544 | 924 | 1.8% | 33 | 92025 | 206 | 0.4% | 58 | 91752 | 98 | 0.2% | 83 | 92211 | 83 | 0.2% |
| 9 | 92586 | 839 | 1.6% | 34 | 92879 | 192 | 0.4% | 59 | 92880 | 98 | 0.2% | 84 | 92336 | 83 | 0.2% |
| 10 | 92028 | 798 | 1.5% | 35 | 92883 | 186 | 0.4% | 60 | 91730 | 96 | 0.2% | 85 | 92508 | 82 | 0.2% |
| 11 | 92570 | 734 | 1.4% | 36 | 92504 | 185 | 0.4% | 61 | 92065 | 96 | 0.2% | 86 | 92582 | 82 | 0.2% |
| 12 | 92587 | 680 | 1.3% | 37 | 92234 | 174 | 0.3% | 62 | 92536 | 96 | 0.2% | 87 | 92128 | 81 | 0.2% |
| 13 | 92543 | 639 | 1.2% | 38 | 92567 | 174 | 0.3% | 63 | 92805 | 96 | 0.2% | 88 | 92392 | 81 | 0.2% |
| 14 | 92590 | 570 | 1.1% | 39 | 92532 | 169 | 0.3% | 64 | 92126 | 94 | 0.2% | 89 | 92801 | 81 | 0.2% |
| 15 | 92571 | 545 | 1.1% | 40 | 92506 | 166 | 0.3% | 65 | 91950 | 92 | 0.2% | 90 | 92260 | 80 | 0.2% |
| 16 | 92545 | 491 | 0.9% | 41 | 92507 | 162 | 0.3% | 66 | 92262 | 92 | 0.2% | 91 | 92870 | 79 | 0.2% |
| 17 | 92596 | 393 | 0.8% | 42 | 92505 | 161 | 0.3% | 67 | 92683 | 92 | 0.2% | 92 | 92324 | 77 | 0.1% |
| 18 | 92585 | 384 | 0.7% | 43 | 92335 | 142 | 0.3% | 68 | 91709 | 90 | 0.2% | 93 | 92688 | 77 | 0.1% |
| 19 | 92583 | 318 | 0.6% | 44 | 92548 | 128 | 0.2% | 69 | 92024 | 89 | 0.2% | 94 | 92404 | 76 | 0.1% |
| 20 | 92553 | 316 | 0.6% | 45 | 92551 | 127 | 0.2% | 70 | 92345 | 89 | 0.2% | 95 | 92555 | 76 | 0.1% |
| 21 | 92054 | 308 | 0.6% | 46 | 92860 | 124 | 0.2% | 71 | 91701 | 88 | 0.2% | 96 | 92008 | 75 | 0.1% |
| 22 | 92026 | 291 | 0.6% | 47 | 90631 | 123 | 0.2% | 72 | 92539 | 88 | 0.2% | 97 | 92105 | 75 | 0.1% |
| 23 | 92069 | 285 | 0.6% | 48 | 92240 | 122 | 0.2% | 73 | 92029 | 87 | 0.2% | 98 | 91977 | 73 | 0.1% |
| 24 | 92083 | 285 | 0.6% | 49 | 92082 | 117 | 0.2% | 74 | 92129 | 87 | 0.2% | 99 | 92692 | 73 | 0.1% |
| 25 | 92509 | 268 | 0.5% | 50 | 92376 | 116 | 0.2% | 75 | 91911 | 86 | 0.2% | 100 | 91761 | 72 | 0.1% |

**Top 100 Worker Destinations by ZIP Code - Murrieta**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 92562 | 4,259 | 9.0% | 26 | 92545 | 273 | 0.6% | 51 | 92586 | 152 | 0.3% | 76 | 92103 | 106 | 0.2% |
| 2 | 92590 | 3,599 | 7.6% | 27 | 92127 | 256 | 0.5% | 52 | 92630 | 152 | 0.3% | 77 | 92805 | 106 | 0.2% |
| 3 | 92592 | 3,255 | 6.9% | 28 | 92064 | 254 | 0.5% | 53 | 92614 | 150 | 0.3% | 78 | 91764 | 105 | 0.2% |
| 4 | 92591 | 2,632 | 5.6% | 29 | 92571 | 254 | 0.5% | 54 | 92882 | 150 | 0.3% | 79 | 92704 | 103 | 0.2% |
| 5 | 92563 | 1,062 | 2.3% | 30 | 92111 | 253 | 0.5% | 55 | 92037 | 143 | 0.3% | 80 | 92868 | 103 | 0.2% |
| 6 | 92028 | 972 | 2.1% | 31 | 92056 | 241 | 0.5% | 56 | 90045 | 142 | 0.3% | 81 | 93901 | 103 | 0.2% |
| 7 | 92501 | 844 | 1.8% | 32 | 92108 | 221 | 0.5% | 57 | 90670 | 138 | 0.3% | 82 | 92544 | 102 | 0.2% |
| 8 | 92530 | 824 | 1.8% | 33 | 92570 | 214 | 0.5% | 58 | 92506 | 138 | 0.3% | 83 | 92606 | 100 | 0.2% |
| 9 | 92595 | 690 | 1.5% | 34 | 91710 | 212 | 0.5% | 59 | 92807 | 136 | 0.3% | 84 | 92505 | 98 | 0.2% |
| 10 | 92101 | 580 | 1.2% | 35 | 92408 | 208 | 0.4% | 60 | 92024 | 132 | 0.3% | 85 | 92392 | 96 | 0.2% |
| 11 | 92069 | 531 | 1.1% | 36 | 92821 | 194 | 0.4% | 61 | 92110 | 132 | 0.3% | 86 | 91786 | 95 | 0.2% |
| 12 | 92121 | 497 | 1.1% | 37 | 92009 | 193 | 0.4% | 62 | 92335 | 131 | 0.3% | 87 | 92324 | 93 | 0.2% |
| 13 | 92584 | 478 | 1.0% | 38 | 91730 | 188 | 0.4% | 63 | 92660 | 129 | 0.3% | 88 | 92532 | 93 | 0.2% |
| 14 | 92008 | 475 | 1.0% | 39 | 92626 | 185 | 0.4% | 64 | 92126 | 127 | 0.3% | 89 | 92831 | 93 | 0.2% |
| 15 | 92123 | 464 | 1.0% | 40 | 92879 | 181 | 0.4% | 65 | 92691 | 127 | 0.3% | 90 | 92860 | 93 | 0.2% |
| 16 | 92083 | 432 | 0.9% | 41 | 92880 | 180 | 0.4% | 66 | 91910 | 124 | 0.3% | 91 | 90703 | 90 | 0.2% |
| 17 | 92507 | 411 | 0.9% | 42 | 92583 | 175 | 0.4% | 67 | 92701 | 124 | 0.3% | 92 | 90806 | 90 | 0.2% |
| 18 | 92025 | 407 | 0.9% | 43 | 92553 | 174 | 0.4% | 68 | 92806 | 123 | 0.3% | 93 | 92688 | 90 | 0.2% |
| 19 | 92596 | 391 | 0.8% | 44 | 92061 | 173 | 0.4% | 69 | 92026 | 121 | 0.3% | 94 | 92113 | 89 | 0.2% |
| 20 | 92618 | 387 | 0.8% | 45 | 92084 | 169 | 0.4% | 70 | 92131 | 120 | 0.3% | 95 | 92653 | 89 | 0.2% |
| 21 | 92543 | 363 | 0.8% | 46 | 92503 | 167 | 0.4% | 71 | 92585 | 115 | 0.2% | 96 | 92071 | 88 | 0.2% |
| 22 | 91761 | 333 | 0.7% | 47 | 92705 | 167 | 0.4% | 72 | 92881 | 115 | 0.2% | 97 | 92130 | 88 | 0.2% |
| 23 | 92029 | 311 | 0.7% | 48 | 92082 | 157 | 0.3% | 73 | 92117 | 110 | 0.2% | 98 | 91706 | 86 | 0.2% |
| 24 | 92128 | 302 | 0.6% | 49 | 92612 | 155 | 0.3% | 74 | 92780 | 110 | 0.2% | 99 | 92708 | 85 | 0.2% |
| 25 | 92054 | 274 | 0.6% | 50 | 92020 | 154 | 0.3% | 75 | 92504 | 109 | 0.2% | 100 | 92656 | 84 | 0.2% |

Figure 78. Top 100 Worker Origins and Destinations (Data Source: LEHD)

Of those employed within five miles of the station, 76.7% live outside of the same area. Of those employed persons living within five miles of the station, more than 74.4% work outside the same area, suggesting very high rates of worker mobility both inside and outside of the station area. Figures 78 and 80 illustrate the top 100 work origins and destinations for the station area by zip code. The top ZIP code for origins and destinations of station area worker commutes was 92562 (Murrieta), home to 10.6% of all trip origins and 9% of all job destinations. Geographically, destinations and origins for commutes inside and outside the station area are evenly dispersed.

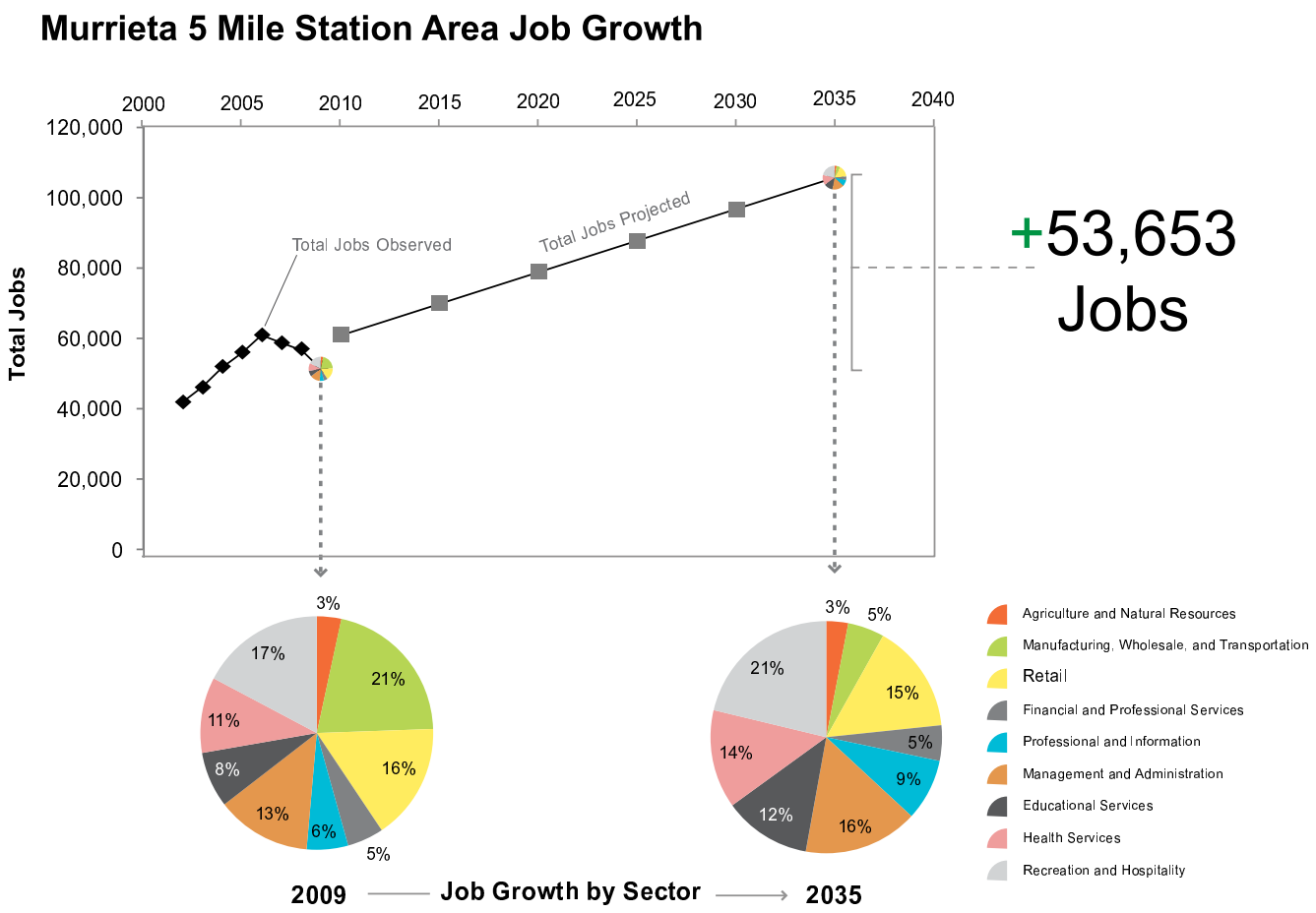
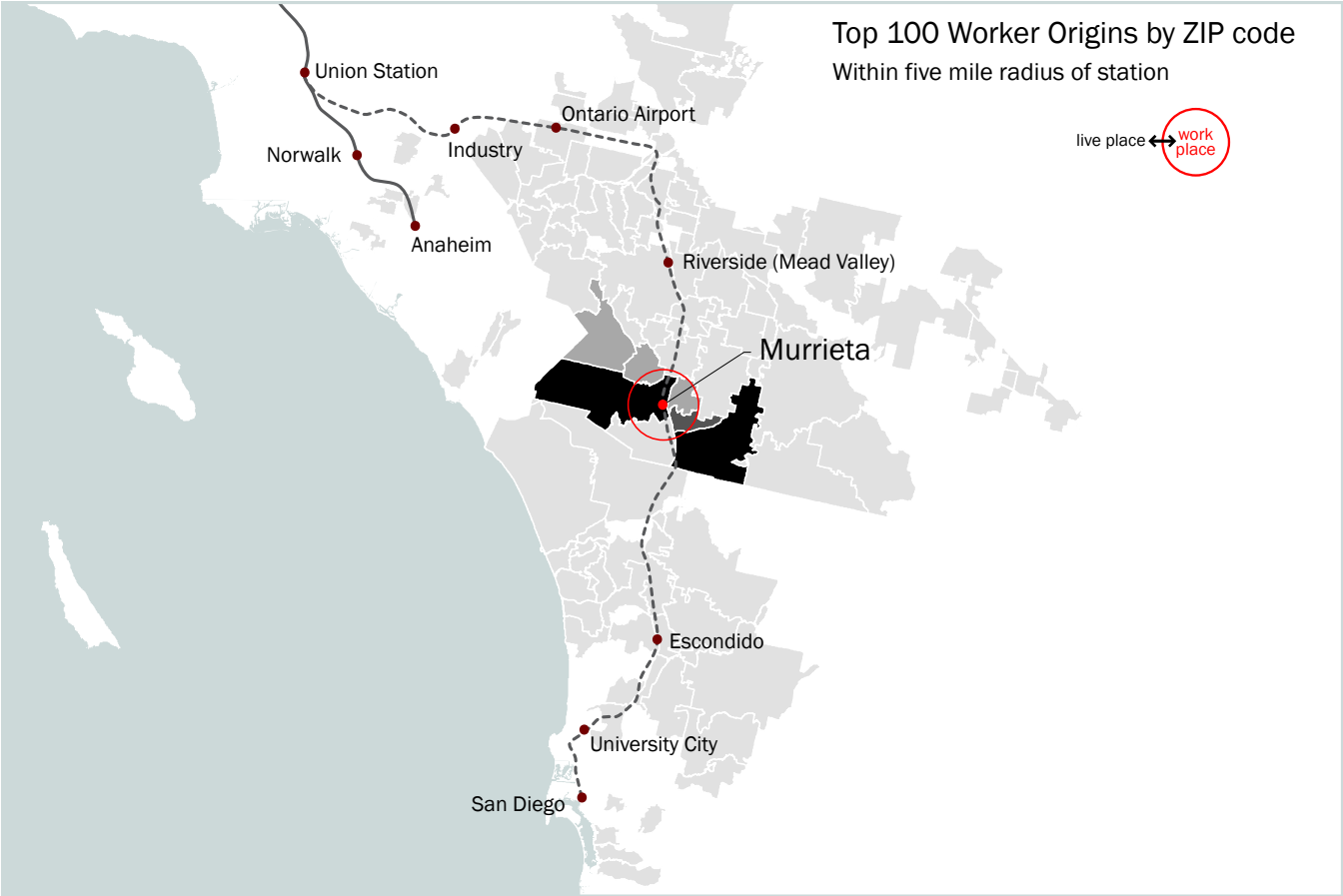



Figure 79. Job Growth Projections (Data Source: LEHD)



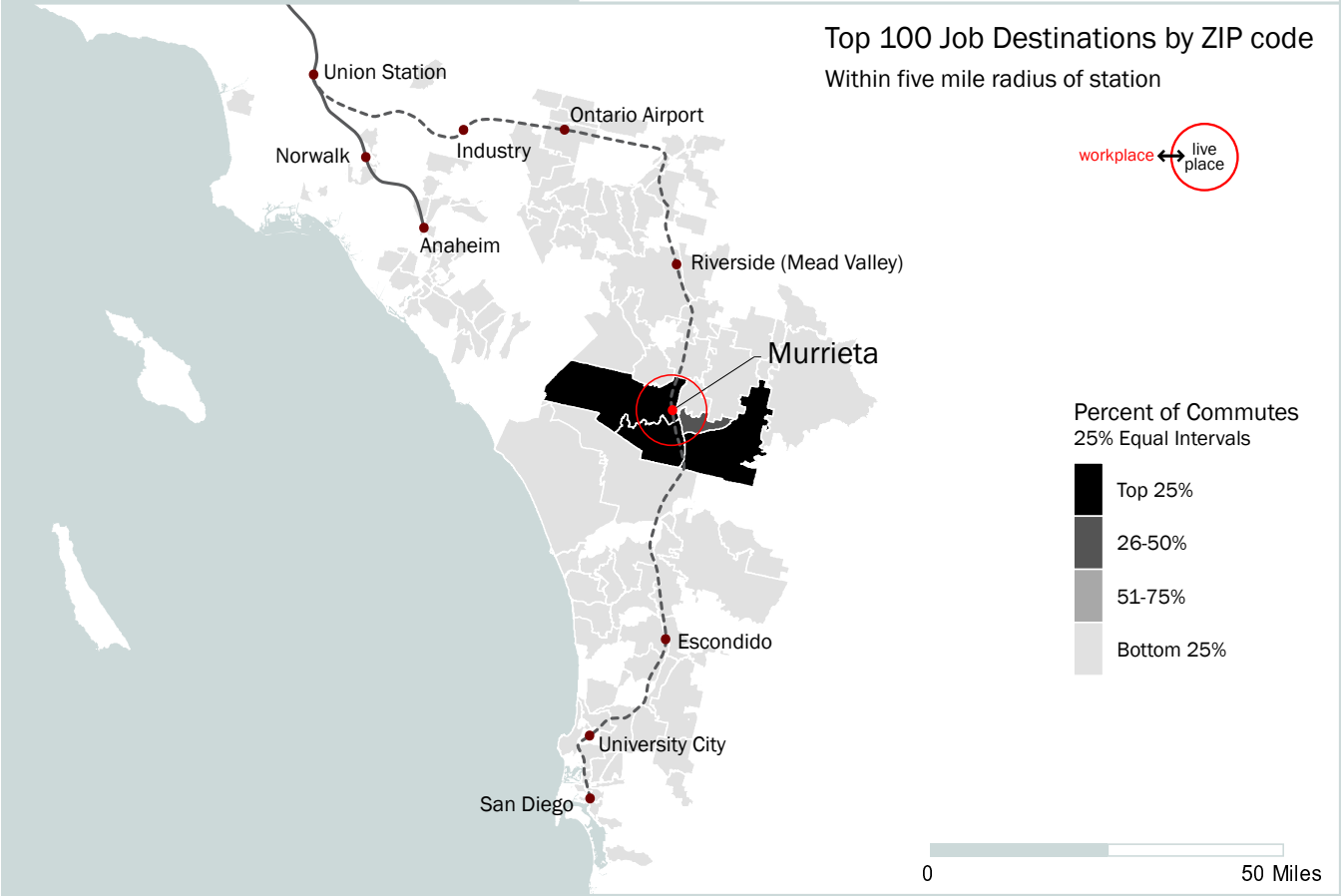




Figure 80. Murrieta Commute Map (Data Source: LEHD)

### Current Land Use

The HSR platform is planned near a plot of land in the cleft of the 215 and 15 interstates known locally as the "Golden Triangle" for its visibility and accessibility to thousands of commuters (Figure 81). Currently, this tract is one of many parcels that lie empty, with vacant land occupying 53.8% of total half-mile area. Retail commercial uses occupy 14.3%, while 13.7% of land is categorized as under construction. Around the station area fringe is single-family housing, which accounts for 7.3% of the total area. Public land occupies another 4.8% and office commercial uses make up 4.3%. Three agricultural parcels combine for 1.7% of the land area in the half mile radius around the station. It is also important to note that a significant amount of station area land is consumed by the interstate highway.

### Subdivision Pattern

As a result of rapid population growth, parcels surrounding the proposed station are under modest development pressure. Large agricultural parcels have been subdivided into smaller tracts over the last fifteen years to facilitate regional retail and medical center development. Parcel sizes range from 0.01 to 21.3 acres, with the largest number of parcels being in the 0.5 to 1 acre range typical of commercial retail centers (Figure 80). Historical maps show sparse residential activity until the past two decades.

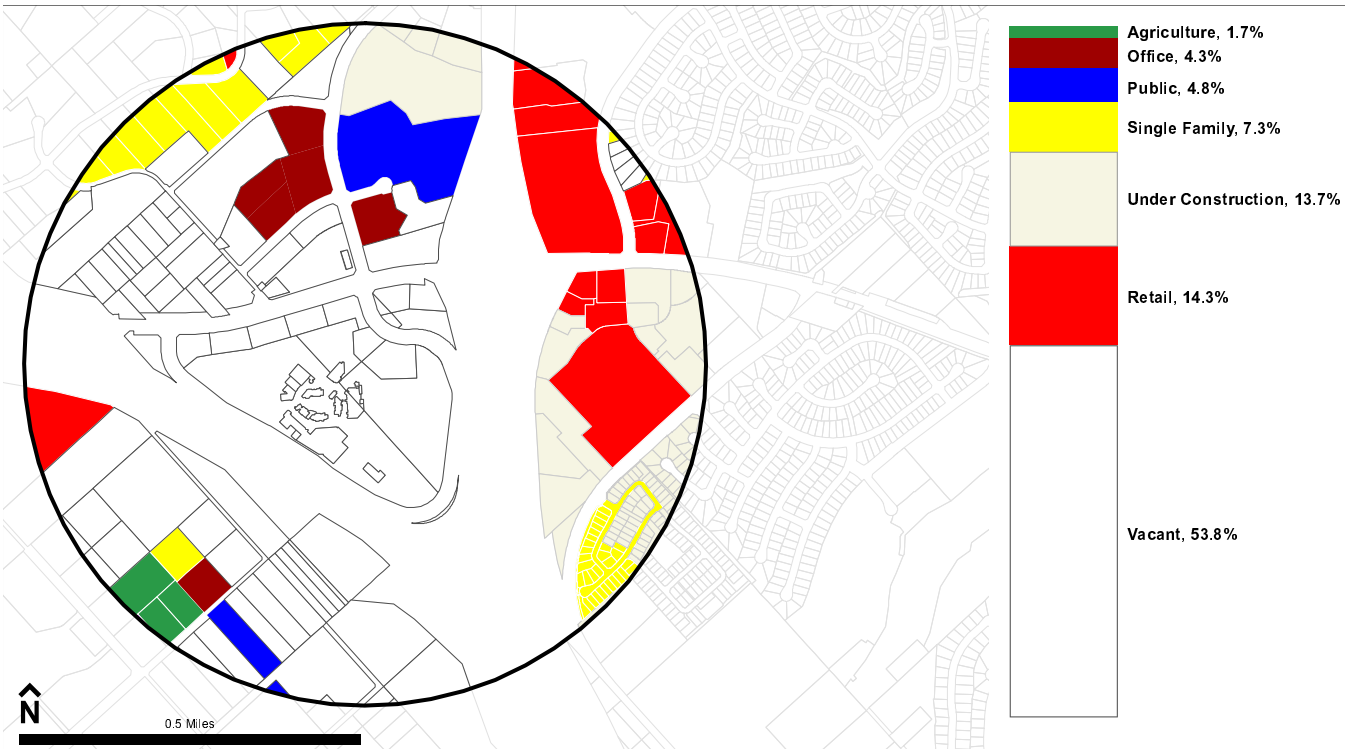



Figure 81. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Murrieta HSR Station (Data Source: SCAG)

### Major Destinations

Murrieta has several major retail and healthcare destinations within five miles of the planned station (Figure 83), the largest being Rancho Springs Medical Center with about 1,500 employees. Regional big box retailers, such as Wal-Mart, Target, Home Depot, Sam's Club, Lowe's and other community serving retail centers favor Murrieta's exposure to interstate commuters. Government destinations including Riverside County's Superior Court and City of Murrieta's civic offices are located about two miles away. Old Town Temecula, at five miles, and the French Valley Airport exist just within the HSR commutershed (Figure 84).

## Parcel Characteristics within Half Mile of Murrieta Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.01 | 21.3 | 0.5-1 |

Figure 82. Subdivision of parcels (Data Source: SCAG)

**Activity and Employment Centers within 5 Miles of Murrieta Station**

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Employment | Rancho Springs Medical Center | 0.50 | 1,500 |
| Employment/Retail | Target | 1.50 | 500 |
| Employment | City of Murrieta (Civic Center) | 1.70 | 401 |
| Employment | Wal-Mart | 0.50 | 340 |
| Employment | The Home Depot | 0.75 | 295 |
| Employment | County of Riverside Superior Court | 2.20 | 220 |
| Employment | Sam's Club | 0.20 | 220 |
| Employment | Lowe's | 3.30 | 200 |
| Employment/Retail | Murrieta Town Center | 0.50 | - |
| Employment/Retail | Palm Plaza Shopping Center | 3.50 | - |
| Transportation | French Valley Airport | 3.40 | - |
| Employment/Tourism | Old Town Temecula | 5.00 | - |

Figure 83. Destinations

Figure 84. Map of Activity and Employment Centers within 5 miles of Murrieta HSR Station

**Transportation and Transit Networks**

A favorable site near the 215-15 interchange gives Murrieta's station instant access to the auto network connecting San Diego to the Inland Empire, Los Angeles, and Las Vegas. Additionally, the half mile area is linked to the public transit network via Riverside Transit's local lines 23 and 61 and express lines 202 and 306, which connect to Oceanside in San Diego County and Corona in Orange County. There are no rail connections in the half mile area. The area is somewhat walkable, with nearby amenities and a consistent, unbroken pedestrian network that follows recently developed properties (Figure 85).

Most commuters (77.3%) in the City of Murrieta drove alone to work in 2007, a 109% increase since 2000 (Figure 86). Carpooling was the second most common mode (13.8% of commute trips), followed by taxi, bicycle or motorcycle (1.8%). Just over one percent of workers walked to work. Usage of public transit(only 0.1% of commuters) was down 7.7% from 2000. About 5.8% of all workers worked at home (Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

**Transit Network within Half Mile of Murrieta Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| Interstate 215 (San Bernardino, Temecula)<br>Interstate 15 (San Diego) | Riverside Transit local lines 23 (Temecula), 61 (Sun City/Temecula) | None | None | None | None | 68, Somewhat Walkable |

Figure 85. Transit Connectivity

| Commutes | 2000 | | 2007 | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 18,780 | 100.0 | 40,342 | 100.0 | 114.8% | Yes |
| Drove alone | 14,900 | 79.3 | 31,189 | 77.3 | 109.3% | Yes |
| Carpooled | 2,415 | 12.9 | 5,553 | 13.8 | 129.9% | Yes |
| Public transit | 39 | 0.2 | 36 | 0.1 | -7.7% | No |
| Walked | 145 | 0.8 | 490 | 1.2 | 237.9% | Yes |
| Taxi, motorcycle, bike, other | 230 | 1.2 | 732 | 1.8 | 218.3% | Yes |
| Worked at home | 1,050 | 5.6 | 2,342 | 5.8 | 123.0% | Yes |

Figure 86. Modal Split: City of Murrieta (Data Source: AASHTO/CTPP)

**Real Estate Market Values and Trends**

Existing commercial real estate values in the Murrieta station area are typical of other station cities (Figure 87). Within 2.5 miles of the station, average leases for office space are $21.83 per square foot per year, just higher than Norwalk's and lower only to Sylmar/San Fernando and Los Angeles. In the same geography, office sales average around $270 per square foot, which is comparable to city of Industry rates. Retail space leases for an average of $21.92, between Norwalk ($19) and Riverside ($24)(Source: Loopnet.com, Geographic Research Inc. 2011).

Paired with one of the highest median household incomes among studied station areas ($75,102), Murrieta's home values reveal a strong residential market despite the economic downturn. In 2010, median home values in census tracts located entirely or partially within a half mile radius of the station were $295,833, the highest of SCAG station areas by over $22,000. Median values were up 63.9% from 2000, the second largest increase observed.

**Development Potential**

Murrieta retains a high development potential because the city is highly accessible to Los Angeles, San Diego, and Orange Counties, has a high quality of life, provides affordable housing options, and is located within close proximity of over twenty institutions of higher education. Murrieta attracts high quality employment, including life sciences, healthcare, and university technology.

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | **$360** | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | **19.0%** |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | **$25.12** | $273,569 | **$213,168** | 28.3% |
| Sylmar/San Fernando | **$28.33** | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | **$107** | **$12.52** | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | **$8.17** | $160 | $24.02 | **$123,572** | **$74,106** | **66.8%** |
| Murrieta | $21.23 | $270 | $21.92 | **$295,833** | $180,469 | 63.9% |

**Category High/Category Low**

Source: Loopnet.com, Geographic Research Inc.

Figure 87. Real Estate Market Values

HSR will only enhance accessibility both to and from Murrieta. While the city has developed as a central mode, Murrieta needs to focus on developing itself as a "place" in order to leverage its relative affordability, mobility, and safety towards economic development. In the meantime, Murrieta appears to be a successful dormitory for workers employed in knowledge-based industries and will continue to exhibit growth in the technology and information based sectors.

**Local Perspectives**

Since its incorporation in 1991, the City of Murrieta has experienced significant population growth with an increase of about 400% in a twenty-year period. While functioning primarily as a commuter suburb to north San Diego County, as well as Los Angeles and Orange Counties, Murrieta is actively trying to diversify and increase its employment opportunities. With economic development as the "number one goal", Bruce Coleman, Director of Economic Development, sees high-speed rail as integral to implementing that vision.

**Perceived Benefits**

According to Coleman, the proposed high-speed rail is seen as crucial in the city's goals of job creation and economic development. Being one of the few communities in Southern California

with available developable land, the city aims to attract technology-related manufacturing businesses that often require large, single storey plants. With these goals, Coleman states: "…we see HSR as being very, very, integral to these plans and very important in helping shape the land use patterns in this area."

The proposed high-speed rail is also seen as being able to create linkages that ease commuting and allow Murrieta to remain a desirable residential location:

*"…[HSR is] a major transportation hub facility that lets you do a few things; it lets you have continued commuting, to the core of San Diego and to the University City area; it let's you commute, in essence to Union Station or lets you go to LA or Ontario airport; or for travel to the east, or would basically let you go to the Bay area. It provides that economic benefit of creating those linkages, so we really see the benefit of it from an economic development point of view."*

While trying to diversify the city's economic base, Coleman also acknowledges that the quality of life and affordable housing in Murietta will continue to make it attractive to commuters, with the HSR improving connections and accessibility.

**Vision**

The city's vision is that high-speed rail will be able to make Murrieta more economically and environmentally sustainable. The proposed rail is seen as integral to attracting job-producing businesses and encouraging economic diversification. In acknowledging Murrieta's dependence on the larger Southern California employment, HSR is also seen as being able to reduce auto-dependence and ease commuting. Within this overall vision, there is the hope that Murrieta will maintain its character while diversifying its economic base. As Coleman states:

*"I see this as a city that has single-family communities, because that is really what we are now – so that's one very important component and it's what makes Murrieta Murrieta. I see the parks that come with that, and I see a very diverse economic base and diverse housing base in certain selected areas of the city, primarily along the freeway and HSR corridors, and in our regional center area, which hasn't been developed yet. I see it developing with class-A quality office buildings, I see it with research and development… I see it really as a cluster, a town center with the necessary streets, with entertainment all in a… more town-center or regional-center type environment."*

**Challenges and Concerns**

While the city is positive about the potential benefits from the proposed high-speed rail, there is concern about the capacity to adequately plan for it, both from a financial aspect and due to the uncertainty of potential plans. As Coleman explains:

*"Cities these days do not have large financial resources. We're financially stable, for a variety of reasons, but we don't have lots of funds just to go invest in having plans being done. We are spending 1.5 million dollars in the middle of a recession to do a general plan update. But it's hard for us – other than just putting general policies in the plan, which has to be completed by April – to do anything other than policies relating to HSR."*

In addition to financial concerns, there is the acknowledgement that while planning should begin at an early stage, there is considerable uncertainty about potential alignments, station locations and required right-of-ways:

*"We can't really zone areas, because we don't know where that zoning would fall. We don't even know which alignment they'll select – the 15 or the 215 – and that's nobody's fault, it's early in the process. So we are searching for ways – we would love to have the opportunity to get some help in doing a study … We understand the benefits – probably not a 100% but we understand conceptually the benefits of it – so we have become very interested in trying to figure out how we plan for, and how we take advantage of the opportunities that are created and go from there."*

There is also significant concern about the impact on existing land uses, and the potential for the alignment to conflict with established areas. While the preferred alignment has not been set by the HSRA, Murrieta is actively encouraging the use of existing freeway alignments for the new high-speed rail.

**Planning and Design**

Although there is uncertainty about the station alignment and location, there has been discussion about the types of uses that would surround a station, as well as ways to achieve that development. From a planning perspective, the HSR is seen as an opportunity to develop transit-oriented clusters and provide for a larger range of housing alternatives. While there is little higher density residential development in Murrieta, Coleman points to recent projects in nearby Temecula as the type that could develop around the proposed rail station. When the station alignment is set, it is anticipated that the city would establish an overlay zone to regulate development.

While HSR rail is seen as integral to encouraging and stimulating economic development, aside from encouraging the development of technology parks, the relation to the proposed station is unclear at this point. Coleman pointed to developing bus access between the station and technology companies but specific details regarding their development have yet to be addressed.

Staff have also pointed to potential issues with the potential alignment, and its impact on existing uses. As a result of this, Coleman has suggested the possibility of utilizing existing right-of-ways:

*"It's really critical which alignment is eventually selected, that we understand the implications of what is needed for the station. Frankly...the more you can put this in the freeway alignment, the better it is because the freeway alignment is really intended as a transportation corridor."*

Locating the alignment in existing right-of-ways is not only seen as a way to preserve existing land uses, but also as a way to encourage development:

*"You can have the stations elevated in the middle of [the freeway], and then you can have the land uses that are TOD-related near the stations, but around the freeway, so you are getting the best of the opportunity of using the freeway and also bringing rail in, and the rail is then creating the regional clusters or regional centers"* [Coleman interview].

# 3.7 NORWALK

**Introduction**

Norwalk is an important public administration hub in Los Angeles County's San Gabriel Valley with many Los Angeles County administrative offices located there (Figures 88 and 89). Largely suburban in character, the city is characterized by swaths of single-family residential subdivisions, strip commercial establishments along Imperial Highway, and low density industrial uses.

Figure 88. Map of Norwalk HSR Station

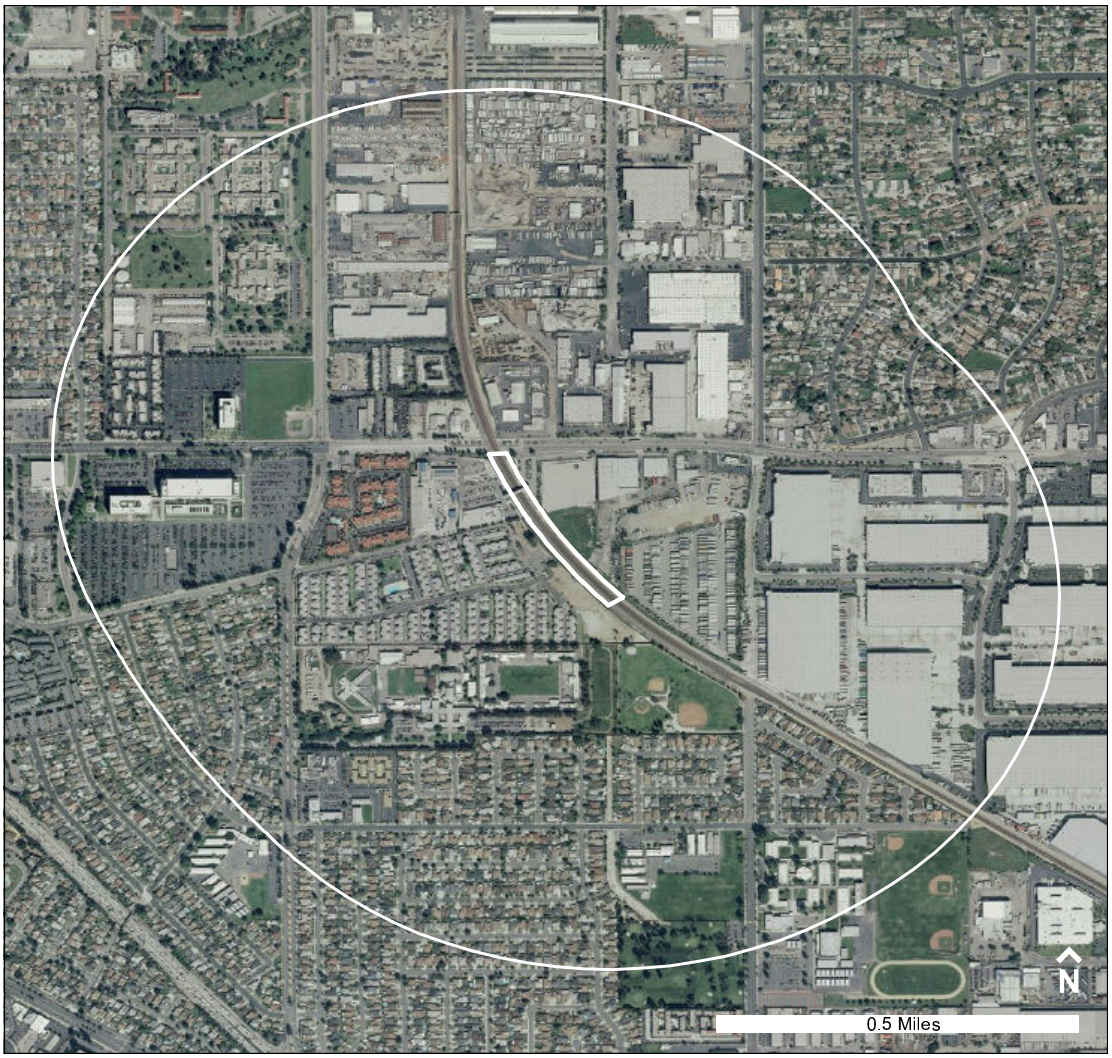



Figure 89. Aerial Photograph of Norwalk HSR Station

**Population**

With 105,549 residents in 2010, Norwalk is a densely populated (11,474 people per square mile) dormitory suburb of Los Angeles.(Source: U.S. Census 2010) Over 70% of the residents are Hispanics, who constitute the majority of the city's population. Between 2000 and 2010, the total population of Norwalk increased by just over 2%, slower than the Los Angeles County rate of 3.1% and the statewide growth rate of 10%. Between 2010 and 2035, the city's population is projected to increase by 14% to 120,409. Median household income in 2010 was $58,442, equivalent

**Residential Population and Population Density Projections within 5 Miles of Norwalk Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Los Angeles County | 10,230,219 | 10,645,211 | 11,005,955 | 11,368,021 | 11,720,520 | 12,061,511 | 12,387,715 |
| Norwalk 5 Mile Station Area | 808,429 | 830,873 | 848,638 | 865,423 | 880,892 | 895,792 | 909,415 |
| Norwalk Half Mile Station Area | 32,615 | 33,609 | 34,376 | 35,178 | 35,956 | 36,707 | 37,425 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Los Angeles County | 2,502 | 2,604 | 2,692 | 2,781 | 2,867 | 2,950 | 3,030 |
| Norwalk 5 Mile Station Area | 7,773 | 7,989 | 8,160 | 8,321 | 8,470 | 8,613 | 8,744 |
| Norwalk Half Mile Station Area | 4,607 | 4,747 | 4,855 | 4,969 | 5,079 | 5,185 | 5,286 |

Figure 90. Residential Population and Population Density Projections within 5 Miles of Norwalk Station (Data Source: SCAG)

to the median household income of all Californians. The median home price in the city in 2010 was $312,000—$90,000 less than the median home price in Los Angeles County as a whole—or 93% of the statewide median home price, having fallen 32% from the pre-recession high median home price (Source: Yahoo Prices.). The homeownership rate (65%) is high when compared to the rate of homeownership within Los Angeles County overall (47.5%) and homeownership statewide (57.8%).

In 2010, 830,873 residents lived in census tracts, including those in Norwalk and adjacent cities, located entirely or containing portions within five miles of the station area (Figures 90 and 91) (Source: Southern California Association of Governments). The population density of those census tracts was an average of 7,989 persons per square mile (Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half mile of the station area, the 2010 population was 33,609, with an average population density of 4,747 persons per square mile (Source: Southern California Association of Governments). SCAG projects that residential population within five miles of the station will increase to 909,415 residents or by 8.6% between 2010 and 2035. Within half mile of the station the residential population is expected to increase by 3,816 or 11.4% within the same period (Source: Southern California Association of Governments).

