

Employment centers in the San Diego region: An analysis of where people live and work

Sorrento Valley employment center



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Updated May 2019

Fast facts

Sorrento Valley employment center

129,242	employees
8.5%	region's employees
1 st	largest of 79 employment centers
15.13	land area (square miles)
8,542	employees per square mile
57,548	residents
19,160	households



Please note this employment center packet represents Version 2. As these analyses are finalized there may be minor adjustments to the data presented here as centers and data elements are refined.

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As of January 23, 2019

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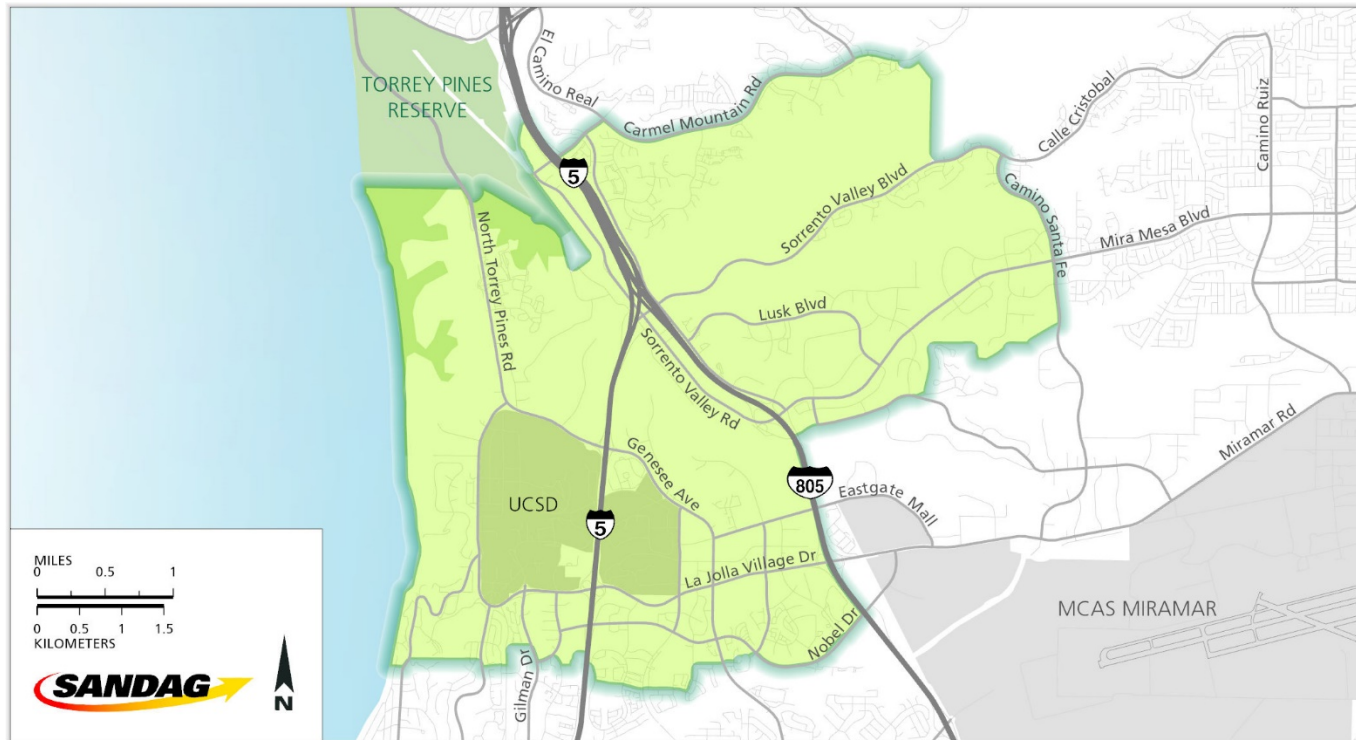
The San Diego region is a growing and dynamic place to live and work. As the community, policy makers, and other stakeholders collaborate regarding how we create transportation options for our residents that are competitive and environmentally responsible, it is essential we utilize the data we have regarding where people live and work to invest in strategies that will best serve our communities.

As we continue to work together to create a region that maintains and improves our quality of life now and in the future, the Data, Analytics, and Modeling Department of SANDAG is applying data analytics to multiple data sources to better understand where employment centers are in the region, where the employees in these areas commute from, and what their commutes look like.

This packet describes the **Sorrento Valley** employment center (Map 1) which is the largest in the region per this analysis, with over 129,000 employees and an estimated resident population of over 57,000. Additional analyses are included here separately describing the Sorrento Valley East employment center (around 58,000 employees and almost 11,000 residents) and Sorrento Valley West employment center (over 70,000 employees and almost 47,000 residents).

Because the data shared here were analyzed specifically for the purposes of these analyses, it is important to note that these results may differ from other sources. Additional information regarding the data sources and important factors to consider when interpreting this information are provided at the end of this packet.

Sorrento Valley employment center



Who works and lives in the Sorrento Valley employment center?

Highlight Table 1

Of the 129,242 jobs in Sorrento Valley employment center, the top five are categorized as professional, state government education, health care, finance, and manufacturing. Compared to the region, there are three times the proportion of professional jobs in this employment center and eight times the proportion of state government education jobs.

Table 1
Top ten industries in the Sorrento Valley employment center

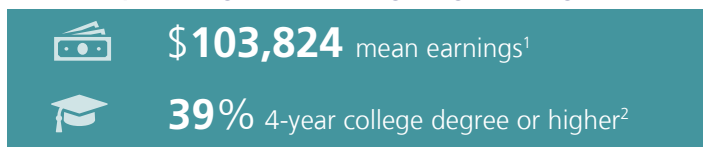
Industry	Total jobs	% of jobs
Professional, scientific & technical services	38,459	30%
State government education	22,223	17%
Health care & social assistance	10,206	8%
Finance & insurance	8,795	7%
Manufacturing	8,396	6%
Administrative, support, & waste services	6,037	5%
Management of companies & enterprises	5,390	4%
Wholesale trade	4,896	4%
Retail	3,419	3%
Food service	3,356	3%

SOURCE: SANDAG Employment Estimates, 2016

Highlight Figure 1

The mean annual earnings of employees in this area is \$103,824, higher than the regional average of \$55,801. Two in five (39%) have a 4-year college degree (or higher), higher than the regional average (24%).

Figure 1
What Sorrento Valley employment center employees earn and what percentage have a college degree or higher



SOURCES: ¹ SANDAG Employment Estimates, 2016; ² LEHD LODES WAC 7.3, 2015

Highlight Figure 2

These 129,242 jobs in the Sorrento Valley employment center represent roughly 8 percent of the jobs in the region and 16 percent of the region's total labor income.

Figure 2

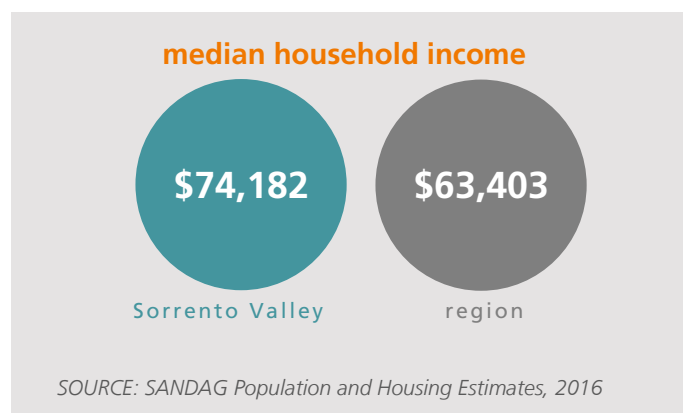
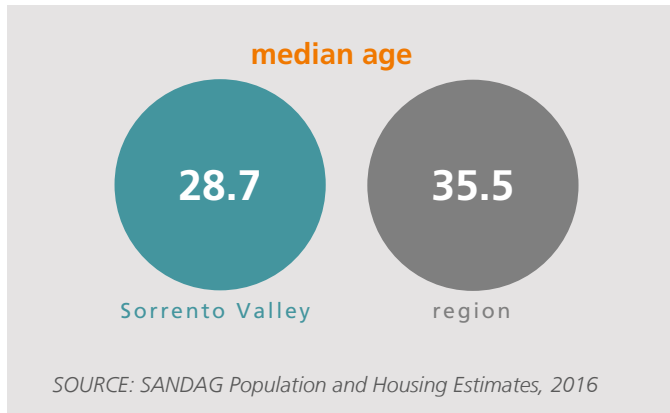
Sorrento Valley employment center's share of regional jobs versus share of labor income



SOURCE: SANDAG Employment Estimates, 2016

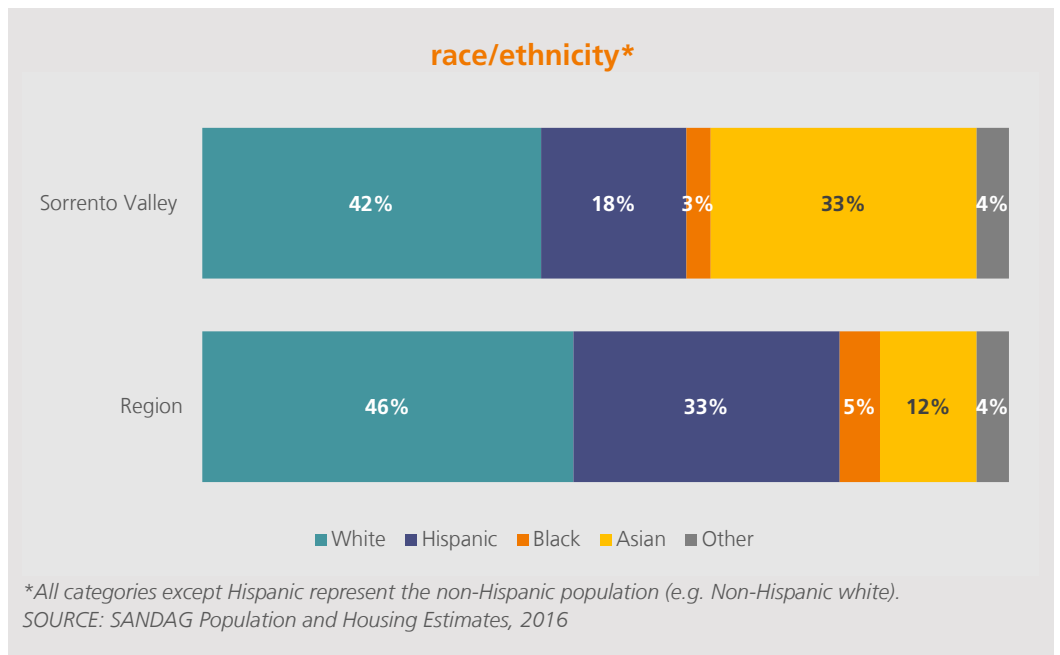
Figure 3

Characteristics of Sorrento Valley employment center residents compared to the region



