

HEALTH IMPACT ASSESSMENT

This section provides a brief overview of health topics as they relate to Tulare County and the effects of the 2018 Regional Transportation Plan and Sustainable Communities Strategy (2018 RTP/SCS) on health.

Geographic Area of Focus

Tulare County is located in California's San Joaquin Valley (SJV). Tulare County is bordered by Inyo County to the east, Fresno County to the north, Kings County to the west and Kern County to the south. The western third of the County is valley floor while the middle and eastern thirds of the County contain the foothills and the Sierra Nevada mountain range. The County is situated 180 miles north of Los Angeles and 200 miles south of San Francisco. State Route 99 (SR-99), a major north-south corridor in California, provides direct access to Los Angeles and Sacramento and the numerous cities throughout the SJV. State Route 198 (SR- 198) provides an east to west corridor connection between Sequoia and Kings Canyon National Parks and Interstate 5 in Fresno County.

Population Characteristics

The majority of Tulare County residents are of Hispanic ethnicity (62.7%). The racial composing for non-Hispanics is 30.6% white, 3.2% Asian, 1.3% African American, 1.4% multi-race, and 0.8% Native American. A large percentage (23%) of residents are foreign-born. The county is also home to the Tule River Tribe. Established in 1873, the Tule River Indian Reservation is estimated to cover almost 85 square miles of foothill lands of the Sierra Nevada Mountains. The reservation is located in a remote rural area approximately 20 miles from Porterville, the nearest city. Tables 1 and 2 provide general population characteristics including population, housing and income, as well as age and gender.

Year	Population	Housing Units	Jobs	Median Household Income
2015	461,589	145,903	172,776	\$44,332
2020	488,141	153,390	181,560	\$45,288
2025	514,693	160,877	190,344	\$46,264
2030	541,693	168,364	199,128	\$47,262
2035	567,796	175,851	207,912	\$48,280
2040	594,348	183,338	216,696	\$49,321
2042	604,969	186,332	220,210	\$49,744

Source: TCAG 2018 Draft RTP/SCS, Action Element, Tulare County Population, Household, and Employment Projections 2015 to 2042

HEALTH IMPACT ASSESSMENT

Jurisdiction	Median Age	Gender	
		Male	Female
Dinuba	27.6	26.1	29.9
Exeter	31.6	29.9	32.5
Farmersville	27.3	28.2	26.9
Lindsay	29.2	29.3	28.7
Porterville	29.1	27.5	30.4
Tulare	29.9	29.4	30.5
Visalia	31.7	30.8	32.7
Woodlake	27.6	24.6	29.4
Tulare County	30.4	29.8	31.1

Source: U.S. Census American Fact Finder, 2012-2016 American Community Survey 5-Year Estimates

Health Factors

In 2016, the Tulare County Health & Human Services Agency’s Public Health Branch partnered with almost 90 representatives from an array of public agencies, nonprofit organizations, businesses, and numerous residents to gain insight on issues impacting county residents’ health and wellbeing. The result of this collaboration is the Tulare County Community Health Assessment (CHA). The report provides an in-depth, comprehensive look at the state of health in Tulare County. The health factors below for the County were obtained from the CHA.¹

Asthma

Tulare County has higher rates of asthma for adults (15.5% Tulare county; 13.9% California), but lower rates for children ages 0 to 17 (11.6% Tulare County; 15.2% California) compared to California.

Obesity

Overall, the prevalence of adult obesity in Tulare County is 36.3%, which is well above the state’s prevalence of 25.3%. Obesity is particularly harmful, as it increases the risk for health conditions such as heart disease, diabetes, stroke, and some cancers. Although certain behaviors such as engaging in physical activity or having a nutritious diet play a role in preventing obesity, environmental factors such as the availability of fresh fruits and vegetables or safe walking trails are important components in encouraging healthy behaviors.