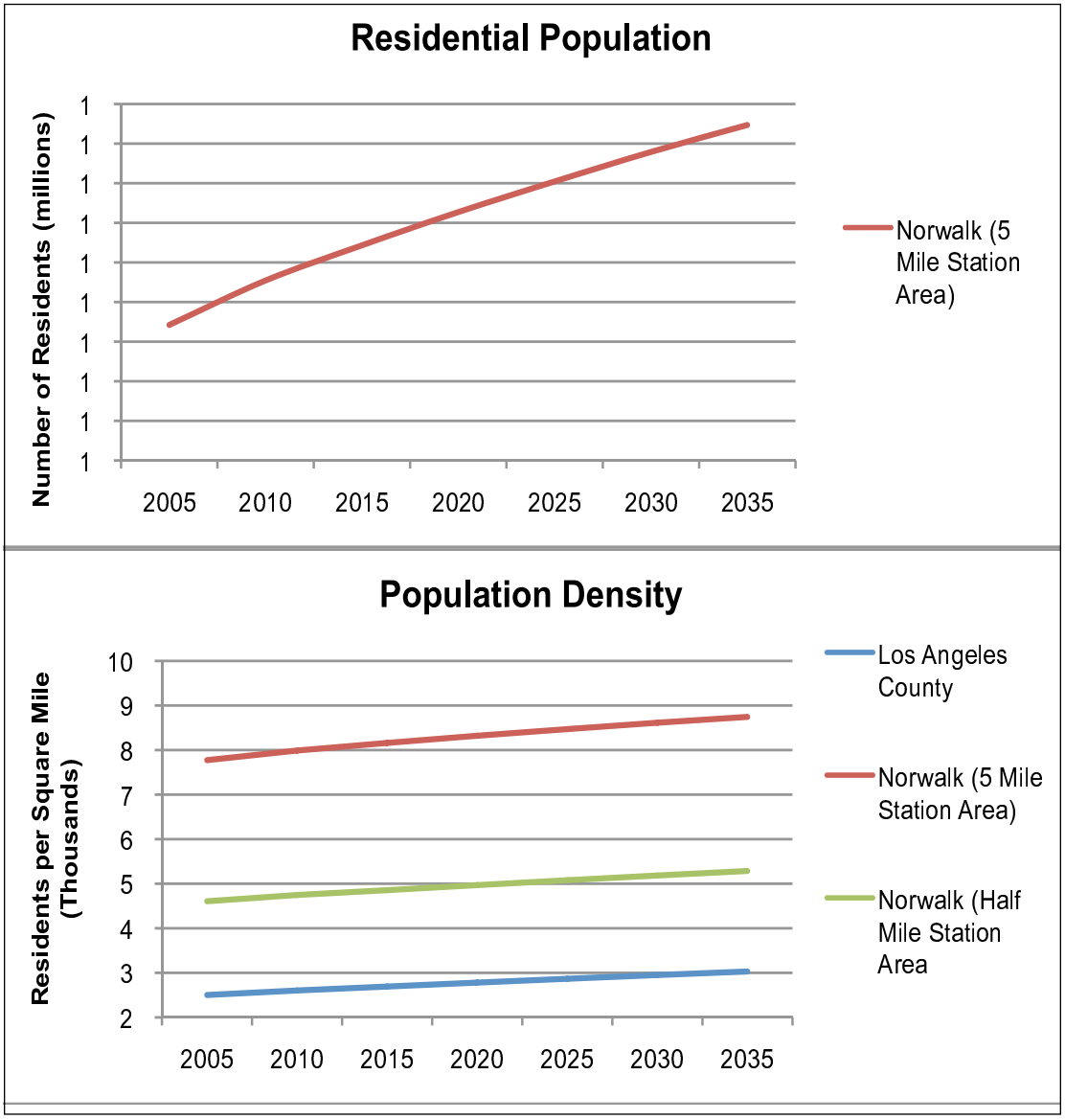



Figure 91. Residential Population and Population Density Projections within 5 miles of Norwalk HSR Station, 2005-2035 (Data Source: SCAG)

**Jobs**

The jobs-housing balance in the city (0.22 jobs for every resident) is less than half the statewide proportion (0.46 jobs per resident). A significant proportion of Norwalk residents, 18.7%, commute to jobs outside the Los Angeles County. The city has a limited economic base, with the education-health sector being the largest job sector, accounting for 27% of total jobs in the city. The sector includes the Norwalk-La Mirada School District, the largest employer in the city, and the Metropolitan State Hospital. A large public administration sector, resulting from the fact that the city is a branch location for Los Angeles County government administration, accounts for 10% of the city's jobs.

We estimated that the area within five miles of the station contained 242,675 jobs in 2009 or less than 6% of all the jobs in Los Angeles County. Within the same area, we predict the number of jobs to increase to 282,823, or by about 16.5%, from 2009 to 2035 (Figure 92)(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). In 2009, jobs in the manufacturing, wholesale, and transportation and retail sectors were relatively overrepresented, compared to the rest of the state (location quotient = 1.40 and 1.27, respectively) (Figures 92 and 94). By 2035, this area will remain specialized in the aforementioned sectors, becoming an increasingly important center for retail jobs relative to the rest of California (location quotient = 1.44 for retail and 1.42 for manufacturing, wholesale, and transportation). In addition to these changes, the highest percent of job growth will occur in the health services, recreation and hospitality, and retail sectors (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Job loss is

**Norwalk 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 252,322 | 257,943 | 262,919 | 267,895 | 272,871 | 277,847 | 282,823 | 9.6% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 241 | 284 | 289 | 293 | 298 | 303 | 307 | 8.3% |
| Manufacturing, Wholesale, and Transportation | 85,777 | 81,164 | 76,910 | 72,657 | 68,403 | 64,150 | 59,896 | -26.2% |
| Retail | 30,211 | 31,558 | 32,531 | 33,504 | 34,477 | 35,451 | 36,424 | 15.4% |
| Financial and Professional Services | 12,197 | 11,581 | 11,760 | 11,939 | 12,118 | 12,297 | 12,476 | 7.7% |
| Professional and Information | 12,339 | 12,637 | 13,015 | 13,393 | 13,771 | 14,149 | 14,527 | 15.0% |
| Management and Administration | 40,799 | 43,302 | 45,093 | 46,883 | 48,674 | 50,464 | 52,255 | 20.7% |
| Educational Services | 25,382 | 25,370 | 25,120 | 24,870 | 24,620 | 24,370 | 24,120 | -4.9% |
| Health Services | 25,515 | 29,321 | 32,466 | 35,611 | 38,756 | 41,901 | 45,046 | 53.6% |
| Recreation and Hospitality Services | 19,861 | 22,726 | 25,735 | 28,744 | 31,753 | 34,763 | 37,772 | 66.2% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.04 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 23.6% |
| Manufacturing, Wholesale, and Transportation | 1.37 | 1.39 | 1.40 | 1.41 | 1.41 | 1.42 | 1.42 | 1.8% |
| Retail | 1.09 | 1.17 | 1.22 | 1.28 | 1.33 | 1.38 | 1.44 | 22.9% |
| Financial and Professional Services | 0.78 | 0.78 | 0.82 | 0.85 | 0.89 | 0.92 | 0.96 | 22.1% |
| Professional and Information | 0.48 | 0.45 | 0.44 | 0.43 | 0.42 | 0.41 | 0.40 | -12.1% |
| Management and Administration | 1.01 | 1.04 | 1.06 | 1.08 | 1.10 | 1.12 | 1.13 | 9.3% |
| Educational Services | 1.12 | 1.00 | 0.92 | 0.84 | 0.78 | 0.73 | 0.68 | -32.4% |
| Health Services | 1.05 | 1.05 | 1.05 | 1.06 | 1.06 | 1.07 | 1.08 | 2.9% |
| Recreation and Hospitality Services | 0.74 | 0.79 | 0.85 | 0.90 | 0.94 | 0.99 | 1.03 | 29.8% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | -0.003 | 0.02 | 0.03 | 0.05 | 0.06 | 0.07 | 0.08 | 333.7% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.76 | -0.77 | -0.79 | -0.81 | -0.83 | -0.84 | -0.85 | 10.7% |
| Manufacturing, Wholesale, and Transportation | 0.03 | 0.06 | 0.09 | 0.12 | 0.16 | 0.21 | 0.27 | 341.4% |
| Retail | 0.03 | 0.07 | 0.10 | 0.13 | 0.16 | 0.18 | 0.21 | 194.7% |
| Financial and Professional Services | -0.09 | -0.07 | -0.05 | -0.02 | 0.00 | 0.02 | 0.04 | -158.7% |
| Professional and Information | -0.16 | -0.15 | -0.15 | -0.15 | -0.15 | -0.15 | -0.15 | 3.4% |
| Management and Administration | 0.00 | 0.03 | 0.05 | 0.07 | 0.09 | 0.11 | 0.13 | 356.8% |
| Educational Services | 0.10 | 0.06 | 0.01 | -0.03 | -0.07 | -0.11 | -0.15 | -350.3% |
| Health Services | 0.03 | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | -10.6% |
| Recreation and Hospitality Services | -0.13 | -0.06 | -0.02 | 0.02 | 0.05 | 0.08 | 0.11 | -263.1% |

Figure 92. Norwalk 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

projected to occur in the management and administration, agriculture and natural resources, and manufacturing, wholesale, and transportation sectors (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). While Norwalk will remain predominantly residential in nature, as population increases the ratio of workers to jobs is likely to be roughly maintained (gap index = 0.02 in 2009 and 0.08 in 2035).

Of those employed within five miles of the station, greater than 77% live outside of the same area. Of those employed persons living within five miles of the station, more than 76% work outside the same area, suggesting high rates of worker mobility both into and outside of the station area for work. Figures 93 and 95 illustrate the top 100 work origins and destinations for the station area by zip code. Of all commuters who work in the station area, 4.3% began their trip in the top ranking ZIP code (90650, Norwalk), while the top destination for jobs (92705, North Tustin) attracted 4.0% of commuters. Geographically, the ZIP codes of worker origin are more dispersed and farther away than job destinations in the station area.

**Top 100 Worker Origins by ZIP Code - Norwalk**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 90650 | 10,603 | 4.3% | 26 | 90640 | 1,809 | 0.7% | 51 | 90804 | 996 | 0.4% | 76 | 92335 | 750 | 0.3% |
| 2 | 90638 | 5,889 | 2.4% | 27 | 90201 | 1,795 | 0.7% | 52 | 90806 | 952 | 0.4% | 77 | 90731 | 749 | 0.3% |
| 3 | 90703 | 5,828 | 2.3% | 28 | 91744 | 1,767 | 0.7% | 53 | 92647 | 945 | 0.4% | 78 | 90044 | 746 | 0.3% |
| 4 | 90660 | 4,574 | 1.8% | 29 | 90670 | 1,749 | 0.7% | 54 | 90220 | 942 | 0.4% | 79 | 92882 | 739 | 0.3% |
| 5 | 90605 | 4,106 | 1.7% | 30 | 92801 | 1,736 | 0.7% | 55 | 91789 | 911 | 0.4% | 80 | 90270 | 729 | 0.3% |
| 6 | 90631 | 4,002 | 1.6% | 31 | 90262 | 1,709 | 0.7% | 56 | 91765 | 893 | 0.4% | 81 | 91792 | 722 | 0.3% |
| 7 | 90604 | 3,884 | 1.6% | 32 | 90723 | 1,690 | 0.7% | 57 | 90011 | 880 | 0.4% | 82 | 92806 | 706 | 0.3% |
| 8 | 90706 | 3,490 | 1.4% | 33 | 92821 | 1,462 | 0.6% | 58 | 92835 | 873 | 0.4% | 83 | 92832 | 682 | 0.3% |
| 9 | 90606 | 3,060 | 1.2% | 34 | 90255 | 1,459 | 0.6% | 59 | 92840 | 866 | 0.3% | 84 | 91702 | 674 | 0.3% |
| 10 | 90805 | 3,012 | 1.2% | 35 | 90815 | 1,433 | 0.6% | 60 | 90810 | 865 | 0.3% | 85 | 92648 | 672 | 0.3% |
| 11 | 90602 | 2,916 | 1.2% | 36 | 92683 | 1,414 | 0.6% | 61 | 90745 | 862 | 0.3% | 86 | 90001 | 662 | 0.3% |
| 12 | 90241 | 2,780 | 1.1% | 37 | 92870 | 1,340 | 0.5% | 62 | 90802 | 862 | 0.3% | 87 | 90003 | 662 | 0.3% |
| 13 | 90280 | 2,474 | 1.0% | 38 | 90022 | 1,297 | 0.5% | 63 | 91770 | 854 | 0.3% | 88 | 90023 | 660 | 0.3% |
| 14 | 90601 | 2,437 | 1.0% | 39 | 92805 | 1,218 | 0.5% | 64 | 90807 | 853 | 0.3% | 89 | 92704 | 654 | 0.3% |
| 15 | 90620 | 2,354 | 0.9% | 40 | 92886 | 1,205 | 0.5% | 65 | 92646 | 852 | 0.3% | 90 | 91733 | 649 | 0.3% |
| 16 | 90603 | 2,279 | 0.9% | 41 | 91710 | 1,144 | 0.5% | 66 | 90063 | 847 | 0.3% | 91 | 90680 | 646 | 0.3% |
| 17 | 90242 | 2,264 | 0.9% | 42 | 90221 | 1,139 | 0.5% | 67 | 92708 | 846 | 0.3% | 92 | 90716 | 636 | 0.3% |
| 18 | 92804 | 2,212 | 0.9% | 43 | 91748 | 1,113 | 0.4% | 68 | 90744 | 824 | 0.3% | 93 | 92509 | 622 | 0.3% |
| 19 | 90630 | 2,112 | 0.9% | 44 | 91709 | 1,102 | 0.4% | 69 | 92831 | 821 | 0.3% | 94 | 90814 | 619 | 0.2% |
| 20 | 90701 | 2,064 | 0.8% | 45 | 90623 | 1,081 | 0.4% | 70 | 90715 | 820 | 0.3% | 95 | 91791 | 613 | 0.2% |
| 21 | 92833 | 2,048 | 0.8% | 46 | 90813 | 1,080 | 0.4% | 71 | 90720 | 809 | 0.3% | 96 | 91761 | 612 | 0.2% |
| 22 | 90621 | 1,993 | 0.8% | 47 | 91706 | 1,063 | 0.4% | 72 | 92802 | 792 | 0.3% | 97 | 92336 | 604 | 0.2% |
| 23 | 90240 | 1,959 | 0.8% | 48 | 91790 | 1,025 | 0.4% | 73 | 91766 | 784 | 0.3% | 98 | 92503 | 602 | 0.2% |
| 24 | 90808 | 1,868 | 0.8% | 49 | 90713 | 1,008 | 0.4% | 74 | 91746 | 774 | 0.3% | 99 | 92841 | 596 | 0.2% |
| 25 | 91745 | 1,849 | 0.7% | 50 | 90803 | 996 | 0.4% | 75 | 92807 | 754 | 0.3% | 100 | 91801 | 595 | 0.2% |

**Top 100 Worker Destinations by ZIP Code - Norwalk**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 92705 | 11,154 | 4.0% | 26 | 92841 | 2,490 | 0.9% | 51 | 90245 | 1,049 | 0.4% | 76 | 92886 | 674 | 0.2% |
| 2 | 92701 | 9,202 | 3.3% | 27 | 92630 | 2,486 | 0.9% | 52 | 90638 | 1,014 | 0.4% | 77 | 92887 | 672 | 0.2% |
| 3 | 92802 | 7,970 | 2.9% | 28 | 92647 | 2,367 | 0.8% | 53 | 92833 | 1,006 | 0.4% | 78 | 92677 | 653 | 0.2% |
| 4 | 92806 | 7,328 | 2.6% | 29 | 92606 | 2,247 | 0.8% | 54 | 92656 | 932 | 0.3% | 79 | 92507 | 636 | 0.2% |
| 5 | 92868 | 7,323 | 2.6% | 30 | 92706 | 1,981 | 0.7% | 55 | 90045 | 930 | 0.3% | 80 | 90248 | 620 | 0.2% |
| 6 | 92704 | 6,910 | 2.5% | 31 | 90620 | 1,979 | 0.7% | 56 | 90015 | 921 | 0.3% | 81 | 90241 | 614 | 0.2% |
| 7 | 92626 | 6,583 | 2.4% | 32 | 92804 | 1,947 | 0.7% | 57 | 92688 | 916 | 0.3% | 82 | 92646 | 605 | 0.2% |
| 8 | 92618 | 6,518 | 2.3% | 33 | 92627 | 1,895 | 0.7% | 58 | 92835 | 912 | 0.3% | 83 | 92620 | 604 | 0.2% |
| 9 | 92805 | 6,090 | 2.2% | 34 | 92703 | 1,884 | 0.7% | 59 | 91710 | 904 | 0.3% | 84 | 92879 | 603 | 0.2% |
| 10 | 92614 | 6,010 | 2.2% | 35 | 90630 | 1,769 | 0.6% | 60 | 90680 | 881 | 0.3% | 85 | 92880 | 590 | 0.2% |
| 11 | 92612 | 5,417 | 1.9% | 36 | 92869 | 1,734 | 0.6% | 61 | 90621 | 873 | 0.3% | 86 | 91706 | 585 | 0.2% |
| 12 | 92780 | 5,271 | 1.9% | 37 | 92653 | 1,733 | 0.6% | 62 | 90720 | 868 | 0.3% | 87 | 92602 | 580 | 0.2% |
| 13 | 92867 | 4,804 | 1.7% | 38 | 92832 | 1,701 | 0.6% | 63 | 91748 | 844 | 0.3% | 88 | 91789 | 578 | 0.2% |
| 14 | 92660 | 4,268 | 1.5% | 39 | 92866 | 1,695 | 0.6% | 64 | 92610 | 785 | 0.3% | 89 | 90503 | 567 | 0.2% |
| 15 | 92801 | 4,139 | 1.5% | 40 | 90670 | 1,613 | 0.6% | 65 | 91730 | 781 | 0.3% | 90 | 92651 | 556 | 0.2% |
| 16 | 92807 | 3,793 | 1.4% | 41 | 90703 | 1,585 | 0.6% | 66 | 92782 | 773 | 0.3% | 91 | 90501 | 548 | 0.2% |
| 17 | 92821 | 3,418 | 1.2% | 42 | 92691 | 1,547 | 0.6% | 67 | 92675 | 769 | 0.3% | 92 | 92408 | 543 | 0.2% |
| 18 | 92708 | 3,402 | 1.2% | 43 | 92663 | 1,512 | 0.5% | 68 | 92844 | 745 | 0.3% | 93 | 91746 | 540 | 0.2% |
| 19 | 92865 | 3,399 | 1.2% | 44 | 92649 | 1,371 | 0.5% | 69 | 90071 | 742 | 0.3% | 94 | 90740 | 529 | 0.2% |
| 20 | 92831 | 3,284 | 1.2% | 45 | 91761 | 1,357 | 0.5% | 70 | 90017 | 735 | 0.3% | 95 | 92882 | 524 | 0.2% |
| 21 | 92707 | 3,081 | 1.1% | 46 | 90012 | 1,305 | 0.5% | 71 | 90220 | 725 | 0.3% | 96 | 90815 | 515 | 0.2% |
| 22 | 92843 | 2,951 | 1.1% | 47 | 90806 | 1,247 | 0.4% | 72 | 92604 | 711 | 0.3% | 97 | 90807 | 499 | 0.2% |
| 23 | 92840 | 2,800 | 1.0% | 48 | 90631 | 1,236 | 0.4% | 73 | 90650 | 699 | 0.3% | 98 | 90058 | 496 | 0.2% |
| 24 | 92870 | 2,677 | 1.0% | 49 | 90802 | 1,117 | 0.4% | 74 | 90505 | 697 | 0.2% | 99 | 91773 | 496 | 0.2% |
| 25 | 92683 | 2,571 | 0.9% | 50 | 92648 | 1,107 | 0.4% | 75 | 90040 | 682 | 0.2% | 100 | 90755 | 490 | 0.2% |

Figure 93. Top 100 Worker Origins and Destinations (Data Source: LEHD)

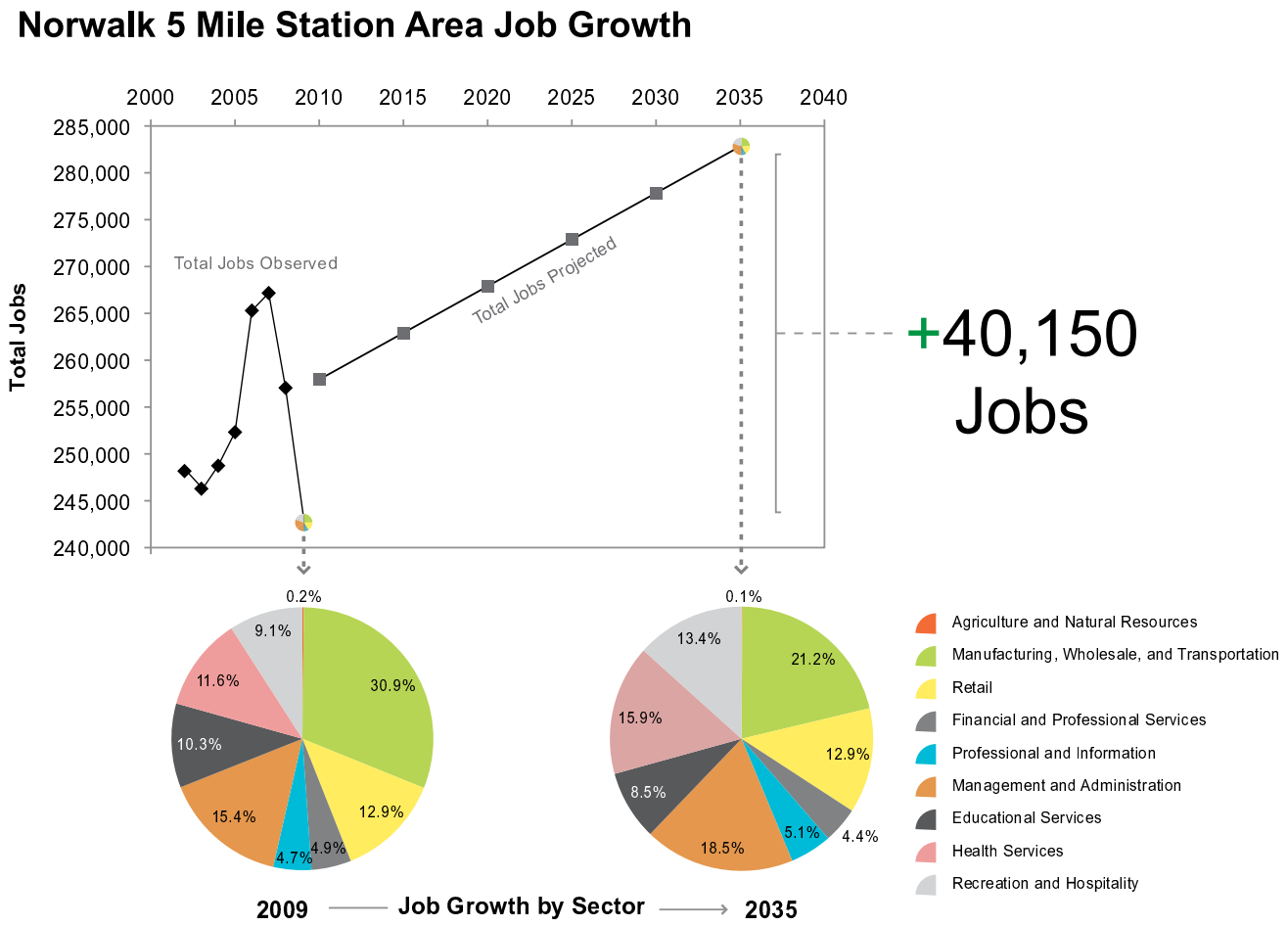



Figure 94. Job Growth Projections (Data Source: LEHD)

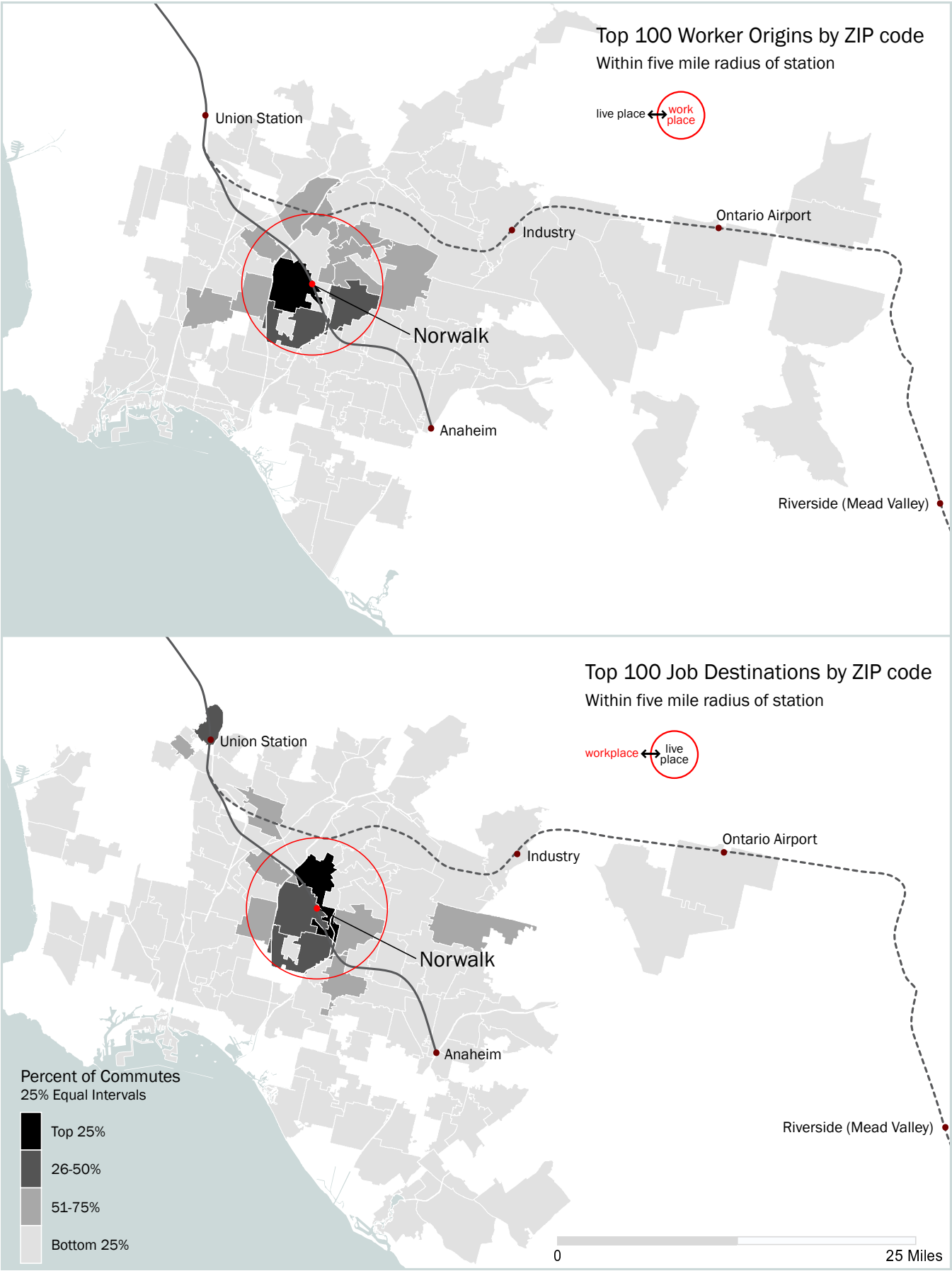



Figure 95. Norwalk Commute Map (Data Source: LEHD)

**Current Land Use**

Land use within half mile of the station area is dominated by industrial uses and related warehousing activities (36%) and public facilities related to various local government administrative uses (also 36%). Single family residential uses constitute 15% of the total area and multi-family residential composes 3.4% of the land. Only 1% of the land is currently vacant (Figure 96).

**Subdivision Pattern**

Parcel sizes in the area range from 0.006 to 155.5 acres, with the largest number of parcels being in the less than 10-acre range (Figure 97). The largest parcels are currently occupied by the Metropolitan State Hospital.

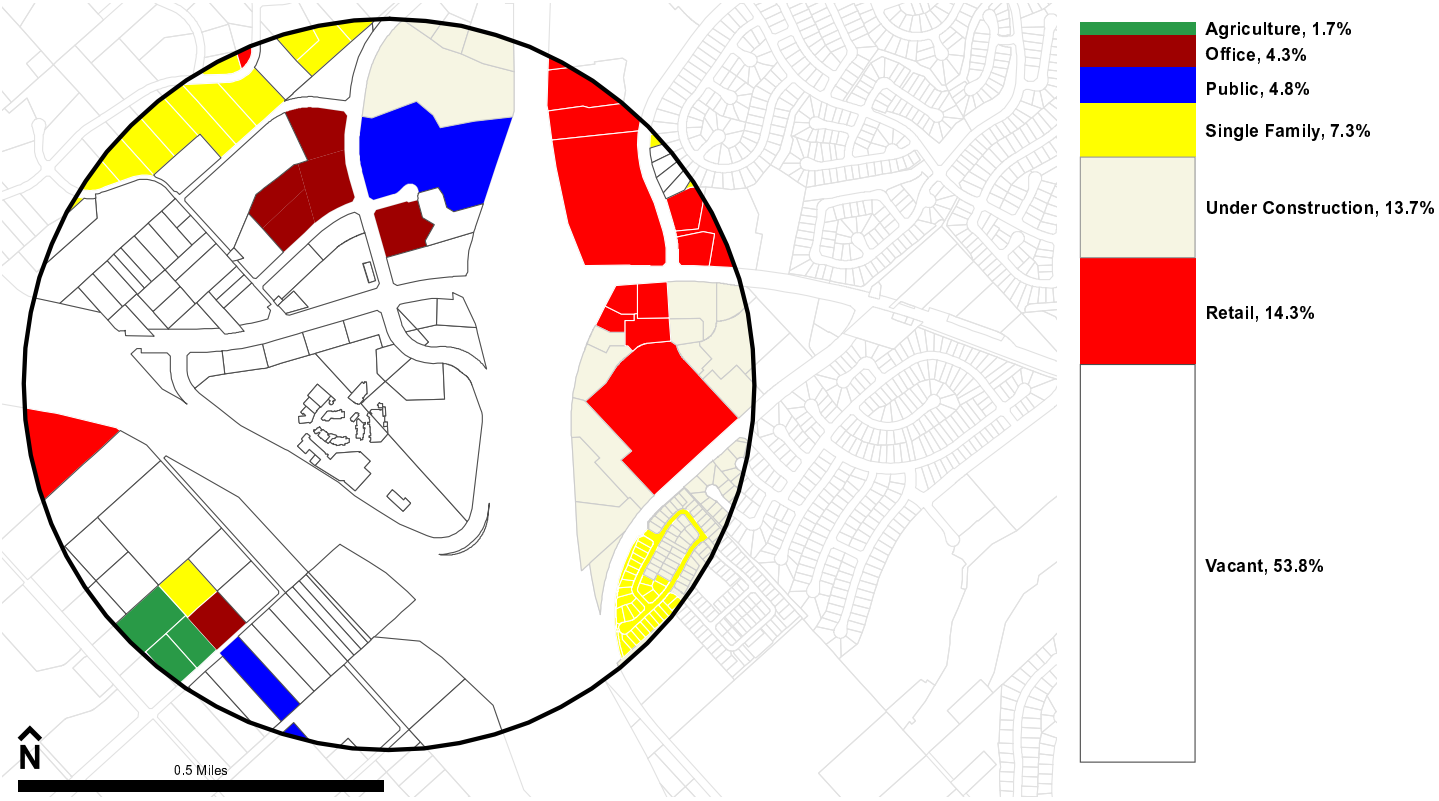



Figure 96. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Norwalk HSR Station (Data Source: SCAG)

**Major Destinations**

A number of important destinations are within a mile of the proposed station area. These include the Metropolitan State Hospital, the City of Norwalk's city hall, and regional headquarters of Bally Fitness and Vons Inc (Figures 98 and 99). Two higher education institutions (Cerritos College and Biola University) and the Cerritos Town Center (a civic and retail center) are located within three miles of the station area.

## Parcel Characteristics within Half Mile of Norwalk Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.006 | 155.5 | >10 |

Figure 97. Subdivision of parcels (Data Source: SCAG)

## Activity and Employment Centers within 5 Miles of Norwalk Station

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Retail | Los Cerritos Mall/Auto Center | 4.0 | 26100 (visitors) |
| Retail/Civic | Cerritos Towne Center | 3.0 | 6,570 |
| Employment | Norwalk/La Mirada Unified School District | Various | 4,365 |
| Employment | LA County | 0.3 | 2,000 |
| Health | Metropolitan State Hospital | 0.8 | 1,530 |
| Education | Biola University | 2.8 | 1,250 |
| Education | Cerritos College | 2.8 | 1,200 |
| Employment | Vons Inc. (Headquarters) | 1.0 | 800 |
| Employment | Bally Fitness (Headquarters) | 0.3 | 650 |
| Employment | City of Norwalk | 0.5 | 480 |

Figure 98. Destinations

Figure 99. Map of Activity and Employment Centers within 5 miles of Norwalk HSR Station

**Transportation and Transit Networks**

Norwalk is accessible from the Santa Ana Freeway (Interstate 5), from the Imperial Freeway (Interstate 105), and the San Gabriel River Freeway (Interstate 605). Additionally, Norwalk is well connected to transit, yet less than 3% of residents use public transportation for commute trips. Los Angeles Metro offers extensive local and express bus transit to other portions of the metropolitan area. Metrolink, Amtrak, and the LA Metro Green Line trains also serve the city. Relatively few (7.3%) households in Norwalk have no access to an automobile, compared with 12.6% of households in Los Angeles County. The environs of the proposed station area, characterized by well designed streets and the universal provision of sidewalks are relatively walkable, despite large block sizes, long distances between intersections, and deep setbacks for commercial buildings, and the relatively high speeds of automobile travel on Imperial Highway (Figure 100).

In 2007, 76.3% of commuters at the city level drove alone to work, up 18% from 2000. Carpooling was the second most common mode at 15.1%, and 3.1% of commuters took public transit. Walking to work (1.6% of commutes) became less popular over the seven year period, decreasing 15.8%. Bicycle or motorcycling accounted for 1.9% of commutes, an increase of about 25%. Two percent of employees worked at home (Figure 101) (Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

**Transit Network within Half Mile of Norwalk Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| None | LA Metro: Lines 69 and 270<br>Norwalk Transit: Lines 1, 2, 3, 4, and 8 | None | Metrolink: 91 Line and Orange County Line | None | 1 Class I Bike Path | 62, Somewhat Walkable |

Figure 100. Transit Connectivity

| Commutes | 2000 | | 2007 | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 38,135 | 100.0 | 45,031 | 100.0 | 18.1% | Yes |
| Drove alone | 28,050 | 73.6 | 34,343 | 76.3 | 22.4% | Yes |
| Carpooled | 6,665 | 17.5 | 6,810 | 15.1 | 2.2% | No |
| Public transit | 1,135 | 3.0 | 1,398 | 3.1 | 23.2% | No |
| Walked | 875 | 2.3 | 737 | 1.6 | -15.8% | No |
| Taxi, motorcycle, bike, other | 685 | 1.8 | 855 | 1.9 | 24.8% | No |
| Worked at home | 720 | 1.9 | 888 | 2.0 | 23.3% | No |

Figure 101. Modal Split: City of Norwalk (Data Source: AASHTO/CTPP)

**Real Estate Market Values and Trends**

Existing real estate market values in the station area are generally average among studied cities with no extreme high or low values (Figure 102). Within 2.5 miles of the station, office sales averaged around $259 per square foot for properties sold since 2006, comparable to properties in Sylmar/San Fernando. Average leases for office space per square foot per year are $20.18, more affordable than Murrieta's ($21.23) and more expensive than Anaheim's ($18.43)(Source: Loopnet.com, Geographic Research Inc. 2011). Retail spaces lease for an average of $19.00, comparable to prices in Ontario.

In 2010, median home values in census tracts located partially or entirely within a half mile of the station were $191,667, a 19% increase from 2000, the lowest growth rate among studied station areas. As indicated in the land use and subdivision section above, 81% of residential properties were single family dwellings. One multiple family neighborhood occupying 18.7% of residential land currently exists adjacent to the proposed station.

**Development Potential**

Norwalk is an industrial suburb of Los Angeles that is currently characterized by the kind of development whose potential for growth is perhaps unlikely to be enhanced by HSR's increased accessibility. Furthermore, job loss is forecasted for the industrial sector in the future. We imagine two rather separate ways in which Norwalk might leverage its increased accessibility.

The first scenario suggests that Norwalk will continue to remain a largely residential suburb. The relatively low cost of housing in Norwalk might allow it to redevelop portions of its warehousing and industrial lands as transit supportive, medium-density housing mixed with neighborhood-serving retail and services. The audience for such housing, much like most of Norwalk's current single-family housing stock, would be commuters, especially those who might use HSR to connect to major employment centers in downtown Los Angeles, Burbank, and Anaheim. Creating a transit

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | **$360** | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | **19.0%** |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | **$25.12** | $273,569 | **$213,168** | 28.3% |
| Sylmar/San Fernando | **$28.33** | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | **$107** | **$12.52** | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | **$8.17** | $160 | $24.02 | **$123,572** | **$74,106** | **66.8%** |
| Murrieta | $21.23 | $270 | $21.92 | **$295,833** | $180,469 | 63.9% |

**Category High**/**Category Low**

Source: Loopnet.com, Geographic Research Inc.

Figure 102. Real Estate Market Values

supportive, residential environment in Norwalk will likely require some significant urban design interventions that would make both the proposed station area and existing retail and services activities along Imperial Highway more accessible to those traveling on foot or by bike.

The second scenario suggests that Norwalk should build on its enhanced accessibility by developing into a relatively small, but self-contained urban area of its own. Already a hub for Los Angeles County administrative services and suburban transportation services, the arrival of high-speed rail might permit Norwalk also to become a hub for suburban business activities. As industrial and warehousing activity diminishes, Norwalk's inventory of land in these categories could be regenerated for new kinds of employment activities. The plausibility of both scenarios could be enhanced by extending the LA Metro Green Line to the Metrolink, and potential HSR, station area.

**Local Perspectives**

The Norwalk/Santa Fe Springs station is planned to be the only station between downtown Los Angeles and the ARTIC complex in Anaheim. Unlike Anaheim, however, which eagerly anticipates the coming of the high speed train, Norwalk and Santa Fe Springs are representative of a number of smaller cities that are skeptical of the benefits and concerned about the unintended consequences that the HSR may bring to their communities. And while Anaheim is proactively preparing station-area plans and moving ahead with the planning and implementation of a multi-modal transportation center that will also host the HSR, Norwalk/Santa Fe Springs do not even know the exact location of the proposed HSR station (Figure 103). They are also critical that the HSRA is rushing a process that should be more participatory and deliberative. Santa Fe Springs has taken the lead in organizing nine other cities (Vernon, Montebello, Commerce, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park and Fullerton), which will be affected by the Los Angeles-Anaheim alignment. Santa Fe Springs city manager, Fred Latham, chairs a group of managers from these nine cities, while the Santa Fe Springs Director of Public Works heads a technical group of urban planners and engineers. According to Latham:

*"Up to the summer of 2009, cities for the most part didn't pay much attention to what seemed to be a futuristic visioning without any real means for implementation. When the voters of California approved some seed funding and the proposition saying we were willing to issue some bonds to make the project go, those presentations took on a little more meaning. We also realized that the HSRA had preceded well down the path of evaluating alternative alignments for this area and had already done some preliminary environmental work in that regard. So we realized that we needed to either individually or collectively meaningfully engage the HSRA in a conversation about how that might work within our communities. And so in September of 2009, 120 folks from our communities, from HSRA, and from the regional transportation authorities,*

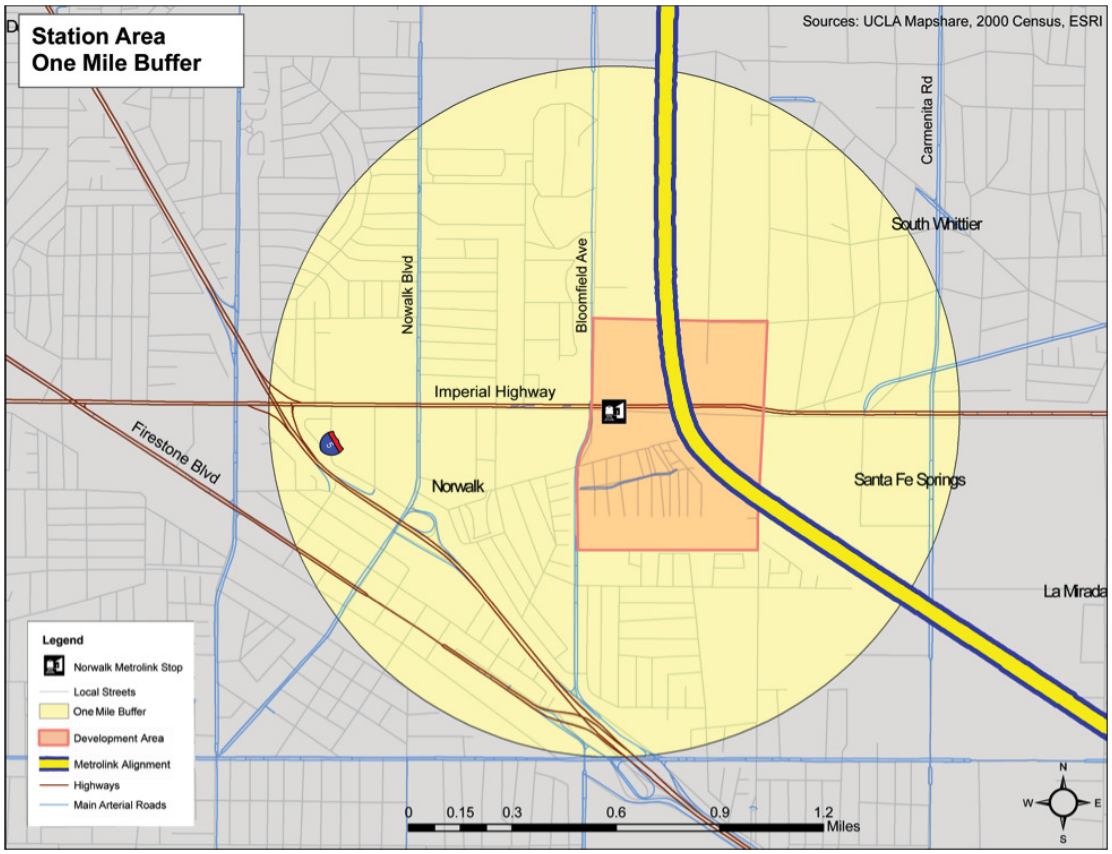



Figure 103. Possible Norwalk/Santa Fe Station Location

*MTA and OCTA, met at the Metro headquarters in Los Angeles with then CEO of HSRA, Mehdi Morshed, and with two board members-- Curt Pringle and Richard Katz – to have a very honest conversation about where we were. And where we were was that the HSRA in its view had proceeded way down the path in terms of alternative analysis, line analysis and CEQA process. And the cities were way behind in that process, and we needed to figure out some way to more meaningfully move forward. So we agreed to create a memorandum of understanding (MOU) between our cities and the Authority. And that MOU defined the way which we would, as a region, engage the HSRA and create some structure. The structure included two subcommittees from these cities. One was a technical group of urban planners from the cities and the engineers. The other was a more policy oriented group which was the city managers from each of those cities. Also part of that MOU and part of a team that is working regionally to deal with this is MTA and OCTA. Each of them have staff assigned to the project, and the Executive Directors of each have been directly involved as well in meetings and discussions regarding high speed rail. There are a lot of pieces to the MOU. The MOU states that the HSRA will reimburse the cities up to $700,000 for technical support and in developing our response, and hopefully finding a way to find the right project to build in this region. Cities retain the ability to challenge the environmental documents and it identifies rights that are available to the cities in terms of land acquisition, etc. So it defines a framework for our relationship.*

*The MOU is actually between a Council of Governments (COG), which is a regional entity of 27 cities who voted unanimously to approve the MOU and to say to the HSRA that unless they were responsive to the 9 cities that are impacted by the rail, then the COG would oppose the project"* (Latham interview).