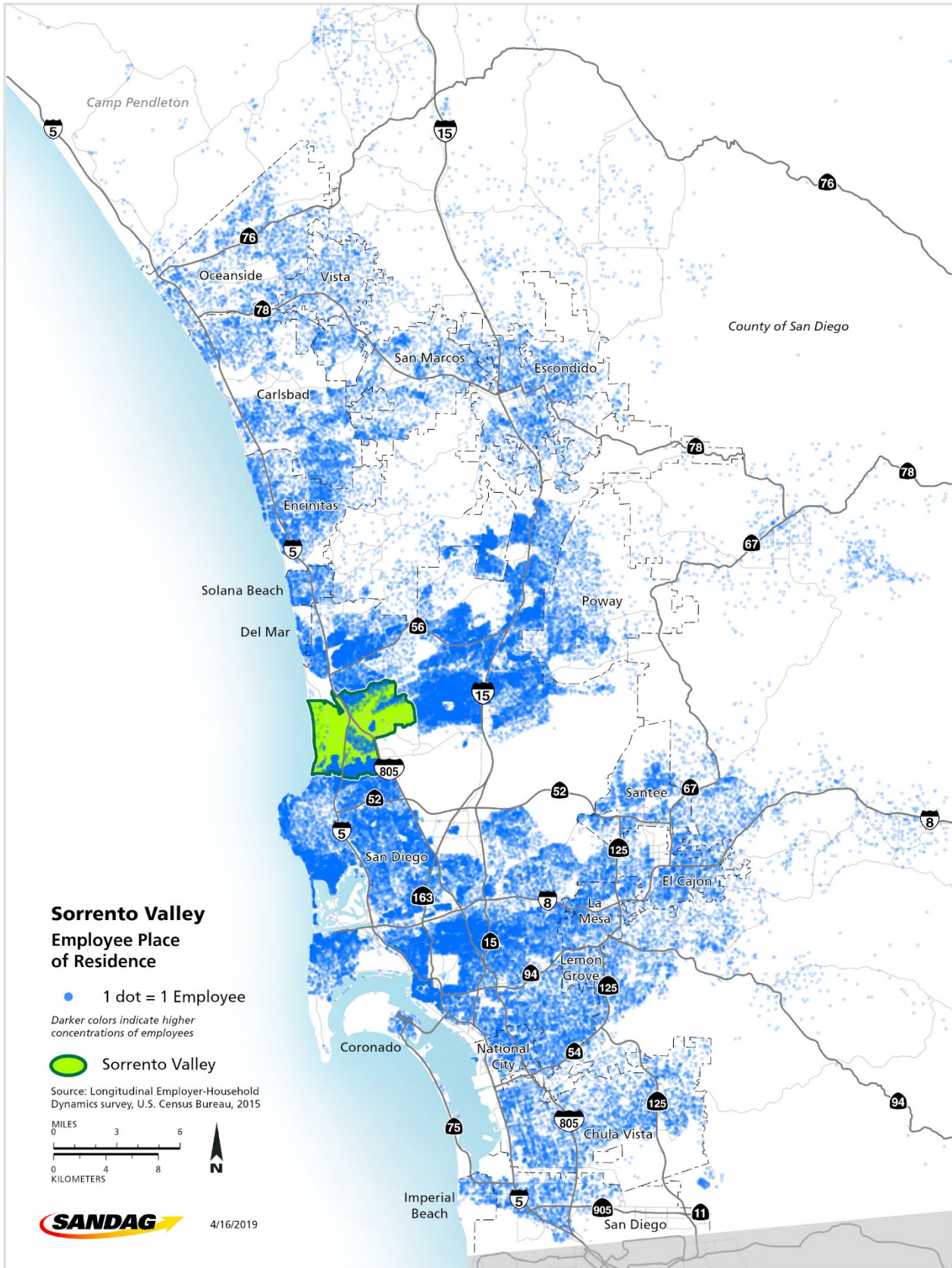
Highlight Figure 3

The 57,548 residents of this employment center represent 2 percent of the region's population. Compared to the region, the residents are younger, have a higher median household income, and the proportion of residents that are Asian is higher and those that are White, Hispanic, or Black is lower.



Map 2

Where do Sorrento Valley employment center employees live?



Where are Sorrento Valley employment center employees traveling from?

Highlight Table 2 and Figure 4

Table 2 shows where Sorrento Valley employment center employees live/travel from to get to their jobs. Almost two-thirds (65%) of the employees live in San Diego, with the other top two areas including the unincorporated areas of the region and Chula Vista. Approximately 5 percent of these employees live and work in the Sorrento Valley employment center (Figure 4).

Table 2

What jurisdictions Sorrento Valley employment center employees travel from

Jurisdiction	Number of workers in employment center	Percent of workers in employment center
San Diego	68,124	65%
Unincorporated	8,852	8%
Chula Vista	3,803	4%
Carlsbad	3,496	3%
Encinitas	2,797	3%
Escondido	2,571	2%
Oceanside	2,176	2%
Poway	1,995	2%
San Marcos	1,856	2%
Santee	1,715	2%
La Mesa	1,685	2%
El Cajon	1,678	2%
Vista	1,280	1%
National City	1,102	1%
Solana Beach	791	1%
Lemon Grove	482	1%
Coronado	346	<1%
Imperial Beach	334	<1%
Del Mar	279	<1%
Total	105,362	100%

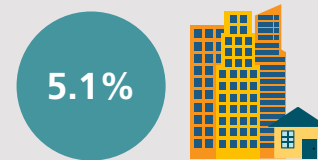
NOTE: Please note that the total number of employees shown here is lower than presented elsewhere because employees who travel from outside the region or have an unknown origin location are excluded and only primary jobs are included.

SOURCE: LEHD LODES OD, 7.3, 2015

Figure 4

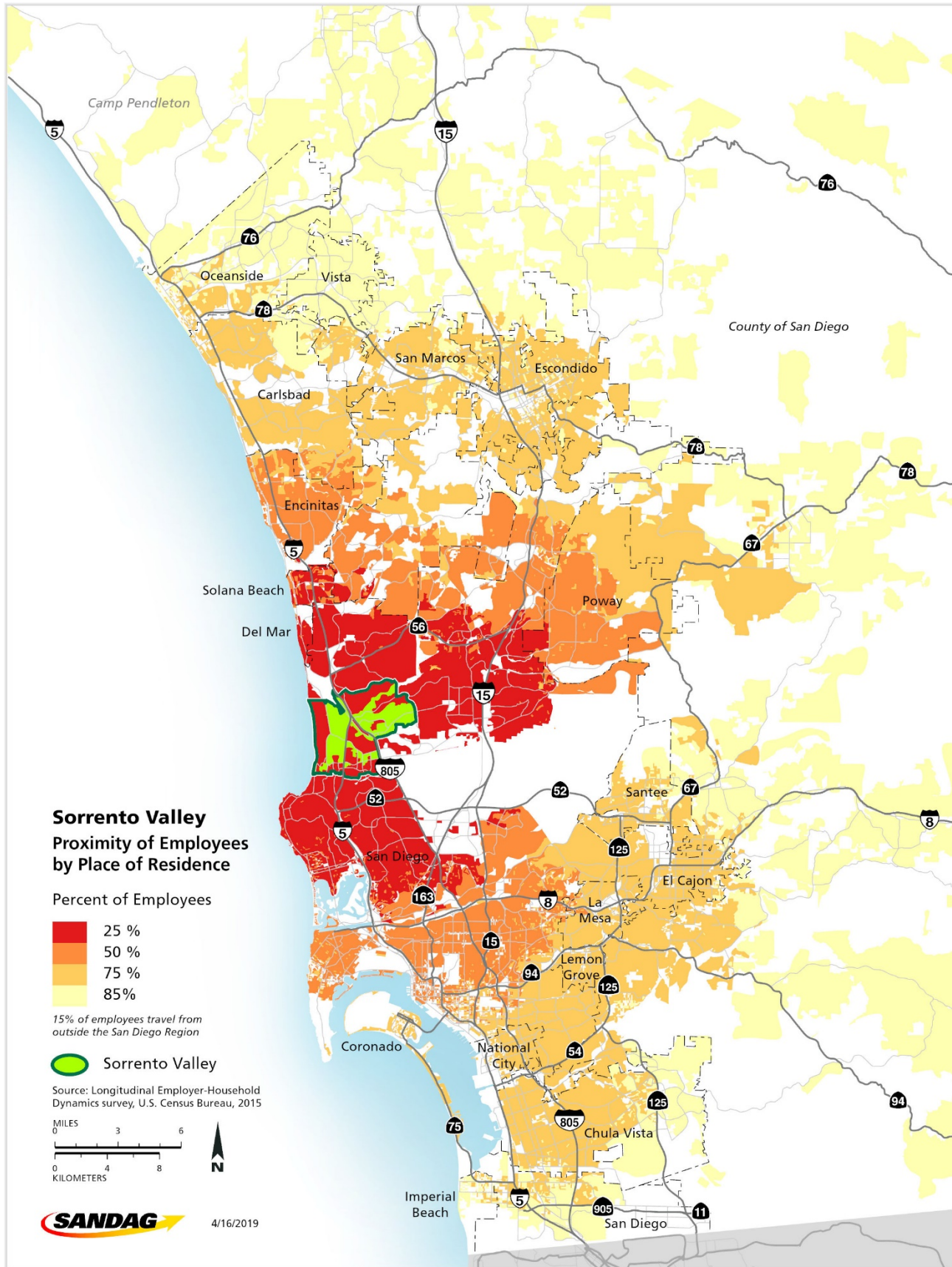
How many Sorrento Valley employees also live in this same employment center?

SOURCE: LEHD LODES OD, 7.3, 2015



Map 3

How far employees in the Sorrento Valley employment center have to travel



How do Sorrento Valley employment center employees get to work, how far do they have to travel, and how long does it take them?

Highlight Figure 5

The transportation modes used by Sorrento Valley employment center employees were similar to the region, with 82 percent driving alone (compared to 80% regionally) and 4 percent taking transit (compared to 4% regionally).

Highlight Figure 6

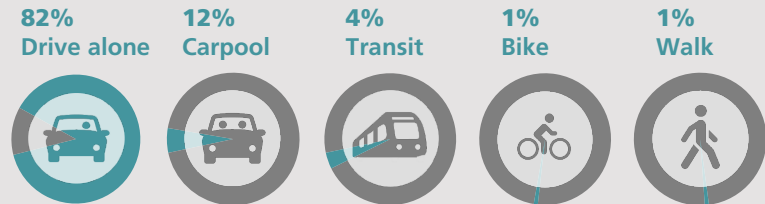
Employees traveling to the Sorrento Valley employment center by automobile traveled a mean of 14.8 miles. This average is higher than the regional average of 12.2 miles.

Highlight Figure 7

Sorrento Valley employment center employees who are traveling by car during peak period drive a mean of 14.5 miles and it takes them a mean of 31.6 minutes. In comparison, those that take transit travel 12.7 miles on average and it takes them a mean of 77.4 minutes.