¹ Tulare County 2017 Community Health Assessment, HHS Public Health
[https://tchhsa.org/es/assets/File/Public%20Health/Tulare%20County%20CHA%20\(2017_03_28\)%20FINAL.pdf](https://tchhsa.org/es/assets/File/Public%20Health/Tulare%20County%20CHA%20(2017_03_28)%20FINAL.pdf)

HEALTH IMPACT ASSESSMENT

Diabetes

Diabetes is more prevalent in Tulare County when compared with the state. Tulare County's rate, as estimated from the California Health Interview Survey is higher than the rate for the state of California (13.7% and 8.6%, respectively), and ranks as the fifth highest rate among California counties. Death rates due to diabetes in Tulare County are also higher than the state. African Americans and Hispanics are disproportionately impacted when it comes to diabetes deaths.

Birth (Low Birth Weight)

Low birth weight babies are babies that are born weighing less than 2,500 grams (or about 5- 1/2 pounds). In Tulare County, on average, there were 495 babies per year born with low birth weight. Since multiples (twins, triplets, etc.) are often born weighing less than single babies, and multiples are often born earlier, the low birth weight among singleton births is often used as a measure. The Tulare County rate of low birth weight among singletons was 5.2% compared to the national percent of 7.3. However, rates varied among racial/ethnic groups, with African-American mothers having the highest rate and non-Hispanic Caucasians having the lowest rate.

Accidental Death

Four accident types account for 80% of all accidental deaths: motor vehicle traffic accidents, drug or medication overdoses, pedestrian-motor vehicle accidents, and falls.

Type	Number	Percent	Yearly Average
Motor vehicle traffic accident	255	38.8	51
Drugs or medication overdose	161	24.5	32.2
Pedestrian-motor vehicle accident	58	8.8	11.6
Fall	55	8.4	11
Drowning	20	3.0	4
Fire	15	2.3	3
Occupational	13	2.0	2.6
Alcohol toxicity	12	1.8	2.4
Bicyclist-motor vehicle accident	12	1.8	2.4
Infant suffocated while sleeping	10	1.5	2
All others	47	7.1	9.4

Source: 2017 Tulare County Community Health Assessment

Health Insurance and Access to Providers

With the enactment of the Affordable Care Act (ACA) in 2010, health care reform gave many Americans the opportunity to access affordable health insurance options. By 2014, the expansion of Medicaid allowed millions of low-income people across the nation to become eligible to receive health care at little or no cost. Many others qualified for tax credits to help cover a large portion of their health care costs. People could no longer be denied health insurance due to their pre-existing

HEALTH IMPACT ASSESSMENT

conditions, and employers with 50 or more employees were required to provide health insurance to their employees. In addition, U.S. citizens and lawful permanent residents were required to have health insurance or be subject to a fine. The effects of the ACA on the health insurance trends in Tulare County can be seen in a drastic decrease in the uninsured rate from 2012-2014, combined with increasing rates of Medi-Cal, work-based insurance, and private purchase insurance during the same period show that more people are covered by health insurance than ever before. Tulare County comes close with 93.4% among those surveyed.