**Perceived Benefits**

While Latham does not dispute that the HSRA will create jobs statewide, he questions the benefits that the nine cities he represents are going to accrue, and has a long list of concerns:

*"Is it really worth the impact upon all of these urban communities, some of which are low to moderate income communities?…Is it really worth the impact on them to run a train basically from Los Angeles to Anaheim that maybe gets 12 or 15 minutes faster? And by doing so, you probably reduce some of the current intercity modes of transportation, if you are using the same tracks"* (Latham interview).

**Challenges and Concerns**

At present, the COG is examining the pros and cons of two alternative scenarios: a dedicated track alignment and a shared track alignment. A dedicated track would add two additional tracks to the existing BNSF (freight) alignment going from Los Angeles to Anaheim, and would therefore require a significant additional amount of right-of-way acquisition. According to Latham, such a scenario, which would be more costly to build, would also have serious adverse effects on Santa Fe Springs, as it would require the removal of a number of businesses and relatively new industrial structures. Additionally, a dedicated track alignment would bypass the existing Norwalk/Santa Fe Springs Transportation Center, which receives Amtrak and Metro trains.

Acquiring the necessary right-of-way for this alternative in the short timeframe that the federal funding terms require is unrealistic, according to Latham. As he argues:

*"The difficulty in making the comparisons with Europe and Asia is that the land acquisition rights and responsibilities are very different. In much of Asia and good portions of Europe, in addition to the fact that the governments can own a good portion of the land, especially around transportation centers and hubs, they have the ability to simply acquire land. The property rights in the United States are very different, and there is a protracted period of time to acquire property through eminent domain. …. And acquiring property from our experience is a tedious, laborious, and litigious process. For anyone to think that all that can be accomplished in this relatively tight timeframe is probably unrealistic in the US"* (Latham interview).

The shared track alternative, proposed by Metro and OCTA, appears easier and is somewhat more palatable to Norwalk/Santa Fe Springs and the other cities of the COG. It would use the existing BNSF lines, elevating them or putting them in a tunnel at certain parts and substantially modifying the operations of BNSF and Metro on the existing lines. This alternative would be less costly, have less impact on urban form, and would require fewer property acquisitions. The location of the HSR station in this alternative would be close to the existing transportation center. However, it is questionable if BNSF, Amtrak, and Metro would go along with this option because it would lead to complex operations, forcing them to share the same tracks. This alternative may mean running less intra-city trains and possibly reducing the relevance of the Santa Fe Springs/Norwalk Metro station.

An additional major concern of Norwalk/Santa Fe Springs according to Latham is what the city perceives as a rushed process, dictated by the terms of the ARRA federal funding that requires that cities have "a shovel in the ground and a contract by 2012" (Latham interview). According to Latham, this rush does not allow a full evaluation of the economic and environmental impacts of the different alternatives on cities. As he argues:

*"We have pleaded with the HSRA board to slow the process down, even if that means that this segment would not get ARRA funding because we are very concerned that by doing so we are missing steps in the process… missing steps of community involvement, city input, [and] of really fully exploring all the available alternatives for the alignment. So certainly a very significant concern on the part of our cities is that the process is being pushed in order to qualify for ARRA funding in a way that doesn't fully realize the need that we have… for a more deliberative process"* (Latham interview).

Similar to the complaints of other cities, Norwalk/Santa Fe Springs and the other cities of the COG are concerned that because of the small HSRA staff and the lack of any Southern California-based HSRA staff, local planners and officials have to deal with consultants, who are not very responsive to their concerns.

While cities such as San Jose, Fresno or Anaheim aspire to attract new commercial and residential development around their HSR station, this vision does not hold true for cities like Santa Fe Springs that represent the industrial back lot of the metropolitan area (Figure 104). As Latham argues:

*"The multi-modal transportation center with mixed used development and other kinds of stuff is a great vision. But the problem is when you are dealing with industrial areas, it doesn't fit; it doesn't work. You have to blow out all kinds of existing uses that are all, in many cases, very highly functional, very economically valuable to the communities to put in a mixed use project. This is really unreasonable. The other part of the vision that went astray is the assumption that cities would be able to partner into funding their transportation centers. But we are confronted with a lack of resources to go in and commit resources to these kinds of projects. For example, part of the vision was that cities would build the parking structures, and use eminent domain to clear out the areas within their transportation center in order to do mixed use development. That's just very unrealistic. In Anaheim, they had the benefit of having some land that was available in the area around the Anaheim Stadium. That way they could build ARTIC. So they had that capacity in a very dense urban area. Our ability to go in and build the kind of visionary transportation centers that the master plan for the Authority envisioned, both in terms of creating land for such things but also most importantly creating the money to build them is just unrealistic. It was probably unrealistic when they drafted it but it certainly became unrealistic when the economy went south"* (Latham interview).

Being quite ambivalent about the benefits from HSR and worried about the adverse effects that its construction might bring upon local business, Norwalk/Santa Fe Springs have not started the planning process. So far these cities have adopted a reactive rather than a proactive stance, reacting and responding the HSRA's proposed alternative alignments but not proactively planning for the coming of the HSR or considering possible opportunities for residential TODs and offering more affordable housing for people working in Anaheim or downtown Los Angeles.

Figure 104. Rendering of ARTIC Station Building

# 3.8 ONTARIO

**Introduction**

The City of Ontario is a suburban municipality in Los Angeles' Inland Empire, approximately forty miles from downtown Los Angeles (Figure 105). The Ontario HSR portal, like the proposed Burbank station, is planned for a site adjacent to the passenger terminal of a domestic and international air travel hub (Figure 106). Situated on the city's northern boundary, the Ontario station would exist in a transitional zone characterized by rural land uses, suburban housing, and emerging office developments. Proximity to the regional freeway network and subsequent access to the large labor pools of the inland empire has fueled substantial growth, particularly in class A office space, which has slowed down since the recent economic recession. Despite dramatic decreases in market productivity, the station area now boasts affordable housing and office values. When paired with instant connectivity to the regional airport, unique conditions arise for this particular node on the HSR network.

Figure 105. Map of Ontario HSR Station

Figure 106. Aerial Photograph of Ontario HSR Station

**Population**

The 2010 US Census recorded 163,924 people residing in Ontario making it the fourth largest city in San Bernardino County behind Rancho Cucamonga (165,269) and ahead of Victorville (115,903), and the 29th largest in California. Population density in the city is 3,248 people per square mile, less dense in comparison with other station cities. Hispanics of all races account for 69% of the population, while the remaining 31% of city residents are comprised of

**Residential Population and Population Density Projections within 5 Miles of Ontario Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| San Bernardino County | 1,971,318 | 2,182,049 | 2,385,748 | 2,582,765 | 2,773,945 | 2,957,753 | 3,133,801 |
| Ontario 5 Mile Station Area | 456,649 | 496,728 | 538,487 | 581,370 | 622,676 | 662,139 | 700,196 |
| Ontario Half Mile Station Area | 20,912 | 21,008 | 21,678 | 22,626 | 23,478 | 24,242 | 24,937 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| San Bernardino County | 98 | 109 | 119 | 129 | 138 | 147 | 156 |
| Ontario 5 Mile Station Area | 3,066 | 3,336 | 3,616 | 3,904 | 4,181 | 4,446 | 4,702 |
| Ontario Half Mile Station Area | 1,084 | 1,089 | 1,124 | 1,173 | 1,217 | 1,257 | 1,293 |

Figure 107. Residential Population and Population Density Projections within 5 Miles of Ontario Station (Data Source: SCAG)

Whites (18.2%), Blacks (5.9%), Asians (4.9%), and other minorities (1.8%). Between 2000 and 2010, Ontario's total population decreased from 170,373, a 3.7% decrease, and a noteworthy loss compared to the San Bernardino County increase of 19% and the statewide population growth rate of 10%. Between 2010 and 2035, the city's population is projected to increase by 67.1% to 161,927. Median household income in Ontario in 2010 was $42,452 or 72% of the median household income among all Californians (Source: U.S. Census 2010). The median home price in the city in 2010 was $369,100, or 77% of the statewide median home price.(Source: Yahoo Prices.) The homeownership rate (59.2%) is comparable to statewide homeownership rates (57.8%).

In 2010, 496,728 residents lived in census tracts located entirely or containing portions within five miles of the station (Source: Southern California Association of Governments). The population density of these census tracts was an average of 3,336 persons per square mile, slightly below the average population density citywide (Figure 107)(Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half mile of the station, the 2010 population was 21,008 with an average population density of 1,089 persons per square mile (Source: Southern California Association of Governments). The Southern California Association of Governments (SCAG) projects that residential population within five miles of the station will increase to 700,196 residents or by 41% between 2010 and 2035. Within half mile of the station the residential population is expected to increase to 24,937 or by 18.7% within the same period (Figure 108)(Source: Southern California Association of Governments).

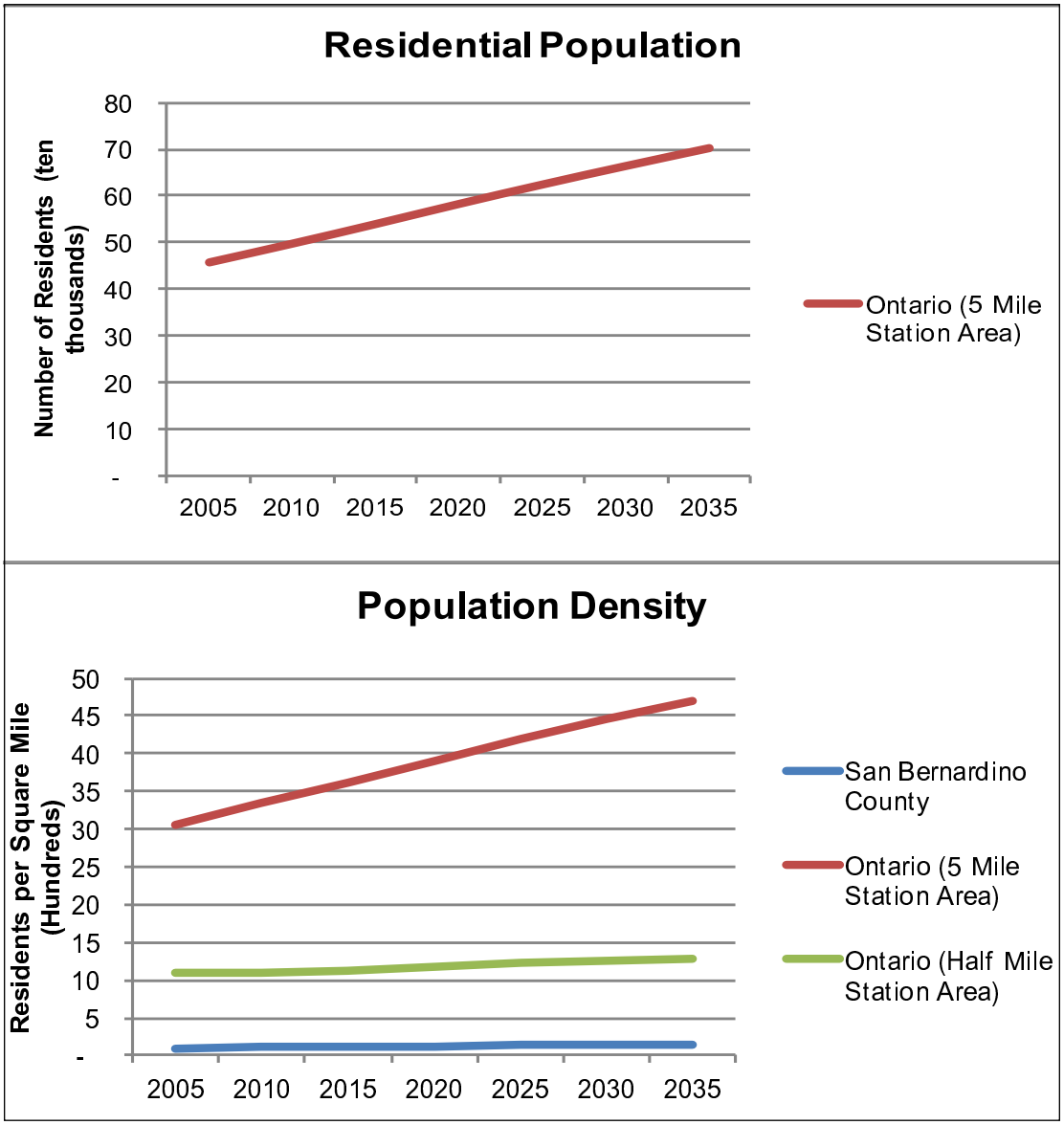



Figure 108. Residential Population and Population Density Projections within 5 miles of Ontario HSR Station, 2005-2035 (Data Source: SCAG)

**Jobs**

Job totals in the City of Ontario account for 1.6% of all San Bernardino County jobs. The jobs-housing balance in the city (0.59 jobs for every resident) is slightly higher than the statewide proportion (0.46). Forty percent of Ontario employees work at jobs within San Bernardino County, while 24% commute to Los Angeles County, and 15.9% to Riverside County. Most employees (39.5%) at the city level work in the manufacturing, wholesale and transportation sector.

We estimated that the area within five miles of the station contained 174,077 jobs in 2009 or 24% of the jobs in San Bernardino County (Source: Longitudinal Employer Household

**Ontario 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 181,304 | 190,337 | 204,696 | 219,055 | 233,414 | 247,774 | 262,133 | 37.7% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 1,324 | 1,139 | 925 | 710 | 496 | 282 | 67 | -94.1% |
| Manufacturing, Wholesale, and Transportation | 75,245 | 75,945 | 77,601 | 79,257 | 80,913 | 82,569 | 84,225 | 10.9% |
| Retail | 21,023 | 24,329 | 27,933 | 31,536 | 35,140 | 38,743 | 42,347 | 74.1% |
| Financial and Professional Services | 9,383 | 9,125 | 9,889 | 10,653 | 11,417 | 12,181 | 12,945 | 41.9% |
| Professional and Information | 8,377 | 9,369 | 10,561 | 11,753 | 12,944 | 14,136 | 15,328 | 63.6% |
| Management and Administration | 35,694 | 33,385 | 35,138 | 36,891 | 38,644 | 40,397 | 42,150 | 26.3% |
| Educational Services | 7,851 | 8,687 | 9,270 | 9,852 | 10,435 | 11,017 | 11,599 | 33.5% |
| Health Services | 8,810 | 12,853 | 15,963 | 19,074 | 22,185 | 25,295 | 28,406 | 121.0% |
| Recreation and Hospitality Services | 13,597 | 15,504 | 17,416 | 19,329 | 21,241 | 23,153 | 25,065 | 61.7% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.29 | 0.25 | 0.20 | 0.15 | 0.10 | 0.06 | 0.01 | -94.6% |
| Manufacturing, Wholesale, and Transportation | 1.67 | 1.76 | 1.82 | 1.88 | 1.96 | 2.04 | 2.15 | 21.8% |
| Retail | 1.06 | 1.22 | 1.35 | 1.47 | 1.59 | 1.70 | 1.80 | 47.5% |
| Financial and Professional Services | 0.83 | 0.84 | 0.88 | 0.93 | 0.97 | 1.02 | 1.07 | 28.0% |
| Professional and Information | 0.45 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.45 | -0.4% |
| Management and Administration | 1.24 | 1.08 | 1.06 | 1.04 | 1.02 | 1.00 | 0.99 | -9.0% |
| Educational Services | 0.48 | 0.47 | 0.43 | 0.41 | 0.39 | 0.37 | 0.35 | -24.5% |
| Health Services | 0.50 | 0.62 | 0.66 | 0.69 | 0.71 | 0.72 | 0.73 | 17.8% |
| Recreation and Hospitality Services | 0.70 | 0.73 | 0.74 | 0.74 | 0.74 | 0.74 | 0.73 | 0.5% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 0.19 | 0.21 | 0.24 | 0.26 | 0.28 | 0.30 | 0.32 | 50.8% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | 0.01 | -167.7% |
| Manufacturing, Wholesale, and Transportation | 0.30 | 0.34 | 0.38 | 0.41 | 0.45 | 0.48 | 0.52 | 51.3% |
| Retail | 0.16 | 0.26 | 0.34 | 0.40 | 0.46 | 0.51 | 0.55 | 108.7% |
| Financial and Professional Services | 0.14 | 0.16 | 0.19 | 0.22 | 0.24 | 0.26 | 0.28 | 70.1% |
| Professional and Information | 0.04 | 0.07 | 0.09 | 0.11 | 0.13 | 0.14 | 0.15 | 111.4% |
| Management and Administration | 0.27 | 0.24 | 0.26 | 0.28 | 0.29 | 0.30 | 0.32 | 30.5% |
| Educational Services | -0.13 | -0.13 | -0.15 | -0.16 | -0.17 | -0.18 | -0.19 | 39.8% |
| Health Services | -0.09 | 0.01 | 0.06 | 0.09 | 0.11 | 0.13 | 0.15 | 1286.3% |
| Recreation and Hospitality Services | 0.09 | 0.12 | 0.14 | 0.15 | 0.16 | 0.17 | 0.18 | 47.1% |

Figure 109. Ontario 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Within the same area, we predict the number of jobs to increase to 262,133 by 2035, or by 50.6% (Figure 109)(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamicspartnership, http://lehdmap.did.census.gov.). The job market here features a higher proportion of manufacturing, wholesale and transportation, and retail sector jobs than the California norm (location quotient = 1.72 and 1.38 respectively). This trend will remain in 2035, with the financial and professional sector also exceeding the state equivalent. The health services sector is projected to remain the fastest growing sector, while the professional and information sector and retail sector will also experience growth (in terms of positive percent change) (Figure 111). Three sectors will experience negative growth: agriculture, management, wholesale, and transportation, and educational services. In 2009, areas within a five mile radius of the HSR portal were jobs-rich (gap index = 0.18), with considerably more jobs than workers by 2035 (gap index = 0.32).

In 2009, 84.9% of those employed within five miles of the station live outside of the same area. Of those employed persons living within five miles of the station, more than 79%

**Top 100 Worker Origins by ZIP Code - Ontario**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91730 | 5,699 | 3.3% | 26 | 92316 | 1,322 | 0.8% | 51 | 91765 | 611 | 0.4% | 76 | 91741 | 381 | 0.2% |
| 2 | 92335 | 5,117 | 2.9% | 27 | 92404 | 1,264 | 0.7% | 52 | 91789 | 604 | 0.3% | 77 | 92307 | 378 | 0.2% |
| 3 | 91761 | 4,672 | 2.7% | 28 | 91752 | 1,217 | 0.7% | 53 | 92374 | 597 | 0.3% | 78 | 92821 | 375 | 0.2% |
| 4 | 91764 | 4,585 | 2.6% | 29 | 92504 | 1,179 | 0.7% | 54 | 92880 | 597 | 0.3% | 79 | 92883 | 363 | 0.2% |
| 5 | 91701 | 4,530 | 2.6% | 30 | 92879 | 1,138 | 0.7% | 55 | 92411 | 588 | 0.3% | 80 | 92562 | 353 | 0.2% |
| 6 | 91762 | 4,228 | 2.4% | 31 | 92392 | 1,062 | 0.6% | 56 | 92308 | 563 | 0.3% | 81 | 91724 | 352 | 0.2% |
| 7 | 91786 | 4,108 | 2.4% | 32 | 91711 | 1,059 | 0.6% | 57 | 91706 | 557 | 0.3% | 82 | 91745 | 326 | 0.2% |
| 8 | 92336 | 3,910 | 2.2% | 33 | 91768 | 1,051 | 0.6% | 58 | 92870 | 533 | 0.3% | 83 | 92802 | 320 | 0.2% |
| 9 | 91710 | 3,661 | 2.1% | 34 | 91750 | 1,045 | 0.6% | 59 | 90650 | 506 | 0.3% | 84 | 91791 | 316 | 0.2% |
| 10 | 92376 | 3,255 | 1.9% | 35 | 92410 | 1,030 | 0.6% | 60 | 92551 | 496 | 0.3% | 85 | 92301 | 307 | 0.2% |
| 11 | 92509 | 3,063 | 1.8% | 36 | 92506 | 1,018 | 0.6% | 61 | 92881 | 492 | 0.3% | 86 | 92408 | 306 | 0.2% |
| 12 | 91737 | 2,617 | 1.5% | 37 | 92377 | 1,008 | 0.6% | 62 | 92804 | 485 | 0.3% | 87 | 92544 | 300 | 0.2% |
| 13 | 91766 | 2,459 | 1.4% | 38 | 92507 | 996 | 0.6% | 63 | 92886 | 483 | 0.3% | 88 | 92683 | 296 | 0.2% |
| 14 | 91709 | 2,297 | 1.3% | 39 | 92505 | 926 | 0.5% | 64 | 92373 | 476 | 0.3% | 89 | 91792 | 295 | 0.2% |
| 15 | 92345 | 2,120 | 1.2% | 40 | 92557 | 913 | 0.5% | 65 | 92508 | 475 | 0.3% | 90 | 93550 | 295 | 0.2% |
| 16 | 91784 | 2,039 | 1.2% | 41 | 92570 | 869 | 0.5% | 66 | 91740 | 466 | 0.3% | 91 | 90640 | 294 | 0.2% |
| 17 | 92337 | 1,992 | 1.1% | 42 | 92346 | 821 | 0.5% | 67 | 92592 | 466 | 0.3% | 92 | 92630 | 288 | 0.2% |
| 18 | 92503 | 1,934 | 1.1% | 43 | 90631 | 752 | 0.4% | 68 | 91748 | 464 | 0.3% | 93 | 92780 | 279 | 0.2% |
| 19 | 91767 | 1,801 | 1.0% | 44 | 92860 | 728 | 0.4% | 69 | 92501 | 464 | 0.3% | 94 | 90201 | 278 | 0.2% |
| 20 | 91763 | 1,758 | 1.0% | 45 | 92571 | 713 | 0.4% | 70 | 91790 | 445 | 0.3% | 95 | 92311 | 274 | 0.2% |
| 21 | 91739 | 1,645 | 0.9% | 46 | 91744 | 668 | 0.4% | 71 | 92801 | 426 | 0.2% | 96 | 90011 | 273 | 0.2% |
| 22 | 92324 | 1,632 | 0.9% | 47 | 91773 | 662 | 0.4% | 72 | 91702 | 414 | 0.2% | 97 | 90280 | 269 | 0.2% |
| 23 | 92407 | 1,489 | 0.9% | 48 | 92530 | 653 | 0.4% | 73 | 92805 | 405 | 0.2% | 98 | 92313 | 269 | 0.2% |
| 24 | 92553 | 1,456 | 0.8% | 49 | 92399 | 651 | 0.4% | 74 | 90805 | 388 | 0.2% | 99 | 91342 | 267 | 0.2% |
| 25 | 92882 | 1,370 | 0.8% | 50 | 92405 | 651 | 0.4% | 75 | 91722 | 383 | 0.2% | 100 | 91331 | 263 | 0.2% |

**Top 100 Worker Destinations by ZIP Code - Ontario**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91761 | 7,686 | 6.5% | 26 | 92507 | 724 | 0.6% | 51 | 91723 | 424 | 0.4% | 76 | 92316 | 297 | 0.3% |
| 2 | 91730 | 6,428 | 5.4% | 27 | 91702 | 694 | 0.6% | 52 | 91745 | 422 | 0.4% | 77 | 91791 | 295 | 0.2% |
| 3 | 91786 | 4,597 | 3.9% | 28 | 91737 | 682 | 0.6% | 53 | 92612 | 419 | 0.4% | 78 | 92401 | 295 | 0.2% |
| 4 | 91710 | 4,593 | 3.9% | 29 | 91709 | 670 | 0.6% | 54 | 92407 | 409 | 0.3% | 79 | 92373 | 294 | 0.2% |
| 5 | 91764 | 3,159 | 2.7% | 30 | 92705 | 667 | 0.6% | 55 | 92324 | 387 | 0.3% | 80 | 91007 | 291 | 0.2% |
| 6 | 91762 | 2,747 | 2.3% | 31 | 92336 | 597 | 0.5% | 56 | 91016 | 382 | 0.3% | 81 | 90638 | 289 | 0.2% |
| 7 | 92408 | 2,098 | 1.8% | 32 | 91746 | 591 | 0.5% | 57 | 90703 | 381 | 0.3% | 82 | 92504 | 289 | 0.2% |
| 8 | 91711 | 1,939 | 1.6% | 33 | 92618 | 581 | 0.5% | 58 | 92614 | 380 | 0.3% | 83 | 90245 | 285 | 0.2% |
| 9 | 91763 | 1,875 | 1.6% | 34 | 92501 | 579 | 0.5% | 59 | 91740 | 378 | 0.3% | 84 | 90640 | 278 | 0.2% |
| 10 | 92335 | 1,818 | 1.5% | 35 | 90015 | 576 | 0.5% | 60 | 91101 | 372 | 0.3% | 85 | 91107 | 278 | 0.2% |
| 11 | 90012 | 1,787 | 1.5% | 36 | 92806 | 554 | 0.5% | 61 | 92660 | 364 | 0.3% | 86 | 92801 | 277 | 0.2% |
| 12 | 91768 | 1,623 | 1.4% | 37 | 92880 | 554 | 0.5% | 62 | 92805 | 356 | 0.3% | 87 | 92704 | 271 | 0.2% |
| 13 | 91767 | 1,612 | 1.4% | 38 | 91765 | 541 | 0.5% | 63 | 91784 | 352 | 0.3% | 88 | 92505 | 264 | 0.2% |
| 14 | 91766 | 1,493 | 1.3% | 39 | 92879 | 501 | 0.4% | 64 | 92831 | 352 | 0.3% | 89 | 91744 | 263 | 0.2% |
| 15 | 91773 | 1,081 | 0.9% | 40 | 92376 | 497 | 0.4% | 65 | 91010 | 351 | 0.3% | 90 | 90503 | 262 | 0.2% |
| 16 | 92337 | 1,049 | 0.9% | 41 | 92868 | 486 | 0.4% | 66 | 92802 | 350 | 0.3% | 91 | 90248 | 259 | 0.2% |
| 17 | 92821 | 1,049 | 0.9% | 42 | 92626 | 481 | 0.4% | 67 | 90017 | 341 | 0.3% | 92 | 92354 | 259 | 0.2% |
| 18 | 91701 | 1,034 | 0.9% | 43 | 92503 | 465 | 0.4% | 68 | 92392 | 337 | 0.3% | 93 | 90802 | 256 | 0.2% |
| 19 | 91739 | 1,027 | 0.9% | 44 | 91790 | 456 | 0.4% | 69 | 92860 | 335 | 0.3% | 94 | 92865 | 253 | 0.2% |
| 20 | 91789 | 1,017 | 0.9% | 45 | 92807 | 456 | 0.4% | 70 | 90071 | 330 | 0.3% | 95 | 92867 | 252 | 0.2% |
| 21 | 91706 | 929 | 0.8% | 46 | 92882 | 442 | 0.4% | 71 | 91733 | 328 | 0.3% | 96 | 92881 | 250 | 0.2% |
| 22 | 91750 | 842 | 0.7% | 47 | 91731 | 438 | 0.4% | 72 | 92701 | 310 | 0.3% | 97 | 90631 | 247 | 0.2% |
| 23 | 91752 | 761 | 0.6% | 48 | 90040 | 433 | 0.4% | 73 | 91741 | 308 | 0.3% | 98 | 90220 | 242 | 0.2% |
| 24 | 90670 | 742 | 0.6% | 49 | 90045 | 427 | 0.4% | 74 | 90058 | 306 | 0.3% | 99 | 92410 | 240 | 0.2% |
| 25 | 91748 | 734 | 0.6% | 50 | 92509 | 426 | 0.4% | 75 | 92346 | 306 | 0.3% | 100 | 92870 | 238 | 0.2% |

Figure 110. Top 100 Worker Origins and Destination (Data Source: LEHD)

work outside the same area, suggesting high rates of worker mobility both into and outside of the station area for work, with slightly more inflow than outflow(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Figures 110 and 112 illustrate the top 100 work origins and destinations for the station area by zip code. Of all commuters who work in the station area, 3.3% originated in the top ranking ZIP code (91730, Rancho Cucamonga), while the top destination for jobs (91761, Ontario) attracted 6.5% of all commuters. Geographically, destinations for jobs outside the station area are farther away and more dispersed than worker origins to the station area.

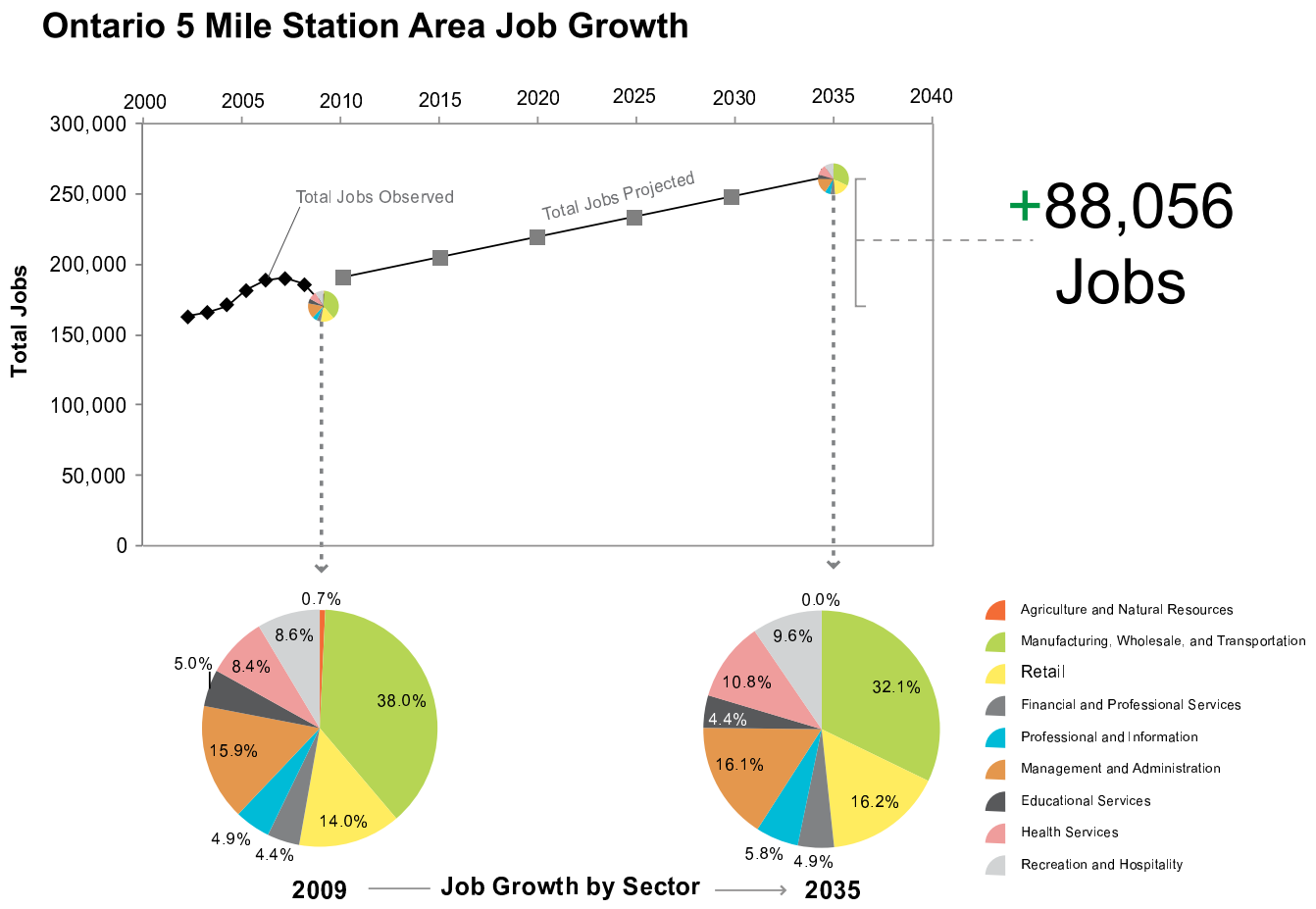



Figure 111. Job Growth Projections (Data Source: LEHD)

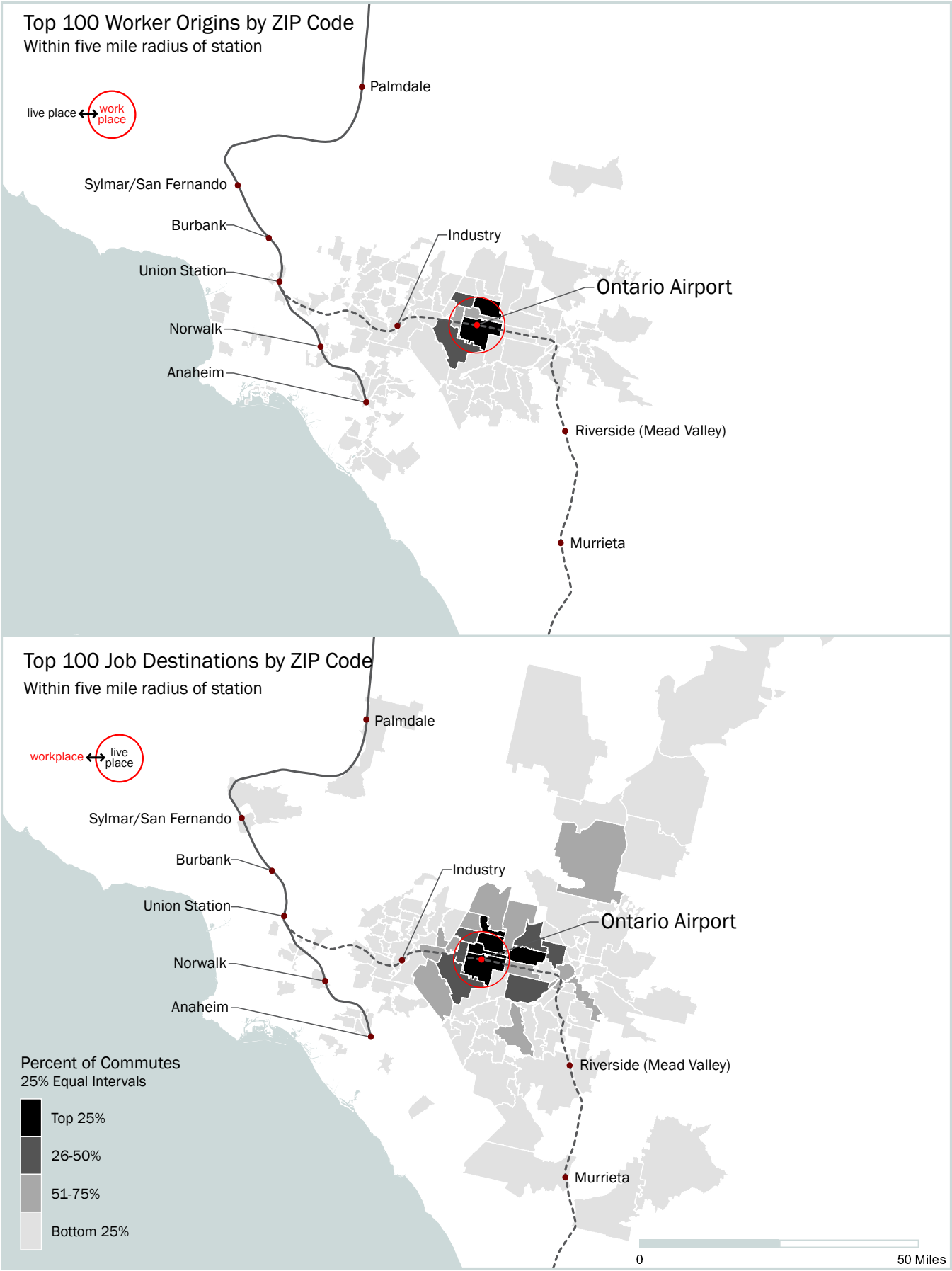



Figure 112. Commute Map (Data Source: LEHD)

**Current Land Use**

Transportation, communication and power land uses related to the functioning of Ontario International Airport occupy 48.2% of all land within half mile of the proposed station. Twenty-four percent of local land is unused or vacant. Commercial office uses occupy 15.5% of land, while 10.5% is used for industrial purposes. Public facilities comprise 1.1% of land and a small amount of retail (0.7%) exists to the north of the station area. There are no residential uses within the half mile radius (Figure 113).

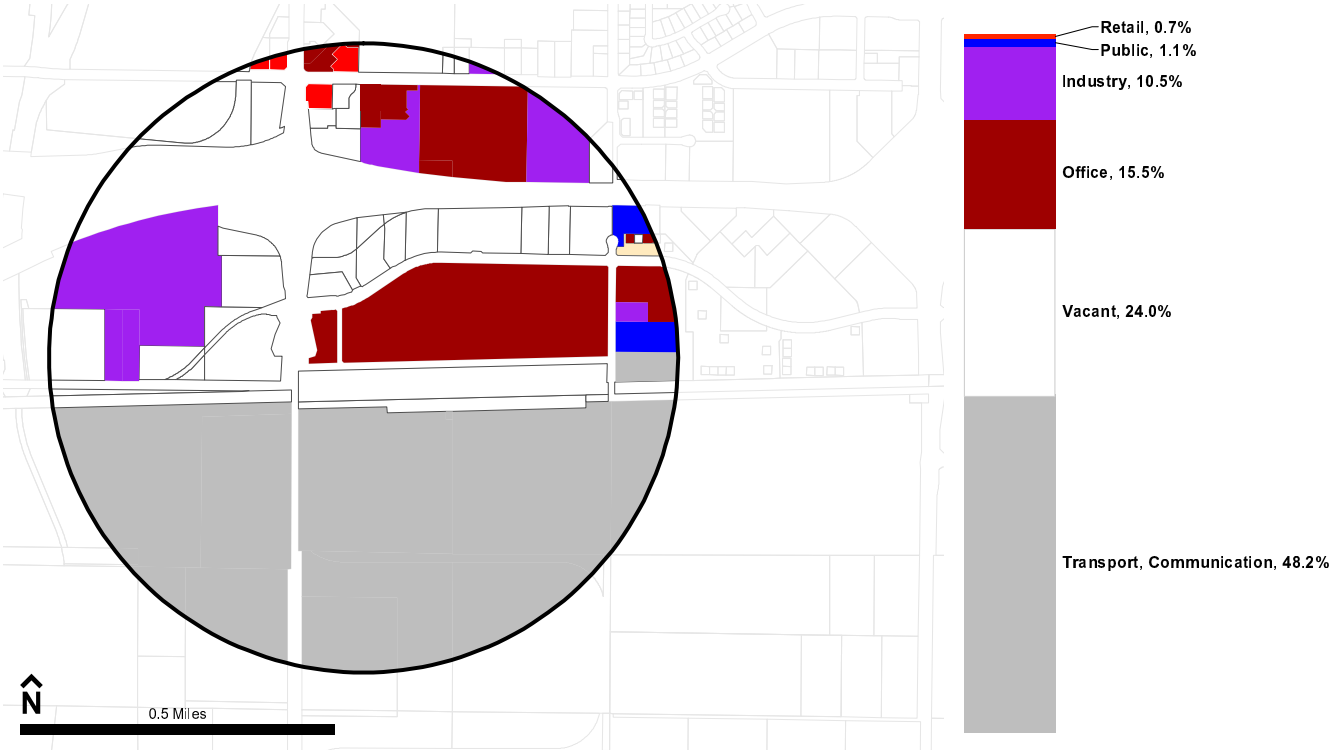



Figure 113. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Ontario HSR Station (Data Source: SCAG)

**Subdivision Pattern**

Large land tracts associated with airport activities characterize the southern half of the half mile station area while large commercial and vacant parcels distinguish the northern half. An airpark/office park subdivision pattern with a lack of small, subdivided single or multiple family parcels is the result of the site's proximity to an airport, to freight rail lines, and its location at the rural/urban fringe of the Los Angeles metro area. Parcel sizes in the area range from 0.01 to 78.6 acres, with the largest number of parcels being in the one to five acre range typical of large commercial/industrial parks or transportation facilities (Figure 114).

**Major Destinations**

The area's largest destination is Los Angeles/Ontario International Airport, which has passenger facilities about 1000 feet from the proposed HSR platform. South of the airport exists a manufacturing and warehousing district, home to Mag Instrument, maker of the prolific MagLite

## Parcel Characteristics within Half Mile of Ontario Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.01 | 78.6 | 1.1-5 |

Figure 114. Subdivision of parcels (Data Source: SCAG)

flashlights. Activity centers include California Speedway, Ontario Convention Center, and Citizens Business Bank Arena (Figures 115 and 116). Two and a half miles away is Ontario Mills Mall, among the largest retail centers in America and one of the primary tourist destinations in the Inland Empire.

**Activity and Employment Centers within 5 Miles of Ontario Station**

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Employment/Transportation | LA/Ontario International Airport | 0.20 | 7,690 |
| Employment | Mag Instrument | 2.30 | 1,000 |
| Employment/Activity | Citizens Business Bank Arena | 2.00 | 719 employees, 5,207 visitors** |
| Employment | The Icee Company | 3.00 | 700 |
| Activity | Ontario Convention Center | 0.50 | - |
| Activity | California Speedway | 5.00 | - |
| Employment/Retail | Ontario Mills | 2.50 | - |

*Based on average number of attendees at Ontario Reigns games (minor league hockey)

Figure 115. Destinations

Figure 116. Map of Activity and Employment Centers within 5 miles of Ontario HSR Station

### Transportation and Transit Networks

Although, well linked to the regional freeway network, there is little connectivity of the site to regional or local public transportation (Figure 117). Ontario station area is well integrated into San Bernardino County's broad transportation network. Within the half mile area, one bus line, run by the Omnibus transit agency of the Inland Empire, connects the airport terminal to the cities of Fontana and Pomona. There are no rail connections in the station area, however a Metrolink commuter rail station exists 1.75 miles to the southeast. The proposed platform site can be reached only by private car, and has few amenities and a lack of bicycle lanes or pedestrian infrastructure.

In 2007, workers driving alone made up the majority of all commutes in the City of Ontario (72%), up 26.5% from the year 2000 (Figure 118). Carpooling was the second most common mode with 19.6% of trips, while 2.9% of commute trips were made on public transit, the latter of which saw a 40% increase in trip volume. Very few people worked at home (2.9%), rode a bike or motorcycle (1.9%), or walked to work (1%)(Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

**Transit Network within Half Mile of Ontario Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| Interstate 10 | Omnibus line 61 (Pomona/Fontana) | None (Bus connection to Amtrak) | None (Bus connection to Amtrak) | None | None | 32, Car Dependent |

Figure 117. Transit Connectivity

| Commutes | 2000 | | 2007 | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 60,920 | 100.0 | 72,521 | 100.0 | 19.0% | Yes |
| Drove alone | 42,505 | 69.8 | 55,582 | 76.6 | 30.8% | Yes |
| Carpooled | 13,710 | 22.5 | 10,583 | 14.6 | -22.8% | Yes |
| Public transit | 1,590 | 2.6 | 1,190 | 1.6 | -25.2% | Yes |
| Walked | 930 | 1.5 | 1,104 | 1.5 | 18.7% | No |
| Taxi, motorcycle, bike, other | 850 | 1.4 | 1,847 | 2.6 | 117.3% | Yes |
| Worked at home | 1,330 | 2.2 | 2,215 | 3.1 | 66.3% | Yes |

Figure 118. Modal Split: City of Ontario (Data Source: AASHTO/CTPP)

### Real Estate Market Values and Trends

Compared to other stations, existing real estate market values near the Ontario station have no extreme highs or lows (Figure 119). Within 2.5 miles of the station, average leases for office space are $16.25 per square foot per year, higher than Palmdale but lower than Burbank.