Figure 5

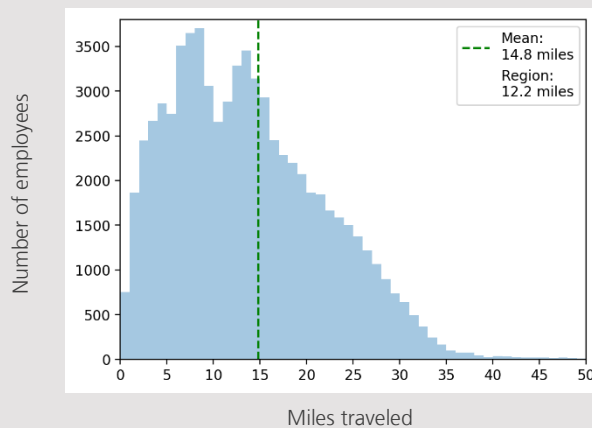
What mode of transportation do Sorrento Valley employment center employees use to get to work during peak period



SOURCE: SANDAG Activity Based Model, 2016

Figure 6

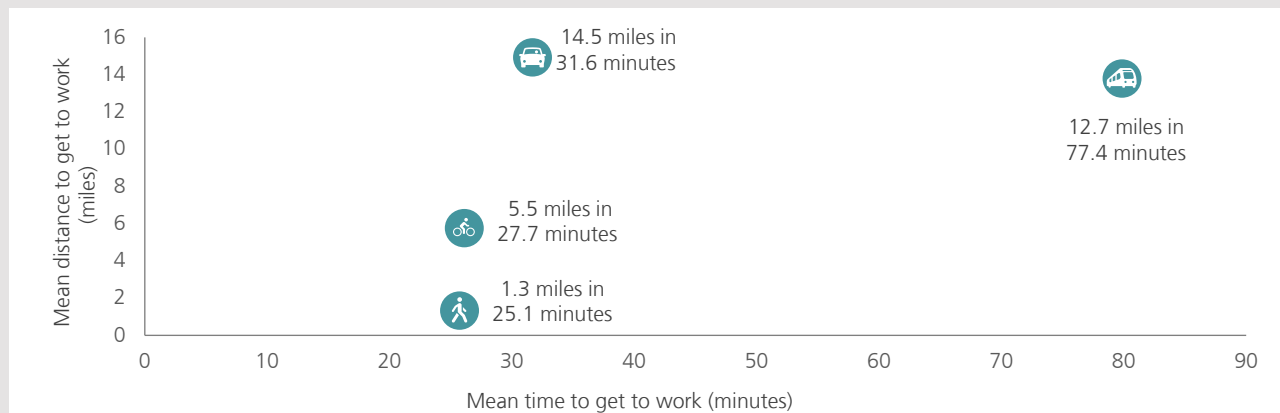
How far Sorrento Valley employment center employees travel from home to work by automobile to get to this employment center at any time



SOURCE: SANDAG Activity Based Model, 2016

Figure 7

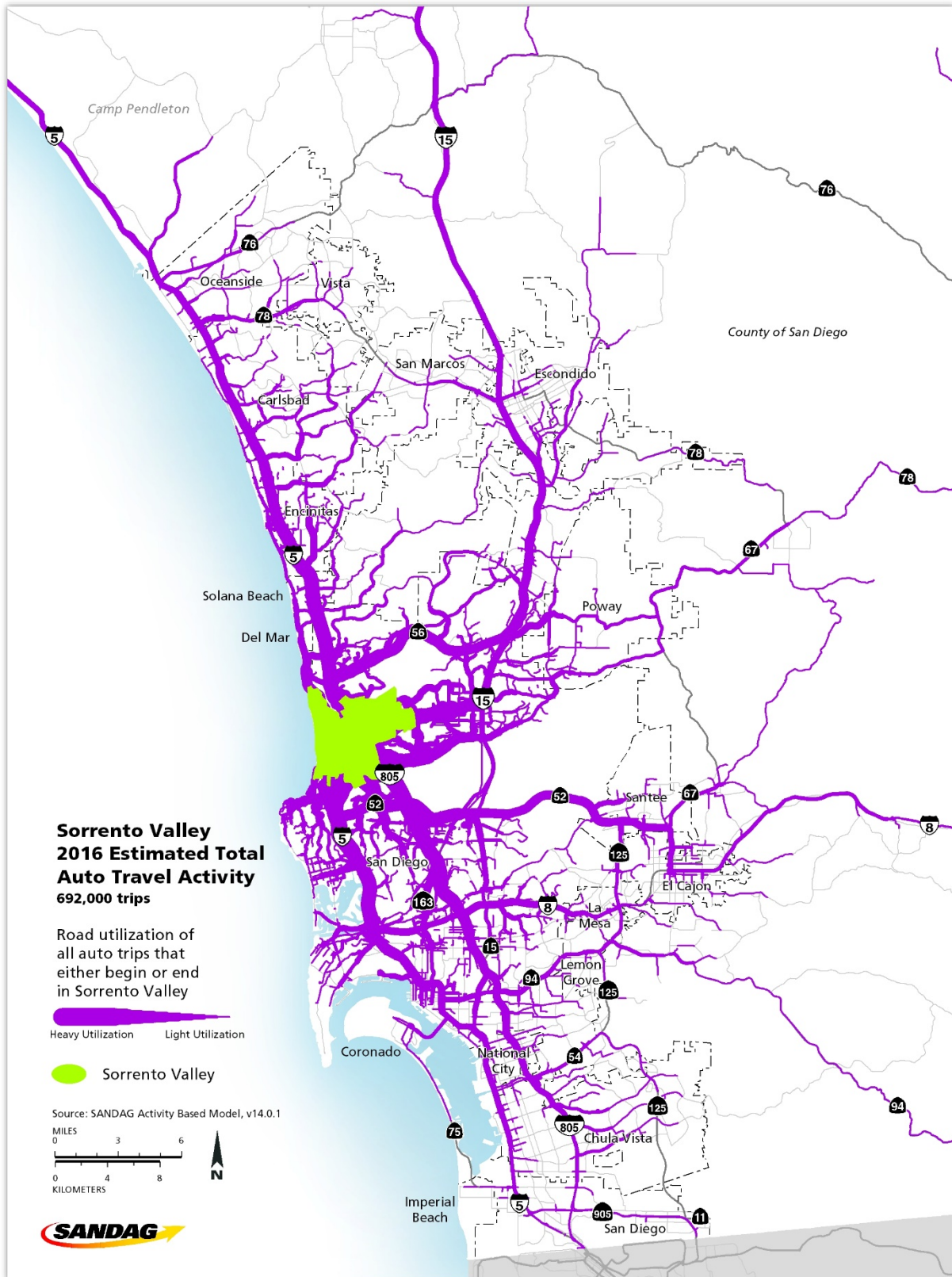
How far Sorrento Valley employment center employees travel to get to their jobs and how long it takes them by mode during peak period



SOURCE: SANDAG Activity Based Model, 2016

Map 4

All automotive trips that originate or end in the Sorrento Valley employment center



Estimated weekday vehicle miles traveled (VMT) from or to the Sorrento Valley employment center

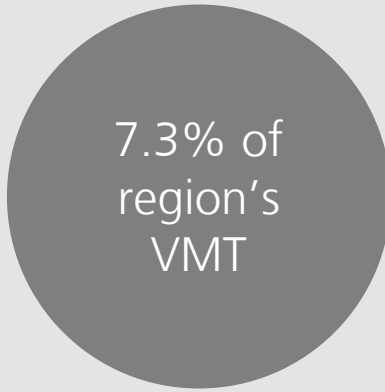
On average, total vehicle miles traveled by automobile on a typical weekday from or to the Sorrento Valley employment center is approximately 6.2 million miles. This estimate is based on a snapshot from a fall weekday and represents 7.3 percent of the estimated VMT for the region.

Figure 8

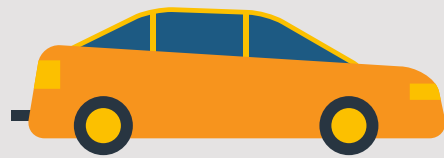
estimated weekday vehicle miles traveled



Sorrento Valley



region



SOURCE: SANDAG Activity Based Model, 2016

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Employment centers in the San Diego region: An analysis of where people live and work

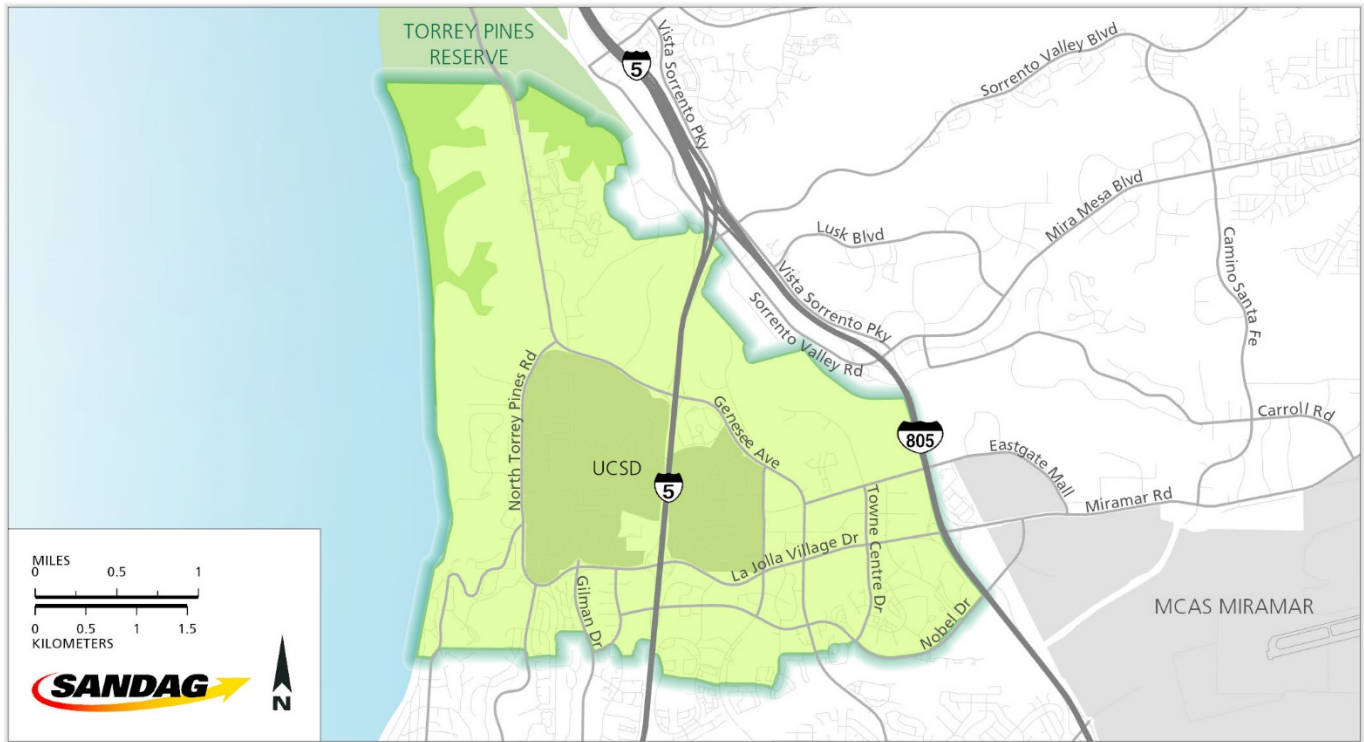
Sorrento Valley West employment center

Fast facts

Sorrento Valley West employment center

70,602	employees
4.6%	region's employees
8.0	land area (square miles)
8,825	employees per square mile
46,737	residents
15,641	households

Sorrento Valley West employment center



Who works and lives in the Sorrento Valley West employment center?

Highlight Table 1A

Of the 70,602 jobs in Sorrento Valley West employment center, the top four are categorized as state government education, professional, health care, and finance. Compared to the region, there is a greater proportion of state government education jobs and professional jobs in this employment center.

Table 1A

Top ten industries in the Sorrento Valley West employment center

Industry	Total jobs	% of jobs
State government education	22,223	31%
Professional, scientific, & technical services	14,549	21%
Health care & social assistance	7,756	11%
Finance & insurance	5,634	8%
Management of companies & enterprises	2,972	4%
Food services	2,364	3%
Educational services	2,146	3%
Retail	2,101	3%
Accommodation	1,662	2%
Real estate, rental, & leasing	1,641	2%

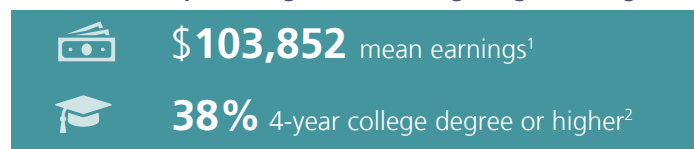
SOURCE: SANDAG Employment Estimates, 2016

Highlight Figure 1A

The mean annual earnings of employees in this area is \$103,852, higher than the regional average of \$55,801. Just under two in five (38%) have a 4-year college degree (or higher), higher than the regional average (24%).

Figure 1A

What Sorrento Valley West employment center employees earn and what percentage have a college degree or higher



SOURCES: ¹ SANDAG Employment Estimates, 2016; ² LEHD LODES WAC 7.3, 2015

Highlight Figure 2A

These 70,602 jobs in the Sorrento Valley West employment center represent roughly 5 percent of the jobs in the region, and approximately 9 percent of the region's total labor income.