Immunizations

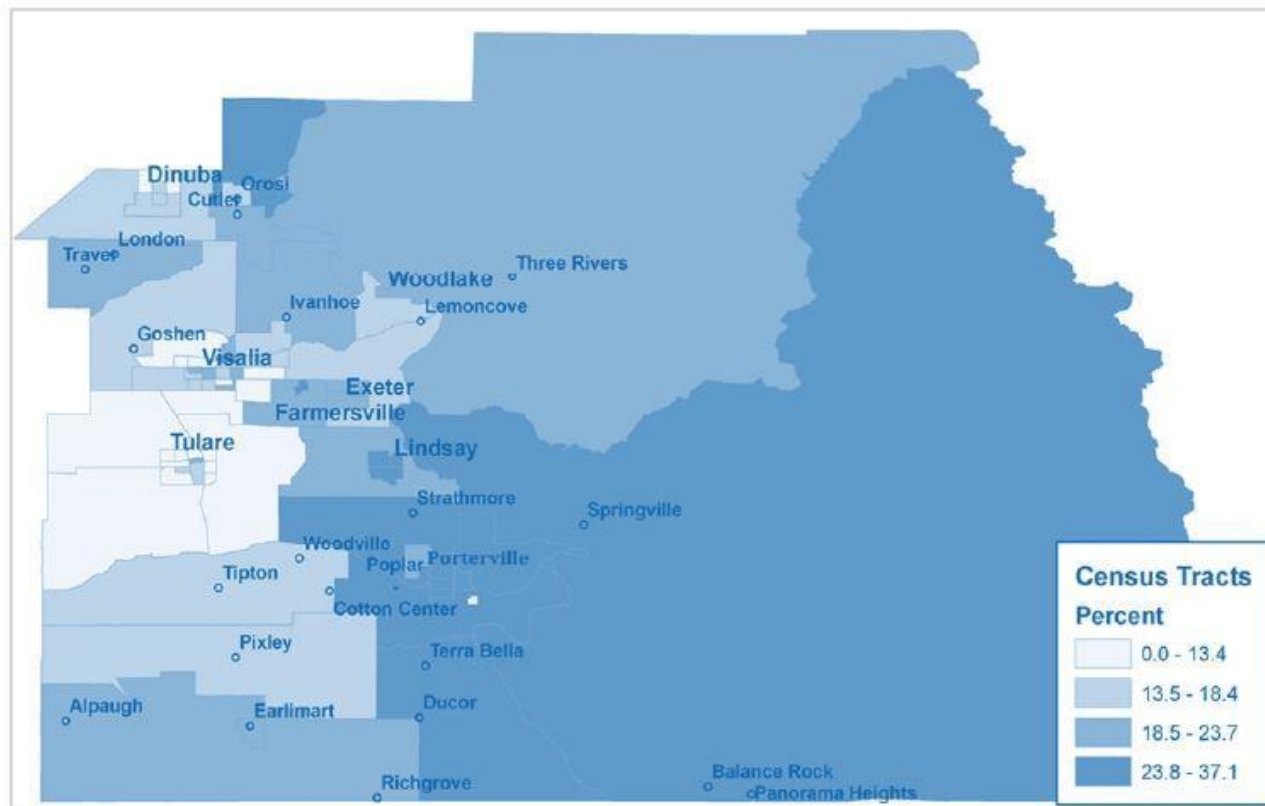
Vaccines are considered one of the best and most cost-effective methods of preventing diseases such as polio, measles, diphtheria, whooping cough, and measles. All school children are required to be vaccinated by state law, unless exempted due to medical reasons. Programs such as Vaccines for Children, are available to ensure that all children regardless of income have access to the required immunizations. In 2014, Tulare County had a higher percentage of kindergarteners with all required immunizations (97.1%) than the state (92.8%).

Access to Prenatal Care

Early prenatal care is important because it promotes better birth outcomes as well as decreasing infant and maternal morbidity and mortality. Optimally, an expectant mother begins prenatal care during her first trimester of pregnancy. In Tulare County, 19.5% of women did not access prenatal care until after the first trimester (2010-2012, 3 year average). The map below shows the geographic distribution which ranged from 6.7% in northwestern Visalia to 37.1% in the rural and mountain area southeast of Porterville. In the more recent period of 2012-2014, no significant change has occurred with 19.2% of expectant mothers not accessing care until after the first trimester, which is above the state average of 16.5%. Other factors that influence early prenatal care include age of the mother, type of health insurance, and race/ ethnicity.

HEALTH IMPACT ASSESSMENT

Percent of Woman Accessing Prenatal Care After the First Trimester by Census Tract, 2010-2012