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | **$360** | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | **19.0%** |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | **$25.12** | $273,569 | **$213,168** | 28.3% |
| Sylmar/San Fernando | **$28.33** | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | **$107** | **$12.52** | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | **$8.17** | $160 | $24.02 | **$123,572** | **$74,106** | **66.8%** |
| Murrieta | $21.23 | $270 | $21.92 | **$295,833** | $180,469 | 63.9% |

**Category High/Category Low**

Source: Loopnet.com, Geographic Research Inc.

Figure 119. Real Estate Market Values

Most commercial offices exist in master-planned office parks built on formerly rural land adjacent to Interstate 10. In the same geography, office sales average around $241 per square foot, higher than the county average. Station area retail spaces lease for an average of $19.28 (Source: Loopnet.com, Geographic Research Inc. 2011).

In 2010, median home values in census tracts located partially or entirely within a half mile of the station were recorded at $128,872, a 25% increase from 2000. However, since there are no residential properties within a half mile radius, these figures are descriptive of housing values in neighboring tracts and can only be used as estimates for proposed development.

**Development Potential**

Ontario International Airport is the third major airport in the greater Los Angeles area, after LAX and John Wayne Airport in Orange County. In addition to passenger service operations, Ontario is also the west coast air and truck hub for UPS and a major distribution point for FedEx Express. Following a period of rapid growth, the airport has experienced a dramatic 47.5% decline in the number of passenger served, from about 7.2 million to 4.88 million. This is a reflection of the dire consequences of the economic recession on the Inland Empire generally and special circumstances faced by airlines including poor management and high fuel costs. Undoubtedly, high-speed train service between the airport and downtown Los Angeles, 38 miles east, would do much to lure travelers, logistics service providers, and freight operations away from the congested LAX and the limited Bob Hope facilities in Burbank. Guiding development of 1,700 acres, the airport's master plan calls for significant future growth, including maintaining and enhancing the region's longest runway and increasing the number of terminals from three to five, including an international terminal designed to segregate arriving international passengers to clear customs and immigration.

# 3.9 PALMDALE

**Introduction**

Palmdale is the second largest city in the Antelope Valley and is separated from the Los Angeles basin by the San Gabriel Mountains (Figures 120 and 121). Known locally for its aerospace economy and several new medical and senior care facilities, Palmdale is also the fifth most populous city in the Mojave Desert. Largely residential in character, the City of Palmdale also supports agriculture and transportation infrastructure.

Figure 120. Map of Palmdale HSR Station

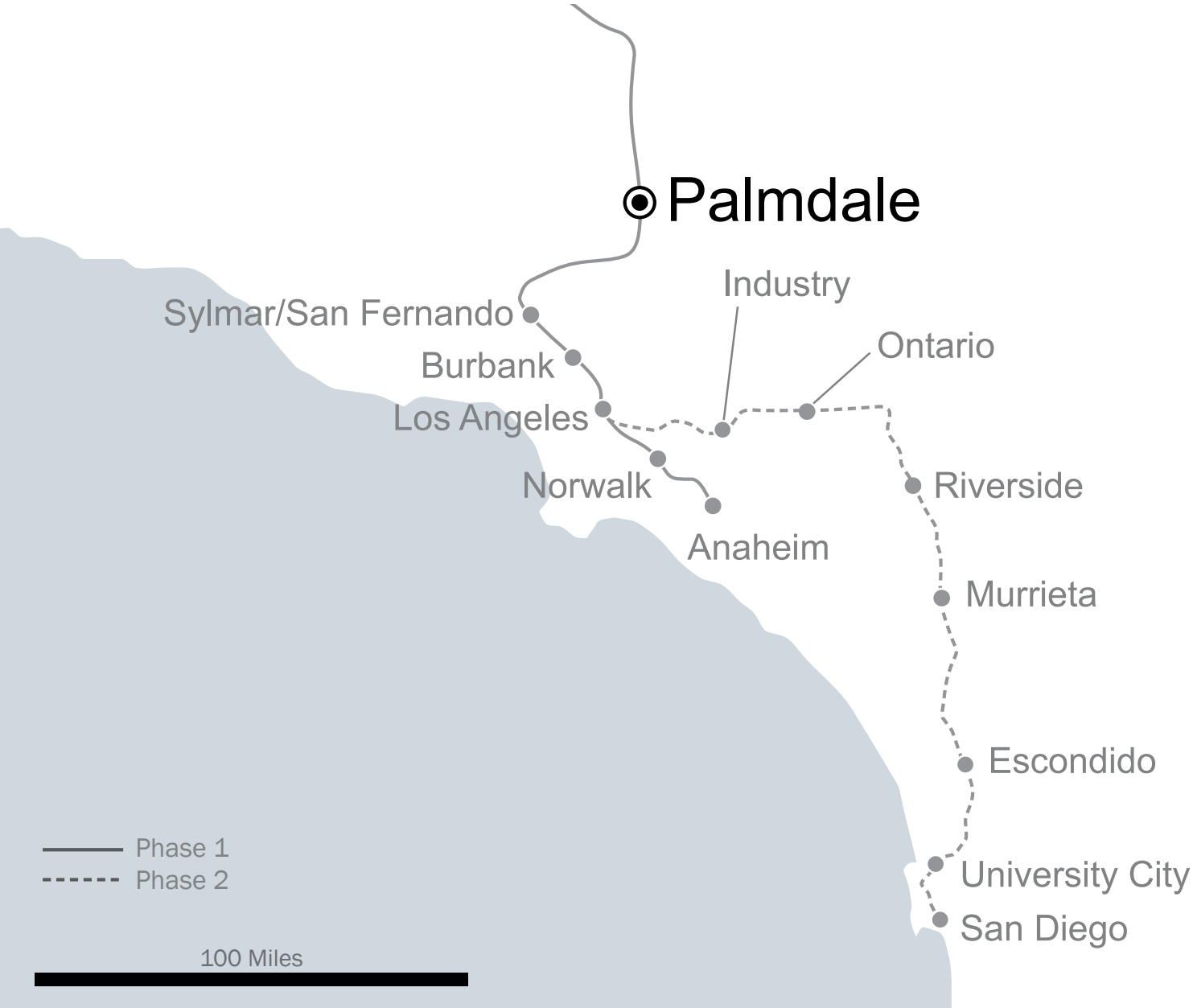


Figure 121. Aerial Photograph of Palmdale HSR Station

**Population**

For the past 25 years Palmdale has been one of the fastest growing cities in the U.S., increasing from 116,670 residents in 2000 to 152,750 in 2010. This suggests a growth rate of nearly 31% between 2000 and 2010, significantly greater than the Los Angeles County rate of 3.1% and the statewide growth rate of 10%. Between 2010 and 2035, the city's population is projected to increase by 228% to 501,637. According to the 2010 census 54% of the residents

**Residential Population and Population Density Projections within 5 Miles of Palmdale Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 10,230,219 | 10,645,211 | 11,005,955 | 11,368,021 | 11,720,520 | 12,061,511 | 12,387,715 |
| Palmdale 5 Mile Station Area | 156,709 | 208,896 | 252,465 | 294,638 | 335,689 | 375,525 | 413,763 |
| Palmdale Half Mile Station Area | 26,340 | 27,428 | 28,254 | 29,057 | 29,835 | 30,587 | 31,306 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 2,502 | 2,604 | 2,692 | 2,781 | 2,867 | 2,950 | 3,030 |
| Palmdale 5 Mile Station Area | 893 | 1,190 | 1,438 | 1,679 | 1,913 | 2,139 | 2,357 |
| Palmdale Half Mile Station Area | 324 | 513 | 668 | 807 | 943 | 1,074 | 1,201 |

Figure 122. Residential Population and Population Density Projections within 5 Miles of Palmdale Station (Data Source: SCAG)

are Hispanics, who constitute the majority of the city's population followed by African Americans (14.8%). Median household income in 2010 was $59,146, 31% less than the median household income of all Californians (Source: U.S. Census 2010). The median home price in the city in 2010 was $150,000—$233,000 less than the median home price in Los Angeles County as a whole—or 45% of the statewide median home price, having fallen 49% from the pre-recession high median home price (Source: Yahoo Prices.). The homeownership rate (71.3%) is high when compared to the rate of homeownership within Los Angeles County overall (47.5%) and homeownership statewide (57.8%).

In 2010, 208,896 residents lived in census tracts, including those in Palmdale and adjacent cities, located entirely or containing portions within five miles of the station area (Figures 122 and 123)(Source: Southern California Association of Governments). The population density of those census tracts was an average of 1,190 persons per square mile (Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half a mile of the station area, the 2010 population was 27,428, with an average population density of 513 persons per square mile (Source: Southern California Association of Governments). SCAG projects that residential population within five miles of the station will increase to 413,763 residents or by 98% between 2010 and 2035. Within half a mile of the station the residential population is expected to increase by 33,101 or 134% within the same period (Source: Southern California Association of Governments).

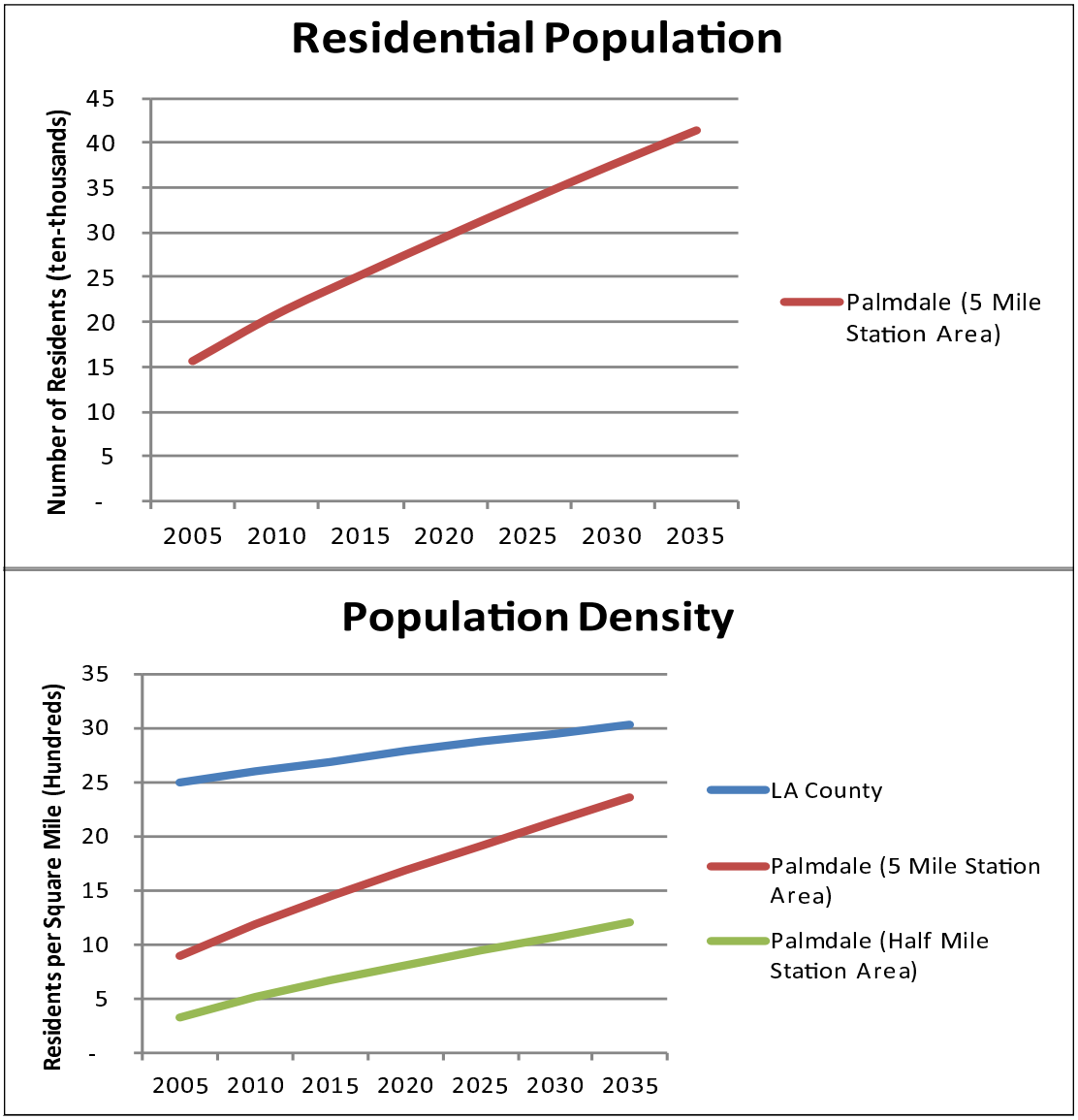



Figure 123. Residential Population and Population Density Projections within 5 miles of Palmdale HSR Station, 2005-2035 (Data Source: SCAG)

**Jobs**

The jobs-housing balance in the city (0.39 jobs for every resident) is just under the statewide proportion (0.46 jobs per resident). Very few workers (6.2%) commute to jobs outside Los Angeles County, however average commute time is 43 minutes. Palmdale has a diverse economic base, with the largest percentages of jobs in the retail (18.8%) and manufacturing (18.4%) sectors. The education services sector accounts for 16% of jobs while 15.4% of total jobs are in management and administration.

We estimated that the area within five miles of the station contained 24,830 jobs in 2009 or about 0.5% of all the jobs in Los Angeles County (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Within the same area, we predict the number of jobs to increase to 42,852 by 2035 or by about 72.6% (Figure 124)(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). In 2009, jobs in the retail, educational services, management and administration, manufacturing, wholesale, and transportation, and recreation and hospitality sectors were relatively overrepresented, relative to the rest of the state (location quotient = 1.59, 1.57, 1.10 and 1.05 respectively) (Figure 126). By 2035, this area will remain specialized in all the aforementioned sectors except educational services, becoming an increasingly important center for manufacturing jobs relative to the rest of California (location quotient = 1.64

**Palmdale 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 24,772 | 27,397 | 30,488 | 33,579 | 36,670 | 39,761 | 42,852 | 56.4% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 11 | 17 | -46 | -109 | -173 | -236 | -300 | -1829.9% |
| Manufacturing, Wholesale, and Transportation | 6,398 | 6,913 | 7,638 | 8,363 | 9,088 | 9,813 | 10,538 | 52.4% |
| Retail | 5,085 | 4,975 | 5,136 | 5,297 | 5,459 | 5,620 | 5,781 | 16.2% |
| Financial and Professional Services | 924 | 916 | 1,020 | 1,123 | 1,226 | 1,330 | 1,433 | 56.4% |
| Professional and Information | 1,216 | 1,590 | 1,923 | 2,255 | 2,588 | 2,920 | 3,253 | 104.5% |
| Management and Administration | 2,901 | 4,064 | 5,067 | 6,071 | 7,075 | 8,079 | 9,083 | 123.5% |
| Educational Services | 3,565 | 3,964 | 4,416 | 4,867 | 5,319 | 5,771 | 6,223 | 57.0% |
| Health Services | 1,683 | 1,855 | 2,106 | 2,357 | 2,609 | 2,860 | 3,111 | 67.8% |
| Recreation and Hospitality Services | 2,989 | 3,103 | 3,228 | 3,354 | 3,479 | 3,605 | 3,730 | 20.2% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.02 | 0.03 | -0.07 | -0.15 | -0.23 | -0.30 | -0.37 | -1483.9% |
| Manufacturing, Wholesale, and Transportation | 1.04 | 1.11 | 1.20 | 1.29 | 1.40 | 1.51 | 1.64 | 47.5% |
| Retail | 1.87 | 1.74 | 1.67 | 1.61 | 1.57 | 1.53 | 1.51 | -13.3% |
| Financial and Professional Services | 0.60 | 0.58 | 0.61 | 0.64 | 0.67 | 0.70 | 0.72 | 24.3% |
| Professional and Information | 0.48 | 0.54 | 0.56 | 0.57 | 0.58 | 0.59 | 0.59 | 9.6% |
| Management and Administration | 0.73 | 0.92 | 1.02 | 1.11 | 1.19 | 1.25 | 1.30 | 41.9% |
| Educational Services | 1.61 | 1.48 | 1.39 | 1.32 | 1.25 | 1.20 | 1.16 | -21.8% |
| Health Services | 0.70 | 0.62 | 0.59 | 0.56 | 0.53 | 0.51 | 0.49 | -21.3% |
| Recreation and Hospitality Services | 1.13 | 1.02 | 0.91 | 0.83 | 0.77 | 0.71 | 0.67 | -34.2% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | -0.24 | -0.25 | -0.24 | -0.24 | -0.24 | -0.24 | -0.24 | -1.1% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.95 | -0.95 | -1.13 | -1.28 | -1.40 | -1.51 | -1.60 | 68.8% |
| Manufacturing, Wholesale, and Transportation | -0.30 | -0.26 | -0.21 | -0.17 | -0.13 | -0.10 | -0.06 | -75.2% |
| Retail | 0.02 | -0.03 | -0.06 | -0.08 | -0.10 | -0.12 | -0.14 | 329.6% |
| Financial and Professional Services | -0.41 | -0.43 | -0.42 | -0.42 | -0.41 | -0.41 | -0.40 | -6.7% |
| Professional and Information | -0.50 | -0.44 | -0.42 | -0.40 | -0.38 | -0.37 | -0.36 | -17.7% |
| Management and Administration | -0.33 | -0.30 | -0.28 | -0.27 | -0.26 | -0.25 | -0.24 | -18.0% |
| Educational Services | -0.05 | -0.06 | -0.07 | -0.07 | -0.08 | -0.08 | -0.08 | 33.1% |
| Health Services | -0.36 | -0.42 | -0.44 | -0.46 | -0.48 | -0.49 | -0.50 | 19.0% |
| Recreation and Hospitality Services | -0.14 | -0.20 | -0.24 | -0.27 | -0.29 | -0.31 | -0.33 | 65.0% |

Figure 124. Palmdale 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

for manufacturing, wholesale, and transportation). In addition to these changes the highest percent of job growth will occur in the management and administration and professional and information sectors (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Substantial job loss is projected to occur in agriculture and mining. Palmdale is predominantly residential in nature, and the ratio of workers to jobs is likely to maintain this trend (gap index = -0.27 in 2009 and -0.24 in 2035).

Of those employed within five miles of the station, 74% live outside of the same area. Of those employed persons living within five miles of the station, more than 85% work outside the same area, suggesting high rates of worker mobility both into and outside of the station area for work. Figures 125 and 127 illustrate the top 100 work origins and destinations for the station area by zip code. Palmdale ZIP code 93550 was the top origin and destination of all commutes, attracting 8.6% of outside workers and housing 15% of station area job destinations. Geographically, ZIP codes of worker origin are farther away and more dispersed than ZIP codes of job destinations in the station area.

**Top 100 Worker Origins by ZIP Code - Sylmar/San Fernando**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91331 | 6,746 | 8.8% | 26 | 91042 | 537 | 0.7% | 51 | 91604 | 211 | 0.3% | 76 | 91320 | 136 | 0.2% |
| 2 | 91342 | 5,999 | 7.8% | 27 | 91387 | 511 | 0.7% | 52 | 90004 | 207 | 0.3% | 77 | 91506 | 136 | 0.2% |
| 3 | 91402 | 2,776 | 3.6% | 28 | 93063 | 507 | 0.7% | 53 | 91381 | 205 | 0.3% | 78 | 90805 | 134 | 0.2% |
| 4 | 91344 | 2,763 | 3.6% | 29 | 91354 | 493 | 0.6% | 54 | 91205 | 196 | 0.3% | 79 | 90046 | 133 | 0.2% |
| 5 | 91343 | 2,352 | 3.1% | 30 | 91355 | 465 | 0.6% | 55 | 90042 | 194 | 0.3% | 80 | 91302 | 132 | 0.2% |
| 6 | 91340 | 2,294 | 3.0% | 31 | 91321 | 434 | 0.6% | 56 | 93534 | 180 | 0.2% | 81 | 90275 | 131 | 0.2% |
| 7 | 91352 | 1,506 | 2.0% | 32 | 91384 | 432 | 0.6% | 57 | 93010 | 179 | 0.2% | 82 | 90280 | 130 | 0.2% |
| 8 | 91335 | 1,445 | 1.9% | 33 | 93551 | 415 | 0.5% | 58 | 90011 | 177 | 0.2% | 83 | 91016 | 130 | 0.2% |
| 9 | 91605 | 1,440 | 1.9% | 34 | 91040 | 377 | 0.5% | 59 | 90049 | 175 | 0.2% | 84 | 91362 | 129 | 0.2% |
| 10 | 91345 | 1,130 | 1.5% | 35 | 91607 | 375 | 0.5% | 60 | 91206 | 169 | 0.2% | 85 | 91602 | 129 | 0.2% |
| 11 | 91405 | 1,067 | 1.4% | 36 | 93552 | 375 | 0.5% | 61 | 91360 | 164 | 0.2% | 86 | 91202 | 128 | 0.2% |
| 12 | 91406 | 1,044 | 1.4% | 37 | 91390 | 362 | 0.5% | 62 | 93021 | 162 | 0.2% | 87 | 91766 | 126 | 0.2% |
| 13 | 91326 | 970 | 1.3% | 38 | 91411 | 348 | 0.5% | 63 | 90026 | 160 | 0.2% | 88 | 90066 | 125 | 0.2% |
| 14 | 91606 | 918 | 1.2% | 39 | 91367 | 317 | 0.4% | 64 | 90044 | 160 | 0.2% | 89 | 91301 | 125 | 0.2% |
| 15 | 91325 | 897 | 1.2% | 40 | 93535 | 314 | 0.4% | 65 | 93012 | 155 | 0.2% | 90 | 91436 | 125 | 0.2% |
| 16 | 93550 | 889 | 1.2% | 41 | 91316 | 313 | 0.4% | 66 | 93033 | 152 | 0.2% | 91 | 90065 | 124 | 0.2% |
| 17 | 91304 | 796 | 1.0% | 42 | 91356 | 313 | 0.4% | 67 | 91501 | 151 | 0.2% | 92 | 90650 | 124 | 0.2% |
| 18 | 91311 | 770 | 1.0% | 43 | 91303 | 311 | 0.4% | 68 | 90029 | 148 | 0.2% | 93 | 91001 | 124 | 0.2% |
| 19 | 91306 | 750 | 1.0% | 44 | 91423 | 303 | 0.4% | 69 | 91214 | 148 | 0.2% | 94 | 91201 | 123 | 0.2% |
| 20 | 93065 | 688 | 0.9% | 45 | 91307 | 267 | 0.3% | 70 | 90027 | 147 | 0.2% | 95 | 90034 | 122 | 0.2% |
| 21 | 91401 | 675 | 0.9% | 46 | 93536 | 248 | 0.3% | 71 | 90006 | 146 | 0.2% | 96 | 93543 | 122 | 0.2% |
| 22 | 91351 | 653 | 0.9% | 47 | 91505 | 245 | 0.3% | 72 | 90032 | 145 | 0.2% | 97 | 90018 | 120 | 0.2% |
| 23 | 91350 | 635 | 0.8% | 48 | 91403 | 217 | 0.3% | 73 | 90007 | 144 | 0.2% | 98 | 90274 | 120 | 0.2% |
| 24 | 91324 | 630 | 0.8% | 49 | 91364 | 213 | 0.3% | 74 | 90019 | 143 | 0.2% | 99 | 90038 | 119 | 0.2% |
| 25 | 91601 | 539 | 0.7% | 50 | 91504 | 211 | 0.3% | 75 | 90037 | 143 | 0.2% | 100 | 92335 | 116 | 0.2% |

**Top 100 Worker Destinations by ZIP Code - Sylmar/San Fernando**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 90015 | 7,305 | 4.3% | 26 | 91411 | 1,275 | 0.8% | 51 | 91203 | 706 | 0.4% | 76 | 90007 | 434 | 0.3% |
| 2 | 91342 | 7,097 | 4.2% | 27 | 91356 | 1,179 | 0.7% | 52 | 91381 | 698 | 0.4% | 77 | 90212 | 434 | 0.3% |
| 3 | 91311 | 6,070 | 3.6% | 28 | 91401 | 1,122 | 0.7% | 53 | 90049 | 677 | 0.4% | 78 | 90248 | 428 | 0.3% |
| 4 | 90012 | 4,840 | 2.9% | 29 | 91335 | 1,120 | 0.7% | 54 | 91326 | 674 | 0.4% | 79 | 90046 | 416 | 0.2% |
| 5 | 91331 | 4,789 | 2.8% | 30 | 91506 | 1,063 | 0.6% | 55 | 91316 | 657 | 0.4% | 80 | 91706 | 409 | 0.2% |
| 6 | 91355 | 4,027 | 2.4% | 31 | 91303 | 1,057 | 0.6% | 56 | 91321 | 608 | 0.4% | 81 | 90040 | 407 | 0.2% |
| 7 | 91340 | 3,306 | 2.0% | 32 | 91403 | 1,036 | 0.6% | 57 | 91101 | 592 | 0.3% | 82 | 91206 | 407 | 0.2% |
| 8 | 91406 | 3,195 | 1.9% | 33 | 91364 | 1,025 | 0.6% | 58 | 91351 | 578 | 0.3% | 83 | 93003 | 407 | 0.2% |
| 9 | 91352 | 3,150 | 1.9% | 34 | 91423 | 969 | 0.6% | 59 | 91301 | 565 | 0.3% | 84 | 91320 | 395 | 0.2% |
| 10 | 91343 | 3,097 | 1.8% | 35 | 90027 | 955 | 0.6% | 60 | 90036 | 554 | 0.3% | 85 | 91205 | 393 | 0.2% |
| 11 | 91505 | 3,027 | 1.8% | 36 | 91302 | 881 | 0.5% | 61 | 91350 | 554 | 0.3% | 86 | 90039 | 389 | 0.2% |
| 12 | 91605 | 2,817 | 1.7% | 37 | 91606 | 881 | 0.5% | 62 | 93063 | 551 | 0.3% | 87 | 93030 | 388 | 0.2% |
| 13 | 91367 | 2,745 | 1.6% | 38 | 90067 | 827 | 0.5% | 63 | 90404 | 550 | 0.3% | 88 | 91761 | 387 | 0.2% |
| 14 | 91325 | 2,531 | 1.5% | 39 | 90048 | 801 | 0.5% | 64 | 90038 | 548 | 0.3% | 89 | 90503 | 386 | 0.2% |
| 15 | 91504 | 2,365 | 1.4% | 40 | 90045 | 790 | 0.5% | 65 | 91307 | 545 | 0.3% | 90 | 90016 | 378 | 0.2% |
| 16 | 91402 | 2,243 | 1.3% | 41 | 91608 | 785 | 0.5% | 66 | 91607 | 524 | 0.3% | 91 | 90023 | 377 | 0.2% |
| 17 | 91344 | 2,196 | 1.3% | 42 | 90017 | 781 | 0.5% | 67 | 90010 | 513 | 0.3% | 92 | 90401 | 377 | 0.2% |
| 18 | 91405 | 2,165 | 1.3% | 43 | 91604 | 771 | 0.5% | 68 | 90245 | 503 | 0.3% | 93 | 91360 | 375 | 0.2% |
| 19 | 91324 | 1,942 | 1.1% | 44 | 90230 | 762 | 0.4% | 69 | 90058 | 497 | 0.3% | 94 | 91361 | 375 | 0.2% |
| 20 | 91345 | 1,802 | 1.1% | 45 | 91201 | 753 | 0.4% | 70 | 91362 | 496 | 0.3% | 95 | 93021 | 375 | 0.2% |
| 21 | 91502 | 1,656 | 1.0% | 46 | 91204 | 737 | 0.4% | 71 | 90071 | 484 | 0.3% | 96 | 90232 | 359 | 0.2% |
| 22 | 91436 | 1,633 | 1.0% | 47 | 90025 | 727 | 0.4% | 72 | 90210 | 467 | 0.3% | 97 | 91105 | 359 | 0.2% |
| 23 | 91304 | 1,606 | 0.9% | 48 | 91601 | 720 | 0.4% | 73 | 90064 | 464 | 0.3% | 98 | 91040 | 341 | 0.2% |
| 24 | 90024 | 1,601 | 0.9% | 49 | 90028 | 715 | 0.4% | 74 | 90069 | 458 | 0.3% | 99 | 93534 | 340 | 0.2% |
| 25 | 93065 | 1.313 | 0.8% | 50 | 90021 | 711 | 0.4% | 75 | 90670 | 445 | 0.3% | 100 | 91354 | 337 | 0.2% |

Figure 125. Top 100 Worker Origins and Destinations (Data Source: LEHD)

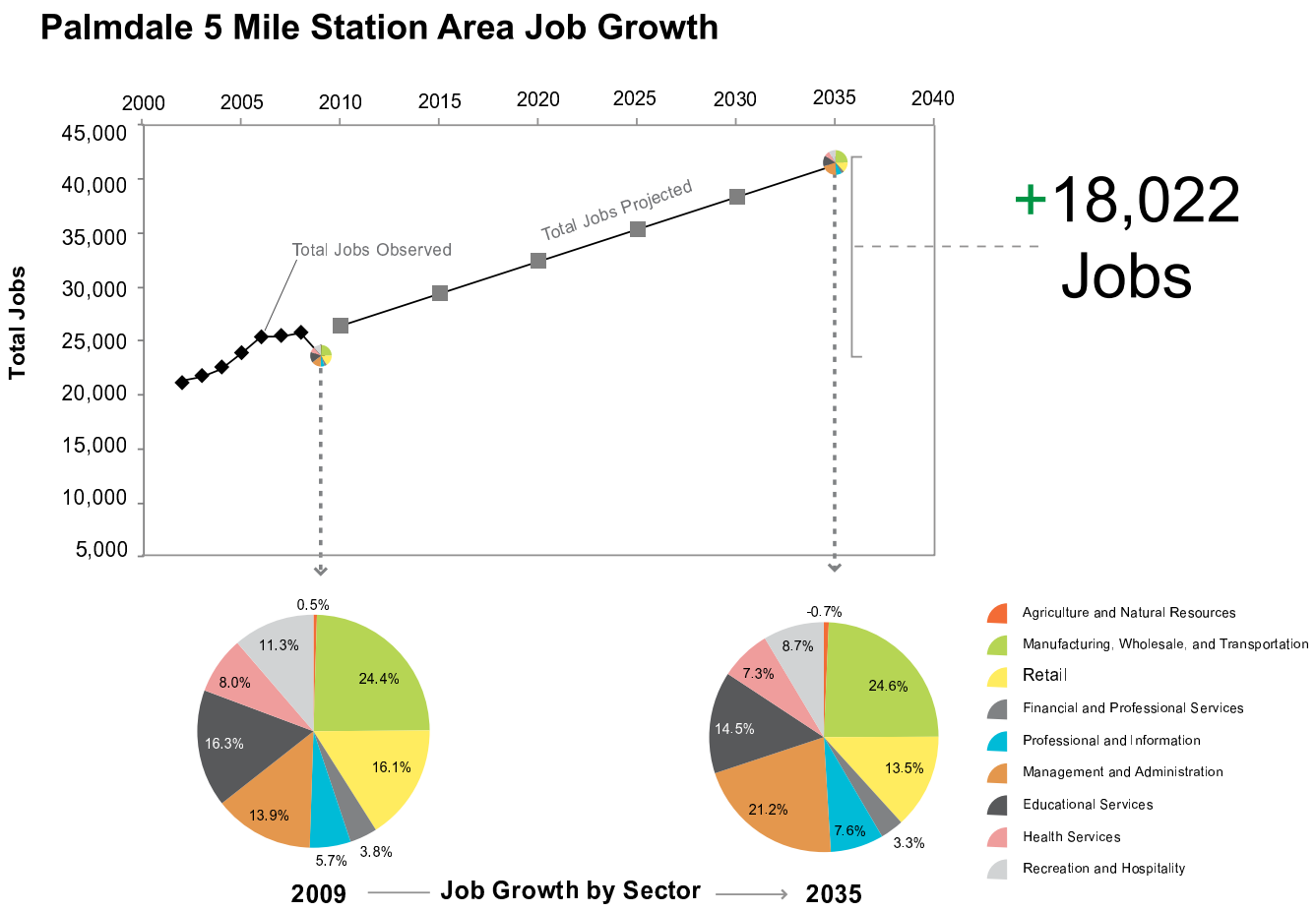



Figure 126. Job Growth Projections (Data Source: LEHD)

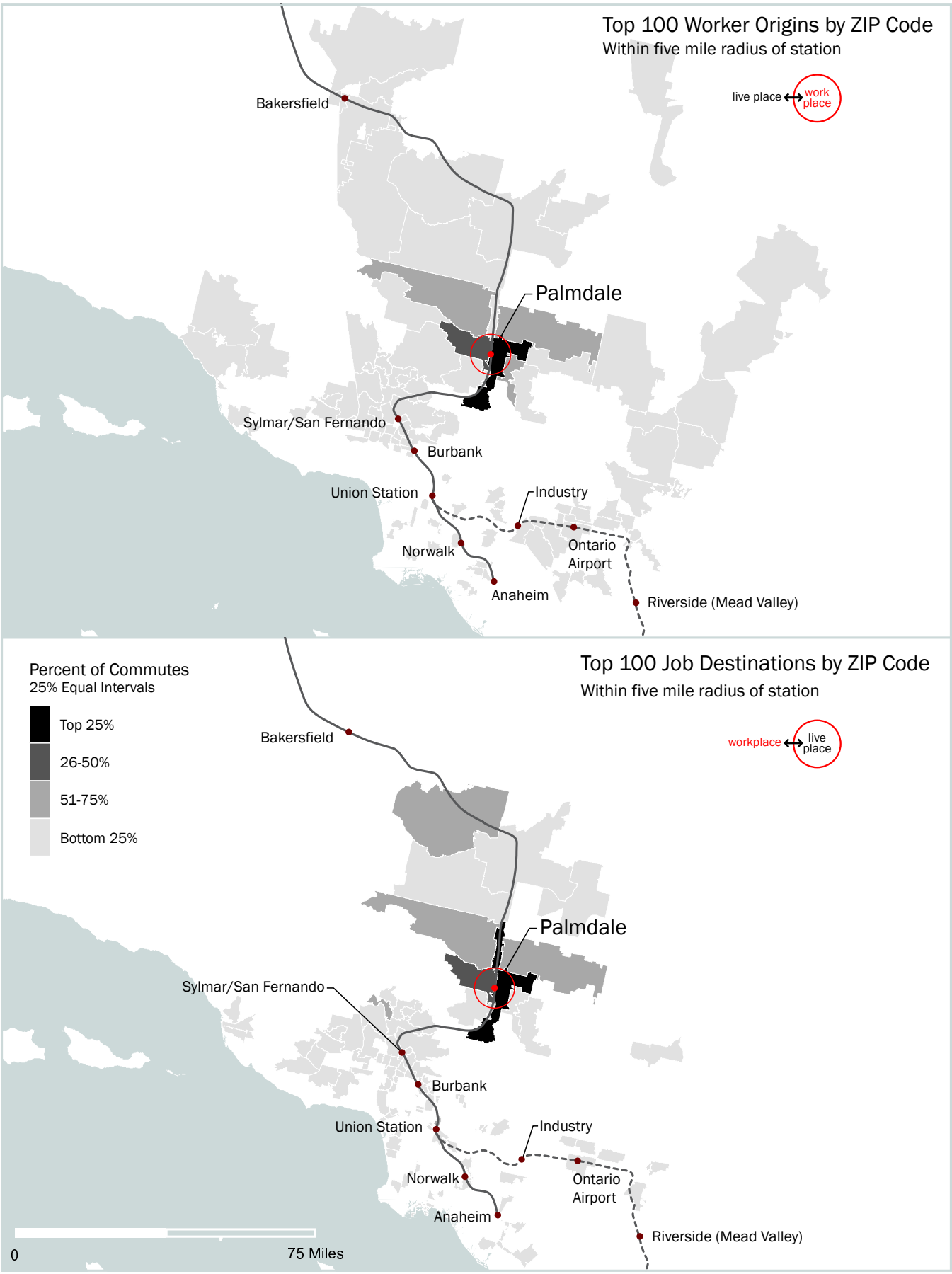



Figure 127. Palmdale Commute Map (Data Source: LEHD)

**Current Land Use**

Being at the fringe of an exurban city, lands within half mile of the station are mostly vacant (36.5%) (Figure 128). Otherwise, land use composition is very diverse. Of the land occupied by residential uses (23.9%), multiple family residences comprise 12.4% and single family uses account for 11.5%. Just over nine percent of land is used for transportation, communication or power infrastructure and public uses occupy 8.7%. Dispersed industrial uses account for 6.7% while combined commercial uses occupy 9.8% of station area land, most of that used for retail commerce. Lastly, one large parcel of recreational open space occupies 4.2% of the land area within half-mile of the proposed station.

**Subdivision Pattern**

Parcel sizes in the area range from 0.017 to 19.5 acres, with the largest number of parcels being in the 0.11 to 0.25 acres range (Figure 129). The largest parcels are currently occupied by vacant land north of the station.

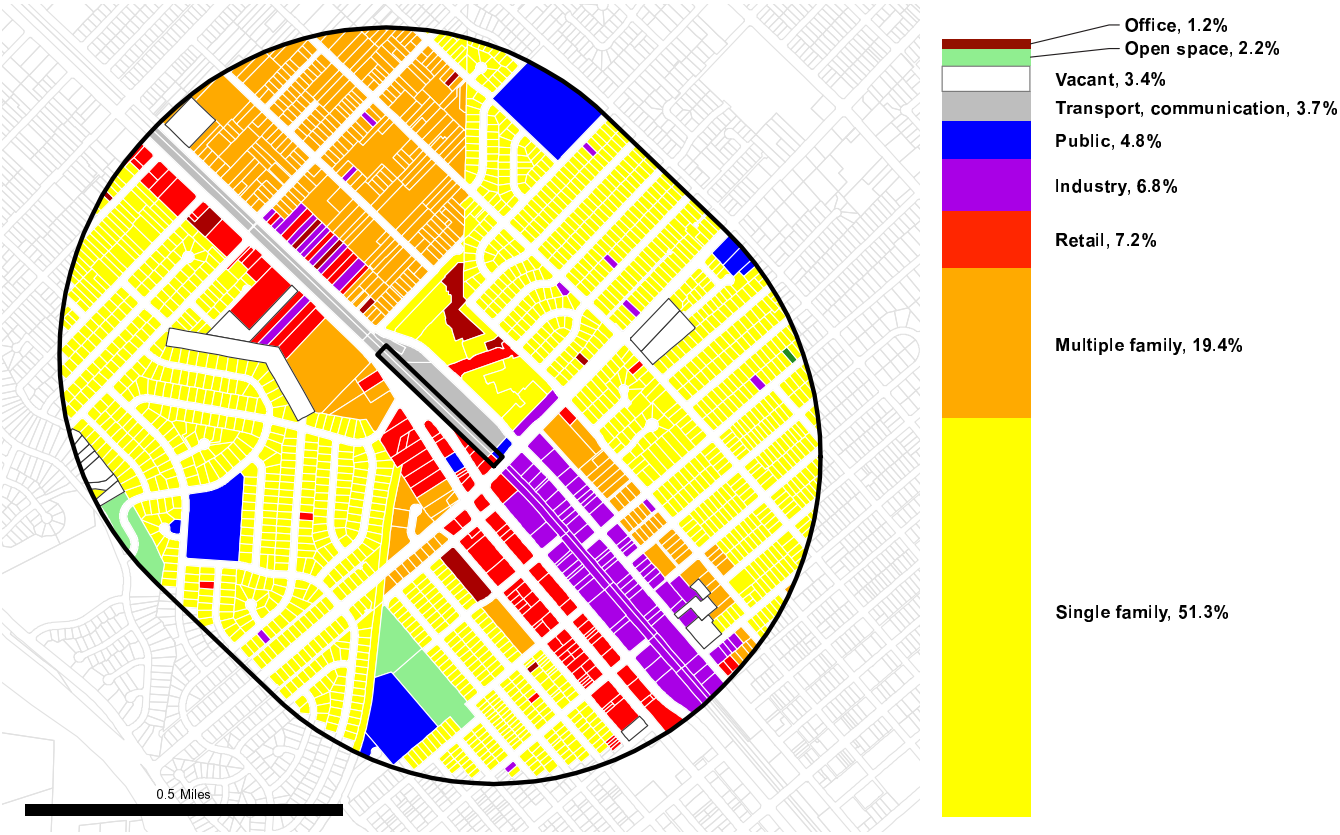



Figure 128. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Palmdale HSR Station (Data Source: SCAG)

**Major Destinations**

Important destinations and employment centers are mostly located to the north of the proposed station location and nearly all are more than a mile away. A variety of aerospace employers such as Lockheed Martin and Boeing Corporation clustered at the Palmdale Airport constitute a dominant presence in the area. Other top employers in the area include a Wal-Mart Supercenter, Antelope Valley Mall, and Palmdale Civic Center (Figures 130 and 131). The Palmdale Sports Complex serves as an activity destination within two miles of the station.

## Parcel Characteristics within Half Mile of Palmdale Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.017 | 19.5 | 0.11 to 0.25 |

Figure 129. Subdivision of parcels (Data Source: SCAG)

**Activity and Employment Centers within 5 Miles of Palmdale Station**

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Retail | Lockheed Martin Corporation | 1.60 | 3,700 |
| Retail | Antelope Valley Mall | 2.00 | 1,800 |
| Retail | Wal-Mart | 2.00 | 1,242 |
| Education | Boeing Corporation | 2.80 | 850 |
| Public | Palmdale Civic Center | 0.75 | 703 |
| Transport | Palmdale Airport | 3.00 | 28 |
| Activity | Palmdale Sports Complex | 2.00 | - |

*Based on 10,392 commercial passenger boardings in 2008

Figure 130. Destinations

Figure 131. Map of Activity and Employment Centers within 5 miles of Palmdale HSR Station

### Transportation and Transit Networks

The Antelope Valley Freeway (State Route 14) is Palmdale's primary automobile artery and is the only highway within five miles of the proposed station. In March 2005 the Palmdale Transportation Center was designed to serve as the Antelope Valley's public transit hub. The hub coordinates several Antelope Valley Transit Authority bus lines as well as the Antelope Valley Metrolink, though less than 3% of residents use public transportation for commute trips. According to recent census data, Palmdale has one of the longest average commute times of any city in the U.S. at 42.9 minutes, compared with 29.4 minutes for LA County. Relatively few (7.2%) households in Palmdale have no access to an automobile, compared with 12.6% of households in Los Angeles County. The environs of the proposed station area, characterized by well designed streets and the universal provision of sidewalks are relatively walkable, despite large block sizes, long distances between intersections, deep setbacks for commercial buildings, and the relatively high speeds of

**Transit Network within Half Mile of Palmdale Station**

| Automobile | Bus | Rail | Rail | Rail | Bike | Walkability |
|---|---|---|---|---|---|---|
| Interstate Network | | Regional Passenger | Commuter | Light | | (Walk Score) |
| None | Antelope Valley Transit Authority: Lines 1, 3, 7, 9, and 97 (Local); Lines 785, 786, 787 (Commuter)<br><br>Santa Clarita Transit: Route 795 | None | Metrolink-Antelope Valley Line | None | 1 Class A Bike Path | 26, Car Dependent |

Figure 132. Transit Connectivity

automobile travel on Imperial Highway (Figure 132).