Figure 2A

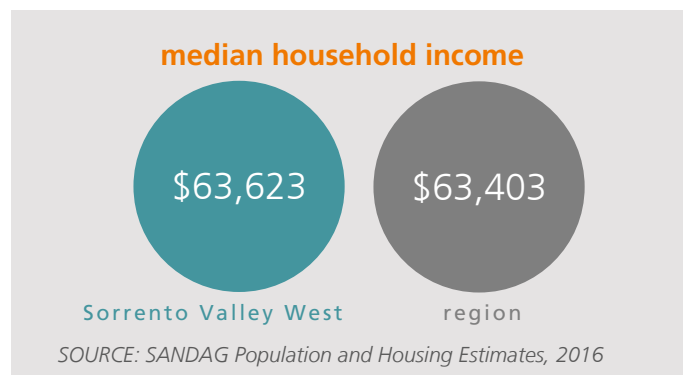
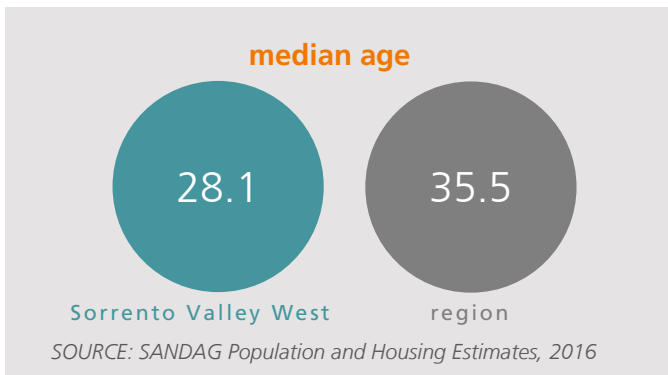
Sorrento Valley West employment center's share of regional jobs versus share of labor income



SOURCE: SANDAG Employment Estimates, 2016

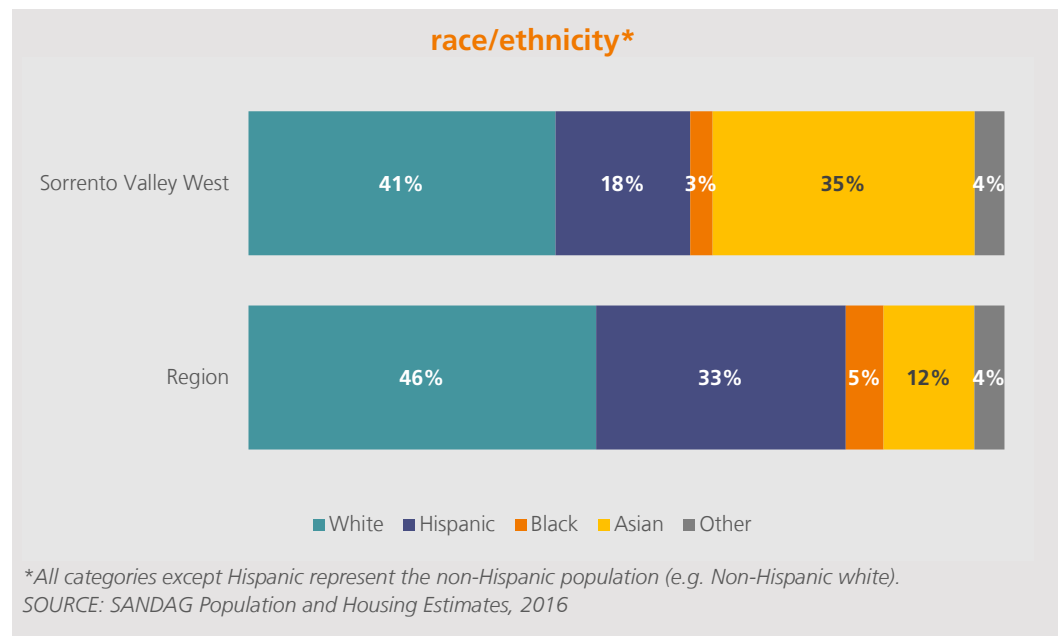
Figure 3A

Characteristics of Sorrento Valley West employment center residents compared to the region

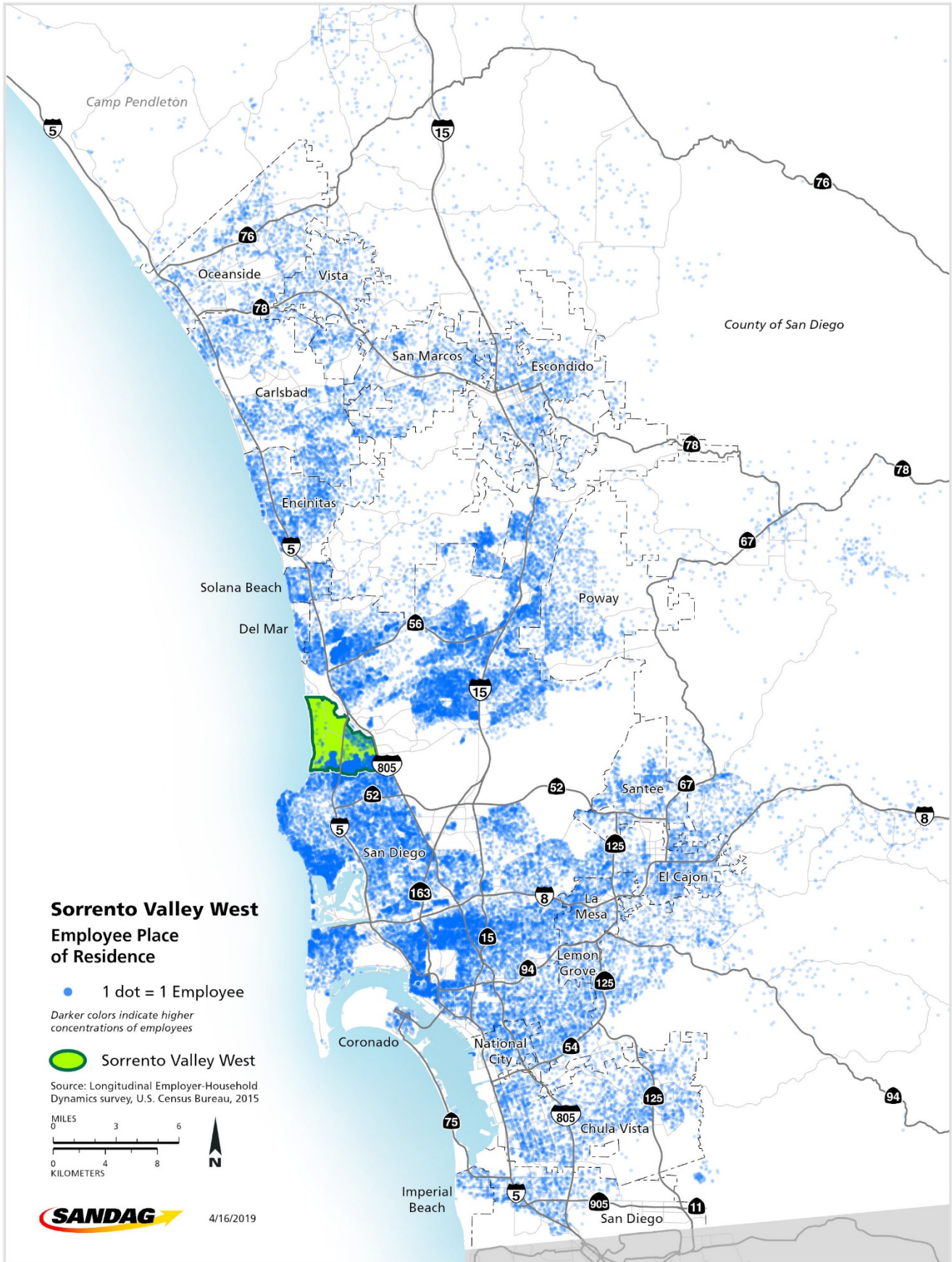


Highlight Figure 3A

The 46,737 residents of this employment center represent 1 percent of the region's population. Compared to the region, the residents are younger, have a similar median household income, and the proportion of residents that are Asian is higher and those that are White or Hispanic is lower.



Where do Sorrento Valley West employment center employees live?



Where are Sorrento Valley West employment center employees traveling from?

Highlight Table 2A and Figure 4A

Table 2A shows where Sorrento Valley West employment center employees live/travel from to get to their jobs. Almost two-thirds (64%) of the employees live in San Diego, with the other top two areas including the unincorporated areas of the region and Chula Vista. Approximately 4 percent of these employees both live and work in the Sorrento Valley West employment center (Figure 4A).

Table 2A

What jurisdictions Sorrento Valley West employment center employees travel from

Jurisdiction	Number of workers in employment center	Percent of workers in employment center
San Diego	37,762	64%
Unincorporated	4,649	8%
Chula Vista	2,302	4%
Carlsbad	2,073	4%
Encinitas	1,786	3%
Escondido	1,342	2%
Oceanside	1,211	2%
San Marcos	1,030	2%
La Mesa	1,015	2%
Poway	1,003	2%
El Cajon	983	2%
Santee	914	1%
Vista	758	1%
National City	607	1%
Solana Beach	547	1%
Lemon Grove	273	<1%
Coronado	241	<1%
Del Mar	193	<1%
Imperial Beach	186	<1%
Total	58,875	100%

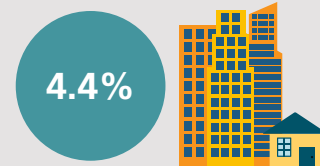
NOTE: Please note that the total number of employees shown here is lower than presented elsewhere because employees who travel from outside the region or have an unknown origin location are excluded and only primary jobs are included.