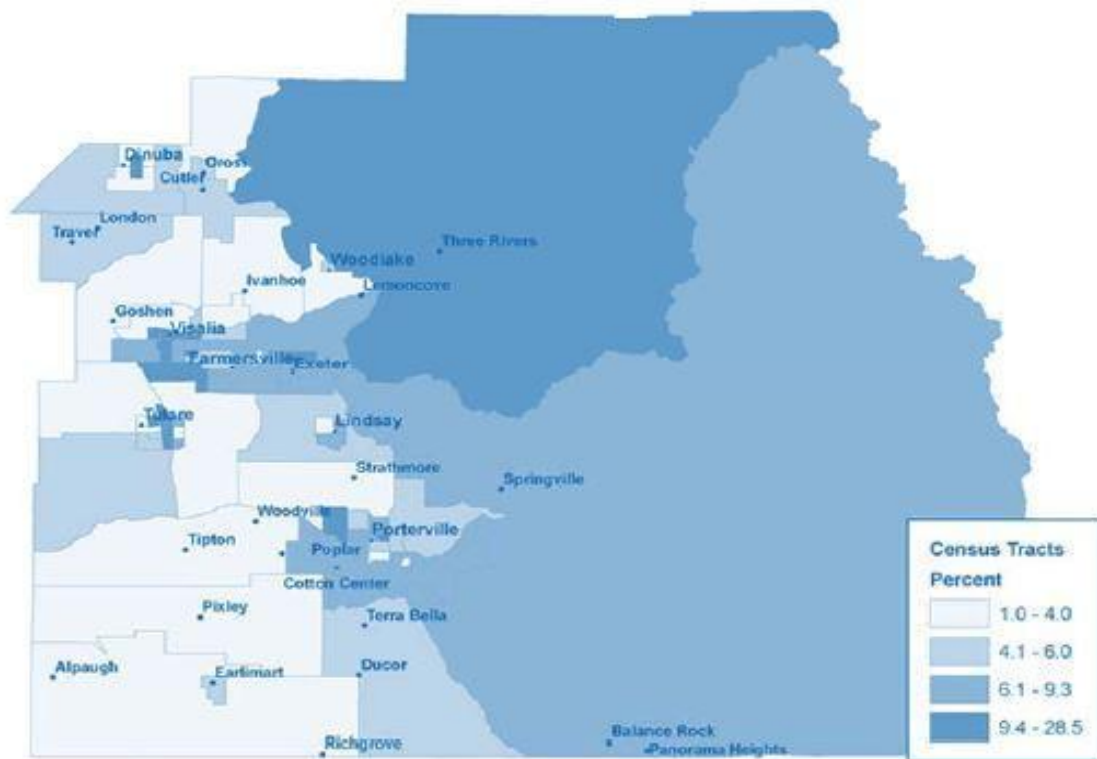
Source: California Center for Health Statistics, Vital Statistics, Birth Statistical Master Files, 2010-2012.

Seniors Living Alone

Older adults suffer from more limited physical and mental abilities than younger populations because of their susceptibility to illness, chronic disease, and injury. Basic daily activities, such as washing dishes or going up stairs, may be difficult for seniors, especially without someone else in the home to assist them. The darkest areas of the map below show the areas with the highest percentages of households with seniors living alone.

HEALTH IMPACT ASSESSMENT

Percent of Households with Senior Living Alone (Adults 65+)



Source: U.S. Census Bureau, American Community Survey, 2010-2014.

Transportation Planning and Health

A growing body of research has indicated that land use and transportation decisions can promote an active lifestyle and improve overall health. Planning for vulnerable populations that are less mobile, such as the elderly is also important. Jurisdictions that promote public transportation, walking, and biking contribute to improved air quality and increase access to: health care, education, social services, healthy food, and physical activities.

By definition, active transportation allows people to integrate physical activity into everyday life, by enabling them to walk or bike to their destinations. Even a moderate amount of daily exercise has an impressive range of benefits to both physical and mental health. These benefits range from lower risk of heart disease, adult-onset diabetes, high-blood pressure and stress to more energy, flexibility and muscle strength and combat obesity. In addition, by enabling people to drive—and pollute—less, active transportation can reduce the number of traffic collisions and lead to lower asthma rates.²

To the extent that promoting active transportation leads people to walk and bike more and to drive less, it can improve the quality of life in our neighborhoods in important ways. When residents are out on foot or by bike, they interact more with neighbors. Residential streets become calmer and

² TCAG, Regional Active Transportation Plan for the Tulare County Region (with amendments), May 2016

HEALTH IMPACT ASSESSMENT

quieter, which, again, encourages interaction. Streets become safer, not only in terms of traffic but also in terms of crime, since pedestrians and cyclists “put more eyes on the street.” In ways that are rarely appreciated, walking and biking build community and create “social capital.”