In 2007, workers driving alone made up the majority of all commutes in the City of Palmdale (72.4%) (Figure 133). Carpooling was the second most common mode with 19.6% of trips, while 2.9% worked from home or commuted on public transit. The largest increase in commute mode occurred in bicycle or motorcycle riding (51.4%), although only 1.2% of people commute this way. Walking to work was the least common commute mode (1.0%)(Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

| Commutes | 2000 | | 2007 | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 42,220 | 100.0 | 53,405 | 100.0 | 26.5% | Yes |
| Drove alone | 29,375 | 69.6 | 38,675 | 72.4 | 31.7% | Yes |
| Carpooled | 9,790 | 23.2 | 10,442 | 19.6 | 6.7% | No |
| Public transit | 1,120 | 2.7 | 1,562 | 2.9 | 39.5% | No |
| Walked | 425 | 1.0 | 560 | 1.0 | 31.8% | No |
| Taxi, motorcycle, bike, other | 420 | 1.0 | 636 | 1.2 | 51.4% | No |
| Worked at home | 1,100 | 2.6 | 1,530 | 2.9 | 39.1% | No |

Figure 133. Modal Split: City of Palmdale (Data Source: AASHTO/CTPP)

### Real Estate Market Values and Trends

Existing real estate market values near the Palmdale station are among the lowest of studied station cities (Figure 134). Within 2.5 miles of the station, average leases for office space are $12.52 per square foot per year, the lowest of Southern California stations. Office sales per square foot, which average around $107, are also a categorical low. Station area retail space leases for an average of $14.36 per square foot per year, in between Industry ($14.01) and Ontario ($16.25) (Source: Loopnet.com, Geographic Research Inc. 2011).

In 2010, median home values in census tracts located partially or entirely within a half mile of the station were estimated at $130,488, almost a 40% increase from 2000. Of the residential properties in the half mile station area, multiple family dwellings are slightly more abundant (51.9%) than single family dwellings (48.1%).

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | $360 | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | 19.0% |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | $25.12 | $273,569 | $213,168 | 28.3% |
| Sylmar/San Fernando | $28.33 | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | $107 | $12.52 | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | $8.17 | $160 | $24.02 | $123,572 | $74,106 | 66.8% |
| Murrieta | $21.23 | $270 | $21.92 | $295,833 | $180,469 | 63.9% |

Category High/Category Low

Source: Loopnet.com, Geographic Research Inc.

Figure 134. Real Estate Market Values

**Development Potential**

Aerospace remains Palmdale's most important industry, and the city has been the site of research, development, assembly and testing of various military and civilian air- and spacecrafts manufactured by Boeing, Lockheed Martin, and Northrup Grumman. The desert climate is ideal for long-term aircraft storage as is demonstrated at the nearby Mojave Air and Space Port. Palmdale's reliance on aerospace, known for its "feast or famine" cycles, has led the city and the Antelope Valley generally to search for economic diversification. The Antelope Valley Enterprise Zone and the Palmdale Federal Foreign Trade Zone provide incentives (mostly in terms of Federal and State tax breaks) and have been important tools in this effort. The city has attracted, among other entities, Delta Scientific, a world leader in high strength vehicle barrier systems, supplying protection for many federal, state and local buildings, and a prime supplier to the US military and US State Department. Leveraging the station's proximity to Edwards Air Force Base, the second largest US Air Force air base, and the infrastructure at LA/Palmdale Regional Airport, owned by Los Angeles World Airports, has also played a role in the city of Palmdale's economic strategies. Long planned as a regional alternative to LAX, the "Palmdale Intercontinental Airport" has struggled convincing airlines of the marketability of the airport to passengers. Although Palmdale Airport offers airline passengers a quicker ground transportation travel time from Sherman Oaks in the San Fernando Valley than the standard LAX airport car trip down the 405 freeway, it has not consistently provided the range of destinations that would convince passengers to consider it as an alternative to relieve the overcrowding at LAX and Bob Hope Airport in Burbank. HSR will increase the marketability of Palmdale's intercontinental airport because it provides a quick and accessible link to surrounding cities throughout the Southern California region. Also, plenty of vacant land surrounds the station, which allows for economic development by private entities or public-private partnerships.

**Local Perspectives**

For Palmdale, a city at the Antelope Valley at the north end of Los Angeles County, the prospect of having a high speed train station is quite desirable. Indeed, according to Assistant City Manager of Palmdale Laurie Lile, the city has lobbied hard to secure the HSR alignment through the Antelope Valley and to get a station location within its boundaries. A strong majority of city residents are in favor of the project. According to Lile:

*"Palmdale has a different philosophy than a lot of the cities in the Bay Area and Peninsula that are so adamantly opposed to it.... There are a few people at Palmdale that are opponents or detractors, but the acceptability of that alignment and station is probably well upwards of 80%"* (Lile interview).

**Perceived Benefits**

There are some clear reasons why Palmdale is favoring the HSR. According to the recent U.S. Census, the city residents face the dubious distinction of having the longest average commute time in the country. Drawn to Palmdale primarily because of the availability of affordable housing,

many of the 152,750 residents have daily commutes of over two hours on Metrolink trains and buses. Presently, Palmdale is an origin station. The military and aerospace industries located at Palmdale employ a number of locals, but most residents are boarding the train to work every morning. If the "bullet train" were to stop at Palmdale, this commute trip would become shorter. According to Lile:

*"Palmdale already has a very high number of residents from the Antelope Valley commuting elsewhere for employment. They are commuting to Kern County to go to Edwards air force base or they are commuting to the LA basin area (Burbank, Long Beach). The existing Metrolink train is almost 2 hours – it is a very long trip – and in peak commute times it is also a very tedious trip. So having access to HSR has the potential to improve the quality of life by offering acceptable commute times"* (Lile interview).

Palmdale would likely remain an origin station, if and when the HSR comes to town. However, Lile believes that the coming of the HSR will not only prompt more people to come and live in the city, it may even spur some new businesses.

*"Having that HSR station, and having more people consider the Antelope Valley as an option to live in, in order to work elsewhere, is going to be very beneficial to us …. From a land use perspective, I think there are some things that will occur that will spur interest in development immediately at the station location. I don't know that it would be only a reverse-commute type development or you would have an interest in developing office uses for people to come from other places to work in offices or retail or industrial settings proximate to our facility, but there might be some of that."*

But for all this to happen, Lile believes that good connectivity with the rest of the metropolitan area is extremely important for this city, which is situated at the metropolitan fringe:

*"For us transportation connections are very important. We've got basically a freeway and some rail links that provide transportation right now. Our airport is at the mercy of another agency that we are having a difficult time dealing with, and there really isn't enough money to build a new freeway out of the area or tunnel through the mountain. But transportation is what moves goods and people and what keeps economies humming along, and not having that puts you more in a position of fighting to not become a backwater. …. "*

Lile believes that the HSR can make Palmdale a more desirable place to live, work, or even visit. She argues that by bringing other employment and recreational destinations closer, the HSR will benefit current residents but also employees of industries located in the city. According to her:

*"There is a lot of desire to have that greater connection to Los Angeles. Los Angeles has a lot of cultural amenities that we are so far away from and cannot provide for our population. These facilities will become more accessible to our residents…. We will also be two hours closer to Mammoth and the beautiful poppies…. We also have a very large economic engine in our community made up of aerospace and military industries. Having connections that facilitate movement of their staff to other locations is going to be beneficial to us as well."*

The increased access and accessibility is likely to spur new development in the city and opportunities for other ventures, according to Lile: "Our experience has been that the more people understand the community and the culture of the community, they tend to bring things with them. They bring small businesses, small industry with them and it helps for us to facilitate job creation locally the more people visit and understand our community."

**Challenges and Concerns**

The challenges that Lile emphasized relate to the lack of experience with building high speed rail systems in the US, which leads to uncertainty about its outcomes:

*"Some of the negative consequences are that the HSR is something new; we don't have a history of dealing with it in our state… If the statewide system is not as cost-effective and doesn't deliver the amenities and the service as promised, I think that that will affect our ability to leverage our station. If it is determined to be more of a white elephant than a benefit, then that is one of its unintended negative consequences"* (Lile interview).

The lengthy process involved in planning such a mega-project and the associated uncertainty of funding sources, exact alignments, and station locations were also listed as concerns. On the other hand, Lile reported that the relationship with the HSRA and its consultants was positive: "The HSRA sees the benefits of serving the Antelope Valley, as one of the last growth areas in Los Angeles county, with a potential for a tremendous amount of ridership…. We have had no problems making sure that we are heard, and making sure they understand our perspective."

**Planning and Design**

Palmdale is between two HSR segments—the Bakersfield-Palmdale and Palmdale-Los Angeles. There are two potential alignments for the Palmdale-LA segment and the city has identified two possible station locations. According to Lile:

*"We have an acceptable location and a preferred location, and we have not done any land use study on how that second location might be taken advantage of, with respect to changing our land use policies, or becoming more transit-oriented"* (Lile interview).

In fact, Palmdale has so far done very little planning in preparation for the HSR. The city was to receive $200,000 from the HSRA for some preliminary station area planning, but these funds have not been dispensed to the city as of this writing. According to Lile:

*"It does not serve us really well to plan now in a very detailed manner for something that is not going to happen for 10 years. The plan you put in place today tends to get stale rather quickly in regards to the type of technology used, demand for services, and type of expectations by the public. So we have policies in our general plan to support the station; we have a general idea of where it is going to go; we collaborate and communicate with the HSR staff; and we make sure that they know what our desires and concerns are. That is how we are preparing right now"* (Lile interview).

Palmdale has developed its existing Metrolink Station into a multi-modal facility with Metrolink buses, local and commuter buses (Greyhound), bike trails, and a park-and-ride. One possible alignment for the HSR would use that location and facility. As can be seen from the aerial photograph in Figure 121, there is a lot of vacant land in the quarter-mile area around the possible station site. Palmdale planners have approved a specific plan for this area that increases residential densities, provides for mixed-use development and other appropriate transit-oriented uses. The city is hopeful that that the plan will spur some redevelopment in that area which will be "conducive for when the HSR comes through" (Lile interview).

# 3.10 RIVERSIDE

**Introduction**

Located on the alignment between Ontario Airport and Murrieta stations, the Riverside station would introduce a regional transit node to a rural area that has until recently experienced significant growth and real estate speculation (Figure 135). A decision on the HSR portal's final site is still in the alternatives analysis stage at the time of this writing. Options include downtown Riverside, the University of California Riverside campus, Martin Luther King Jr. Drive (also near the campus), and March Air Reserve Base (ARB), among other less feasible sites. According to the latest alternatives analysis reports and reports from community meetings, the current preferred alternative by most stakeholders is between the City of Perris and the unincorporated Riverside County community of Mead Valley, south of March ARB. The I-215 freeway adjacent site is largely undeveloped, characterized by agricultural or vacant land uses (Figure 136).

Figure 135. Map of Riverside HSR Station

Figure 136. Aerial Photograph of Riverside HSR Station

**Population**

With 303,871 residents in 2010 according to the US Census, the City of Riverside is the largest city in rural Riverside County, and the 12th largest in California. Riverside's population density (3,731 persons per square mile) is high for the county (297 persons per square mile) but low relative to other station cities. Hispanics of all races account for 49% of the population, while the remaining 51% of the city's residents are comprised of Whites (34%), Asians (7.2%), Blacks

**Residential Population and Population Density Projections within 5 Miles of Riverside Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Riverside County | 2,077,135 | 2,406,774 | 2,696,165 | 3,025,263 | 3,334,957 | 3,609,583 | 3,882,136 |
| Riverside 5 Mile Station Area | 166,383 | 189,145 | 210,174 | 235,999 | 260,540 | 282,185 | 303,678 |
| Riverside Half Mile Station Area | 21,970 | 26,735 | 34,618 | 42,304 | 49,469 | 55,662 | 62,196 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Riverside County | 285 | 330 | 369 | 415 | 457 | 494 | 532 |
| Riverside 5 Mile Station Area | 990 | 1,126 | 1,251 | 1,404 | 1,550 | 1,679 | 1,807 |
| Riverside Half Mile Station Area | 774 | 1,013 | 1,220 | 1,491 | 1,744 | 1,962 | 2,192 |

Figure 137. Residential Population and Population Density Projections within 5 Miles of Riverside Station (Data Source: SCAG)

(6.6%), American Indian and Alaska Native (0.4%) and other minorities (2.8%). Between 2000 and 2010, Riverside's total population increased by 19.1%, a strong growth rate compared to the statewide rate of 10%, but modest compared to the Riverside County increase of 41.7%. Between 2010 and 2035, the city's population is projected to increase at a similar rate of 37%, adding an estimated 112,400 people. Median household income in Riverside in 2010 was $52,847 or 91% of the median household income among all Californians ($58,925)(Source: U.S. Census 2010). The median home price in the city in 2010 was $193,286, or 65.6% of the statewide median home price (Source: Yahoo Prices.). The homeownership rate (55.7%) is consistent with the rate of homeownership statewide (57.8%).

In 2010, 189,145 residents lived in census tracts located entirely or containing portions within five miles of the station (Source: Southern California Association of Governments). The population density of these census tracts was an average of 1,126 persons per square mile, much lower than the average population density in city boundaries (Figures 137 and 138)(Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half mile of the station, the 2010 population was 28,735 with an average population density of 1,013 persons per square mile (Source: Southern California Association of Governments). The Southern California Association of Governments (SCAG) projects that residential population within five miles of the station will increase to 303,678 residents or by 60% between 2010 and 2035. Within half mile of the station the residential population is expected to increase by 33,461 people or by 116% within the same period (Source: Southern California Association of Governments).

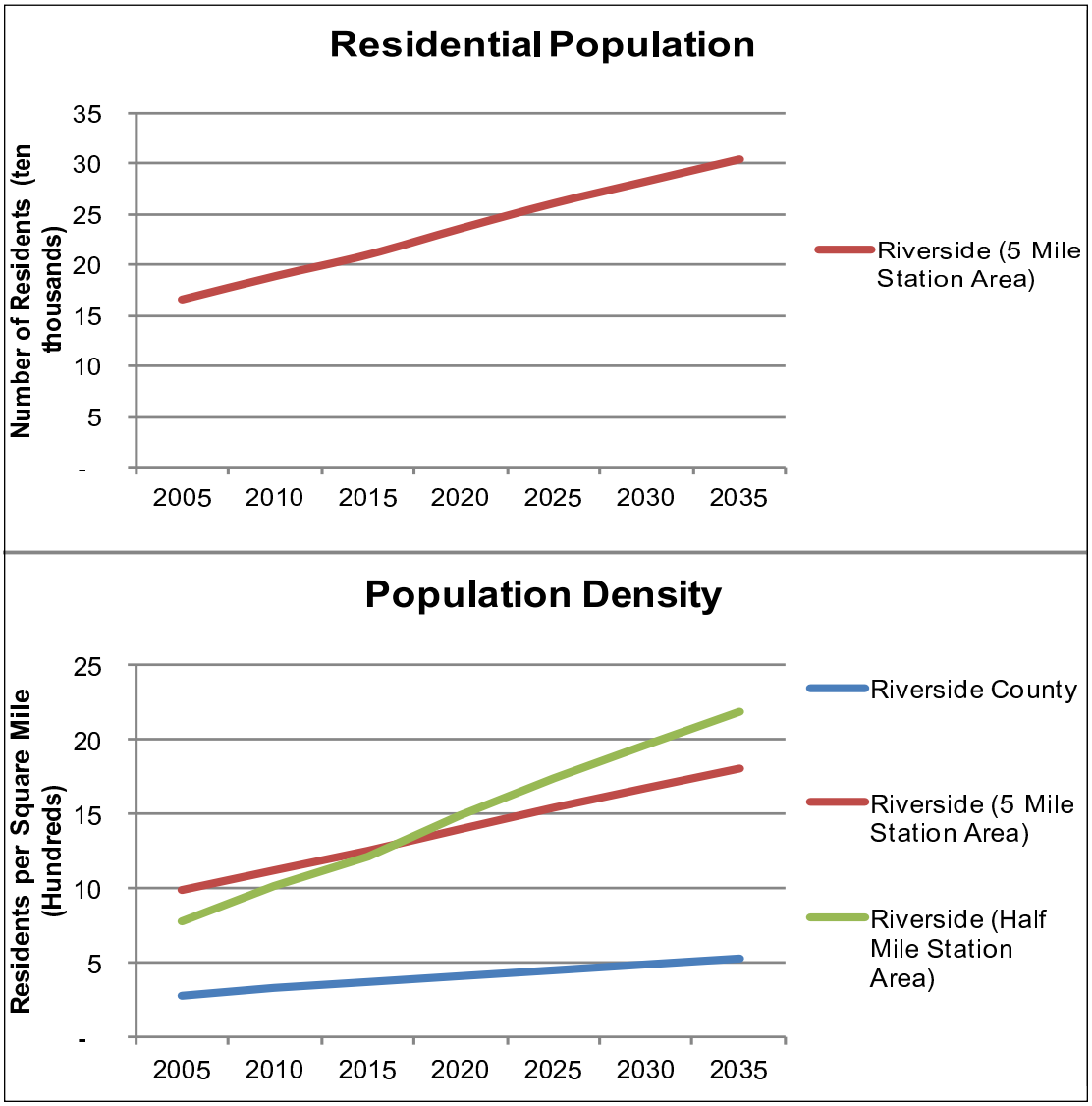



Figure 138. Residential Population and Population Density Projections within 5 miles of Riverside HSR Station, 2005-2035 (Data Source: SCAG)

**Jobs**

Job totals in Riverside (129,409) account for 24% of all jobs in Riverside County (537,534). The jobs-housing balance in the city (0.43 jobs for every resident) is consistent with the statewide proportion (0.46). Most employees in the city work at jobs within Riverside County (57.5%), while 17.6% commute to San Bernardino County, 10.7% work in Los Angeles County, 6.4% commute to Orange County, and 3.6% commute to San Diego County. The city has a diverse economic base, with health services (19.6% of jobs) as the largest employment sector.

## Riverside 5 Mile Station Area Job Growth, Location Quotient, Gap Index

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 22,479 | 25,439 | 29,469 | 33,500 | 37,530 | 41,560 | 45,590 | 79.2% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 138 | 320 | 443 | 565 | 687 | 810 | 932 | 191.1% |
| Manufacturing, Wholesale, and Transportation | 7,834 | 9,589 | 11,039 | 12,490 | 13,941 | 15,391 | 16,842 | 75.6% |
| Retail | 3,678 | 3,961 | 4,278 | 4,596 | 4,914 | 5,231 | 5,549 | 40.1% |
| Financial and Professional Services | 1,484 | 474 | 254 | 35 | -185 | -405 | -625 | -231.7% |
| Professional and Information | 676 | 678 | 770 | 861 | 952 | 1,043 | 1,134 | 67.1% |
| Management and Administration | 2,732 | 2,836 | 3,684 | 4,533 | 5,381 | 6,229 | 7,077 | 149.6% |
| Educational Services | 3,668 | 4,515 | 5,284 | 6,053 | 6,821 | 7,590 | 8,359 | 85.1% |
| Health Services | 912 | 1,444 | 1,795 | 2,146 | 2,496 | 2,847 | 3,198 | 121.4% |
| Recreation and Hospitality Services | 1,357 | 1,621 | 1,922 | 2,222 | 2,523 | 2,823 | 3,124 | 92.7% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.24 | 0.53 | 0.67 | 0.78 | 0.89 | 0.99 | 1.08 | 103.3% |
| Manufacturing, Wholesale, and Transportation | 1.40 | 1.66 | 1.79 | 1.94 | 2.10 | 2.27 | 2.47 | 48.3% |
| Retail | 1.49 | 1.49 | 1.44 | 1.40 | 1.38 | 1.37 | 1.36 | -8.7% |
| Financial and Professional Services | 1.06 | 0.33 | 0.16 | 0.02 | -0.10 | -0.20 | -0.30 | -191.4% |
| Professional and Information | 0.30 | 0.25 | 0.23 | 0.22 | 0.21 | 0.20 | 0.19 | -21.8% |
| Management and Administration | 0.76 | 0.69 | 0.77 | 0.83 | 0.88 | 0.92 | 0.95 | 38.3% |
| Educational Services | 1.82 | 1.81 | 1.72 | 1.64 | 1.57 | 1.51 | 1.46 | -19.5% |
| Health Services | 0.42 | 0.52 | 0.52 | 0.51 | 0.50 | 0.49 | 0.47 | -9.3% |
| Recreation and Hospitality Services | 0.56 | 0.57 | 0.56 | 0.55 | 0.54 | 0.54 | 0.53 | -7.9% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | -0.32 | -0.32 | -0.31 | -0.30 | -0.29 | -0.28 | -0.28 | -12.8% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.62 | -0.36 | -0.27 | -0.20 | -0.15 | -0.11 | -0.08 | -79.0% |
| Manufacturing, Wholesale, and Transportation | -0.31 | -0.21 | -0.16 | -0.11 | -0.07 | -0.04 | -0.01 | -94.7% |
| Retail | -0.22 | -0.22 | -0.23 | -0.23 | -0.24 | -0.24 | -0.25 | 14.2% |
| Financial and Professional Services | -0.16 | -0.63 | -0.81 | -0.97 | -1.13 | -1.28 | -1.43 | 126.0% |
| Professional and Information | -0.53 | -0.60 | -0.62 | -0.63 | -0.64 | -0.64 | -0.65 | 8.1% |
| Management and Administration | -0.44 | -0.46 | -0.39 | -0.34 | -0.30 | -0.27 | -0.24 | -47.1% |
| Educational Services | -0.05 | -0.05 | -0.04 | -0.04 | -0.04 | -0.03 | -0.03 | -38.0% |
| Health Services | -0.59 | -0.59 | -0.61 | -0.62 | -0.62 | -0.63 | -0.63 | 6.5% |
| Recreation and Hospitality Services | -0.49 | -0.51 | -0.51 | -0.51 | -0.52 | -0.52 | -0.52 | 3.0% |

Figure 139. Riverside 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

We estimated that the area within five miles of the station contained 20,871 jobs in 2009 or 3.8% of jobs in Riverside County (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Within the same area, we predict the number of jobs to increase to 45,590 by 2035, or by 118% (Figure 141)(Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). The job market here features a higher proportion of retail, educational services, and manufacturing, wholesale, and transportation jobs than the California norm (location quotient = 1.96, 1.79, and 1.28 respectively). By 2035, the manufacturing, wholesale, and transportation and agricultural sectors will strengthen (location quotient = 2.47 and 1.08 respectively), while retail and educational services will still exceed the statewide equivalent (Figure 139). The manufacturing, wholesale, and transportation sector is predicted to be the fastest growing sector from 2009 to 2035, while management/administration and agriculture will also see large growth in terms of positive percent change. (Figure 141). Financial and professional services, education and health services, and recreation/hospitality are projected to exhibit negative growth from 2009 to 2035 (Source: Longitudinal Employer Household Dynamics, Local Employment

**Top 100 Worker Origins by ZIP Code - Riverside**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 92553 | 1,739 | 8.3% | 26 | 92585 | 140 | 0.7% | 51 | 92345 | 60 | 0.3% | 76 | 91706 | 33 | 0.2% |
| 2 | 92570 | 1,483 | 7.1% | 27 | 92882 | 139 | 0.7% | 52 | 91761 | 59 | 0.3% | 77 | 91744 | 33 | 0.2% |
| 3 | 92571 | 1,269 | 6.1% | 28 | 92335 | 137 | 0.7% | 53 | 92337 | 59 | 0.3% | 78 | 92264 | 33 | 0.2% |
| 4 | 92557 | 1,010 | 4.8% | 29 | 92501 | 137 | 0.7% | 54 | 92883 | 59 | 0.3% | 79 | 92411 | 33 | 0.2% |
| 5 | 92551 | 834 | 4.0% | 30 | 92376 | 133 | 0.6% | 55 | 91710 | 56 | 0.3% | 80 | 91737 | 32 | 0.2% |
| 6 | 92508 | 420 | 2.0% | 31 | 92563 | 129 | 0.6% | 56 | 92392 | 56 | 0.3% | 81 | 91763 | 32 | 0.2% |
| 7 | 92506 | 401 | 1.9% | 32 | 92591 | 128 | 0.6% | 57 | 91762 | 55 | 0.3% | 82 | 92284 | 32 | 0.2% |
| 8 | 92503 | 398 | 1.9% | 33 | 92346 | 126 | 0.6% | 58 | 92582 | 55 | 0.3% | 83 | 92805 | 31 | 0.1% |
| 9 | 92507 | 359 | 1.7% | 34 | 92220 | 120 | 0.6% | 59 | 92804 | 53 | 0.3% | 84 | 91786 | 30 | 0.1% |
| 10 | 92555 | 357 | 1.7% | 35 | 92595 | 119 | 0.6% | 60 | 92405 | 49 | 0.2% | 85 | 92054 | 30 | 0.1% |
| 11 | 92504 | 339 | 1.6% | 36 | 92399 | 118 | 0.6% | 61 | 91730 | 47 | 0.2% | 86 | 92870 | 30 | 0.1% |
| 12 | 92544 | 338 | 1.6% | 37 | 92407 | 117 | 0.6% | 62 | 92881 | 46 | 0.2% | 87 | 91911 | 29 | 0.1% |
| 13 | 92509 | 276 | 1.3% | 38 | 92879 | 112 | 0.5% | 63 | 92240 | 44 | 0.2% | 88 | 92083 | 28 | 0.1% |
| 14 | 92567 | 263 | 1.3% | 39 | 92336 | 110 | 0.5% | 64 | 92262 | 44 | 0.2% | 89 | 92311 | 28 | 0.1% |
| 15 | 92543 | 260 | 1.2% | 40 | 92374 | 108 | 0.5% | 65 | 92532 | 43 | 0.2% | 90 | 92377 | 28 | 0.1% |
| 16 | 92586 | 257 | 1.2% | 41 | 92404 | 100 | 0.5% | 66 | 92801 | 41 | 0.2% | 91 | 92802 | 28 | 0.1% |
| 17 | 92530 | 245 | 1.2% | 42 | 92373 | 97 | 0.5% | 67 | 92880 | 41 | 0.2% | 92 | 92084 | 27 | 0.1% |
| 18 | 92584 | 240 | 1.1% | 43 | 92223 | 96 | 0.5% | 68 | 91709 | 39 | 0.2% | 93 | 92677 | 27 | 0.1% |
| 19 | 92545 | 239 | 1.1% | 44 | 91752 | 75 | 0.4% | 69 | 91766 | 39 | 0.2% | 94 | 92886 | 27 | 0.1% |
| 20 | 92562 | 235 | 1.1% | 45 | 92548 | 72 | 0.3% | 70 | 92354 | 38 | 0.2% | 95 | 92027 | 26 | 0.1% |
| 21 | 92583 | 216 | 1.0% | 46 | 92410 | 70 | 0.3% | 71 | 92277 | 36 | 0.2% | 96 | 92201 | 26 | 0.1% |
| 22 | 92592 | 198 | 0.9% | 47 | 92234 | 67 | 0.3% | 72 | 92596 | 36 | 0.2% | 97 | 92408 | 26 | 0.1% |
| 23 | 92505 | 165 | 0.8% | 48 | 92860 | 62 | 0.3% | 73 | 90631 | 35 | 0.2% | 98 | 92683 | 26 | 0.1% |
| 24 | 92324 | 150 | 0.7% | 49 | 91764 | 60 | 0.3% | 74 | 91701 | 34 | 0.2% | 99 | 92307 | 25 | 0.1% |
| 25 | 92587 | 141 | 0.7% | 50 | 92316 | 60 | 0.3% | 75 | 92313 | 34 | 0.2% | 100 | 92704 | 25 | 0.1% |

**Top 100 Worker Destinations by ZIP Code - Riverside**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 92501 | 2,255 | 5.1% | 26 | 92557 | 313 | 0.7% | 51 | 91764 | 183 | 0.4% | 76 | 92805 | 117 | 0.3% |
| 2 | 92507 | 1,731 | 3.9% | 27 | 92562 | 313 | 0.7% | 52 | 92807 | 183 | 0.4% | 77 | 91762 | 116 | 0.3% |
| 3 | 92571 | 1,725 | 3.9% | 28 | 92592 | 303 | 0.7% | 53 | 92545 | 181 | 0.4% | 78 | 92780 | 116 | 0.3% |
| 4 | 92553 | 1,399 | 3.2% | 29 | 92373 | 293 | 0.7% | 54 | 92376 | 174 | 0.4% | 79 | 92121 | 115 | 0.3% |
| 5 | 91761 | 1,208 | 2.7% | 30 | 92337 | 282 | 0.6% | 55 | 92860 | 173 | 0.4% | 80 | 92220 | 111 | 0.3% |
| 6 | 92570 | 1,197 | 2.7% | 31 | 90012 | 272 | 0.6% | 56 | 92704 | 171 | 0.4% | 81 | 90245 | 108 | 0.2% |
| 7 | 92408 | 856 | 1.9% | 32 | 92591 | 271 | 0.6% | 57 | 92346 | 168 | 0.4% | 82 | 91789 | 107 | 0.2% |
| 8 | 92504 | 765 | 1.7% | 33 | 92806 | 258 | 0.6% | 58 | 92868 | 159 | 0.4% | 83 | 92586 | 106 | 0.2% |
| 9 | 92503 | 683 | 1.5% | 34 | 92530 | 245 | 0.6% | 59 | 92701 | 151 | 0.3% | 84 | 92653 | 105 | 0.2% |
| 10 | 92506 | 655 | 1.5% | 35 | 92821 | 245 | 0.6% | 60 | 92831 | 138 | 0.3% | 85 | 90638 | 104 | 0.2% |
| 11 | 91730 | 507 | 1.1% | 36 | 92618 | 235 | 0.5% | 61 | 92404 | 135 | 0.3% | 86 | 90045 | 102 | 0.2% |
| 12 | 92590 | 484 | 1.1% | 37 | 92518 | 229 | 0.5% | 62 | 92865 | 131 | 0.3% | 87 | 91739 | 101 | 0.2% |
| 13 | 92879 | 445 | 1.0% | 38 | 90670 | 221 | 0.5% | 63 | 91766 | 130 | 0.3% | 88 | 92336 | 101 | 0.2% |
| 14 | 91710 | 444 | 1.0% | 39 | 91752 | 217 | 0.5% | 64 | 92867 | 130 | 0.3% | 89 | 90015 | 99 | 0.2% |
| 15 | 92509 | 432 | 1.0% | 40 | 92374 | 210 | 0.5% | 65 | 92660 | 129 | 0.3% | 90 | 90631 | 98 | 0.2% |
| 16 | 92335 | 426 | 1.0% | 41 | 92626 | 206 | 0.5% | 66 | 91706 | 128 | 0.3% | 91 | 92392 | 98 | 0.2% |
| 17 | 92551 | 425 | 1.0% | 42 | 92543 | 195 | 0.4% | 67 | 92407 | 128 | 0.3% | 92 | 90248 | 96 | 0.2% |
| 18 | 92555 | 416 | 0.9% | 43 | 92612 | 195 | 0.4% | 68 | 90703 | 126 | 0.3% | 93 | 90620 | 96 | 0.2% |
| 19 | 92508 | 403 | 0.9% | 44 | 92584 | 194 | 0.4% | 69 | 91763 | 126 | 0.3% | 94 | 92008 | 96 | 0.2% |
| 20 | 92354 | 346 | 0.8% | 45 | 92881 | 194 | 0.4% | 70 | 91748 | 124 | 0.3% | 95 | 92585 | 95 | 0.2% |
| 21 | 92505 | 338 | 0.8% | 46 | 92614 | 192 | 0.4% | 71 | 92802 | 123 | 0.3% | 96 | 92870 | 95 | 0.2% |
| 22 | 92324 | 335 | 0.8% | 47 | 92316 | 186 | 0.4% | 72 | 92630 | 122 | 0.3% | 97 | 90802 | 93 | 0.2% |
| 23 | 92705 | 330 | 0.7% | 48 | 92410 | 186 | 0.4% | 73 | 92801 | 119 | 0.3% | 98 | 91746 | 93 | 0.2% |
| 24 | 92880 | 325 | 0.7% | 49 | 92583 | 186 | 0.4% | 74 | 92567 | 118 | 0.3% | 99 | 91768 | 93 | 0.2% |
| 25 | 92882 | 320 | 0.7% | 50 | 91786 | 184 | 0.4% | 75 | 91773 | 117 | 0.3% | 100 | 92028 | 91 | 0.2% |

Figure 140. Top 100 Worker Origins and Destinations (Data Source: LEHD)

Dynamics partnership, http://lehdmap.did.census.gov.). In 2009, areas within a five mile radius of the HSR portal were very jobs-poor (gap index = -0.36), and despite adding more jobs relative to workers, will remain jobs-poor in 2035 (gap index = -0.28).

Of those employed within five miles of the station, 81.1% live outside of the same area. Of those employed persons living within five miles of the station, more than 91% work outside the same area, suggesting very high rates of worker mobility outside of the station area, and slightly lower rates to the inside of the station area. Figures 140 and 142 illustrate the top 100 work origins and destinations for the station area by zip code. Of all commuters who work in the station area, 8.3% originated in the top ranking ZIP code (92553, Moreno Valley), while the top ZIP code for job destinations outside the station area (92501, Downtown Riverside) attracted 5.1% of all commuters. Geographically, destinations for jobs outside the station area are farther away and more dispersed than worker origins to the station area.

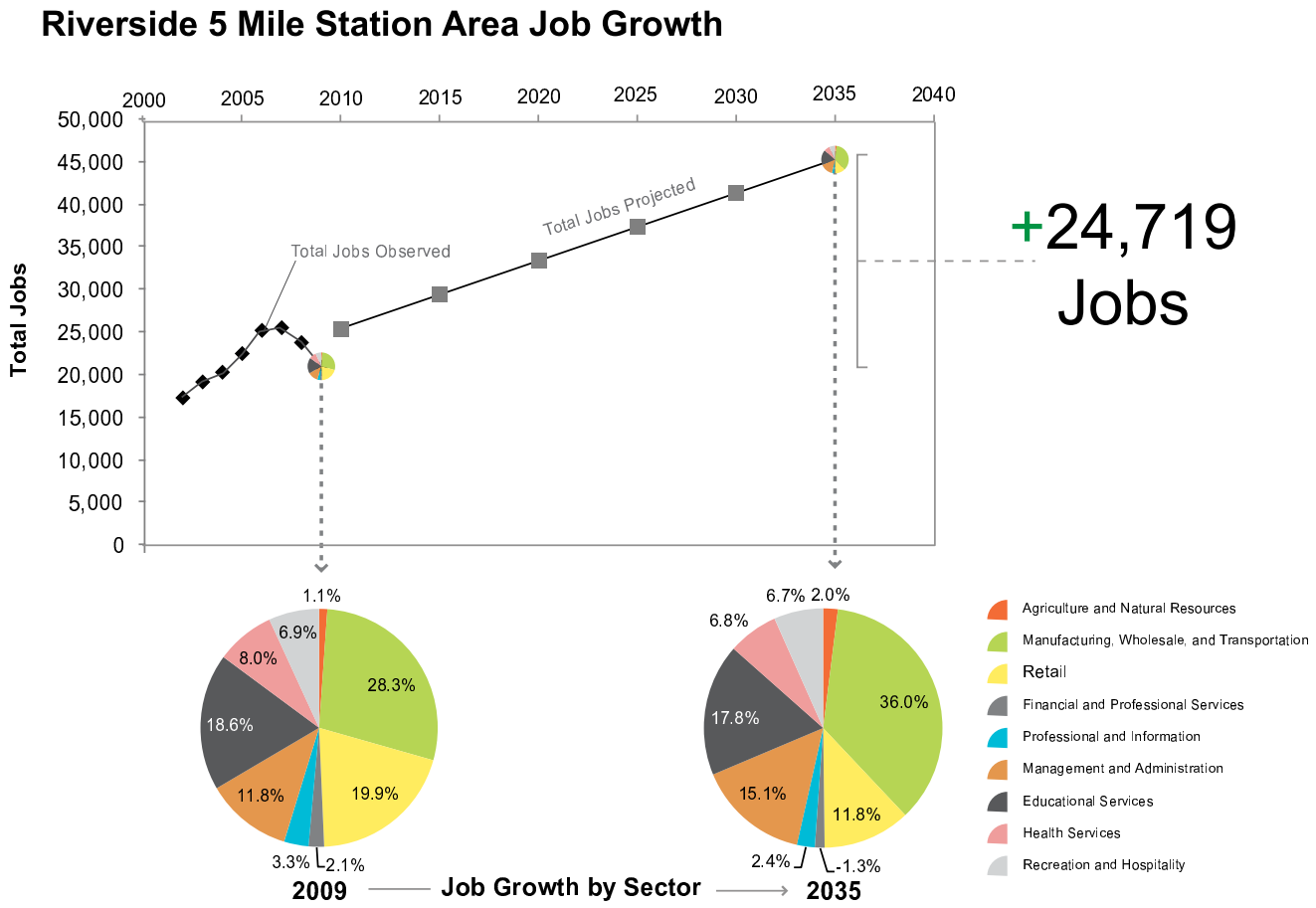
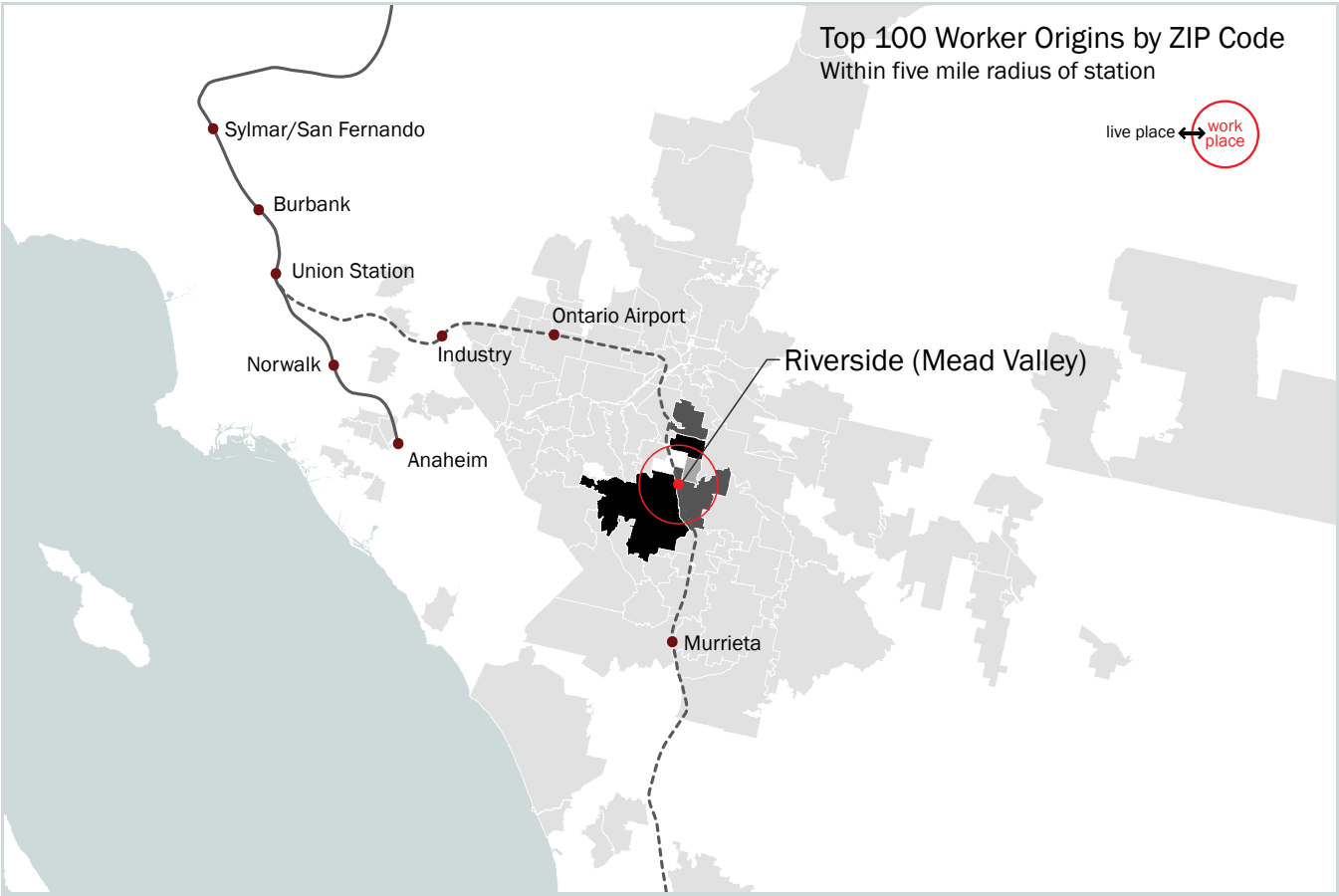



Figure 141. Job Growth Projections (Data Source: LEHD)



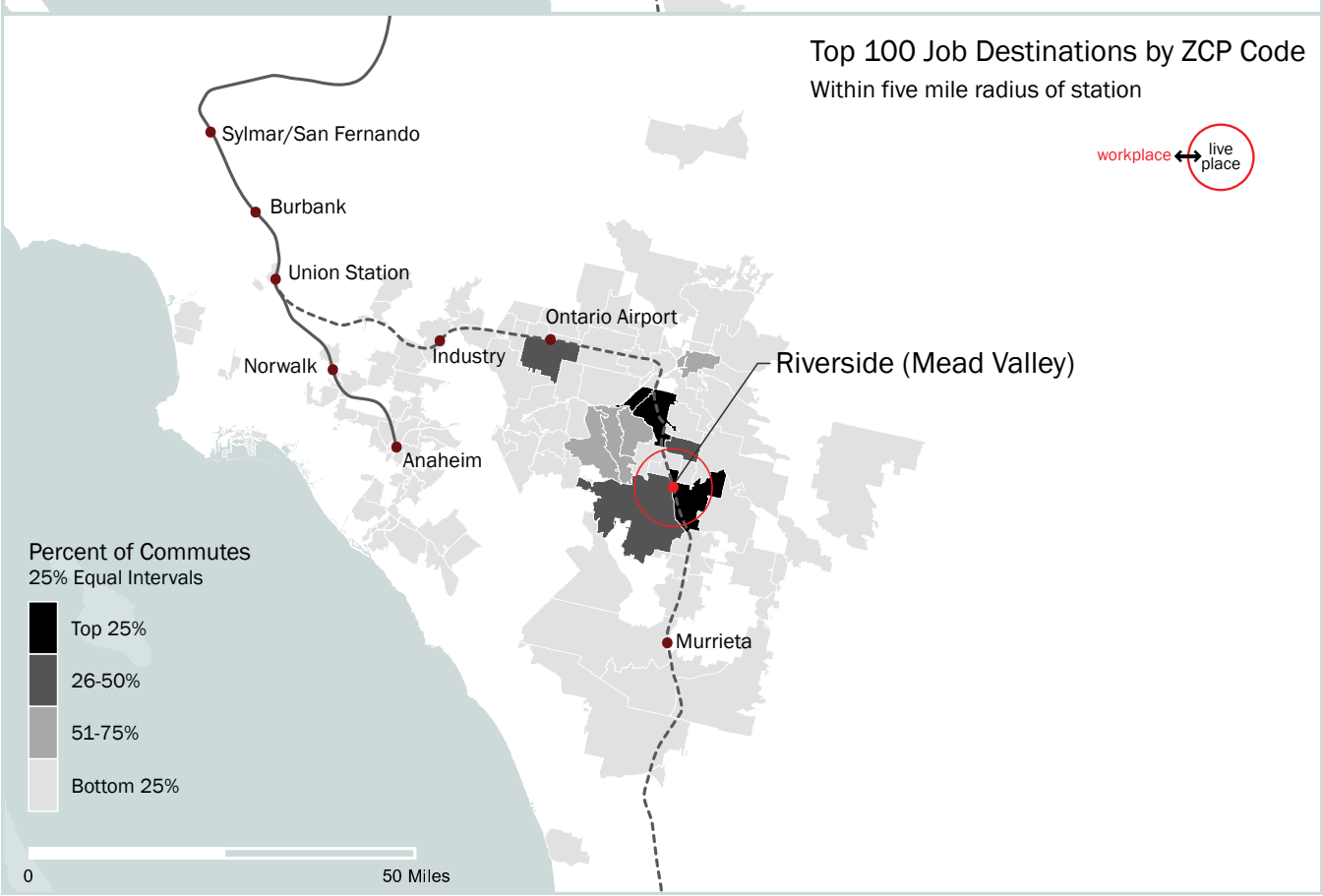




Figure 142. Riverside Commute Map (Data Source: LEHD)

**Current Land Use**

Agricultural (44.9%) or vacant land (42.3%) is the most common land use within half mile of the station. Parcels used for transport, communication or power infrastructure associated with freight rail operations occupy 5.8% of land and another 3.4% is occupied by industrial uses. Public uses account for 1.5%, and residential land constitutes 1.3% of the total area. Small freeway-side retail establishments occupy 0.8% of the land in the half mile radius (Figure 143). It is important to note that several additional residential properties exist, however, these homes operate small agricultural plots, thus the county assessor categorizes them as agricultural land use.