SOURCE: LEHD LODES OD, 7.3, 2015

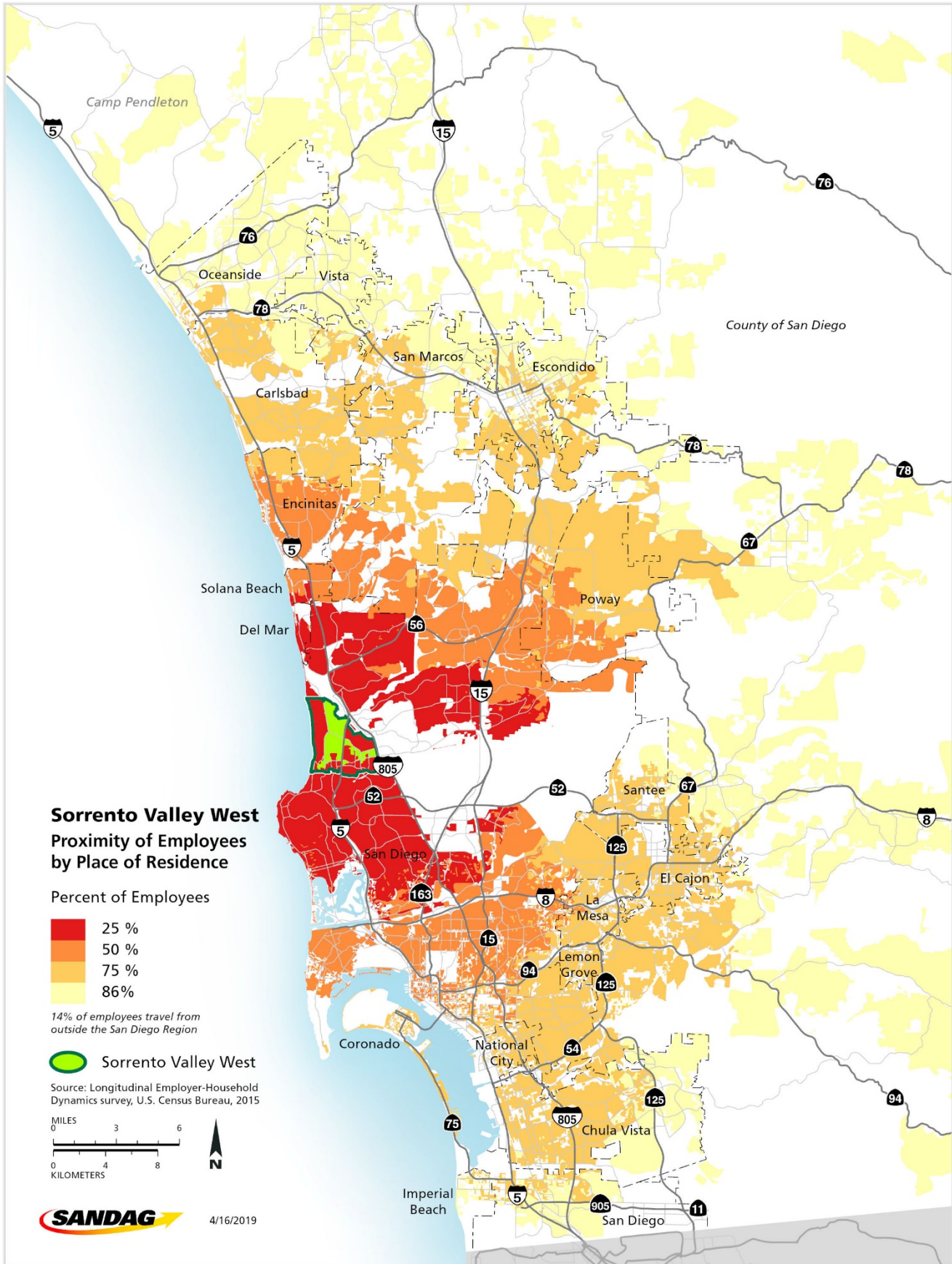
Figure 4A

How many Sorrento Valley West employees also live in this same employment center?

SOURCE: LEHD LODES OD, 7.3, 2015



How far employees in the Sorrento Valley West employment center have to travel



How do Sorrento Valley West employment center employees get to work, how far do they have to travel, and how long does it take them?

Highlight Figure 5A

The transportation modes used by Sorrento Valley West employment center employees were similar to the region, with 81 percent driving alone (compared to 80% regionally) and 5 percent taking transit (compared to 4% regionally).

Highlight Figure 6A

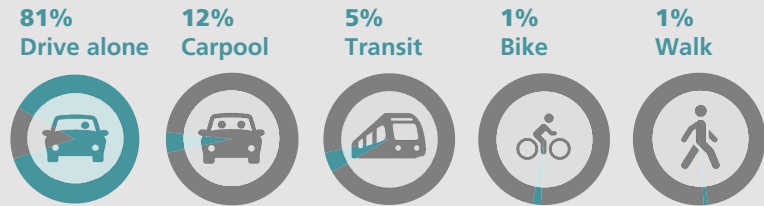
Employees traveling to the Sorrento Valley West employment center by automobile traveled a mean of 14.8 miles. This is higher than the regional average of 12.2 miles.

Highlight Figure 7A

Sorrento Valley West employment center employees who are traveling by car during peak period drive a mean of 14.4 miles and it takes them a mean of 30.3 minutes. In comparison, those that take transit travel 12.6 miles on average and it takes them a mean of 75.9 minutes.

Figure 5A

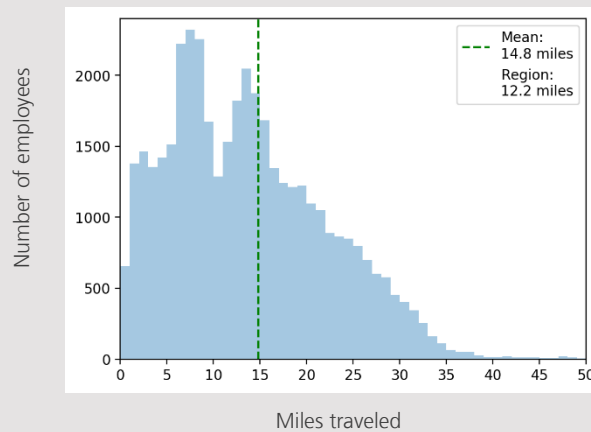
What mode of transportation do Sorrento Valley West employment center employees use to get to work during peak period



SOURCE: SANDAG Activity Based Model, 2016

Figure 6A

How far Sorrento Valley West employment center employees travel from home to work by automobile to get to this employment center at any time



SOURCE: SANDAG Activity Based Model, 2016

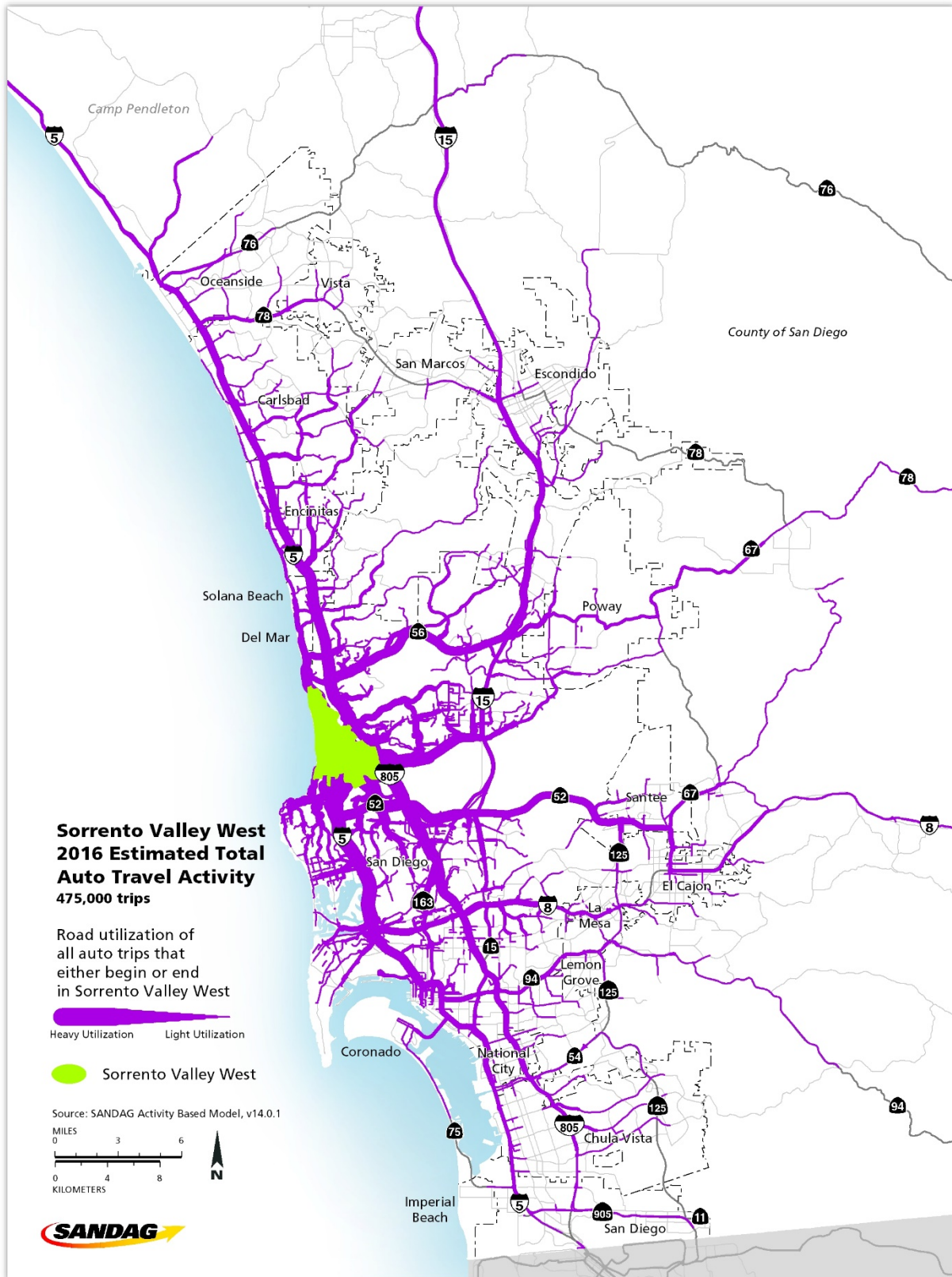
Figure 7A

How far Sorrento Valley West employment center employees travel to get to their jobs and how long it takes them by mode during peak period



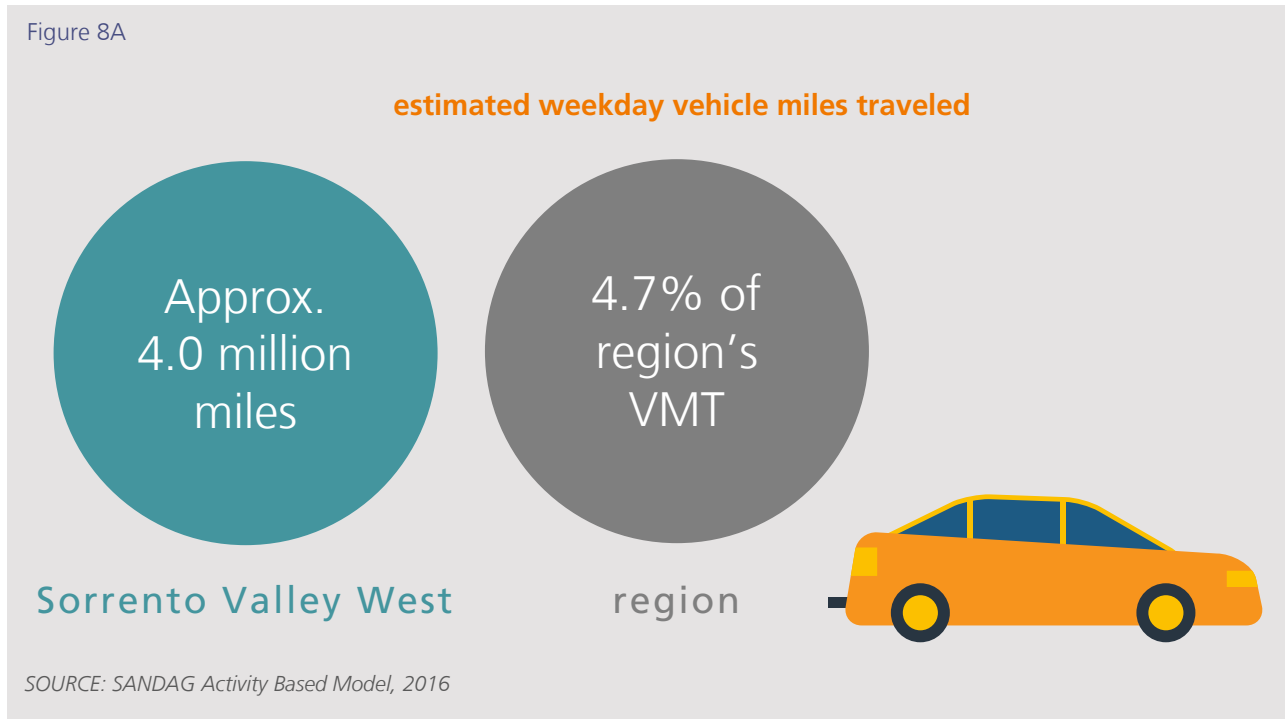
SOURCE: SANDAG Activity Based Model, 2016

All automotive trips that originate or end in the Sorrento Valley West employment center



Estimated weekday vehicle miles traveled (VMT) from or to the Sorrento Valley West employment center

On average, total vehicle miles traveled by automobile on a typical weekday from or to the Sorrento Valley West employment center is approximately 4.0 million miles. This estimate is based on a snapshot from a fall weekday and represents 4.7 percent of the estimated VMT for the region.