In enabling people to make short trips on foot or by bike instead of by car, active transportation can help address a number of environmental challenges. The most discussed, and perhaps most critical, environmental benefits of active transportation are reduced air pollution and emissions of greenhouse gases. They are not the only ones, however. Other environmental benefits include energy savings; less noise pollution; less water pollution; and even reduced pressure to develop agricultural and open space.

Trip-making California Household Travel Survey In 2010–2012, the California Department of Transportation (Caltrans) conducted a statewide survey to gather information from households about their demographics and travel patterns. (TCAG was one of a dozen or so agencies that contributed funding for the survey.) In Tulare County, information was gathered from approximately 700 households. Below are some highlights of the survey results for Tulare County:

- The average household size was 3.1 people and the average number of daily trips by all members of a household was 6.4.
- The average duration of a walking or biking trip was 12.6 minutes while the average distance was 0.5 miles.
- The average distance to work for pedestrian and bicycle commuters was 0.6 miles, compared to 7.0 miles for solo car drivers.
- Just over 11% of all trips—for all purposes, work and otherwise—were made by walking while 0.5% of trips were made by bike (see Table 4 below).
- In the case of trips from home to work, 4.7% were made by walking while 0.5% were made by bike. Table 1 shows the percentage of trips made by each of several forms, or “modes,” of transportation.

HEALTH IMPACT ASSESSMENT

Mode	Percentage (%)
Carpool/vanpool	48.0
Drive alone	37.7
Walk	11.1
Other*	2.2
Bike	0.5
Transit	0.5

*Includes worked at home, taxicab, motorcycle and other means
Source: TCAG, Regional Active Transportation Plan for the Tulare County Region (with amendments), May 2016

According to the ACS, an estimated 2.1% of Tulare County workers, or 3,405 people, commute primarily on foot while 0.5%, or 890 people, do so primarily by bike. Meanwhile, more than three quarters, 75.6%, drive alone; 15.7% carpool; less than 1% use public transportation; and 5.2% work at home or use other means of transportation. For comparison purposes, the table below also provides the estimated walking and bicycling commute shares for California as a whole and for two of Tulare County's neighboring counties. The estimated walking commute share for Tulare County (2.1%) is lower than California's (2.7%) but equal to Fresno County's and higher than Kern County's (1.8%). Meanwhile, Tulare's estimated bicycling commute share (0.5%) is lower than California's (1.1%) and Fresno County's (0.8%) but equal to Kern County's.

HEALTH IMPACT ASSESSMENT

**Table 5
Commute Mode Split**

Mode	Tulare County	Kern County Incorporated	Kern County Unincorporated	California	United States
Drove alone	75.60%	77.10%	74.30%	72.90%	75.80%
Carpooled	15.70%	14.90%	18.10%	12.00%	10.60%
Public Transport	0.80%	0.90%	1.30%	5.20%	4.90%
Walked	2.10%	0.50%	1.10%	2.80%	2.80%
Bicycled	0.50%	0.30%	0.40%	0.90%	0.50%
Other*	5.20%	6.30%	4.80%	6.20%	5.40%
Total	100%	100%	100%	100%	100%

Source: TCAG, Regional Active Transportation Plan for the Tulare County Region (with amendments), May 2016. Kern COG (American Communities Survey), Regional Active Transportation Plan, 2012 https://www.ca-ilg.org/sites/main/files/file-attachments/2012_bicyclemasterplan_i.pdf <http://www.tularecog.org/wp-content/uploads/2017/11/TCAG-Regional-Active-Transportation-Plan-Walk-and-Bike-Tulare-County-with-amendments.pdf>

Regular exercise is important in maintaining health and preventing disease. Physical activity can help control weight; strengthen bones and muscles; reduce the risk of obesity, diabetes, heart disease, some cancers and other diseases; and improve mental health and mood. Guidelines by the U.S. Office of Disease Prevention and Health Promotion recommend that adults participate in at least 150 minutes a week of moderate-intensity physical activity such as walking or 75 minutes a week of vigorous-intensity aerobic physical activity such as running. The percentage of adults—people 18 years or older—in Tulare county who walked at least 150 minutes per week in a given time period (29%) is lower than in California as a whole (33%). The source of the data in this section is the California Health Interview Survey. This data set is limited, as it is collected only for zip codes with a population larger than 15,000.