**Subdivision Pattern**

The station area has predominantly agricultural or vacant parcels. As a result, several large parcels (>25 acres) are divided only by the freight rail and interstate rights of way. The agricultural residences mentioned above typically occupy parcels of 0.75 to one acre, yet these plots are few

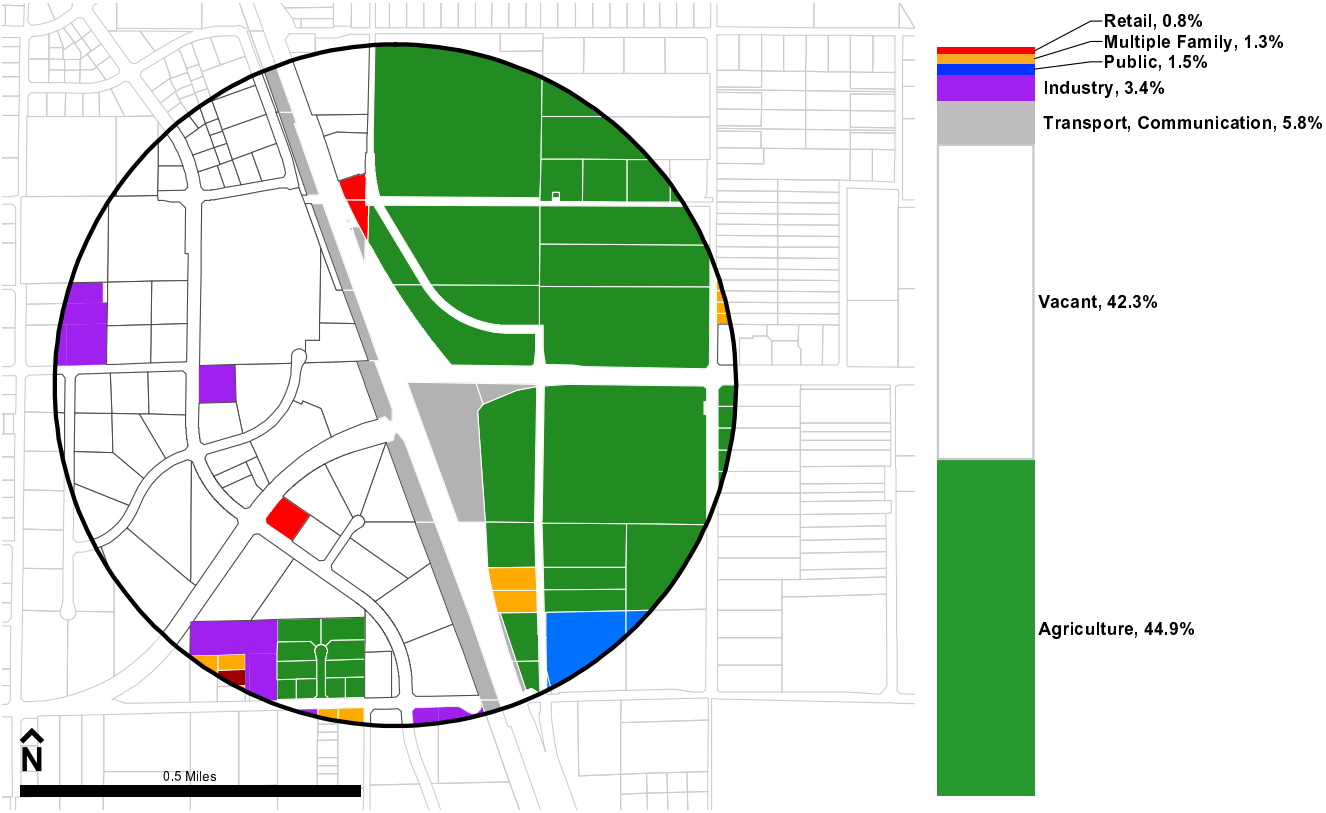



Figure 143. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Riverside HSR Station (Data Source: SCAG)

and exist near the station area's periphery. Parcel sizes within the half mile radius range from 0.15 (the largest minimum parcel size) to 137 acres, with the largest number of parcels existing in the one to five acre range typical of farming operations (Figure 144).

**Major Destinations**

Riverside County, with abundant land resources and regional interstate access, has attracted large point-source employers in the last few decades. Particular to the station area, the March Air Reserve Base has been a long-time employment and activity establishment, housing

## Parcel Characteristics within Half Mile of Riverside Station

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.15 | 137.0 | 1 to 5 |

Figure 144. Subdivision of parcels (Data Source: SCAG)

1,159 permanent residents within 3.25 miles of the station (Figures 145 and 146). Retailing giant Wal-Mart operates a supercenter 2.3 miles away, employing 319 people. Vista Hospital of Riverside, within three miles, is a local healthcare service provider, while the City of Perris has their administrative offices four miles away. The Southern Hotel and Museum, a monument to the area's early settlers, is a historic attraction in nearby Perris.

**Activity and Employment Centers within 5 Miles of Riverside Station**

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Employment/Government | March Air Reserve Base | 3.25 | 1,159* |
| Employment | Walmart | 2.30 | 319** |
| Employment/Health | Vista Hospital of Riverside | 2.90 | 100** |
| Employment/Government | City of Perris | 4.00 | - |
| Activity | Southern Hotel Museum | 4.50 | - |
| Government | Riverside National Cemetary | 2.25 | - |

*Permanent Residents
**Employees

Figure 145. Destinations

Figure 146. Map of Activity and Employment Centers within 5 miles of Riverside HSR Station

### Transportation and Transit Networks

The HSR station at Riverside/Mead Valley, adjacent to a regional interstate, is not well connected to the public transportation network (Figure 147). Riverside Transit agency's local line 41 is the closest transit stop within the half mile station ridershed. This line connects passengers to destinations in Moreno Valley and Mead Valley, but does not link to the Perris Transit Center, a stop for seven express and local buses 4.5 miles away. There are no rail connections or bicycle lanes. The area is extremely car dependent, with few nearby amenities and an incomplete pedestrian network.

Commute mode data does not exist for Mead Valley, however 72.5% of the City of Riverside's commuters drove alone to work in 2007, up almost 100% since the year 2000 (Figure 148). The second most common commute mode was car or vanpooling, which comprised 20.6% of commutes. Only 1.6% of city workers took public transit in 2007. Between 2000 and 2007, workers who worked at home increased by 147%. Public transit ridership increased by 173 commutes, a 102% increase from 2000 to 2007(Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

**Transit Network within Half Mile of Sylmar/San Fernando Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| None | Metro Local: 94, 224, 230, 236/237, 239, 292; Metro Rapid 734 and 794 | None | Metrolink-Antelope Valley Line | None | 1 Class I Bike Path | 57, Somewhat Walkable |

Figure 147. Transit Connectivity

| Commutes | 2000 | | 2007 | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 11,580 | 100.0 | 21,506 | 100.0 | 85.7% | Yes |
| Drove alone | 7,855 | 67.8 | 15,581 | 72.5 | 98.5% | Yes |
| Carpooled | 2,840 | 24.5 | 4,426 | 20.6 | 55.8% | Yes |
| Public transit | 170 | 1.5 | 343 | 1.6 | 101.8% | No |
| Walked | 265 | 2.3 | 298 | 1.4 | 12.5% | No |
| Taxi, motorcycle, bike, other | 219 | 1.9 | 280 | 1.3 | 27.9% | No |
| Worked at home | 230 | 2.0 | 568 | 2.6 | 147.0% | Yes |

Figure 148. Modal Split: City of Riverside (Data Source: AASHTO/CTPP)

### Real Estate Market Values and Trends

Existing real estate market conditions near the Riverside/Mead Valley station are among the lowest of station cities in most categories (Figure 149). Within 2.5 miles of the station, average leases for office space are $8.17 per square foot per year, the lowest price per square foot per year among SCAG station cities. In the same geography, office sales average around $160 per

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | $360 | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | 19.0% |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | $25.12 | $273,569 | $213,168 | 28.3% |
| Sylmar/San Fernando | $28.33 | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | $107 | $12.52 | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | $8.17 | $160 | $24.02 | $123,572 | $74,106 | 66.8% |
| Murrieta | $21.23 | $270 | $21.92 | $295,833 | $180,469 | 63.9% |

Category High/Category Low

Source: Loopnet.com, Geographic Research Inc.

Figure 149. Real Estate Market Values

square foot, only higher than Palmdale prices. Retail space is relatively more expensive at $24.02 per square foot per year, just below L.A. Union Station ($24.75) and Burbank ($25.12)(Source: Loopnet.com, Geographic Research Inc. 2011).

In 2010, median home values in census tracts located entirely or partially within a half mile radius of the station were recorded at $123,572, again a categorical low. The station area, however, has experienced the largest appreciation in median home value, increasing 66.8% since 2000, when values were at $74,106.

**Development Potential**

The decision to locate the Riverside HSR station in proximity to the former March Air Force Base, selected for realignment under the Base Closure and Realignment [BRAC] III, would appear to be part of an effort to re-ignite redevelopment of the facility. Thus far, however, redevelopment of what is now called the March GlobalPort, an air cargo center and logistics center, has halted due to a contracting economy. In 2004, DHL / ABX Air entered a 16-year joint-use agreement with the March Joint Powers Authority to begin freight operations at March GlobalPort, but by 2009 DHL had closed the facility due to low profitability. A new commercial tenant for the March GlobalPort facility has yet to be determined and other proposals to convert March Air Reserve Base into a joint civil-military public use airport have not attracted FAA funding that would make the transition possible. In the meantime, the University of California, Riverside, is one of the fastest growing branches in the system and its research efforts (significantly concentrated in agricultural science) retain important potentials for economic development.

**Local Perspectives**

The City of Corona, in Riverside County, has been identified as one of the alternative sites for the Phase Two alignment linking Los Angeles to San Diego through the Inland Empire. While uncertainty for this phase of the project is high, the City of Corona is beginning to address the potential concerns and benefits of an HSR station. As Kip Field, Director of Public Works and City Engineer, explains: "Since we're supportive of the idea [of high-speed rail], we didn't want to be left out so we're trying to show that we're looking ahead to that by beginning the planning processes."

**Perceived Benefits**

The perceived benefits of high-speed rail are mostly seen as the ability to improve the area's connectivity both to Los Angeles and the rest of the state. As Field explains:

*"We heard from a lot of our residents when we had the scoping meetings that they utilize the airports frequently, and they have to drive to a lot of places. Over and over again, we heard 'oh wow, this makes us connectable to the rest of the world'. I think it's hard to quantify that yet, but I think it would have a good impact on commerce and on everything just within our town and our area."*

**Vision**

While there is no clear vision for how the area around a potential station would develop aside from increased density, there is the acknowledgement that Corona will not have the same scale of development as larger cities. Seeing the station as more of a suburban location, Field acknowledges that many of the trips originating from Corona may be for "premium commuting" such as to Los Angeles, Burbank or San Diego.

**Challenges and Concerns**

One of the primary concerns for the city at this stage is the impact of the alignment on residential and commercial or industrial properties. In some cases the alignment would require relocation while others would be impacted by their proximity to the proposed rail line. There are additional concerns about the physical requirements for the station and alignment, and the difficulties fitting it into the existing built context:

*"The size and the linear shape of the station is a factor. Just in platforms, it's 1300 feet long. In terms of general switching and the fact that you have four tracks wide for approximately almost a mile is very substantial. That's not an easy thing to fit into any setting. I think that along with the fact that it's grade separated… is probably the most difficult thing to deal with in terms of stations."*

**Planning and Design**

The city has been working with the CHSRA to determine appropriate station locations and alignments. While planning is at the very early stages for this location, it is anticipated that the area around the station would require intensification and densification to support the station. According to Field, the need for increased density is not only seen as the best course of action from the perspective of the city's needs, but also as directed by the Authority:

*"It would really require some densification of proposed and planned land uses in that area to support the station and to make the most of it according to, not only what would be best for the city but also according to the high-speed rail authority's land use policies and station area development policies…"*

While the City is supportive of high-speed rail, the uncertainty of the rail alignment has meant that planning is currently only at the conceptual level.

# 3.11 SYLMAR/SAN FERNANDO

**Introduction**

The Sylmar/San Fernando HSR portal lies on or near the border of the City of San Fernando and Sylmar, a neighborhood of Los Angeles in the San Fernando Valley. The immediate Sylmar and San Fernando station area maintains population and employment densities that are among the highest of case study cities. The proposed station is twenty-four miles from Los Angeles Union Station and 411 miles from San Francisco along the proposed HSR route (Figures 150 and 151). Well linked to the regional freeway and commuter rail network, Sylmar/San Fernando is a suburban dormitory for employment destinations in the San Fernando Valley and downtown Los Angeles, the latter of which is the top destination for local jobs.

Figure 150. Map of Sylmar/San Fernando HSR Station

Figure 151. Aerial Photograph of Sylmar/San Fernando HSR Station

**Population**

With 104,472 residents in 2010, the Sylmar/San Fernando agglomerated area is the 16th largest city in Los Angeles County, between Burbank (103,469) and Norwalk (109,817), or the 61st largest in California. Population density in census tracts entirely inside the City of San Fernando and the neighborhood of Sylmar is 7,010 persons per square mile, moderately dense by national standards. This figure, however, does account for an amount of mountainous open space at the urban fringe. Sylmar/San Fernando accounts for about 1.0% of all residents in Los Angeles County. Between 2000 and 2010, Sylmar/San Fernando's total population increased by 4,097, reaching 104,472 in 2010. The resulting 4.1% growth rate was slightly higher than the Los Angeles County

**Residential Population and Population Density Projections within 5 Miles of Sylmar/San Fernando Station**

| Population | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 10,230,219 | 10,645,211 | 11,005,955 | 11,368,021 | 11,720,520 | 12,061,511 | 12,387,715 |
| Sylmar/ San Fernando 5 Mile Station Area | 505,080 | 520,052 | 530,536 | 541,265 | 551,619 | 561,599 | 571,154 |
| Sylmar/San Fernando Half Mile Station Area | 32,587 | 33,379 | 33,910 | 34,478 | 35,027 | 35,555 | 36,060 |

| Population Density | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| LA County | 2,502 | 2,604 | 2,692 | 2,781 | 2,867 | 2,950 | 3,030 |
| Sylmar/San Fernando 5 Mile Station Area | 2,505 | 2,580 | 2,632 | 2,685 | 2,736 | 2,786 | 2,833 |
| Sylmar/San Fernando Half Mile Station Area | 10,862 | 11,126 | 11,303 | 11,493 | 11,676 | 11,852 | 12,020 |

Figure 152. Residential Population and Population Density Projections within 5 Miles of Sylmar/San Fernando Station (Data Source: SCAG)

rate of 3.1% but lower than the statewide growth rate of 10%. Between 2010 and 2035, the area's population is projected to increase by 8% to 113,035. Demographic data is not available for the agglomerated area, however the following City of San Fernando figures can be used as an estimate. Hispanic residents in San Fernando account for 90.6% of the population, while the remaining 8.4% of the city's residents are comprised of non-Hispanic whites (6.5%), and other minorities (2.9%). Median household income in the City of San Fernando in 2010 was $50,497, or 82% of the median household income among all Californians (Source: U.S. Census 2010). The city's 2010 median home price was $298,250, or 58% of the statewide median home price (Source: Yahoo Prices.). The homeownership rate (53.4%) is slightly lower than the rate of homeownership statewide (57.8%).

In 2010, 520,052 residents lived in census tracts located entirely or containing portions within five miles of the station (Source: Southern California Association of Governments). The population density of these census tracts was an average of 2,580 persons per square mile, which includes large tracts of uninhabited mountainous area (Figures 152 and 153)(Source: Southern California Association of Governments). Within census tracts located entirely or containing portions within half mile of the station, the 2010 population was 33,379 with an average population density

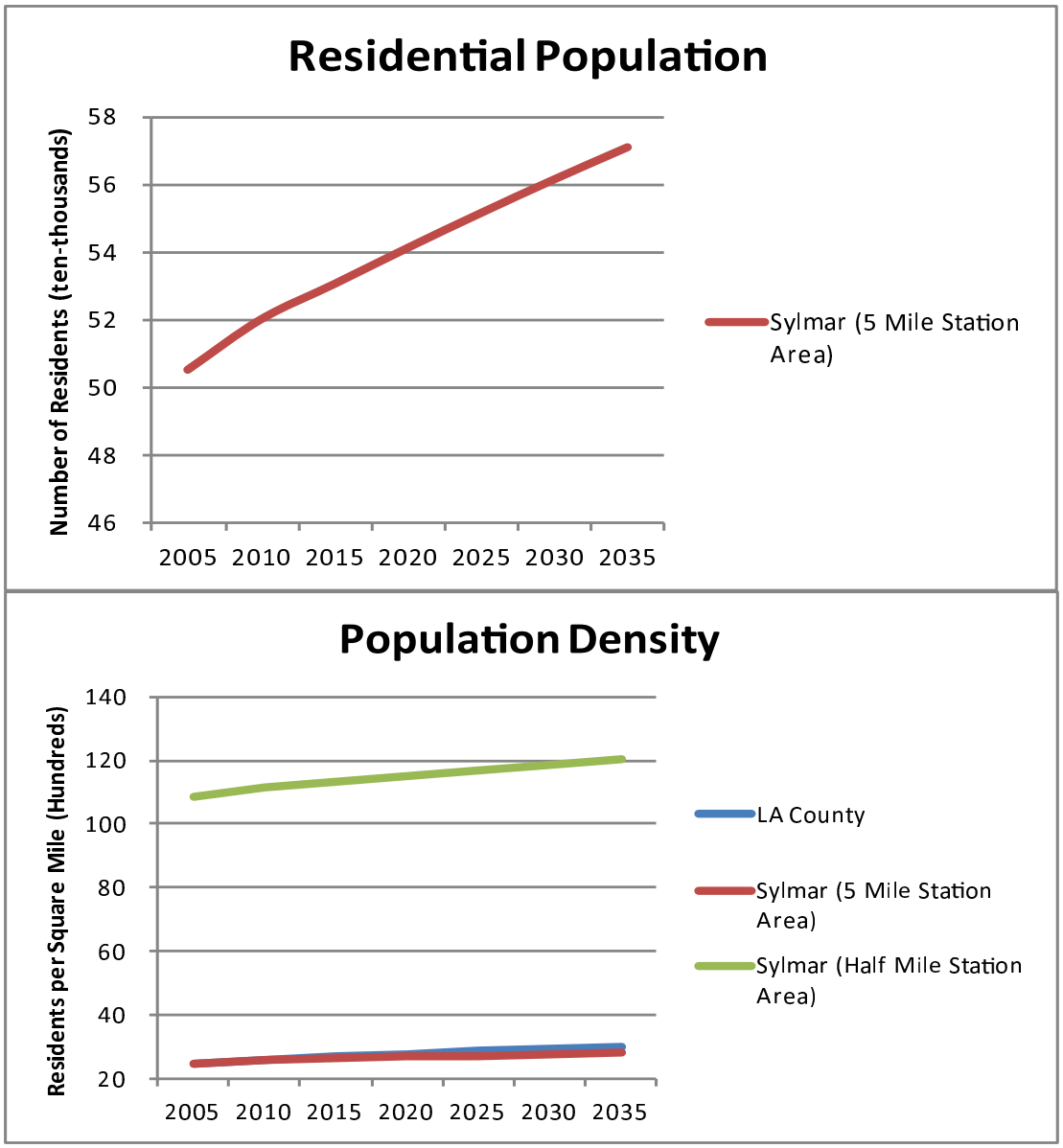



Figure 153. Residential Population and Population Density Projections within 5 miles of Sylmar/San Fernando HSR Station, 2005-2035 (Data Source: SCAG)

of 11,126 persons per square mile (Source: Southern California Association of Governments). This is the highest half mile density among station areas studied. The Southern California Association of Governments (SCAG) projects that residential population within five miles of the station will increase to 571,154 residents (9.8%) between 2010 and 2035. Within a half mile of the station the residential population is expected to increase by 2,681 people or by 7% within the same period (Source: Southern California Association of Governments).

**Jobs**

Job totals in Sylmar and San Fernando account for less than one percent of the jobs in Los Angeles County. The jobs-housing balance in the City of San Fernando in particular (0.59 jobs for every resident) is higher than the statewide proportion (0.46). Most Sylmar/San Fernando employees work at jobs within Los Angeles County, with only 4.4% commuting outside the county for work each day. The Sylmar/San Fernando combined area has a homogeneous economic base with a dominant manufacturing, wholesale, and transportation sector that accounts for 37% of total jobs in the city. Other large sectors include health (13.9%) and retail (13.5%).

We estimated that the area within five miles of the station contained 79,579 jobs in 2010 or 1.7% of all the jobs in Los Angeles County (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Within the same area,

**Sylmar/San Fernando 5 Mile Station Area Job Growth, Location Quotient, Gap Index**

| Total Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | 73,853 | 79,579 | 85,044 | 90,509 | 95,974 | 101,439 | 106,904 | 34.3% |

| Grouped Jobs | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 413 | -90 | -91 | -91 | -92 | -92 | -93 | 2.5% |
| Manufacturing, Wholesale, and Transportation | 29,599 | 25,176 | 25,171 | 25,167 | 25,162 | 25,157 | 25,153 | -0.1% |
| Retail | 11,026 | 9,170 | 9,168 | 9,166 | 9,165 | 9,163 | 9,161 | -0.1% |
| Financial and Professional Services | 3,029 | 3,521 | 3,522 | 3,522 | 3,523 | 3,523 | 3,524 | 0.1% |
| Professional and Information | 2,797 | 4,409 | 4,410 | 4,411 | 4,413 | 4,414 | 4,415 | 0.2% |
| Management and Administration | 8,911 | 11,038 | 11,039 | 11,040 | 11,042 | 11,043 | 11,045 | 0.1% |
| Educational Services | 2,522 | 2,558 | 2,558 | 2,559 | 2,559 | 2,559 | 2,559 | 0.0% |
| Health Services | 9,852 | 11,648 | 11,650 | 11,652 | 11,653 | 11,655 | 11,657 | 0.1% |
| Recreation and Hospitality Services | 5,704 | 5,813 | 5,812 | 5,812 | 5,812 | 5,812 | 5,812 | 0.0% |

| Location Quotient | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | 0.22 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -4.5% |
| Manufacturing, Wholesale, and Transportation | 1.61 | 1.40 | 1.42 | 1.44 | 1.48 | 1.52 | 1.57 | 12.5% |
| Retail | 1.36 | 1.10 | 1.07 | 1.03 | 1.01 | 0.98 | 0.96 | -13.2% |
| Financial and Professional Services | 0.66 | 0.77 | 0.76 | 0.74 | 0.73 | 0.72 | 0.71 | -7.4% |
| Professional and Information | 0.37 | 0.51 | 0.46 | 0.42 | 0.38 | 0.35 | 0.32 | -37.5% |
| Management and Administration | 0.76 | 0.86 | 0.80 | 0.75 | 0.71 | 0.67 | 0.63 | -26.0% |
| Educational Services | 0.38 | 0.33 | 0.29 | 0.26 | 0.23 | 0.21 | 0.19 | -42.0% |
| Health Services | 1.38 | 1.35 | 1.17 | 1.02 | 0.91 | 0.81 | 0.74 | -45.3% |
| Recreation and Hospitality Services | 0.72 | 0.66 | 0.59 | 0.54 | 0.49 | 0.45 | 0.42 | -36.3% |

| Gap Index of All Jobs and Workers | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| | -0.37 | -0.35 | -0.34 | -0.33 | -0.32 | -0.31 | -0.30 | -14.5% |

| Gap Index by Sector | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | % Change 2010-2035 |
|---|---|---|---|---|---|---|---|---|
| Agriculture and Natural Resources | -0.56 | -1.11 | -1.09 | -1.08 | -1.07 | -1.06 | -1.06 | -4.6% |
| Manufacturing, Wholesale, and Transportation | -0.24 | -0.26 | -0.20 | -0.14 | -0.07 | 0.02 | 0.12 | -146.5% |
| Retail | -0.26 | -0.36 | -0.39 | -0.41 | -0.43 | -0.45 | -0.47 | 29.4% |
| Financial and Professional Services | -0.54 | -0.47 | -0.47 | -0.47 | -0.47 | -0.47 | -0.47 | -0.2% |
| Professional and Information | -0.71 | -0.60 | -0.62 | -0.64 | -0.66 | -0.68 | -0.69 | 16.2% |
| Management and Administration | -0.47 | -0.42 | -0.44 | -0.47 | -0.49 | -0.52 | -0.54 | 29.0% |
| Educational Services | -0.63 | -0.66 | -0.71 | -0.74 | -0.77 | -0.79 | -0.81 | 22.6% |
| Health Services | -0.24 | -0.25 | -0.32 | -0.38 | -0.43 | -0.47 | -0.50 | 100.5% |
| Recreation and Hospitality Services | -0.44 | -0.46 | -0.48 | -0.50 | -0.51 | -0.53 | -0.54 | 18.7% |

Figure 154. Sylmar/San Fernando 5 Mile Station Area Job Growth, Location Quotient, and Gap Index (Data Source: LEHD)

we predict the number of jobs to increase by 2035 to 106,904 or by 34% (Figures 154 and 156) (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). The job market here features a higher proportion of manufacturing, wholesale, and transportation sector, health services sector, and retail sector jobs than the California norm (location quotient = 1.65, 1.29 and 1.34 respectively). In 2035, all sectors will still exceed the state equivalent except agriculture and natural resources, professional and information, education, and recreation and hospitality services. By 2035, educational services will experience the largest growth (105.4%).

Additionally, positive growth will occur in the management and information sectors and health services (Figure 156). Agriculture is the only sector predicted to experience job loss, reinforcing positive total job growth across all sectors (34.3%). This station area is jobs-poor, exhibiting a relatively low gap index (-0.38 in 2009 and -0.30 in 2035) among the station areas under study.

**Top 100 Worker Origins by ZIP Code - Sylmar/San Fernando**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91331 | 6,746 | 8.8% | 26 | 91042 | 537 | 0.7% | 51 | 91604 | 211 | 0.3% | 76 | 91320 | 136 | 0.2% |
| 2 | 91342 | 5,999 | 7.8% | 27 | 91387 | 511 | 0.7% | 52 | 90004 | 207 | 0.3% | 77 | 91506 | 136 | 0.2% |
| 3 | 91402 | 2,776 | 3.6% | 28 | 93063 | 507 | 0.7% | 53 | 91381 | 205 | 0.3% | 78 | 90805 | 134 | 0.2% |
| 4 | 91344 | 2,763 | 3.6% | 29 | 91354 | 493 | 0.6% | 54 | 91205 | 196 | 0.3% | 79 | 90046 | 133 | 0.2% |
| 5 | 91343 | 2,352 | 3.1% | 30 | 91355 | 465 | 0.6% | 55 | 90042 | 194 | 0.3% | 80 | 91302 | 132 | 0.2% |
| 6 | 91340 | 2,294 | 3.0% | 31 | 91321 | 434 | 0.6% | 56 | 93534 | 180 | 0.2% | 81 | 90275 | 131 | 0.2% |
| 7 | 91352 | 1,506 | 2.0% | 32 | 91384 | 432 | 0.6% | 57 | 93010 | 179 | 0.2% | 82 | 90280 | 130 | 0.2% |
| 8 | 91335 | 1,445 | 1.9% | 33 | 93551 | 415 | 0.5% | 58 | 90011 | 177 | 0.2% | 83 | 91016 | 130 | 0.2% |
| 9 | 91605 | 1,440 | 1.9% | 34 | 91040 | 377 | 0.5% | 59 | 90049 | 175 | 0.2% | 84 | 91362 | 129 | 0.2% |
| 10 | 91345 | 1,130 | 1.5% | 35 | 91607 | 375 | 0.5% | 60 | 91206 | 169 | 0.2% | 85 | 91602 | 129 | 0.2% |
| 11 | 91405 | 1,067 | 1.4% | 36 | 93552 | 375 | 0.5% | 61 | 91360 | 164 | 0.2% | 86 | 91202 | 128 | 0.2% |
| 12 | 91406 | 1,044 | 1.4% | 37 | 91390 | 362 | 0.5% | 62 | 93021 | 162 | 0.2% | 87 | 91766 | 126 | 0.2% |
| 13 | 91326 | 970 | 1.3% | 38 | 91411 | 348 | 0.5% | 63 | 90026 | 160 | 0.2% | 88 | 90066 | 125 | 0.2% |
| 14 | 91606 | 918 | 1.2% | 39 | 91367 | 317 | 0.4% | 64 | 90044 | 160 | 0.2% | 89 | 91301 | 125 | 0.2% |
| 15 | 91325 | 897 | 1.2% | 40 | 93535 | 314 | 0.4% | 65 | 93012 | 155 | 0.2% | 90 | 91436 | 125 | 0.2% |
| 16 | 93550 | 889 | 1.2% | 41 | 91316 | 313 | 0.4% | 66 | 93033 | 152 | 0.2% | 91 | 90065 | 124 | 0.2% |
| 17 | 91304 | 796 | 1.0% | 42 | 91356 | 313 | 0.4% | 67 | 91501 | 151 | 0.2% | 92 | 90650 | 124 | 0.2% |
| 18 | 91311 | 770 | 1.0% | 43 | 91303 | 311 | 0.4% | 68 | 90029 | 148 | 0.2% | 93 | 91001 | 124 | 0.2% |
| 19 | 91306 | 750 | 1.0% | 44 | 91423 | 303 | 0.4% | 69 | 91214 | 148 | 0.2% | 94 | 91201 | 123 | 0.2% |
| 20 | 93065 | 688 | 0.9% | 45 | 91307 | 267 | 0.3% | 70 | 90027 | 147 | 0.2% | 95 | 90034 | 122 | 0.2% |
| 21 | 91401 | 675 | 0.9% | 46 | 93536 | 248 | 0.3% | 71 | 90006 | 146 | 0.2% | 96 | 93543 | 122 | 0.2% |
| 22 | 91351 | 653 | 0.9% | 47 | 91505 | 245 | 0.3% | 72 | 90032 | 145 | 0.2% | 97 | 90018 | 120 | 0.2% |
| 23 | 91350 | 635 | 0.8% | 48 | 91403 | 217 | 0.3% | 73 | 90007 | 144 | 0.2% | 98 | 90274 | 120 | 0.2% |
| 24 | 91324 | 630 | 0.8% | 49 | 91364 | 213 | 0.3% | 74 | 90019 | 143 | 0.2% | 99 | 90038 | 119 | 0.2% |
| 25 | 91601 | 539 | 0.7% | 50 | 91504 | 211 | 0.3% | 75 | 90037 | 143 | 0.2% | 100 | 92335 | 116 | 0.2% |

**Top 100 Worker Destinations by ZIP Code - Sylmar/San Fernando**

| Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent | Rank | ZIP Code | Jobs | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 90015 | 7,305 | 4.3% | 26 | 91411 | 1,275 | 0.8% | 51 | 91203 | 706 | 0.4% | 76 | 90007 | 434 | 0.3% |
| 2 | 91342 | 7,097 | 4.2% | 27 | 91356 | 1,179 | 0.7% | 52 | 91381 | 698 | 0.4% | 77 | 90212 | 434 | 0.3% |
| 3 | 91311 | 6,070 | 3.6% | 28 | 91401 | 1,122 | 0.7% | 53 | 90049 | 677 | 0.4% | 78 | 90248 | 428 | 0.3% |
| 4 | 90012 | 4,840 | 2.9% | 29 | 91335 | 1,120 | 0.7% | 54 | 91326 | 674 | 0.4% | 79 | 90046 | 416 | 0.2% |
| 5 | 91331 | 4,789 | 2.8% | 30 | 91506 | 1,063 | 0.6% | 55 | 91316 | 657 | 0.4% | 80 | 91706 | 409 | 0.2% |
| 6 | 91355 | 4,027 | 2.4% | 31 | 91303 | 1,057 | 0.6% | 56 | 91321 | 608 | 0.4% | 81 | 90040 | 407 | 0.2% |
| 7 | 91340 | 3,306 | 2.0% | 32 | 91403 | 1,036 | 0.6% | 57 | 91101 | 592 | 0.3% | 82 | 91206 | 407 | 0.2% |
| 8 | 91406 | 3,195 | 1.9% | 33 | 91364 | 1,025 | 0.6% | 58 | 91351 | 578 | 0.3% | 83 | 93003 | 407 | 0.2% |
| 9 | 91352 | 3,150 | 1.9% | 34 | 91423 | 969 | 0.6% | 59 | 91301 | 565 | 0.3% | 84 | 91320 | 395 | 0.2% |
| 10 | 91343 | 3,097 | 1.8% | 35 | 90027 | 955 | 0.6% | 60 | 90036 | 554 | 0.3% | 85 | 91205 | 393 | 0.2% |
| 11 | 91505 | 3,027 | 1.8% | 36 | 91302 | 881 | 0.5% | 61 | 91350 | 554 | 0.3% | 86 | 90039 | 389 | 0.2% |
| 12 | 91605 | 2,817 | 1.7% | 37 | 91606 | 881 | 0.5% | 62 | 93063 | 551 | 0.3% | 87 | 93030 | 388 | 0.2% |
| 13 | 91367 | 2,745 | 1.6% | 38 | 90067 | 827 | 0.5% | 63 | 90404 | 550 | 0.3% | 88 | 91761 | 387 | 0.2% |
| 14 | 91325 | 2,531 | 1.5% | 39 | 90048 | 801 | 0.5% | 64 | 90038 | 548 | 0.3% | 89 | 90503 | 386 | 0.2% |
| 15 | 91504 | 2,365 | 1.4% | 40 | 90045 | 790 | 0.5% | 65 | 91307 | 545 | 0.3% | 90 | 90016 | 378 | 0.2% |
| 16 | 91402 | 2,243 | 1.3% | 41 | 91608 | 785 | 0.5% | 66 | 91607 | 524 | 0.3% | 91 | 90023 | 377 | 0.2% |
| 17 | 91344 | 2,196 | 1.3% | 42 | 90017 | 781 | 0.5% | 67 | 90010 | 513 | 0.3% | 92 | 90401 | 377 | 0.2% |
| 18 | 91405 | 2,165 | 1.3% | 43 | 91604 | 771 | 0.5% | 68 | 90245 | 503 | 0.3% | 93 | 91360 | 375 | 0.2% |
| 19 | 91324 | 1,942 | 1.1% | 44 | 90230 | 762 | 0.4% | 69 | 90058 | 497 | 0.3% | 94 | 91361 | 375 | 0.2% |
| 20 | 91345 | 1,802 | 1.1% | 45 | 91201 | 753 | 0.4% | 70 | 91362 | 496 | 0.3% | 95 | 93021 | 375 | 0.2% |
| 21 | 91502 | 1,656 | 1.0% | 46 | 91204 | 737 | 0.4% | 71 | 90071 | 484 | 0.3% | 96 | 90232 | 359 | 0.2% |
| 22 | 91436 | 1,633 | 1.0% | 47 | 90025 | 727 | 0.4% | 72 | 90210 | 467 | 0.3% | 97 | 91105 | 359 | 0.2% |
| 23 | 91304 | 1,606 | 0.9% | 48 | 91601 | 720 | 0.4% | 73 | 90064 | 464 | 0.3% | 98 | 91040 | 341 | 0.2% |
| 24 | 90024 | 1,601 | 0.9% | 49 | 90028 | 715 | 0.4% | 74 | 90069 | 458 | 0.3% | 99 | 93534 | 340 | 0.2% |
| 25 | 93065 | 1.313 | 0.8% | 50 | 90021 | 711 | 0.4% | 75 | 90670 | 445 | 0.3% | 100 | 91354 | 337 | 0.2% |

Figure 155. Top 100 Worker Origins and Destinations (Data Source: LEHD)

Of those employed within five miles of the station, about 68.6% live outside of the same area. Of those employed persons living within five miles of the station, more than 85.8% work outside the same area, suggesting high rates of worker mobility outside, and slightly lower rates of mobility inside the station area (Source: Longitudinal Employer Household Dynamics, Local Employment Dynamics partnership, http://lehdmap.did.census.gov.). Figures 155 and 157 illustrate the top 100 work origins and destinations for the station area by zip code. Of all commuters who work in the station area, 8.8% originated in the top ranking ZIP code (91331, Pacoima), while the top ZIP code for job destinations outside the station area (90015, Downtown Los Angeles) attracted 4.3% of all commuters. Geographically, origins of commuters that work inside the five mile station area are farther away and more dispersed than ZIP codes of job destinations outside the station area.

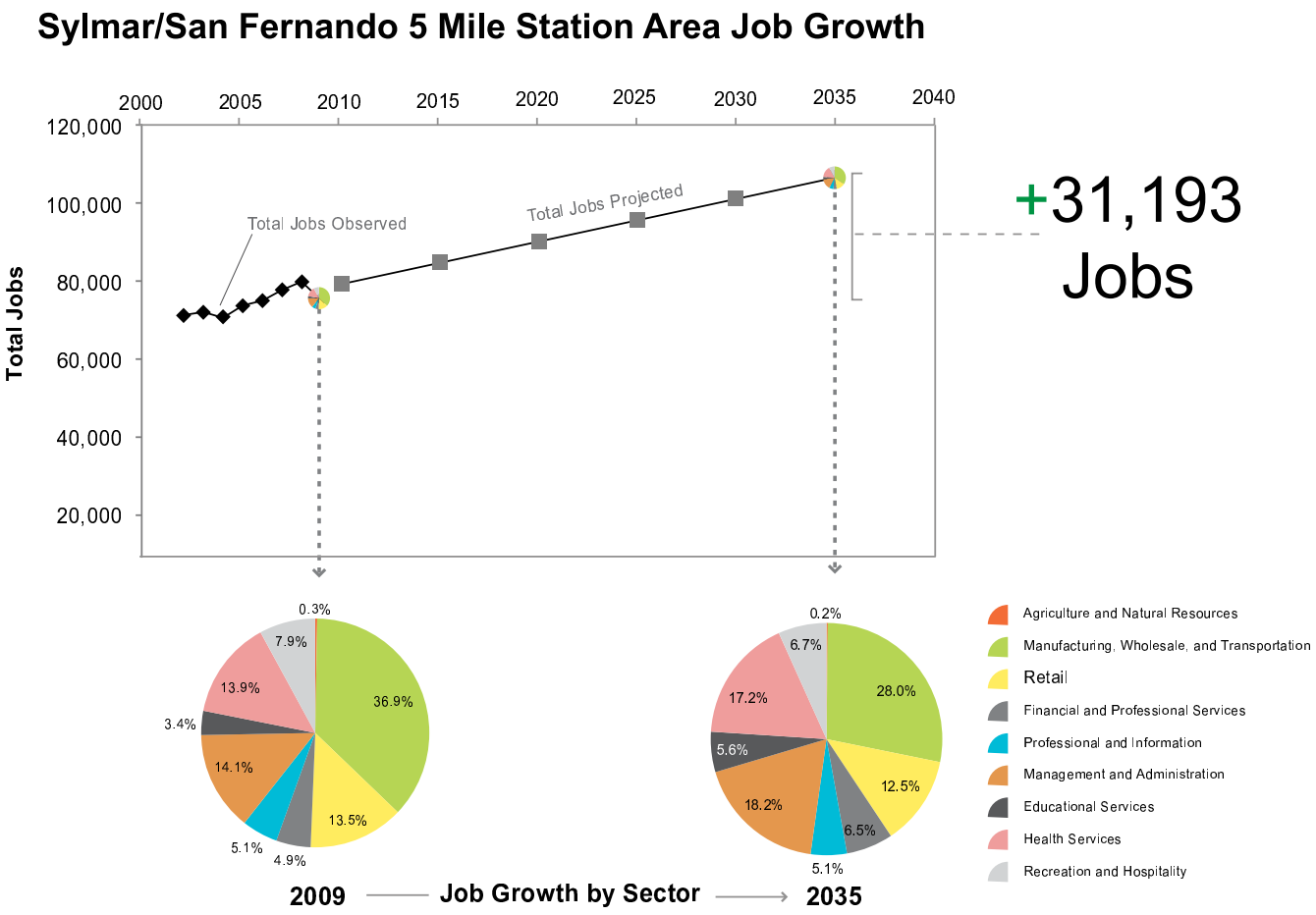



Figure 156. Job Growth Projections (Data Source: LEHD)

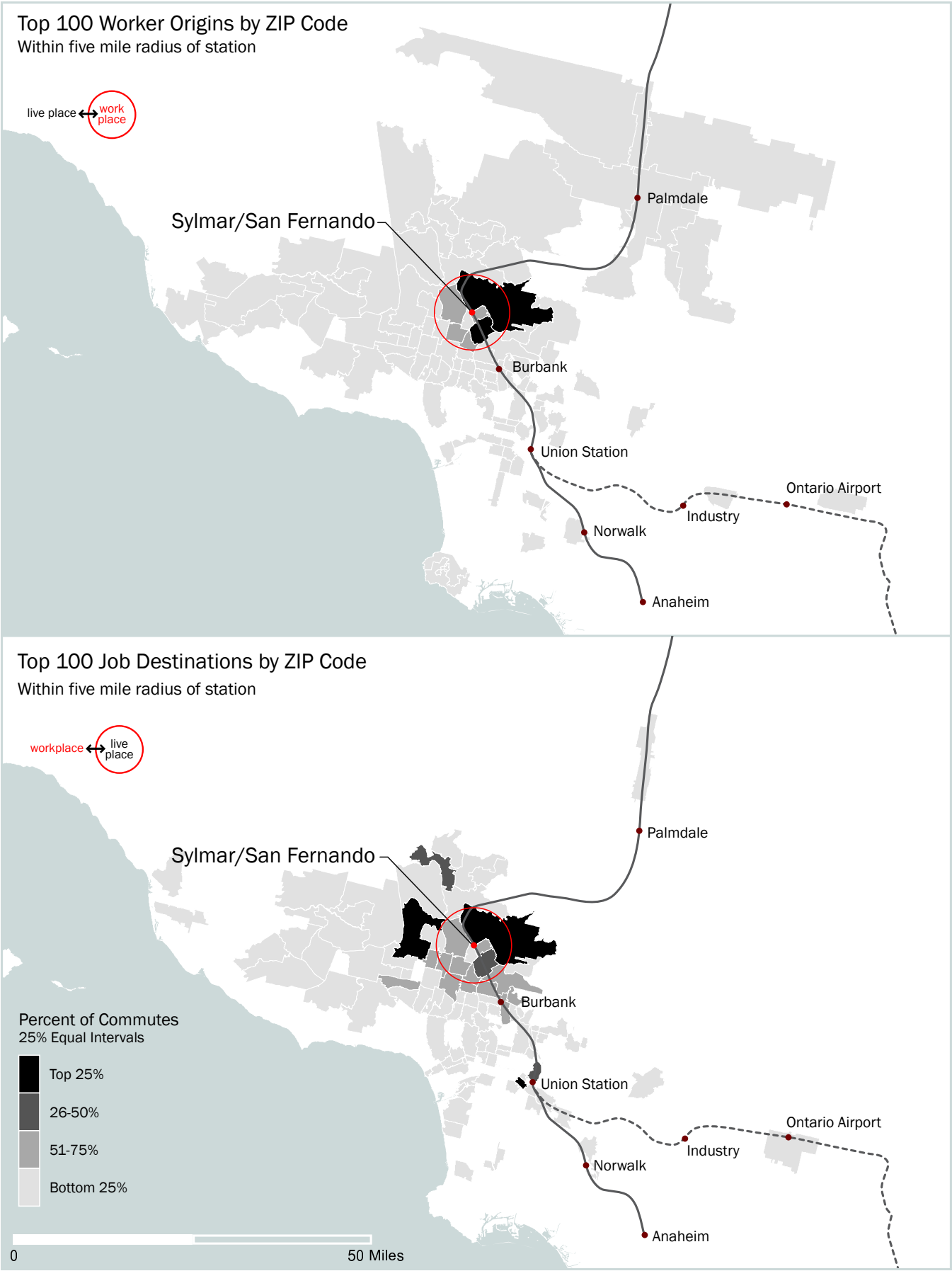



Figure 157. Sylmar/San Fernando Commute Map (Data Source: LEHD)

**Current Land Use**

Land within half mile of the station area is predominantly residential in use (70.7%), divided into single family (51.3%) and multiple family parcels (19.4%) (Figure 158). Commercial uses combine for 8.4%, with the majority of that belonging to retail establishments (7.2%) along the San Fernando Road corridor. Industrial uses related to low rise vehicle service and repair shops along the existing rail corridor account for 6.8%. Vacant land and open space combine for 5.6% of land, public facilities occupy 4.8%, and transportation and communications infrastructure account for 3.7%.