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Employment centers in the San Diego region:

An analysis of where people live and work

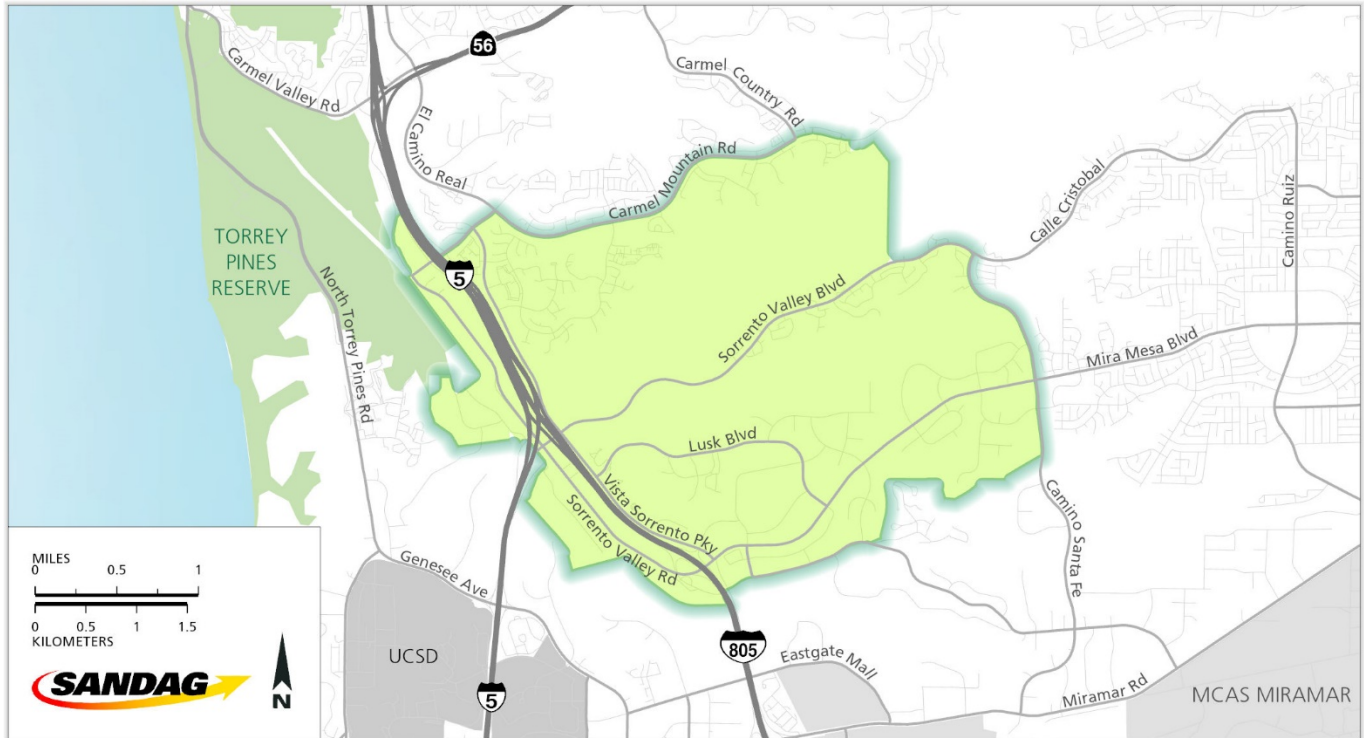
Sorrento Valley East employment center

Fast facts

Sorrento Valley East employment center

58,640	employees
3.8%	region's employees
7.14	land area (square miles)
8,213	employees per square mile
10,811	residents
3,519	households

Sorrento Valley East employment center



Who works and lives in the Sorrento Valley East employment center?

Highlight Table 1B

Of the 58,640 jobs in Sorrento Valley East employment center, the top four are categorized as professional, manufacturing, administrative, and wholesale trade. Compared to the region, there are four times the proportion of professional jobs in this employment center and double the proportion of manufacturing jobs.

Table 1B

Top ten industries in the Sorrento Valley East employment center

Industry	Total jobs	% of jobs
Professional, scientific, & technical services	23,910	41%
Manufacturing	7,191	12%
Administrative, support, & waste services	4,965	8%
Wholesale trade	3,404	6%
Finance & insurance	3,161	5%
Health care & social assistance	2,450	4%
Management of companies & enterprises	2,418	4%
Information	2,303	4%
Construction	1,858	3%
Other services	1,387	2%

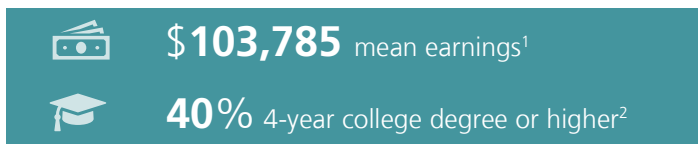
SOURCE: SANDAG Employment Estimates, 2016

Highlight Figure 1B

The mean annual earnings of employees in this area is \$103,785, higher than the regional average of \$55,801. Around two in five (40%) have a 4-year college degree (or higher), higher than the regional average (24%).

Figure 1B

What Sorrento Valley East employment center employees earn and what percentage have a college degree or higher



SOURCES: ¹ SANDAG Employment Estimates, 2016; ² LEHD LODES WAC 7.3, 2015

Highlight Figure 2B

These 58,640 jobs in the Sorrento Valley East employment center represent nearly 4 percent of the jobs in the region and nearly 7 percent of the region's total labor income.

Figure 2B

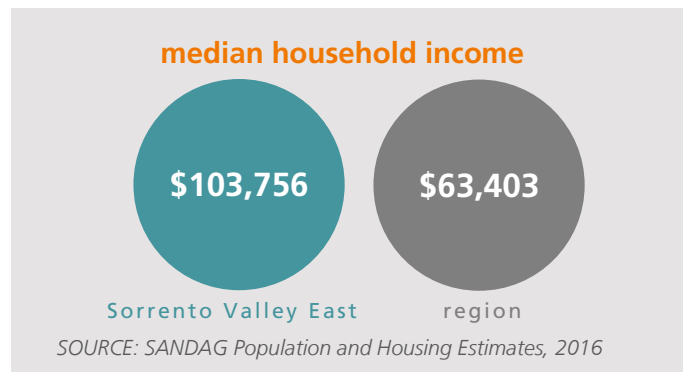
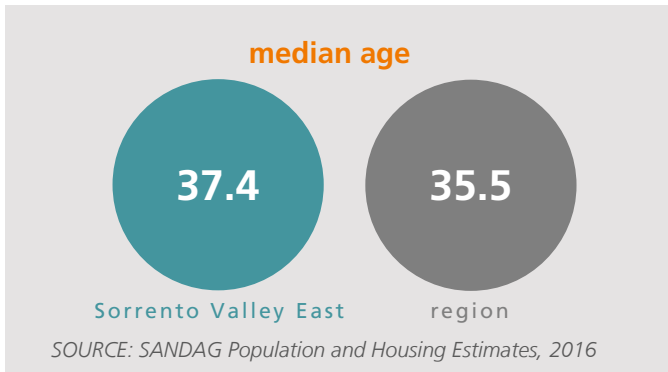
Sorrento Valley East employment center's share of regional jobs versus share of labor income



SOURCE: SANDAG Employment Estimates, 2016

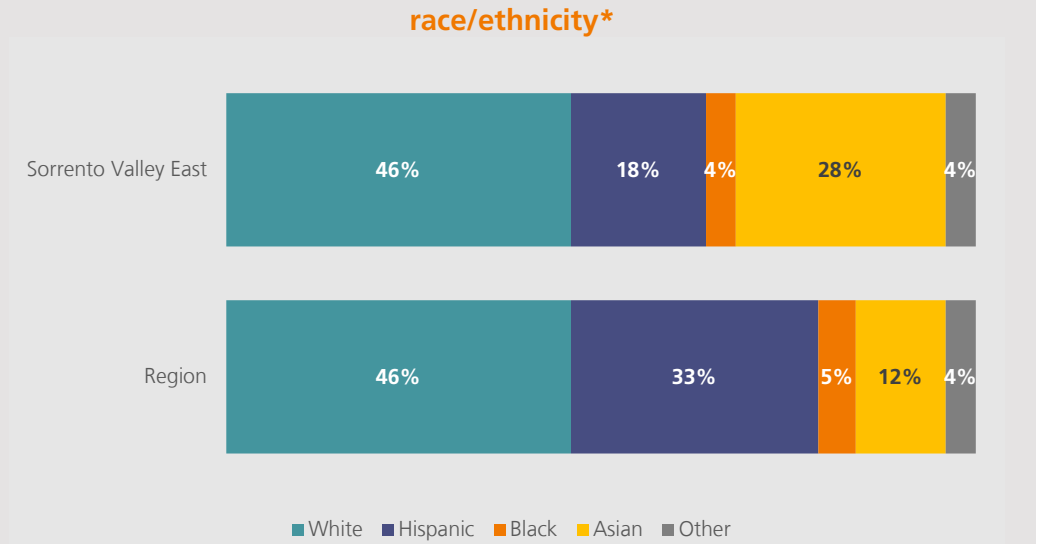
Figure 3B

Characteristics of Sorrento Valley East employment center residents compared to the region



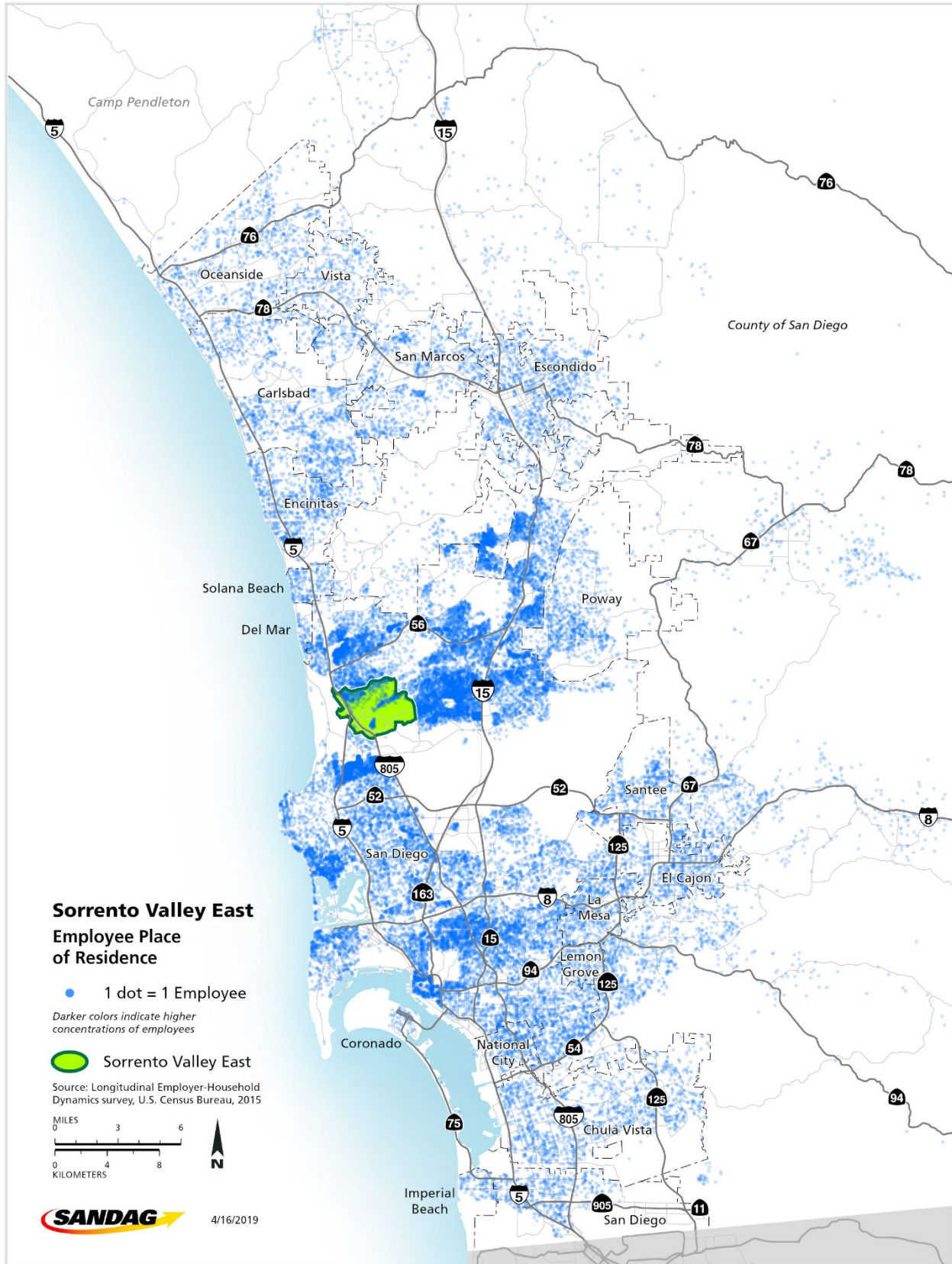
Highlight Figure 3B

The 10,811 residents of this employment center represent less than 1 percent of the region's population. Compared to the region, the residents are older, have a higher median household income, and the proportion of residents that are Asian is higher and those that are Hispanic is lower.