Non-vehicle modes of transportation in Tulare County are also called Active Transportation. Active Transportation includes pedestrian walkways and bikeways. The social impacts of not continuing to improve transit and active modes of transportation, such as bicycling and walking, also influence the health and well-being of the residents living in and traversing Tulare County. As discussed previously, in Tulare County's populated centers, bicycle commuting is a viable transportation alternative. This is due to the generally flat topography and the moderate year round climate in the

HEALTH IMPACT ASSESSMENT

Valley. Many of the roadways throughout the County can accommodate bicyclists. However, there is a need for striping improvements and adequate separation from vehicles on the circulation system.

Investment in existing communities and high quality transportation systems, meanwhile, do not extend the benefits of active transportation and transit options equitably throughout the region. Other regions in California have developed land use scenarios that concentrate growth and resource allocation in areas that already have high quality transportation systems or are in physical proximity of housing to jobs, schools, and areas of commerce. While this approach makes certain neighborhoods and communities attractive for investment, it leaves other areas at a disadvantage. Low income, especially those in rural settings, often lack the basic features of healthy, sustainable neighborhoods – quality and quantity of affordable housing, adequate public transit, complete streets, and basic essential services. Maximizing opportunities for all communities will create a healthier, more sustainable region.

Plan Performance

The investments in the 2018 RTP/SCS are expected to improve and maintain accessibility across the region to essential destinations and support positive health outcomes. The Plan identifies a comprehensive set of strategies that work in concert to optimize the operational performance of the transportation system and allow residents to access schools, healthy food, jobs, housing, parks/open space, health care facilities and other essential destinations. Table 6, Plan Performance highlights outcomes of the plan that will influence the ability of residents across the County to access essential destinations. These outcomes are directly related to public health improvements at the neighborhood level and aim to extend the reach to destinations that support healthy living.

While the Plan will provide a wider variety of transportation options, the vast majority of Tulare County residents will still use automobiles to complete a majority of trips, especially those over three miles. The highway and arterial investments included in the Plan attempt to optimize the existing system and expand it where necessary to ensure that the mobility needs of the region are met.

The 2018 RTP/SCS improves physical activity outcomes by increasing opportunities for people to access their jobs, transit, schools and many of their daily needs by walking and biking. The Plan also encourages the development of more compact, accessible and walkable communities. Over its 24 year timeframe, the Plan invests nearly \$453 million in the development and enhancement of active transportation networks, including first/last mile improvements, safe routes to school projects, public transit investments, partnership with CalVans, and regional bikeway infrastructure. By enabling greater levels of physical activity, the Plan is expected to reduce rates of obesity and chronic disease.

HEALTH IMPACT ASSESSMENT

Table 6 Plan Performance – Physical Activity (Modeled)		
Metric	Result of Plan	
	Existing	2042 Plan
Percent of Work Trips less than 3 miles	45.71%	47.13%
Percent of Non-Work trips less than 3 miles	58.83%	58.01%
Mode Share of Walking	8.63%	9.26%
Mode Share of Biking	1.57%	1.65%

Source: TCAG Travel Demand Model

Percent of trips less than 3 miles

Shorter trips are easily completed by walking and biking. Trips under 3 miles can be completed by the average person riding a bike in about 15 minutes. 58 percent of all non-work trips and 47 percent of work trips are expected to be under three miles as a result of the Plan.

Mode share of walking and bicycling

Walking and biking mode shares in the County are expected to increase by .63% and .08% percent, respectively, when compared to existing conditions. The growth will be more significant in urban areas with the increased number of close destinations and activities, and less so in rural areas where distances and lack of infrastructure may make some walk and bicycle trips impractical.