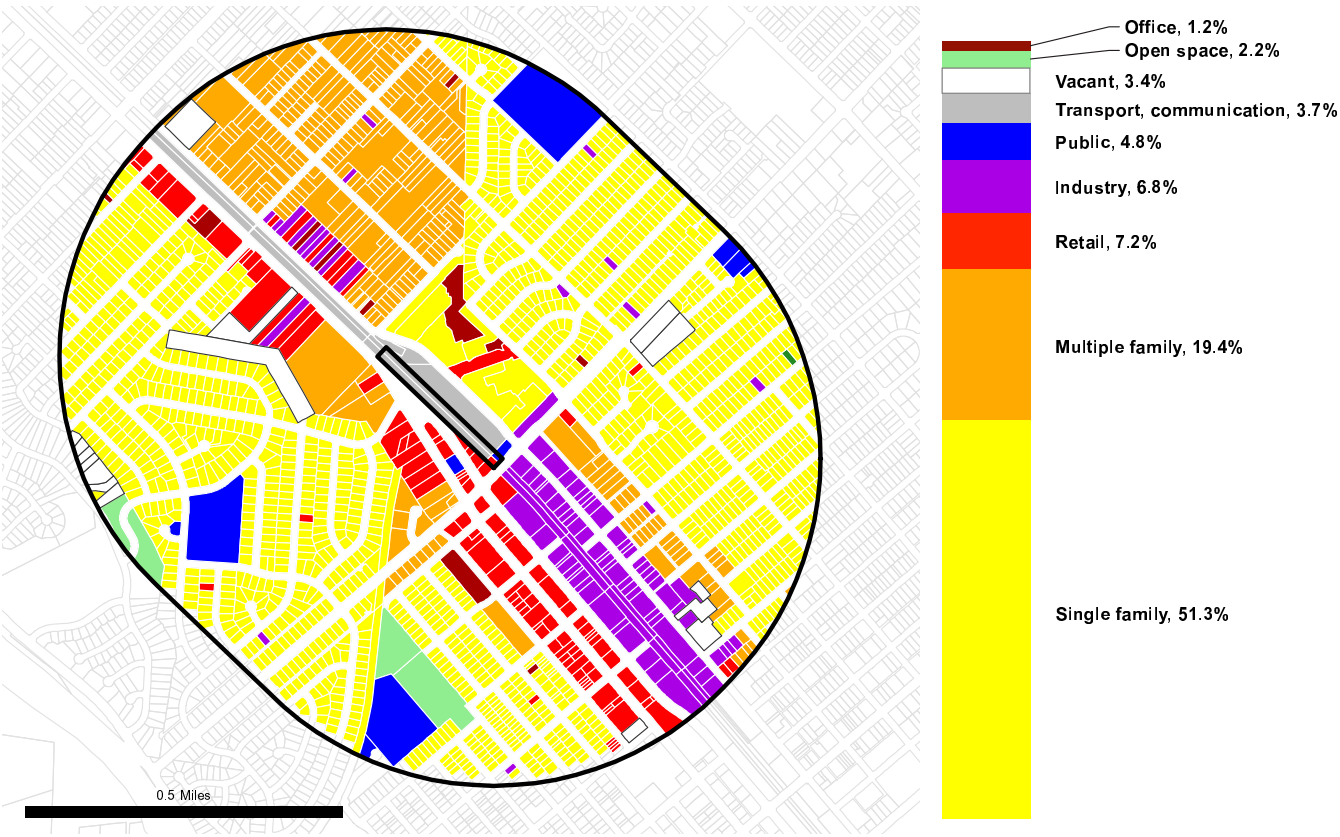



Figure 158. Map of Land Uses and Distribution of Land Uses (by Parcel) within Half Mile of Sylmar/San Fernando HSR Station (Data Source: SCAG)

**Subdivision Pattern**

Parcel subdivision surrounding the proposed station is characterized by small to medium sized (0.11 to 0.5 acre) lots on a street grid aligned to the railway corridor (Figure 159). Historical records explain that this pattern began in 1874, when the lands of the Mission San Fernando del Rey were purchased and subdivided into 50' by 100' lots surrounded by farmland. Simultaneously, the city became linked to Los Angeles via passenger rail. Sanborn maps show that structures began occupying parcels on this subdivision pattern as far back as 1907. By 1940, much of the existing residential fabric was in place. At that time, mixed commercial and manufacturing activities began to fill in vacant land formerly occupied by rail yards along the freight and passenger rail corridor.

**Parcel Characteristics within Half Mile of Sylmar/San Fernando Station**

| Min Parcel Size (acres) | Max Parcel Size (acres) | Modal Parcel Size Range (acres) |
|---|---|---|
| 0.005 | 10.5 | 0.11 to 0.25 |

Figure 159. Subdivision of parcels (Data Source: SCAG)

Currently, parcel sizes range between 0.005 and 10.5 acres, with an elementary school occupying the largest parcel in the half mile area. Most parcels are in the range of 0.11 to 0.25 acres.

**Major Destinations**

The largest employment or activity destination within five miles of the station is Los Angeles Mission College, attracting around 10,800 students per day (Figures 160 and 161). Less than one mile away is downtown San Fernando, a modest central business district providing about 950 retail sector jobs. Other large retail destinations include Sylmar Towne Center and La Rinda Shopping Center, both within one mile of the station. A manufacturing, technology, and a professional employment center is two to three miles east. Two prominent health centers, Providence Holy Cross and L.A. County Olive View-UCLA Medical Center, provide local healthcare jobs and services.

**Activity and Employment Centers within 5 Miles of Sylmar/San Fernando Station**

| Type | Activity/Employment Center | Miles from Station | Employees/Visitors per day |
|---|---|---|---|
| Education | Los Angeles Mission College | 2.25 | 10,792* |
| Retail/Employment | Downtown San Fernando | 0.75 | 950 |
| Health | Providence Holy Cross Medical Center | 1.00 | 803 |
| Retail | Sylmar Towne Center | 0.75 | 660 |
| Employment | Los Angeles Unified School District | Various | 490 |
| Employment | Pure Tek Corporation | 2.25 | 400 |
| Employment | JT Contractors | 1.50 | 400 |
| Health | LA County Olive View-UCLA Medical Center | 2.30 | 200 |
| Activity/Tourism | San Fernando Mission | 1.50 | - |
| Retail | La Rinda Shopping Center | 0.75 | - |
| Health | Aurora Medical Center | 0.75 | - |

*Total Number of Students

Figure 160. Destinations

Figure 161. Map of Activity and Employment Centers within 5 miles of Sylmar/San Fernando HSR Station

**Transportation and Transit Networks**

An extensive state and interstate highway network provides automobile access to the Sylmar/San Fernando station area (Figure 162). Interstates 405, 210 and 5 as well as state route 14 traverse the five mile area, connecting many residents and workers to housing and employment centers across the Southern California region. Amtrak trains do not stop in Sylmar or San Fernando, however Metrolink commuter rail lines connect Antelope Valley and Sylmar travelers to the regional and national passenger rail node at Union Station. Metrolink lines service destinations as far south as Orange County.

The station is also a node for local and long-distance bus transit. Los Angeles Metro provides frequent bus service to destinations in the San Fernando Valley and Downtown Los Angeles. Two express and four local lines stop at the station or within the half mile area. Further, a shuttle connects rail passengers to the L.A. County Olive View Medical Center. The station area is well connected to

**Transit Network within Half Mile of Sylmar/San Fernando Station**

| Automobile Interstate Network | Bus | Rail Regional Passenger | Rail Commuter | Rail Light | Bike | Walkability (Walk Score) |
|---|---|---|---|---|---|---|
| None | Metro Local: 94, 224, 230, 236/237, 239, 292; Metro Rapid 734 and 794 | None | Metrolink-Antelope Valley Line | None | 1 Class I Bike Path | 57, Somewhat Walkable |

Figure 162. Transit Connectivity

the bicycle network, with the Mission City Trail Class I bicycle route connecting the station to nearby residential and commercial areas. Sylmar/San Fernando is less walkable relative to other station area case studies.

Most commuters (69.3%) in the City of San Fernando drove alone to work in 2007, a 44.3% increase since 2000 (Figure 163). Carpooling was the second most common mode (18.2% of commute trips), followed by walking to work (4%). Usage of public transit (comprising only 3.7% of all commutes) was down almost 25% from 2000. Bicycle or motorcycle commutes comprised 2.6% of the total, while 2.2% of residents worked at home (Source: AASHTO/Census Transportation Planning Products 2000-2007 Part 1 Pro" le 1,http://ctpp.transportation.org/Pages/default.aspx).

| **Commutes** | **2000** | | **2007** | | | |
|---|---|---|---|---|---|---|
| Mode to Work | Number | Percent | Number | Percent | % Change 2000-2007 | Change Significant? |
| Total Workers | 8,175 | 100.0 | 10,536 | 100.0 | 28.9% | Yes |
| Drove alone | 5,060 | 61.9 | 7,301 | 69.3 | 44.3% | Yes |
| Carpooled | 1,955 | 23.9 | 1,917 | 18.2 | -1.9% | No |
| Public transit | 524 | 6.4 | 394 | 3.7 | -24.8% | No |
| Walked | 325 | 4.0 | 418 | 4.0 | 28.6% | No |
| Taxi, motorcycle, bike, other | 164 | 2.0 | 273 | 2.6 | 66.5% | No |
| Worked at home | 145 | 1.8 | 233 | 2.2 | 60.7% | No |

Figure 163. Modal Split: City of San Fernando (Data Source: AASHTO/CTPP)

**Real Estate Market Values and Trends**

Commercial real estate leases for properties within 2.5 miles of the proposed HSR portal are among the highest of station cities at $28.33 per square foot per year (Figure 164). In the same geography, office sales averaged around $263 per square foot for properties sold since 2006, more affordable than sales prices in Anaheim, Burbank, Industry and Murrieta. Retail space leases for an average of $15.76, the second lowest average, just above Palmdale (Source: Loopnet.com, Geographic Research Inc. 2011). In 2010, median home values in census tracts located partially or entirely within a half mile of the station were $194,349, a 26.6% increase from 2000. Single family residential is the dominant dwelling type, occupying 72.5% of residential land, while multiple family dwellings occupy 27.4%.

**Development Potential**

Sylmar is the northernmost neighborhood in the city of Los Angeles. It is accessible from the Golden State Freeway (Interstate 5) and the Foothill Freeway (Interstate 210). The southern

| Station Area | Avg Office Lease (Price/SF/Yr) | Avg Office Sales (Price/SF) | Avg Retail Lease (Price/SF/Yr) | Median Home Value 2010 | Median Home Value 2000 | Percent Change 2000-2010 |
|---|---|---|---|---|---|---|
| Anaheim | $18.43 | **$360** | $25.00 | $261,116 | $176,130 | 48.3% |
| Norwalk | $20.18 | $259 | $19.00 | $191,667 | $161,111 | **19.0%** |
| Los Angeles | $25.24 | $253 | $24.75 | $165,000 | $137,500 | 20.0% |
| Burbank | $17.25 | $350 | **$25.12** | $273,569 | **$213,168** | 28.3% |
| Sylmar/San Fernando | **$28.33** | $263 | $15.76 | $194,349 | $153,537 | 26.6% |
| Palmdale | $14.36 | **$107** | **$12.52** | $130,488 | $93,333 | 39.8% |
| Industry | $14.01 | $270 | (No Listings) | $225,622 | $174,618 | 29.2% |
| Ontario | $16.25 | $241 | $19.28 | $128,872 | $102,880 | 25.3% |
| Riverside/Mead Valley | **$8.17** | $160 | $24.02 | **$123,572** | **$74,106** | **66.8%** |
| Murrieta | $21.23 | $270 | $21.92 | **$295,833** | $180,469 | 63.9% |

**Category High/Category Low**

Source: Loopnet.com, Geographic Research Inc.

Figure 164. Real Estate Market Values

terminus of the Antelope Valley Freeway (SR 14) is at the northernmost section of Sylmar. Thus development in Sylmar would seem tied to its ability to position itself as an important transportation node in the eastern portion of the San Fernando Valley between the Antelope Valley to the north and Glendale and Burbank, Hollywood, and downtown Los Angeles to the south.

**Local Perspectives**

San Fernando is a small, low-income, and primarily Latino city at the northeastern end of the Los Angeles metropolitan area. The city has been struggling for years to attract business and residents. For this reason, according to Public Works Director Ron Ruiz, the city views HSR as a "great opportunity," and has told the HSRA that it would welcome a station within its boundaries.

**Perceived Benefits**

San Fernando's positive predisposition towards the HSR is based on their belief that it will bring along increased accessibility to their community, and will generate opportunities for redevelopment and revitalization of a downtown area that has been long under decline. San Fernando is already served by a Metrolink station that provides a transit connection to downtown Los Angeles. Nevertheless, city planners hope that the combination of a Metrolink and a HSR station would enhance the accessibility of residents from more distant municipalities of the state. Whereas now the city faces a leakage and a loss of sales taxes because many residents are traveling outside San Fernando to shop, Ruiz hopes that this trend may be reversed. Additionally, he argues that the HSR will "positively change the dynamic of the community and help to create a destination" (Ruiz interview).

According to Ruiz, the placement of a station at San Fernando's downtown may serve as a catalyst for the redevelopment of the area because "it will cause some activity to happen around the San Fernando Mall…. A project like this might spur interest in current owners or investors to redevelop some of these parcels because the station makes an attractive place for redevelopment…. Since HSR has such a high profile, it will probably be something exciting for their city."

**Vision**

The vision of local planners is that the HSR will put San Fernando on the map. "It will revitalize the community, which has been struggling to do so for many years. More people would know about it, visit it, and want to shop or live there. The city would become more of a destination" (Ruiz interview).

In a low-income community that has experienced blight in its downtown core, the prospect of a station is seen as "an opportunity for a new re-birth" and "a shot-in the arm" of the local downtown mall that was once a destination center but has long declined (Ramirez interview). As Ramirez sums up:

*"The community is taking a very resilient approach to dealing with what we have been given and trying to put a positive spin on it and see how we can build off it; see what economic development opportunities can come of it; and also to provide additional services. If we are able to get some of these TODs to happen adjacent to the railway facilities, then I think it is a positive for us locally, and also regionally to try to build upon it."*

**Challenges and Concerns**

A number of physical and economic challenges would accompany the coming of the HSR into town. The planners are worried about the adverse physical and visual impacts that such a big project with its associated large demand for parking might bring to the city. As argued by Ruiz: "San Fernando is only 2.3 sq miles and has a small town 'feel' despite its close proximity to Los Angeles. The question is how this project would change the landscape of the city…. Just like the history of freeways that broke up and divided communities, the size and process can break us up."

Currently, existing railroad tracks are crossing San Fernando but Ramirez is worried that HSR's wider right of way and changes in elevation would create important visual and functional challenges:

*"The alignment is bisecting our downtown on a grander scale than the existing railroad ROW does. We are trying to see how we can mitigate some of these impacts,*

*and there are different scenarios on how to get pedestrian and vehicular traffic in a north-south direction to cross the elevated railroad ROW…. My understanding is that because there are fault lines outside the westerly portion of the city, they actually have to bring the rail line down to grade at one portion in the city. There are some grade changes that have the potential to impact the city visually. There will be noise, and also the existing streets that cross the ROW would be impacted in some ways, depending on the different alternatives"* (Ramirez interview).

Another concern relates to the possible removal of certain buildings and some commercial and industrial land uses that fall within the path of the HSR alignment. As emphasized by Ramirez:

*"Ultimately, if you have crossings that require that your roadways are put below the existing finished grade to be able to comply with the requirements that the HSR has for clearance between the street ROW and their rail lines, this has some potential major impacts to neighboring land uses on both sides of the railroad. … The proposed line with that 100 foot-wide berth that it needs is basically going to take out a portion of commercial along the northern portion of Truman Street adjacent to the railroad. Also north of the railroad track we've got some industrial, which is at a premium because there is not a lot of it… At the same time, we have some services (police department) and some school facilities that are also adjacent and would probably be impacted by the rail lines. So we would have to look at relocating some of these services as well."*

The economic challenges of funding the construction of the system and financing local redevelopment projects were also mentioned. Being primarily a low-income, working-class city, San Fernando does not have many resources for land acquisition around the station area, which may preempt efforts of redevelopment. At the same time, the uncertainty surrounding the time of implementation and exact station location forestalls local planning. As argued by Ramirez, "I think we need to be somewhat proactive in the planning process but there is a lot of uncertainty still with HSR as far as when this thing will get developed, that to start planning for something that hasn't been finalized yet is difficult. It's somewhat of a moving target."

The need for coordination, communication, and collaboration with other entities (the HSRA, Metro, and neighboring cities) was mentioned as both a challenge and an opportunity. As stated by Ruiz, "It takes hard work and a lot of communication to overcome the challenges. Communication with the Authority has been good so far. We meet with them on a regular basis to discuss what is happening in the project…. The project may create some opportunities to work with other cities. If ever a time, it is now!"

"We need to take both a state-wide approach and a regional approach," agrees Ramirez. "We should develop facilities that will be built through collaboratives with the state, the city of LA, and with private entities that are providing some of the support services to the rail line."

**Planning and Design**

Because of the aforementioned uncertainty of the exact alignment and station location, the city has not yet started planning for a HSR station. Nevertheless, in an effort to leverage the existing Metrolink station and also revitalize some of it commercial corridors, the city in 2005 implemented the San Fernando Corridor Specific Plan and changed some zoning areas from commercial to mixed-use (Ruiz interview). Part of the Specific Plan area would be impacted by the HSR alignment. As explained by Ramirez:

*"The idea behind the specific plan was to create some TOD development in close proximity to the Metrolink public transportation node…. We may expand the specific plan to look at some of the industrial land uses that are north of the tracks as an opportunity site for higher density for TOD. This area is adjacent to our higher-density residential which is 45 units/acre. So it is quite conceivable that could happen"* (Ramirez interview).

However, the planners readily acknowledge that much more planning in conjunction with a market analysis needs to happen to prepare for an HSR station. As Ramirez emphasized, "We are talking about a different animal, so to speak, when it comes to the HSR trains and how they need to

be mitigated; how to reduce the potential impacts of noise and speed; how to achieve connectivity at grade-level crossings between the northern and southern parts of the city since the alignment will not be elevated. So these are the things that are uncharted territory at this point."

Planning for the coming of the HSR in San Fernando becomes even more important as it is likely to change the face of its downtown. As Ramirez argued: "Ultimately we would have to reevaluate our existing downtown. We have a historic downtown area that is on San Fernando Road. With the coming of the HSR, it is almost like beachfront property. As the waters rise, what was once beachfront property along the beach is now two blocks in." He believes that the city should:

1.promote higher density residential in proximity to the rail lines (especially along the northern part of the tracks);

2.remodel and revitalize the downtown mall and redevelop the portions that will remain after bisecting downtown and

3.redevelop the old downtown core, bringing in support services and parking to the station.

# 4. MODELING URBAN FORM ALTERNATIVES

This chapter summarizes schematic land use and massing projections for development around four Phase 1 HSR station-areas: Anaheim, Norwalk, Burbank, and Palmdale. These station-cities represent three different station-city typologies. Anaheim and Burbank are suburban employment centers; Norwalk is a suburban dormitory, while Palmdale can be characterized as an exurban dormitory. The chapter presents different scenario plans that demonstrate ways that development around these stations can be envisioned based on their particular socio-economic context and trends and existing local assets. In what follows, we will first give an overview of the definition and process of scenario planning, and then will turn to present some station-specific scenarios.

## 4.1 SCENARIO PLANNING

Scenario planning is one of the ways urban designers, planners, and public officials "engage the future," thereby combating uncertainty when devising strategies and executing tactics in the present. Scenario planning often begins with exploration of social, economic, environmental, political, and physical data, and the extrapolation of these data into the future (the projection of trends). By engaging information about a place, scenario planning seeks also to identify its comparative advantages and assets.

In the case when the past is deemed to be a poor indicator of future developments (as when major infrastructure investments like high-speed rail service are thrown into the mix), alternatives to current trends, while still drawing on information from the present, are often more speculative. They are in many cases answers to questions that begin with "What if…?". Two or more alternative scenarios can be compared to one another and to the business-as-usual scenario and assessed using a range of criteria. Sometimes a preferred scenario is chosen and decisions are made with the goal of realizing that scenario in place of the status quo situation.

The last two decades have witnessed the rise of scenario planning as a tool for better understanding and modeling urban form relationships, especially in terms of urban form interactions with transportation systems, and with developing urban development strategies that capitalize on the competitive advantages of places. Thus, scenario planning processes may address the relationship between urban design, land use decisions, transportation investments, and economic activities (Bartholomew 2008).

Importantly, scenario planning offers the potential for being a bottom-up rather than top-down process. It has been proven particularly useful for engaging stakeholders in productive discussions during the process of developing and evaluating alternative scenarios. As a consequence, stakeholders become more informed about the external forces that can shape their communities and about the relationships of those forces to one another (McDermott 2005). Evidence suggests that scenario planning can help participants to develop ideas about possible futures that often vary from the direction of current trends and suggest alternative strategies to conducting business as usual (Zegras, Sussman, & Conklin 2004; Ways & Burbank 2005). An additional advantage of scenario planning is that it offers the opportunity to better link urban design, transportation investments, economic development strategies, and land use planning efforts that are often undertaken by separate agencies.

### Scenario Planning Process

Scenario planning involves the delineation of a range of scenarios, an evaluation of these scenarios, the identification of a preferred scenario, and the implementation of the scenario through a variety of means. Although not often found in many recent scenario planning efforts, the inclusion of an assessment stage is also understood to be critical to the success of any scenario planning initiative (Ames 2006). As conditions change, successes appear and/or obstacles emerge, the implementation strategy can be reconsidered and adapted.

The role of visualization in delineating scenarios, and the opportunity to enhance their legibility to audiences of stakeholders, funding agencies, and policy makers cannot be underestimated. Urban designers have an important role to play in scenario planning as both communicators and negotiators.

## 4.2 SCENARIOS FOR STATION AREA PLANNING

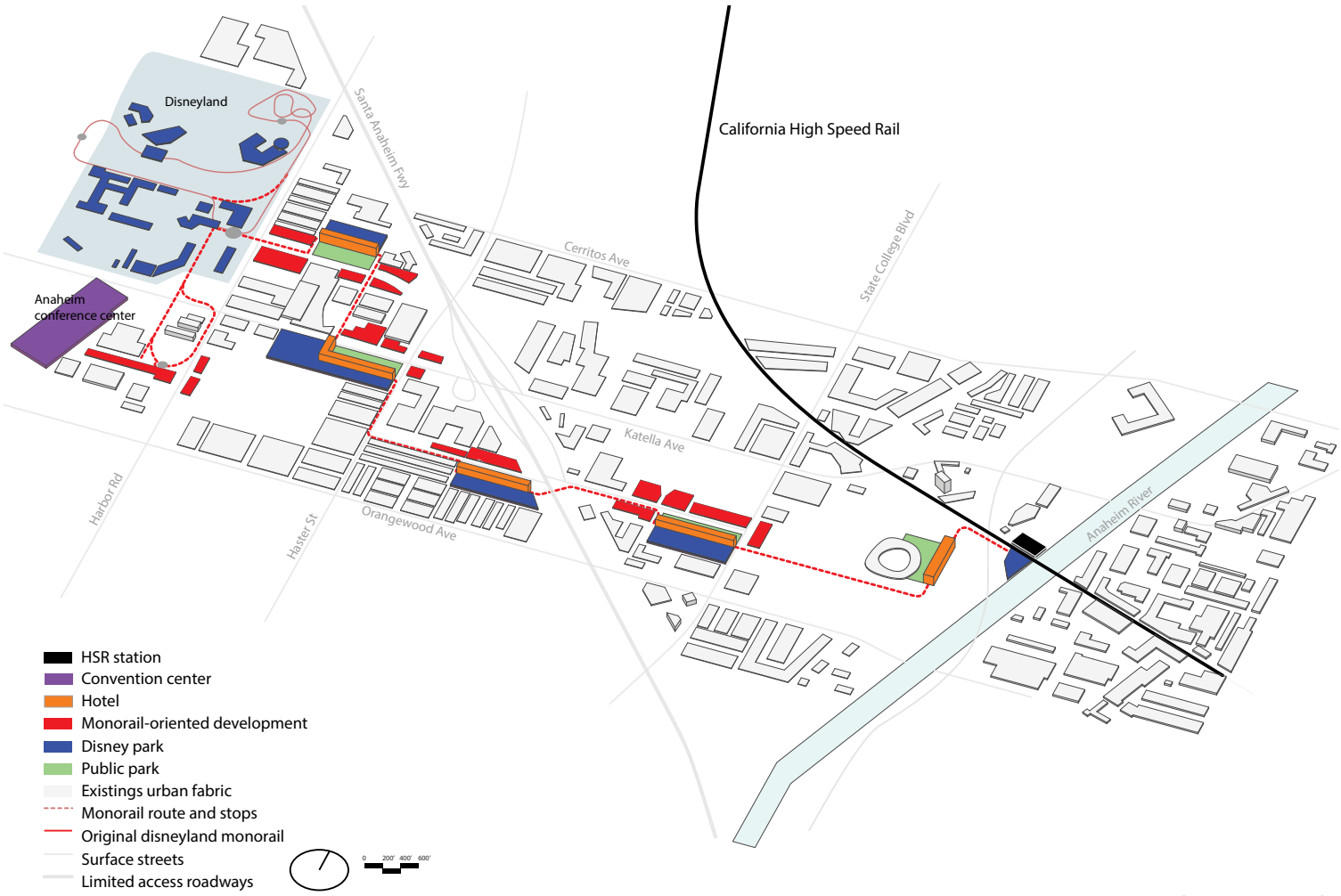
We utilized the basic tenets of scenario planning to develop scenarios for four Southern California station-areas. We relied significantly on collected socio-demographic and economic data and trends and an evaluation of each station-city's local assets. While wide participation in the scenario development process by community stakeholders was not possible at this time, we sought to collect information about community visions and needs through a series of interviews with local planners and policy makers in each station-area city. We also conducted two workshops at SCAG, an earlier one attended by representatives of transportation agencies (HSRA, Caltrans, Metro) and SCAG officials, and a second one that included some representatives from the station-cities. In what follows, we present three alternative scenarios for Anaheim, and one scenario each for Norwalk, Burbank, and Palmdale.

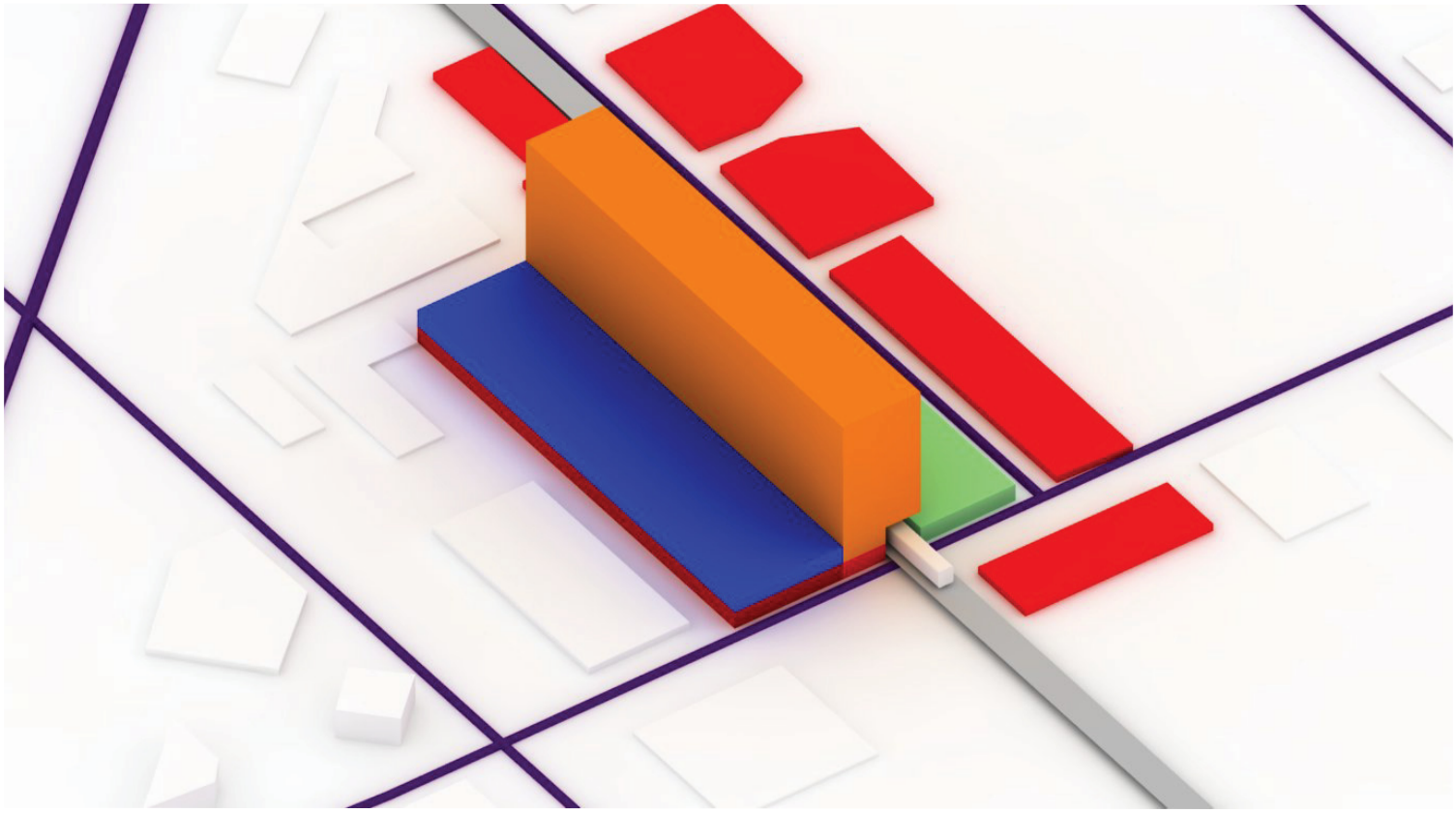
# 4.2.1 ANAHEIM SCENARIO 1-DISNEYRAIL

This scenario imagines the establishment of a public-private partnership in which the Disney Co. plays an entrepreneurial, quasi-public role as transportation developer/operator. Doing so will enable it to link the HSR station at ARTIC (Anaheim Regional Transportation Intermodal Center) with Disneyland, providing a direct access to the theme park from the station through the development of an elevated light rail system. Disney Co. may also choose to develop a series of intermittent properties that lie along the guiderail system's right-of-way. Constituting in effect an expansion of the Park itself, Disney would own and operate a hotel and entertainment/commercial venue at each stop of the light rail.

Disneyland and the city-owned Anaheim Convention Center are Anaheim's largest two destinations and those most likely to attract High-Speed Rail ridership from cities along the HSR corridor. Disney Co pioneered the idea of "train as entertainment" with their original monorail at Disneyland constructed in 1959. Pairing this idea with the company's desire to enlarge the theme park leads to a scenario in which the Company takes an active role in developing a light rail mode and theme-park related venues at its stops. Mutual economic benefits may accrue from this synergy because the present situation presents two obstacles for Disney Co: 1) Disneyland is land-constrained and therefore unable to expand to meet current visitor/conventioneer demands; and 2) the ARTIC station (which will be the HSR portal) lies over a mile east of the theme park/convention center, making the connection less than seamless, if not inconvenient.

A light rail would transport not only Disney patrons but also Anaheim residents and workers, who may use a pass-card system to differentiate from visitors. At the same time, such arrangement will enable the City of Anaheim to leverage Disney's investment and presence toward the revitalization of HSR- and light rail surrounding areas, beginning with the development of a community park fronting each station—the everyday counterpart to the theme park. Hotel and commercial establishments may front the community park. The city may also choose to build additional convention space, anticipating Anaheim's enhanced desirability as a convention destination—a result of both the Disney expansion and eventual high-speed rail access to/from Las Vegas.





HSR
Monrail development
Convention Center
Open Space
Disney park
Disney Hotel
Existing urban fabric
Automobile route

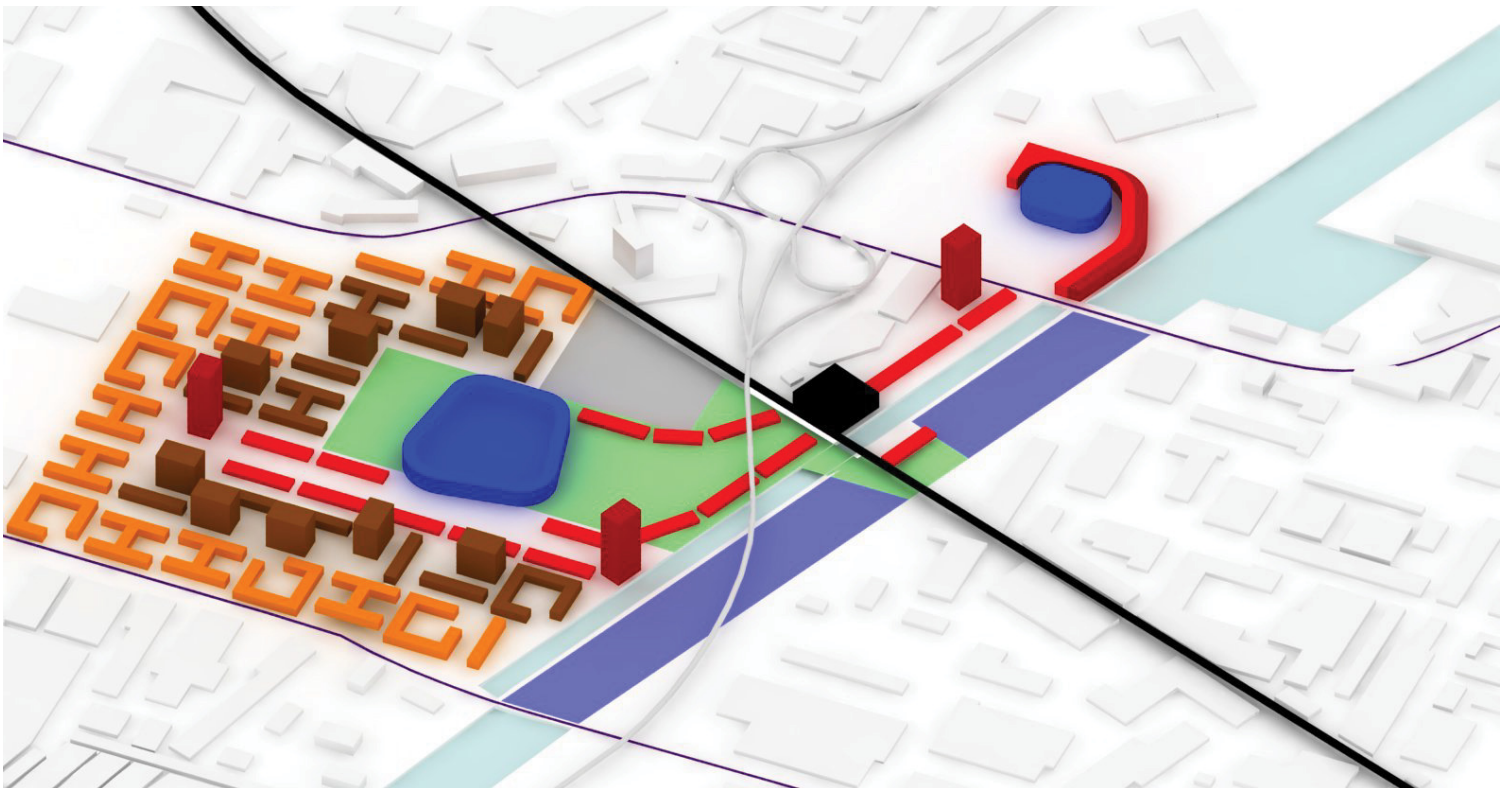
Anaheim: Disney Rail

# 4.2.1 ANAHEIM
# SCENARIO 2-TRAIN TO TRAINING

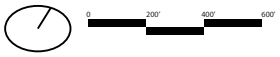
This scenario recognizes the role that the HSR system might play in enabling California to become the country's largest Olympic training network. HSR would provide convenient and easy travel between the large number of such centers, many of which happen to be located at planned station stops (San Jose/Palo Alto, Escondido/San Diego, Merced). Anaheim already hosts a large number of training facilities and athletic venues and would be the logical location for centralized support facilities (clinics, offices, labs and gyms). Given the plethora of professional grade sports venues already in Anaheim (most of them underutilized), it is also the obvious place to establish venues for those sports for which no central training facilities yet exist in the U.S., such as kayaking, roller hockey, golf, handball/squash, karate/judo/tae kwon do, etc.

Thus, this scenario considers the existing local assets and connects them to the station to take advantage of the increased accessibility provided by the HSR. The existing and new facilities can also be viewed as larger public amenities (off-hours), as well as also integrate institutional uses with related commercial ones (sports retail, extended stay housing/hotel facilities) for athletes' families and spectators.

This concept is exemplified in the development of a riverside esplanade linking the HSR to the Honda Center to the north and Angels' Stadium to the south. The scenario extends to the handling of the site's ecology. This is re-made through the (rubber) damming of the Santa Ana river to create an amphitheatrical stadium with bank-side seating; and by channeling and filtering storm water into a peripheral canal/kayaking course and a series of terraces and channels (lined by dormitories for athletes) around Angels Stadium. These would serve both as an overflow retention basin and as a golf course.