*All categories except Hispanic represent the non-Hispanic population (e.g. Non-Hispanic white).
SOURCE: SANDAG Population and Housing Estimates, 2016

Where do Sorrento Valley East employment center employees live?



Where are Sorrento Valley East employment center employees traveling from?

Highlight Table 2B and Figure 4B

Table 2B shows where Sorrento Valley East employment center employees live/travel from to get to their jobs. Almost two-thirds (65%) of the employees live in San Diego, with the other top two areas including the unincorporated areas of the region and Chula Vista. About 1 percent of these employees live and work in the Sorrento Valley East employment center (Figure 4B).

Table 2B

What jurisdictions Sorrento Valley East employment center employees travel from

Jurisdiction	Number of workers in employment center	Percent of workers in employment center
San Diego	30,362	65%
Unincorporated	4,203	9%
Chula Vista	1,501	3%
Carlsbad	1,423	3%
Escondido	1,229	3%
Encinitas	1,011	2%
Poway	992	2%
Oceanside	965	2%
San Marcos	826	2%
Santee	801	2%
El Cajon	695	1%
La Mesa	670	1%
Vista	522	1%
National City	495	1%
Solana Beach	244	1%
Lemon Grove	209	<1%
Imperial Beach	148	<1%
Coronado	105	<1%
Del Mar	86	<1%
Total	46,487	100%

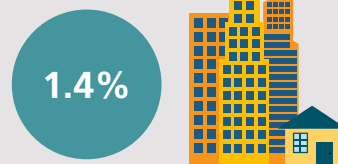
NOTE: Please note that the total number of employees shown here is lower than presented elsewhere because employees who travel from outside the region or have an unknown origin location are excluded and only primary jobs are included.

SOURCE: LEHD LODES OD, 7.3, 2015

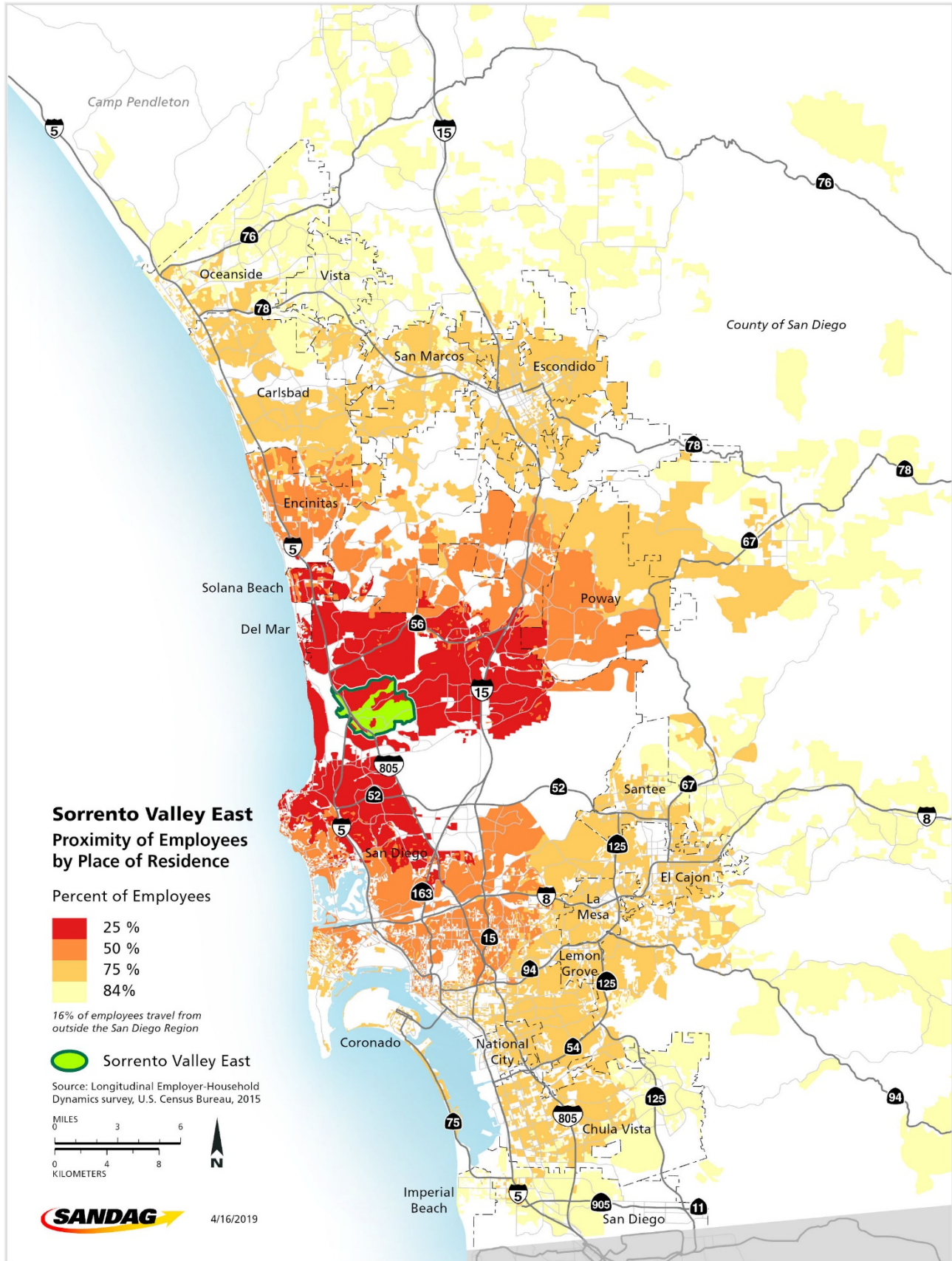
Figure 4B

How many Sorrento Valley East employees also live in this same employment center?

SOURCE: LEHD LODES OD, 7.3, 2015



How far employees in the Sorrento Valley East employment center have to travel



How do Sorrento Valley East employment center employees get to work, how far do they have to travel, and how long does it take them?

Highlight Figure 5B

The transportation modes used by Sorrento Valley East employment center employees were different than the region, with 84 percent driving alone (compared to 80% regionally) and 3 percent taking transit (compared to 4% regionally).

Highlight Figure 6B

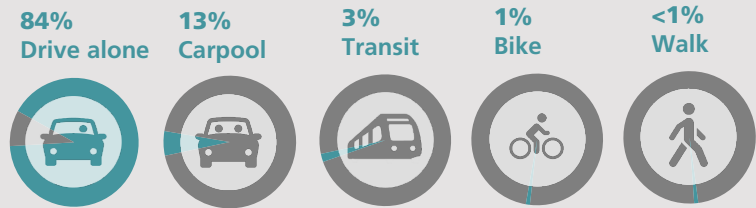
Employees traveling to the Sorrento Valley East employment center by automobile traveled a mean of 14.9 miles. This is higher than the regional average of 12.2 miles.

Highlight Figure 7B

Sorrento Valley East employment center employees who are traveling by car during peak period drive a mean of 14.5 miles and it takes them a mean of 33.3 minutes. In comparison, those that take transit travel 13.1 miles on average and it takes them a mean of 81.4 minutes.

Figure 5B

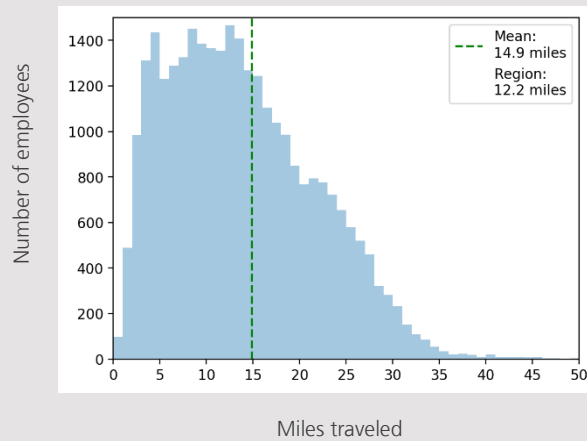
What mode of transportation do Sorrento Valley East employment center employees use to get to work during peak period



SOURCE: SANDAG Activity Based Model, 2016

Figure 6B

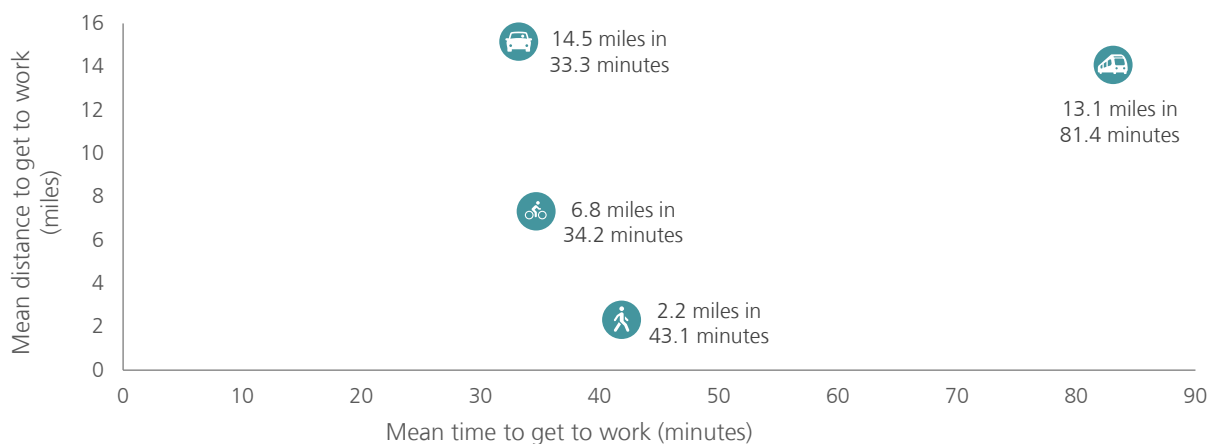
How far Sorrento Valley East employment center employees travel from home to work by automobile to get to this employment center at any time