Collision rates

TCAG analysis of traffic related fatalities and injuries revealed the following for 2015:

**Table 7
Tulare County Traffic Related Injuries and Fatalities 2015**

Total Collision	4,615
Collision Property Damage/Other	3,009
Collision Injuries (Total)	1,721
Collision Fatalities (Total)	67
Deaths (People)	76
Injuries (People)	2,504

Source: TIMS - Transportation Injury Mapping System 2015, CHP - California Highway Patrol 2014

Traffic related deaths and injuries are expected to fall in the time frame of this plan with expected improvements to technology, safety, and infrastructure. However, distracted driving remains an issue of concern, with a spike in roadway accidents in recent years. TCAG is in the process of developing a modeling tool to measure future traffic related deaths and injuries within the context of this plan.

HEALTH IMPACT ASSESSMENT

Public Transit Network

Existing bus service covers an extensive area of the county including rural areas as seen below, showing adequate service to all areas of the County. Fixed route service is provided in urban areas and rural areas, with urban areas receiving higher frequency of service due to density, demand, job and retail locations, ridership levels, cost of service per mile, and other factors.

Estimated daily ridership for existing routes is shown here. TCAT is the county connector service for rural to urban areas with the largest area to cover, and receives the lowest estimated ridership in the county on some routes.

Visalia Transit		Porterville Transit	
Route	Daily Riders	Route	Daily Riders
1	1498	1	272
2	626	2	305
3	291	3	327
4	478	4	224
5	326	5	299
6	286	6	197
7	626	7	81
8	266	8	65
9	251	9	444
11	242	Tulare Intermodal Express	
12	203	Route	Daily Riders
15	70	1	137
		2	165
		3	168
		4	251
		5	164
		7	115
		11x	232
		DART	
		Route	Daily Riders
		1	54
		2	57
		3	206
		4	92