HSR station
Existing professional athletic site
Proposed professional athletic site
Existings
Commercial office
Commercial retail
Residential
Public opened space
Parking

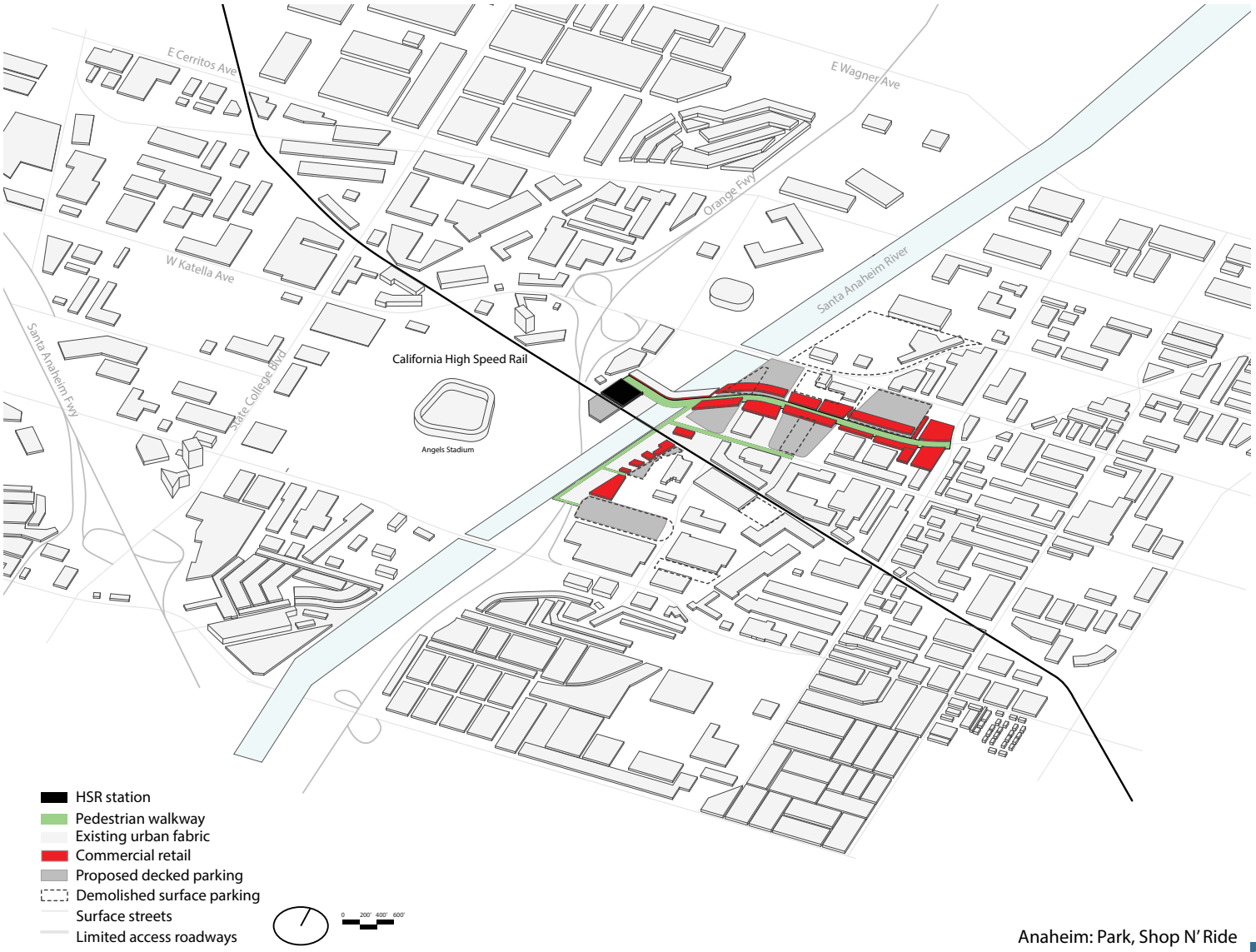


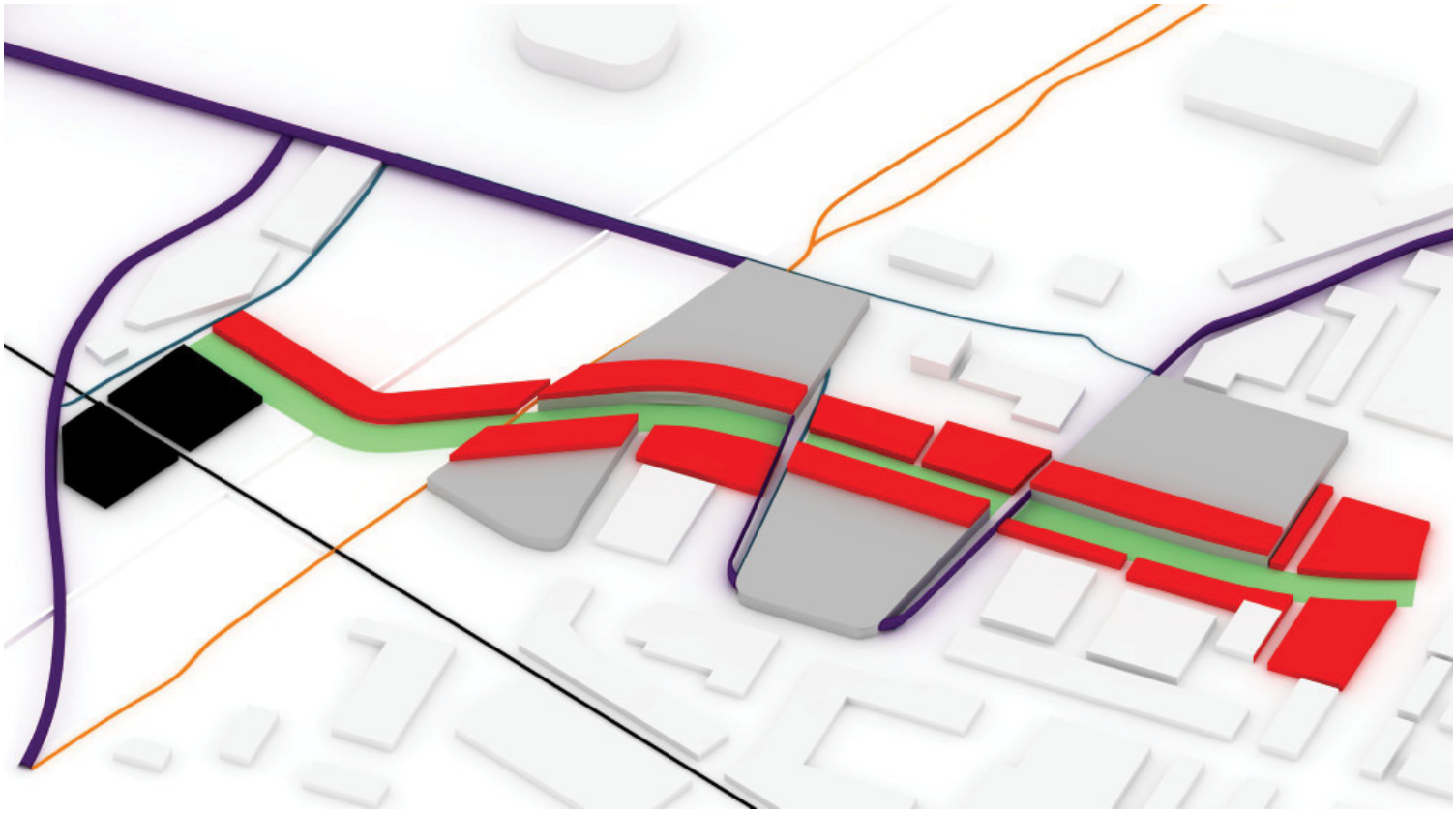

Anaheim: Train to training

# 4.2.1 ANAHEIM
# SCENARIO 3-PARK, SHOP N'RIDE

This scenario arises out of the disparity between the HSRA's requirement that each of the station-cities provides a very large number of parking spaces, and the City of Anaheim's reluctance to supply more than 1,000 such spaces until such time as either HSR can demonstrate additional parking demand, or surrounding private development occurs to support it. The scenario argues that this gap represents a window of economic revitalization opportunity for the City of Orange, which sits equally proximate to the Anaheim station just on the east side of the Santa Ana River.

The City of Orange has enough vacant or surface parking lots within a half-mile radius of the station to make up the parking space differential. These spaces are located in a light industrial area that is presently low density and underperforming. Initially, these lots are proposed to be linked to the HSR station by a shuttle, similar to what happens at most airport long-term parking lots. The design scenario calls for progressively consolidating the same number of cars in structured parking on only those lots within a ¼ mile walking distance from the station. In lieu of a shuttle, the structures would be linked to a new, outdoor pedestrian shopping corridor (with moving sidewalk for those in a hurry) along and over the path of what is currently a tributary of the river, whose banks would be naturalized to provide a verdant setting. It is envisioned that the parking structures would be linked to one another by bridges that cross over the walkway, facilitating cross-site circulation without interrupting the pedestrian flow.





High speed rail and station
Commercial
Public recreational
Parking
Existing urban fabric
Automobile route
HSR shuttle route
Bike route

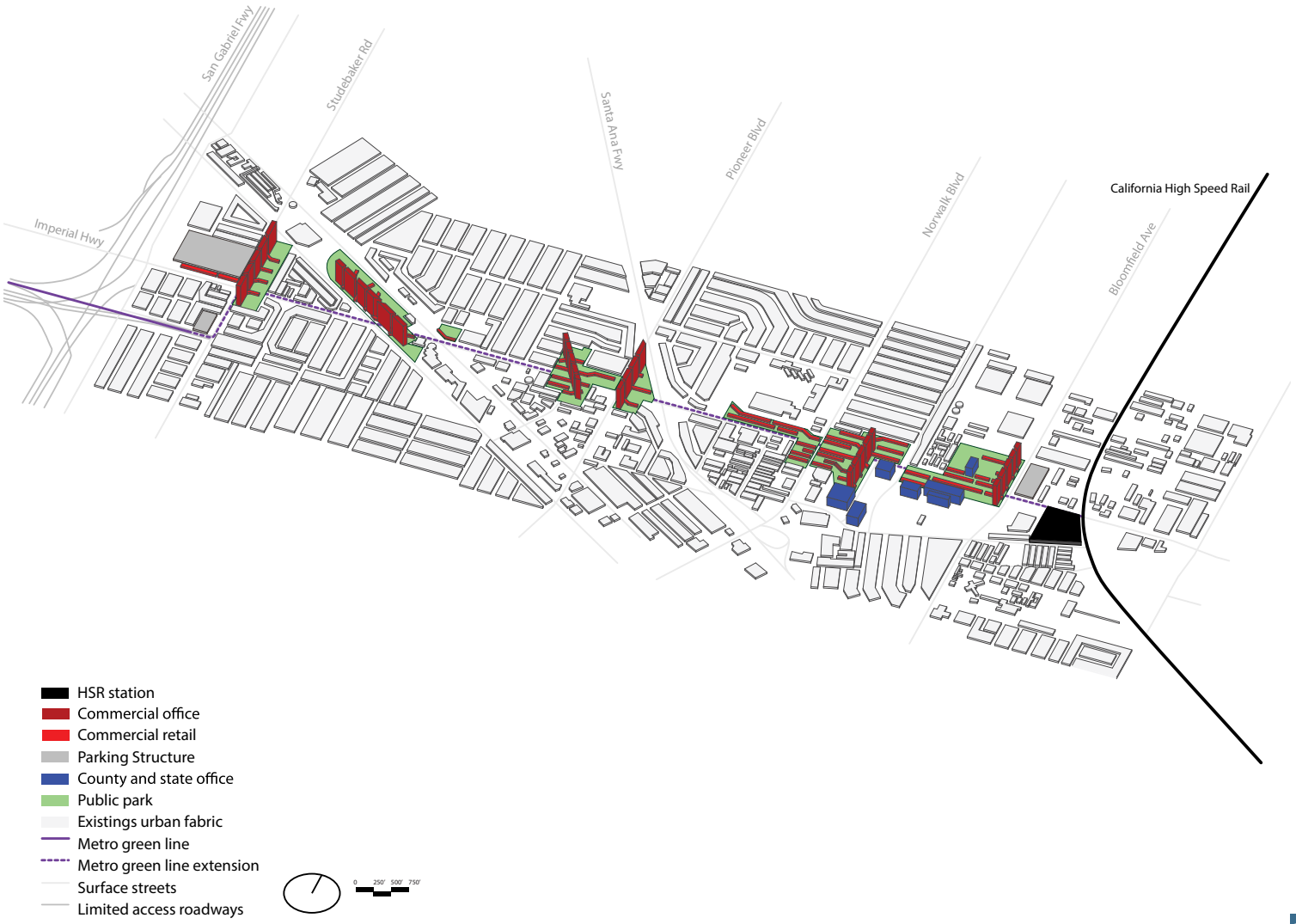
Anaheim: Park, Shop N' Ride

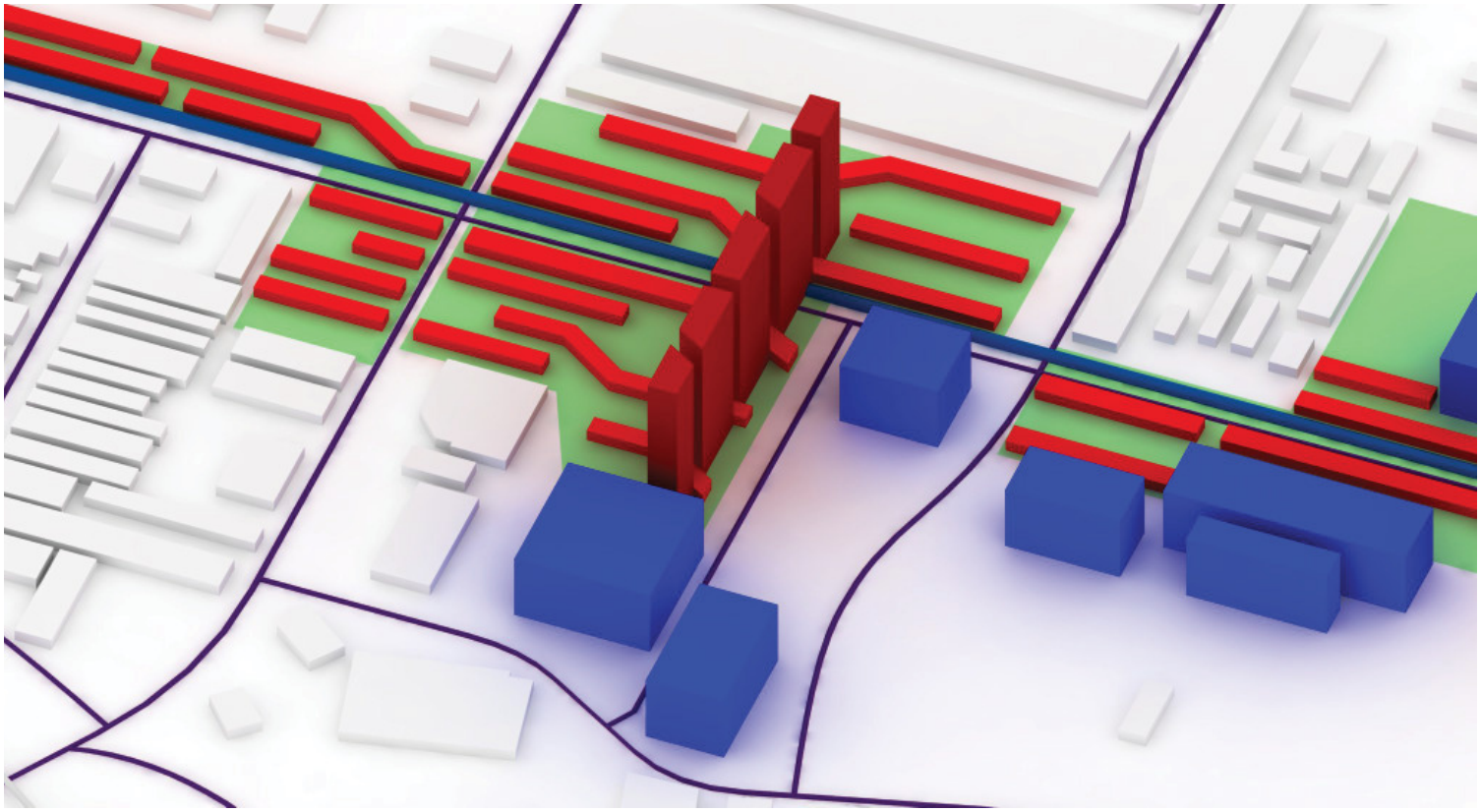
# 4.2.2 NORWALK-MORE WALK

The arrival of HSR to Norwalk positions the city to take advantage of its location as the central hub of a nested series of rail networks—statewide (HSR), regional (Metrolink) and local (Metro Green Line)--which connect a constellation of different outlying employment centers. This coincides with a decreased demand for "full-time" office space due to advances in digital communication, and more workers commuting from home. More firms are seeking to lease space on a periodic basis, in turn affording employees more flexibility with respect to where to live and how to commute—for which rail makes increased sense.

Responding to these facts and trends, the scenario for Norwalk envisions a regional time-share office/meeting center, not unlike those at many major air hubs. Its plausibility is fortified by the fact that the city's 'anchor tenant'—the County of Los Angeles' largest administrative center—is already located adjacent to the station site. With the unprecedented connectivity enabled by HSR, the County will likely attract many more companies with which it does business to collocate there. For many of the same reasons, the County may itself also choose to consolidate its diffuse, auto-dependent network of service centers in fewer rail-convenient hubs.

The design proposal is structured around remedying the "missing link" between the current eastern terminus of the Metro Green line at the 605 Freeway, and the HSR station 2.5 miles to the east. It calls for the eastward extension and realignment of the light trail along Imperial Highway, whose right-of way is redesigned to serve as a hybrid corridor: part transit way, part linear park, and part promenade. In includes three intermediate transit stops, at which major office nodes are located and formally mark/identify the district.





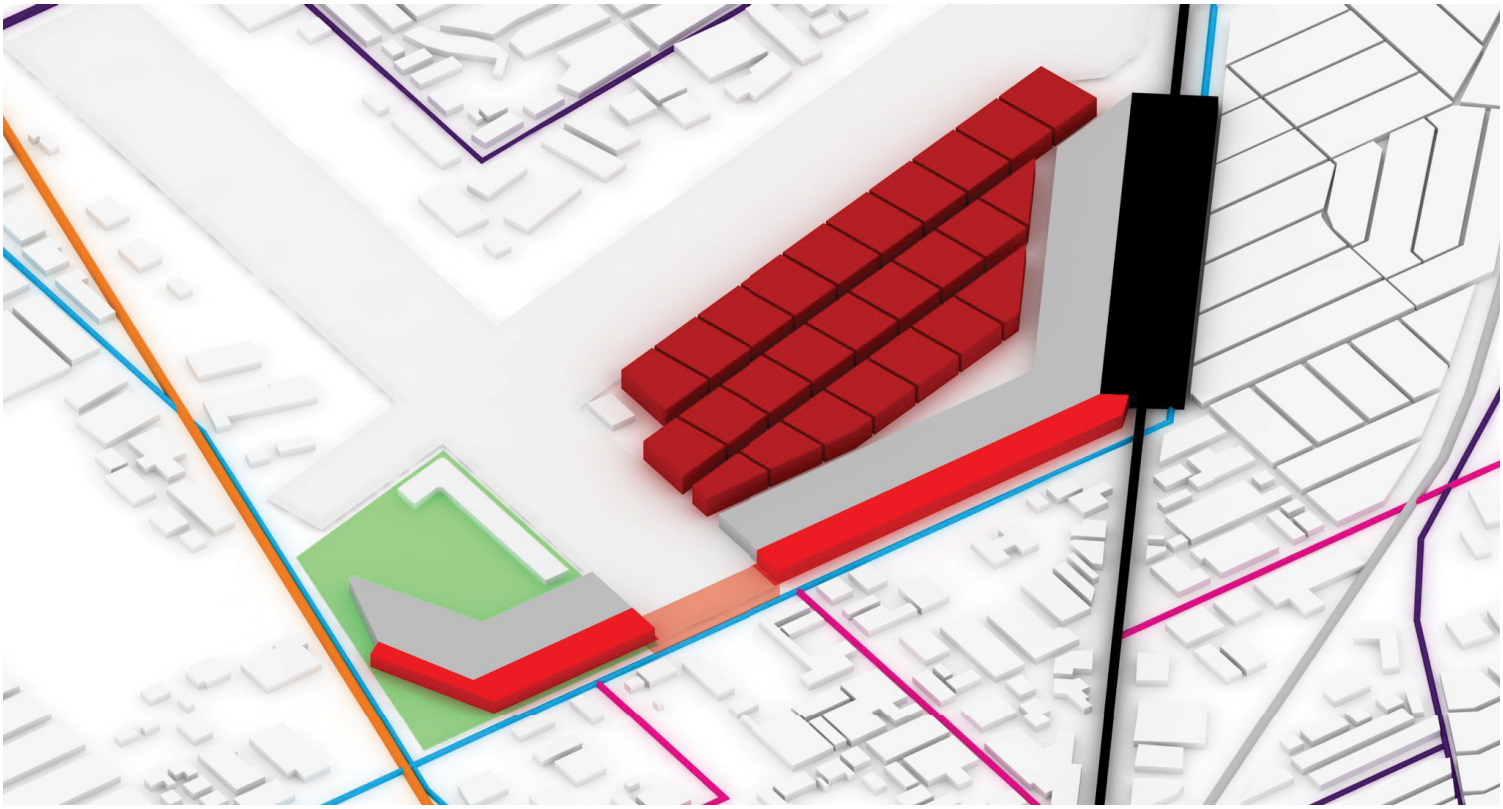
Commercial office
Commercial retail
County and state office
Public park
Existings urban fabric
Automobile route
Metro green line extension

Norwalk : More Walk Corridor

# 4.2.3 BURBANK-AEROTROPOLIS

This scenario argues for locating the HSR station at Bob Hope (Burbank) Airport rather than adjacent to the central business district. It is premised on the idea that Burbank's significance to the HSR system lies in serving as a larger regional transit hub/transfer point, rather than as a destination in itself, one that allows for easy travel from the smaller stops along the line to (flights to) any of the (mostly Western U.S.) cities that the airport serves. It is anticipated that this situation will become more desirable as LAX is increasingly overburdened with passenger demand and the air and ground traffic delays that come with it. Many San Gabriel and Fernando Valley residents already opt for the convenience of flying out of Burbank. At the same time, the scenario sees and seizes an opportunity in the community's resistance to airport expansion, which now appears unlikely.

Thus, the "Aerotropolis" scenario proposes the development of the unused and underutilized portions of airport property as lucrative rental film production facilities (soundstages, postproduction and office space), given that the nearby studios are fully built out, and are having to rent additional such facilities as far away as L.A.'s Westside. The design locates this campus to one side of a new parking structure meeting HSR demands, but which is also available for shared use parking by the rental space tenants. The other side (along Hollywood Way) is lined with a 3/4-mile long, shaded outdoor mall serving as intermodal connector and shopping venue. Extending south from the HSR station (on N. San Fernando Road), it continues under the runway, and resurfaces to connect to the existing air terminal, terminating at the Metrolink station (Van Owen Blvd.).



HSR station
Commercial office
Commercial retail
Parking Structure
Public park
Existings urban fabric
Metrolink
Metro rapid bus
Burbank bus
Automobile route
Limited access roadways

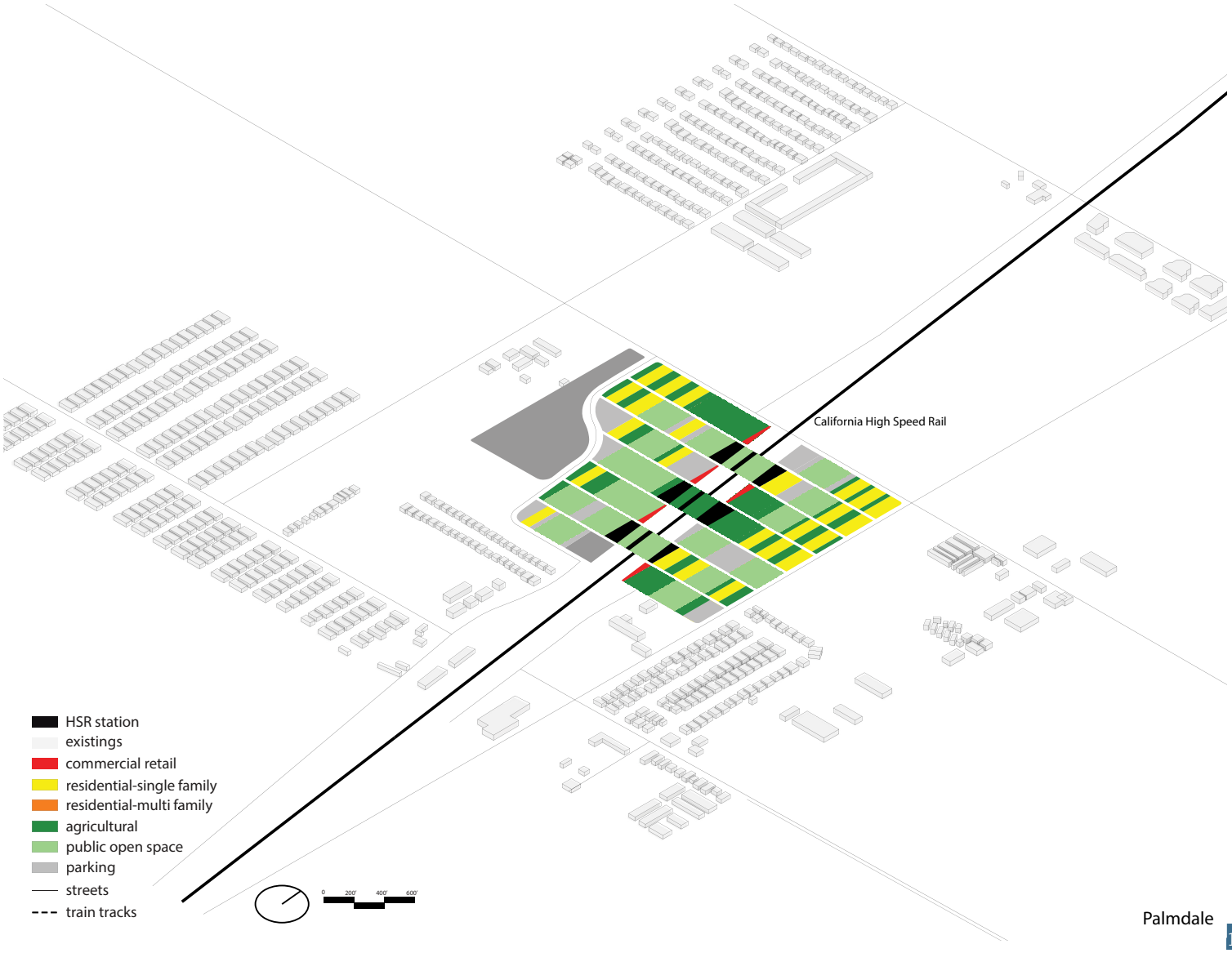
0 100' 200' 300'

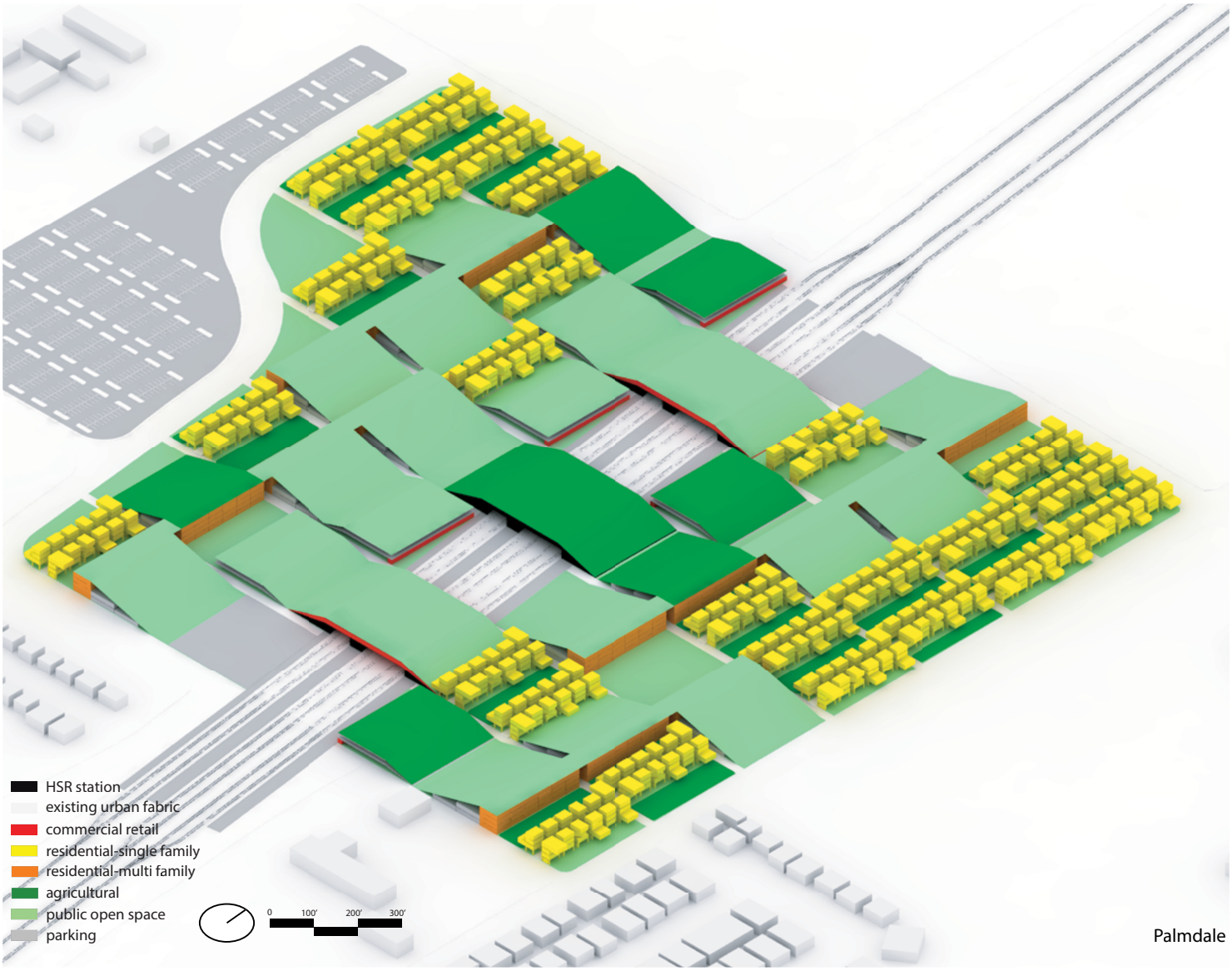
Burbank: Aerotropolis

# 4.2.4 PALMDALE-LIVE, WORK, GROW

Palmdale is well known as a commuter city for Los Angeles, where more than half of the population commutes to work. Long resident commutes, fueled by the shortage of affordable housing in central Los Angeles and the lower housing costs present at Palmdale, will only get worse as population is projected to increase in the city. But it is not only Palmdale residents who leave the city in the morning. A number of people commute from other places into Palmdale to work at the high-tech aeronautical industry, and weekend shoppers make the trip to the shopping district situated on the west side of town. The new HSR station at Palmdale would cut commuting times in half, and decongest the overcrowded road network. Housing is projected to grow in the city, adding around 9000 units by 2035. As a consequence, the scenario plans to combine housing, parking, and parkways to create a new node around the transit station. New bus routes linked with the station would provide connectivity with the aeronautical industry, the airport, and the shopping district.

Considering the projected housing growth, and density levels at Palmdale, the proposal creates a concentrated housing/recreational hub around the train station. The urban strategy employs flexible land use, adjusted growth, and combinatory architecture. Based on demand, parcels can be adjusted to accommodate either single-family or multi-family housing. The new typology for the multi-family complex combines housing with a shared parking structure. This configuration allows for parkways and urban farmland on the rooftop as an added bonus, which would provide fresh produce to residents. Commercial spaces situated along the platform would be a live-work business opportunity for residents and could also provide refreshments for travelers.




HSR station
existing urban fabric
commercial retail
residential-single family
residential-multi family
agricultural
public open space
parking
0
100'
200'
300'

Palmdale

# 5. CONCLUSIONS

This study was concerned with the preconditions and strategies that different station-cities in Southern California should put in place to take advantage of the HSR. Based on a systematic review of the scholarly literature on the urban development impacts of HSR in other countries, a survey of experts on the same topic, a compilation of detailed socio-demographic and economic profiles and trends for ten Southern California station-cities, and interviews with main actors of the HSR planning and design process in these cities, we reach the following conclusions in response to the four questions originally posed in Chapter 1:

1.What are important preconditions for positive station area development in HSR station-cities and station areas, as indicated from examples in Europe and Asia, and are these relevant for Southern California cities?

2.How are these preconditions different for the different types of station-cities in Southern California?

3.In what ways are municipalities in Southern California station-cities preparing for the HSR?

4.What policy and design recommendations should be in place to foster positive development in Southern California's station-cities?

**Important Preconditions**

The experience of station-cities in other countries with HSR infrastructure indicates that preplanning, context-sensitive planning, and appropriate policies are necessary for positive development to take place in station-cities. Such development will happen only if certain preconditions exist. Factors that lead to positive impacts include proactive public sector involvement, private investment, a station's central-city location, quality and frequency of the HSR service, multimodal connectivity of the station area with other employment- and transportation poles, high quality station architecture, and good integration of the station with its surrounding area. It is also important that cities consider their pre-existing local assets (e.g. airports, recreation/retail centers, convention centers, particular industries, etc.) as leverage for new HSR investment, and try to connect these assets to the HSR station. Many of the European and Asian cities that have implemented HSR systems have physical and planning contexts significantly different from those in California. Nevertheless, the existence of the aforementioned preconditions is also important within the California context.

**Differences among cities**

Research from Europe and Asia suggests that the principle benefits (jobs, growth, economic dominance, centrality) of HSR accrue more readily in first-tier cities, but second-tier cities with HSR stations have fared better than those without.

For second-tier cities along the HSR network a variety of factors may influence the type and extent of HSR-induced development, including the number of trains that stop in these cities, the degree of intermodal accessibility, position in the regional hierarchy, and the unique offerings of the city in the larger network. As mentioned above, catalytic effects are more likely to take place if second-tier cities leverage pre-existing assets (such as the Disneyland Theme Park at Anaheim or the airport at Burbank).

Nevertheless, and within the Southern California context, we find that a simple distinction between first-tier and second-tier cities is overly broad. As the case studies in Chapter 3 showed, there is considerable variety and different development potentials among so-called second-tier cities. Therefore, a more detailed typology is warranted (such as the one that we offer in Figure 1 of Chapter 3) that distinguishes second-tier cities in Southern California into small metropolitan cities, suburban employment centers, suburban dormitory cities, and exurban dormitories.

Indeed, the review of the ten case studies and their "facts on the ground"—namely the socio-economic characteristics and trends of each station location -- illustrates that the potential of the different station cities to leverage HSR stations varies widely. Thus, the benefits and burdens associated with HSR are likely to be uneven among these station cities. A first-tier city like Los Angeles, where knowledge-based, managerial, and service work are already largely concentrated, is likely to benefit first from the HSR. But to do so, it must muster the necessary resources, political will, planning and regulatory discipline, and private sector investment--in

tough fiscal times--to plan and regenerate the urban areas around Union Station. This means planning for more intense uses in areas that are currently industrial or warehouses, providing high degrees of connectivity between HSR and local and regional transit, and realizing the kinds of urban design interventions necessary not only to overcome existing disruptions to the urban fabric by state and interstate freeway systems but to also mitigate potential disruptions by the HSR system itself.

Benefits should also accrue to entertainment and leisure destinations like Anaheim, where increased access to new markets will provide a wider audience for attractions and tourist destinations as well as convention and visitor facilities. Similarly, a suburban employment center like Burbank with an established airport and a robust local economy centered around the studio industry is likely to gain by the increased accessibility that the HSR will bring about. In both cases, significant changes to the quality of urban environment and high degrees of local transit connectivity must be realized in order to comfortably and adequately accommodate tourists, visitors, and employees arriving by train rather than automobile.

The recommended response for small or intermediate suburban and exurban localities is less clear. The costs that these localities will have to sustain in terms of providing station structures, parking, an enhanced infrastructural capacity and local transit access may prove to be a major burden. As discussed in Chapter 4, however, localities such as Norwalk and Palmdale may accrue some benefits, if they manage to provide transit supportive, medium-density housing and associated amenities for long-distance commuters to outlying cities characterized by more expensive housing markets.

**Municipal Preparation and Response**

While the CAHSRA has compiled general urban design guidelines "to help shape development around the HSRA stations,"[1] the experience of other counties where HSR has already been implemented, shows that planning strategies and guidelines should be context-specific and dependent on the particular local context and local economy.

Nevertheless, and as of this writing, with the exception of Anaheim and to a limited extent Los Angeles, other Southern California station-cities have not undertaken any significant local planning effort in anticipation of the HSR. Anaheim represents the exception. As we discussed in Chapter 3, the city is proactively preparing for the HSR, and hopes to use such transportation investment to catalyze further development and attract more jobs and visitors. The city of Los Angeles is generally interested and supportive of the HSR but since it does not expect any catalytic effects from it (other than a possible redevelopment of the immediate station area), is not as energetic in pursuing planning and development opportunities. The response and HSR-related activities of the other Southern California station-cities are much more muted. The suburban and exurban bedroom communities along the HSR corridor such as Norwalk or Sylmar/San Fernando are ambivalent about HSR-induced benefits and more worried about its negative impacts (in terms of noise, congestion, adverse aesthetic impacts). The long-term nature of the project and ambivalence about the exact station locations make cities like Palmdale reluctant to compose station-area plans. Partly because of this and partly because of lack of local planning capacity and resources, Southern California cities have done little to prepare for the HSR.

The interviews also revealed that officials in most station-cities share some common concerns. In a state that has no tradition of regional planning, and where MPOs have only advisory roles, planning a megaproject that spans the boundaries of different state regions is a major challenge. Second, all cities are concerned with the adverse aesthetic impacts generated by a station structure which in many cases would be elevated 60-feet above the ground. A third common concern relates to the accommodation of station-area parking. The CAHSRA has given each city a target number of required parking spaces, which in all cases far exceeds their current capacities. Cities are expected to expend their own resources for station area improvements (or at best entice joint development projects with the private sector). Finding the space and resources to accommodate that much parking provides challenges for cities. Additionally, cities are concerned by the lack of available land around station areas, as well as the negative aesthetic impact of a "sea of parking lots." Lastly, cities are worried about the perceived uncertainty that surrounds the building and implementation of this megaproject. With funds available for only the first leg of the line in the Central Valley, station-cities—even those in the first phase of the project—are not certain when to expect the coming of the HSR. According

to some interviewees, this uncertainty stands in the way of attracting private investment in potential station areas.

### 5.1 RECOMMENDATIONS

In this final section of our report we turn to the last research question posed in the introduction, namely what policy and design recommendations should be in place to foster positive development in Southern California's station cities?

It is abundantly clear that a significant degree of preparedness and planning in the form of land use regulations and design guidelines will be needed to guide development in station areas, for both first- and second-tier cities. A high degree of attention should be paid to the quality of the urban environment itself, to mitigate any deleterious effects of HSR, to stitch back existing disruptions to the urban fabric, to ease transit and non-motorized access in and through station areas and their surroundings, to enhance the vibrancy and visual quality of places, and to provide the amenities that HSR travelers may demand. Based on the research presented in the previous sections, we offer the following ten recommendations:

1.Station cities that hope to effectively harness HSR to catalyze urban development will need to adapt the existing generic guidelines toward more specifically local solutions that build in economic development plans and engage in an extensive urban design process. Each station-city should carefully consider its local assets and competitive advantages as well as its regional context and economy.

2.Four spatial zones must be considered in the urban design of HSR station areas: 1) the station itself and how it relates to its immediate surroundings; 2) the district generally defined as one-half mile radius around the station; 3) the municipality at large; and 4) the broader region. In terms of the region, newly condensed in terms of space and time, station cities must identify productive relationships with newly accessible neighboring areas.

3.Design considerations should include mitigating the "barrier effect" and integrating the station to its wider urban fabric. Depending on the context, the urban design strategy to integrate railway infrastructure into an urban setting can include both "hard" solutions such as covering sections of the rail tracks or constructing rail bypasses, and "soft" solutions (treatment of borders, increasing permeability, construction of different types of railway crossings, adapting to specific topographic site conditions).

4.Particular consideration should be given to ways of accommodating the large amounts of necessary parking. Parking structures should be "hidden" to the degree possible and scattered throughout the area.

5.The development effects of HSR may take as many as two additional decades to realize. Thus, planning must be undertaken as a set of phased-goals that can be accomplished at various stages of system development. Given the uncertainty surrounding HSR development, station-cities should consider scenario-planning approaches (such as those presented in Chapter 4) that offer a series of alternative design visions for future station area development and evaluate these alternatives in terms of their desirability and feasibility.

6.Second-tier cities should consider catalytic projects, complementary planning with first-tier neighboring cities and branding strategies that emphasize their unique offerings and assets. Some second-tier dormitory cities have the potential to create affordable, workforce housing for their first-tier neighbors along the rail line. It will be important to plan in ways that guide this likely outcome toward positive effects and to prevent suburban sprawl.

7.Planning for HSR in low-density second-tier cities should take into account not only the immediate station area (one-half mile radius), but also the five-mile radius and in particular, the densest nodes or destinations within that wider region for jobs, services, and commercial activity. Particular attention should be given to the ways that these more distant nodes are well-connected to the HSR station via different transportation modes.

8.Station design should take into account value capture in the surrounding area as a means for the public sector to generate desired development effects.

9.Stations should be less internally focused (e.g., shopping mall model) and more externally oriented hubs and well-connected to the adjacent area and rest of the city through a robust transportation network to encourage surrounding development.

10.Lastly, complementarity at the regional level can be encouraged by the creation of a Joint Powers Authority consisting of high-level representatives and/or planners from all station cities. Such a body could help establish a regional vision for the HSR corridor and set goals that are mutually beneficial for cities along the line.

In conclusion, the urban development effects of HSR will vary greatly depending upon the characteristics of the different station-cities and their regions and the type of local planning and policy that is in place. The challenges of building such a large infrastructural project are many, and its success will be determined by political and economic factors but also by the level of planning preparedness.

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# 7. APPENDIX

## Interview Summary

| Name | City | Department/ Organization | Title |
|---|---|---|---|
| Litschi, Michael | Anaheim | Orange County Transit Authority | Section Manager, Metrolink Operations |
| Wu, Danny | Anaheim | Public Works | Principal Transportation Planner |
| Lai, Jamie | Anaheim | Public Works | Transit Manager |
| Kim, Susan | Anaheim | Planning Services | Senior Planner |
| Kennedy, David | Anaheim | Public Works | Associate Transportation Planner |
| Kim, Susan | Anaheim | Planning Services | Senior Planner |
| Carpenter, Jeff | Los Angeles | Community Redevelopment Agency - LA | Transportation Programs |
| Clifford, Alex | Los Angeles | Los Angeles County Metropolitan Transportation | Executive Officer, High Speed Rail |
| Diefenderfer, Patricia | Los Angeles | City Planning | City Planner |
| Joel Reynolds | Los Angeles | NRDC | Director of the Urban Program |
| Latham, Fred | Santa Fe Springs | City Manager | City Manager |
| Ruiz, Ron | San Fernando [Sylmar] | Public Works | Director |
| Prevetti, Laurel | San Jose | Planning | Deputy Director |
| Liccardo, Sam | San Jose | City Council | Council Member |
| Tripousis, Ben | San Jose | Transportation | Transportation Policy Manager |
| Korbiak, Dennis | San Jose | San Jose Redevelopment Agency | Manager of Strategic Planning |
| Greene, Cary | San Jose | San Jose Mineta Airport | Airport Planner |
| Frank Fuller | San Jose | Field Paoli | Principal |
| Haglund, Tom | Gilroy | Administration | City Administrator |
| Scharton, Craig | Fresno | Downtown and Community Revitalization | Director |
| Minami, Jan | Fresno | Downtown Association of Fresno | Executive Director |
| Graveline, Ed | Fresno | n/a | Consultant |
| Dozier, Mike | Fresno | Partnership for the San Joaquin Valley / CSU | Executive Director |
| Polyzoides, Stefanos | Fresno | Urban Design Consultant | Principal, Moule+Polyzoides |
| Arrington, G.B. | n/a | Parsons Brinckerhoff | Vice President |
| Leavitt, Dan | n/a | CAHSRA | Deputy Director for Environmental Review and Planning |
| Howard, Herman; Osborne, | n/a | HOK | Vice President, Aviation and Transportation [Atlanta, |
| DiStefano, Joe | n/a | Calthorpe Associates | Principal |