SOURCE: SANDAG Activity Based Model, 2016

Figure 7B

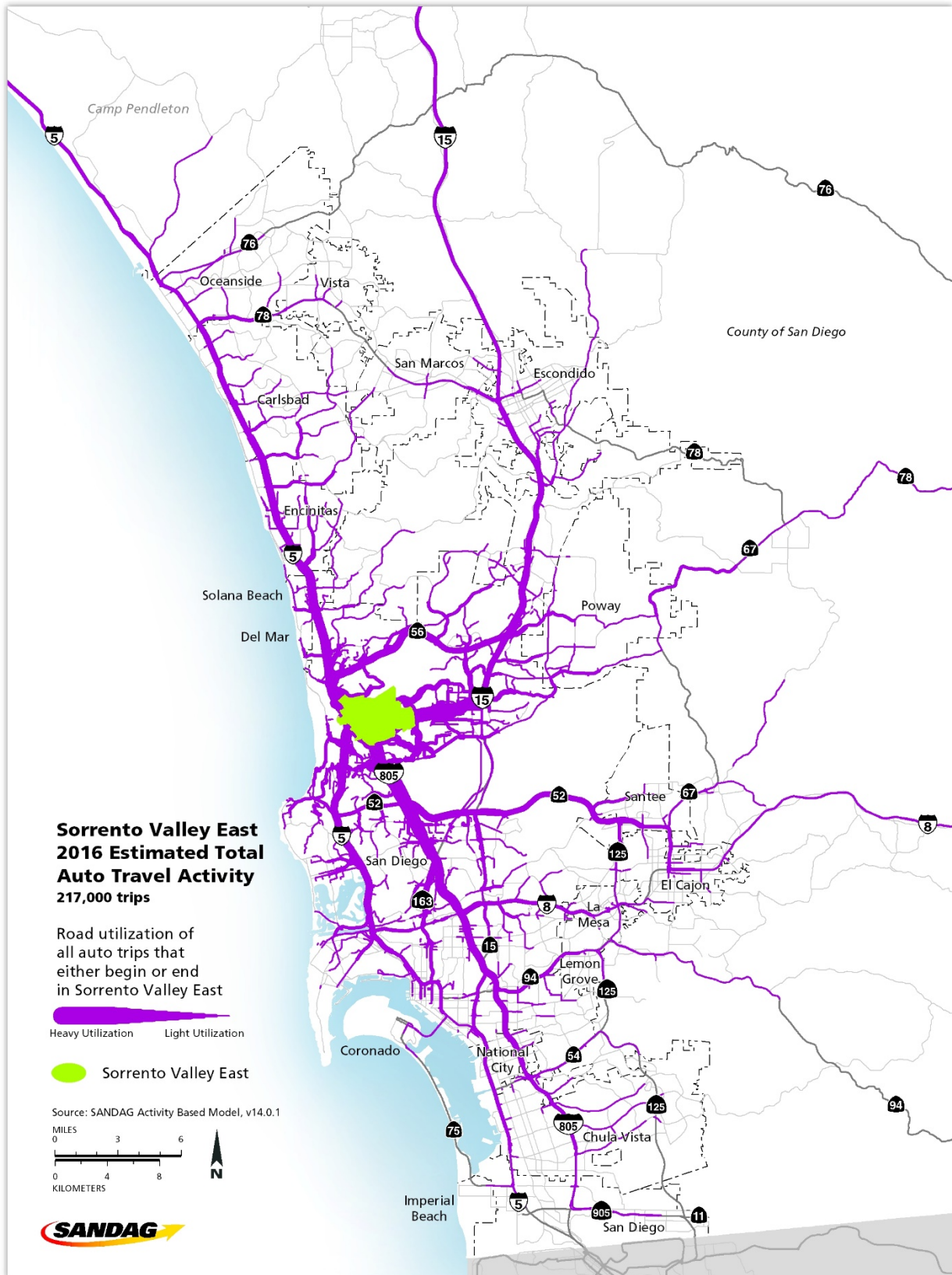
How far Sorrento Valley East employment center employees travel to get to their jobs and how long it takes them by mode at peak time



SOURCE: SANDAG Activity Based Model, 2016

Map 4B

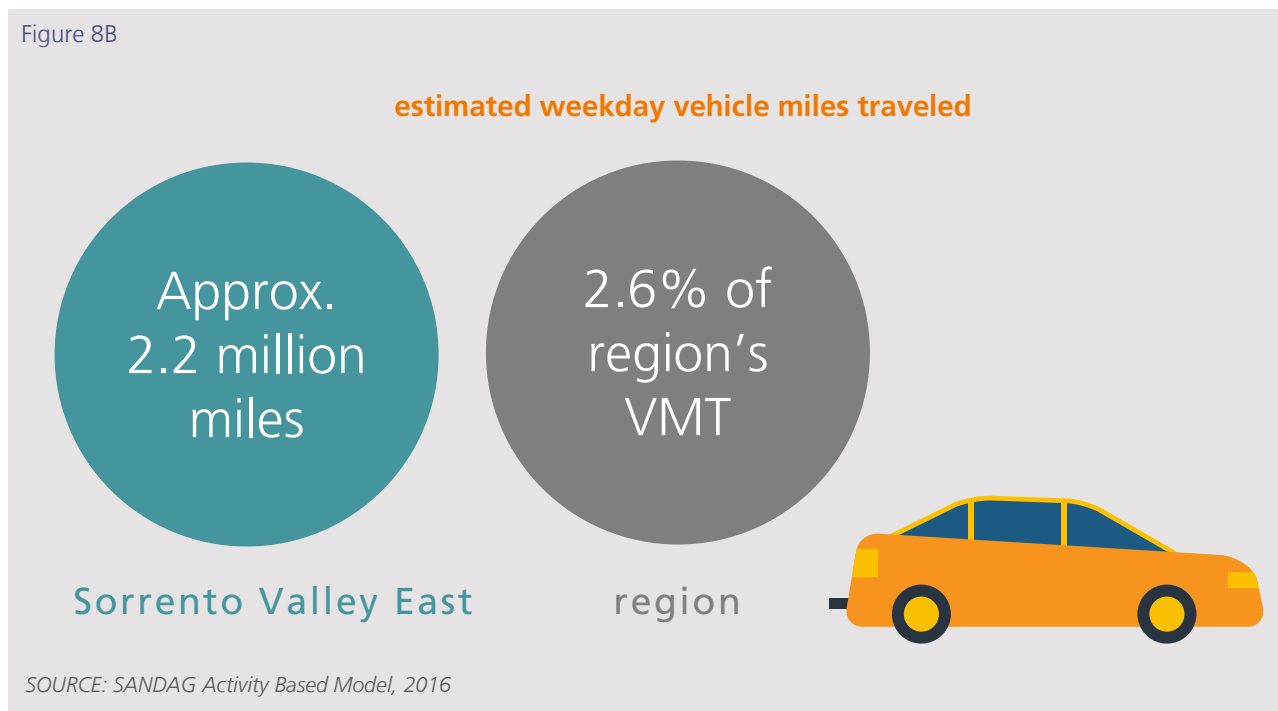
All automotive trips that originate or end in the Sorrento Valley East employment center



Estimated weekday vehicle miles traveled (VMT) from or to the Sorrento Valley East employment center

On average, total vehicle miles traveled by automobile on a typical weekday from or to the Sorrento Valley East employment center is approximately 2.2 million miles. This estimate is based on a snapshot from a fall weekday and represents 2.6 percent of the estimated VMT for the region.

Figure 8B



Methodology, data sources, and other things to consider

Methodology

SANDAG used a collaborative empirical approach to identifying employment centers across the San Diego region. Building-level SANDAG Employment Estimates (2016) were summarized by ¼ mile radius hexagons. Local-maxima were identified as starting points, and regions were grown to include neighboring hexagons meeting a minimum employment density threshold within an approximate 2-mile radius. The resulting boundaries were generalized (taking into account major barrier features such as topography and freeways) and used to select SANDAG Master Geographic Reference Areas (MGRAs) by activity-weighted (population and employment) centroid. Through this process, over 70 initial employment centers were identified. These centers provided the geographies to evaluate travel patterns, employment information, and resident information. Additional technical information regarding this methodology is available by contacting the Data Analytics and Modeling Department at SANDAG.

Data sources and other things to consider

Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) 7.3 (2015)

The Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statics (LODES) data are a publicly available product of the U.S. Census Bureau. The LODES data are an extract of the LEHD infrastructure which is composed of administrative records, census, and survey data. The LODES data provide counts of unemployment insurance-covered wage and salary jobs, including private sector and state, local and federal government jobs. Workplace location and residential location of an employee is measured at the census block-level (2010). The 2015 data that are used here reflect the latest available data (version 7.3) at the time of this analysis and included two primary tables: Original-Destinations (OD) (used in Table 2 and Figures 1 and 4), and Workplace Area Characteristics (WAC) (used in Figure 1). It should be noted that these data (1) contain wage and salary jobs (and exclude self-employed individuals); (2) do not include military and other security-related federal agencies, postal workers, some employees at nonprofits and religious institutions, and informal workers; and (3) only includes an individual's primary job if an individual has more than one. These analyses reflect preliminary results and are pending final verification. Additional information is available at <https://lehd.ces.census.gov/data/>.

SANDAG Employment Estimates (2016)

On a regular basis, SANDAG produces estimates of employment and individual earnings for the San Diego region. These estimates were used in Tables 1, 1A, and 1B and Figures 1, 1A, 1B, 2, 2A, and 2B. These estimates utilize California Employment Development Department (EDD) data, the Quarterly Census of Employment and Wages (QCEW) data, and the LEHD LODES data from the U.S. Census Bureau. among other sources. The employment estimates include wage and salary for private sector and government workers, as well as the self-employed. Uniformed military are not included. Additional information regarding these estimates is available by contacting the Economic and Demographic Analysis Modeling team at SANDAG.

SANDAG Population and Housing Estimates (2016)

Each year SANDAG produces estimates of population and housing for the San Diego region. These estimates utilize several data sources including the California Department of Finance, the U.S. Census Bureau, and a variety of other publicly available datasets. These small-area estimates contain information on the characteristics of the population (ethnicity, age, sex) and housing units (occupied, vacant, unoccupiable) in the region. The population living in military barracks, college dorms and other institutional facilities are included in the population and are counted in housing referred to as Group Quarters. The active military population and their dependents who live in households are included in the household population counts. The population and housing estimates are created in a process similar to the Regional Growth Forecast and contain similar information, however the Population and Housing estimates reflect current conditions. These data are presented in Figures 3, 3A, and 3B. Additional information regarding these estimates is available by contacting the Economic and Demographic Analysis team at SANDAG.

SANDAG Activity Based Transportation Model (2016)

In order to plan and complete regional transportation projects, SANDAG creates and maintains a transportation model which uses a variety of regional transportation survey and socioeconomic and demographic data (e.g., count of trips from home to work, how people carpool, what bus routes are most frequented, and which highways are used and when). These data are then utilized in the Activity Based Model (ABM) to simulate individual and household transportation choices. These choices include how individuals travel around the region (the mode), why people travel around the region (the trip purpose), and when they travel (time of day). The ABM model is refined based on transportation data and expert feedback on methodology and data sources. For this analysis, SANDAG utilized release version 14.0.1 of ABM to estimate travel for the year 2016 (reference scenario #232). Data in Figures 5, 6, and 7 are restricted only to transportation trips in the model in which (1) the trip begins at home and ends at work and does not have any intermediary stops (e.g., dropping a child at school); and (2) the trip's purpose is work. Transit travel time includes initial wait time, walk time to transit stop, transfer time between stops, in vehicle time, and walk time to the destination. Data in Figures 5 and 7 are based on peak periods which are as 6:00 am to 8:59 am and 3:30 pm to 6:59 pm. It should be noted that estimated auto trip path and VMT data from the model to create Map 4 and Figure 8 include vehicle travel across all trip purposes that either start or end in the study area. Additional information about the ABM is available here: sandag.org/index.asp?subclassid=120&fuseaction=home.subclasshome