Source: TCAG internal data

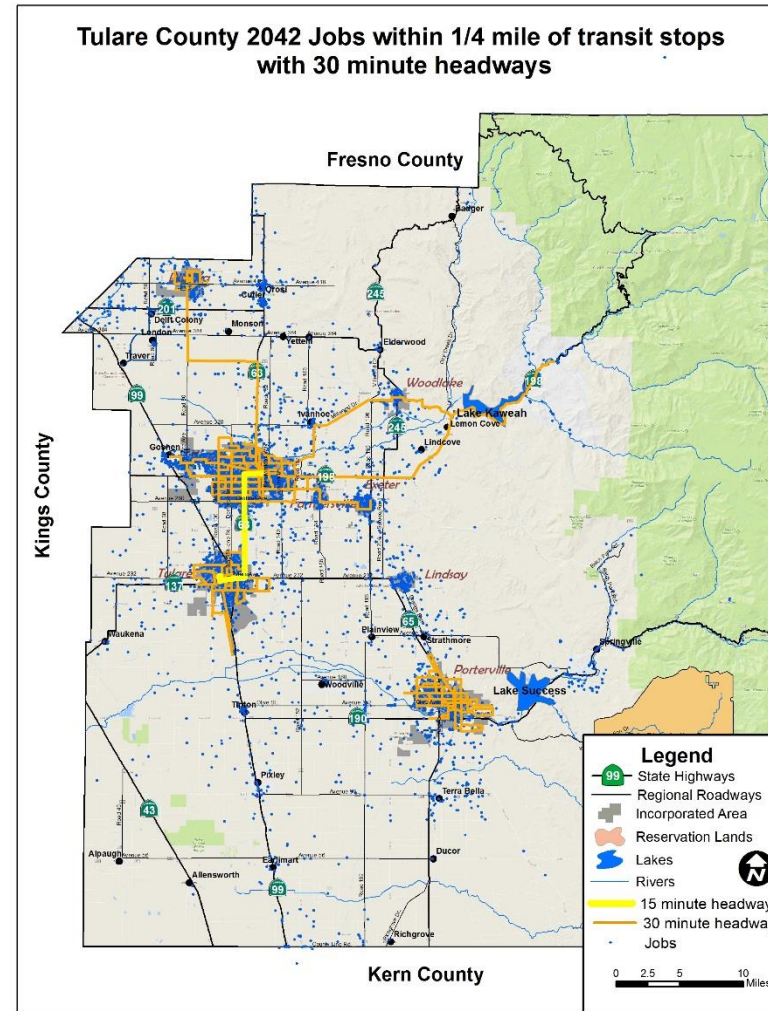
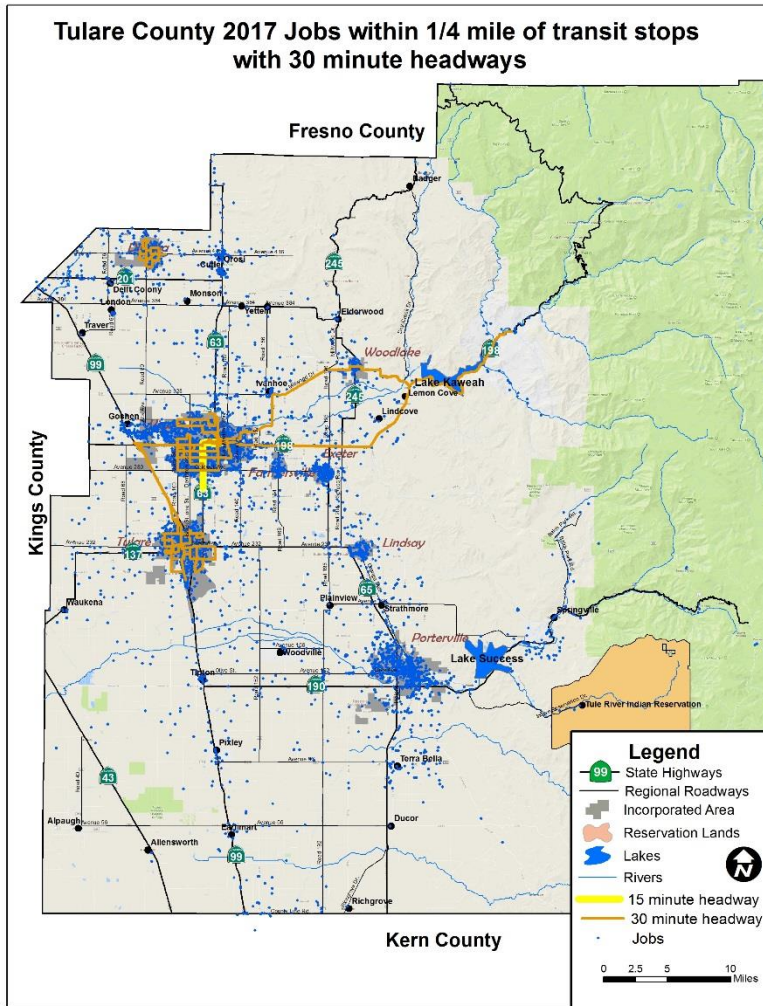
HEALTH IMPACT ASSESSMENT

To display job location accessibility via transit within the County, an analysis was performed to determine how many jobs are located within a quarter mile of a transit stop with 30 minute peak headways or better, which provide reasonable travel times to and from work, shops, and home. This analysis does not, however, take into consideration walk time to the bus, travel time on the bus, nor transfer time between bus lines.

There are a total of 15 existing routes with headways of 30 minutes or less during peak times. Future modeled transit includes 35 modeled routes with headways of 30 minutes or less during peak times, with improvement coming from a potential increase in headways, a potential expansion of routes to cover new land use, and Porterville Transit potentially moving to 30 minute peak headways from its existing 40 minutes.

Table 8		
Job location relative to headways		
Year	30 minute headway Routes or better	Percentage of jobs within 1/4 mile of stop
Existing	17	40.01%
2042	35	61.24%

HEALTH IMPACT ASSESSMENT



Source: TCAG 2018

HEALTH IMPACT ASSESSMENT
