# CHAPTER 1 Why Sustainability?

## 2040 Regional Transportation Plan

In the state of California, responsibility for transportation planning and coordination is assigned to regional transportation planning agencies. The Santa Cruz County Regional Transportation Commission (referred to as the "Commission" or "RTC") is the designated regional transportation planning agency (RTPA) for Santa Cruz County. The RTC is required to periodically undertake long-range planning efforts, as a way to set the course for meeting the transportation needs of its respective communities over a 20-plus year timeframe. This long-range planning effort is called the Regional Transportation Plan, or RTP. Planning is an important component to project implementation as it provides a forum for assessing the direction of transportation in our county over the next 20 plus years. It positions our community to receive funding for projects that require a well thought out plan, and helps to develop collaboration on projects.

The *2040 Santa Cruz County Regional Transportation Plan* incorporates sustainability principles in all of its elements: transportation goals and policies (policy element – **Chapter 4**), a financial plan for funding transportation projects (financial element – **Chapter 5**), and a program of short and long-range transportation projects (action element – **Chapter 6**).

The RTC coordinates with the Association of Monterey Bay Area Governments (AMBAG) in developing the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the tri-county area of Monterey, San Benito and Santa Cruz Counties. AMBAG also develops the population, housing and employment growth projections for the region. The 2040 RTP is consistent with both of these efforts.

## Why Sustainability?

Transportation affects many aspects of our lives both directly and indirectly. The transportation system enables us to get around – to work, to school, to stores and other destinations – but it is also interlinked with our health and safety, the quality of the natural environment, and the economic vitality of our region. The *2040 Regional Transportation Plan* reflects a wide spectrum of sustainability objectives for this long range planning effort. A sustainable transportation system requires a plan that encompasses improvements to access, mobility, the environment, public health, safety, the economy and equity, as well as preservation of our current transportation system, all

within financial constraints. A challenge, no doubt, but a strategy that strives to best serve the residents and visitors of Santa Cruz County.

The California Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires the establishment of regional greenhouse gas emission targets and the 2016 California Senate Bill 32 requires the reduction of greenhouse gas emissions by 40% below 1990 levels by 2030. A much greater emphasis is being placed on transportation to reduce the number of vehicle miles we travel through coordination of transportation investments and land use planning. Considering these sustainability requirements and all applicable state, federal, and regional priorities, the *2040 Santa Cruz County Regional Transportation Plan* identifies infrastructure projects and programs that could be implemented through 2040 based on anticipated transportation revenues.

This chapter discusses a number of challenges that face transportation in Santa Cruz County now and in the future. The 2040 RTP endeavors to address these challenges and result in safer, healthier and more efficient travel choices that provide improved multimodal access to jobs, education, healthcare, and other destinations for our residents and visitors.

## System Preservation

A well-maintained multimodal transportation system of local roads, highways, bridges, buses, bicycle facilities, pedestrian infrastructure and other transportation components is critical to providing a reliable, seamless, interconnected system. Such a system supports the traveling public and the local economy, reduces wear-and-tear on vehicles, and operates efficiently. Unfortunately, much of the local transportation system is aging and in need of major repair. Due to increased demands on the transportation network and unreliable funding, transportation agencies (cities, counties, Caltrans, and transit providers), have not been able to keep up with the increasing backlog of maintenance in recent years. Therefore, local voters approved Measure D in November 2016 and the State Legislature approved Senate Bill 1 (SB 1) – the Road Repair and Accountability Act of 2017 – which will enable cities and counties, Caltrans, and transit agencies to finally address significant maintenance, rehabilitation and safety needs.

On a scale of zero (failed) to 100 (excellent), the average pavement condition index (PCI) of local streets in our county's five jurisdictions has been between 49 and 50 over the last many years hovering around the boundary between "poor" and "at risk". In 2016, the Pavement Condition Index for Santa Cruz County was 50, the eighth worst Pavement Condition Index in the state.[1] Maintenance of rural roadways can be particularly challenging due to their remote location, susceptibility to storm damage, and low traffic volumes relative to more urban roadways. The winter storms of 2016/2017 caused severe damage to numerous

### Santa Cruz County Road Maintenance

- Miles of local roads: 871
- Average Pavement Condition: PCI 50 (out of 100 = poor)
- County has 8th worst PCI rating in CA
- Over $350 million backlog

roadways in the Santa Cruz Mountains which lowered the 2017 average PCI for roadways in unincorporated areas to 39. Insufficient gasoline tax funding to cities and counties has contributed to a backlog of local road maintenance needs in Santa Cruz County that totals over $350 million. Measure D and SB 1 provide approximately $4.5 million and $7 million per year to local cities and the County of Santa Cruz to start addressing at least some of this backlog. **Figure 1.1** shows there is still a disparity between available funds and funds needed for local road pavement maintenance given the backlog of maintenance that has been accumulating.

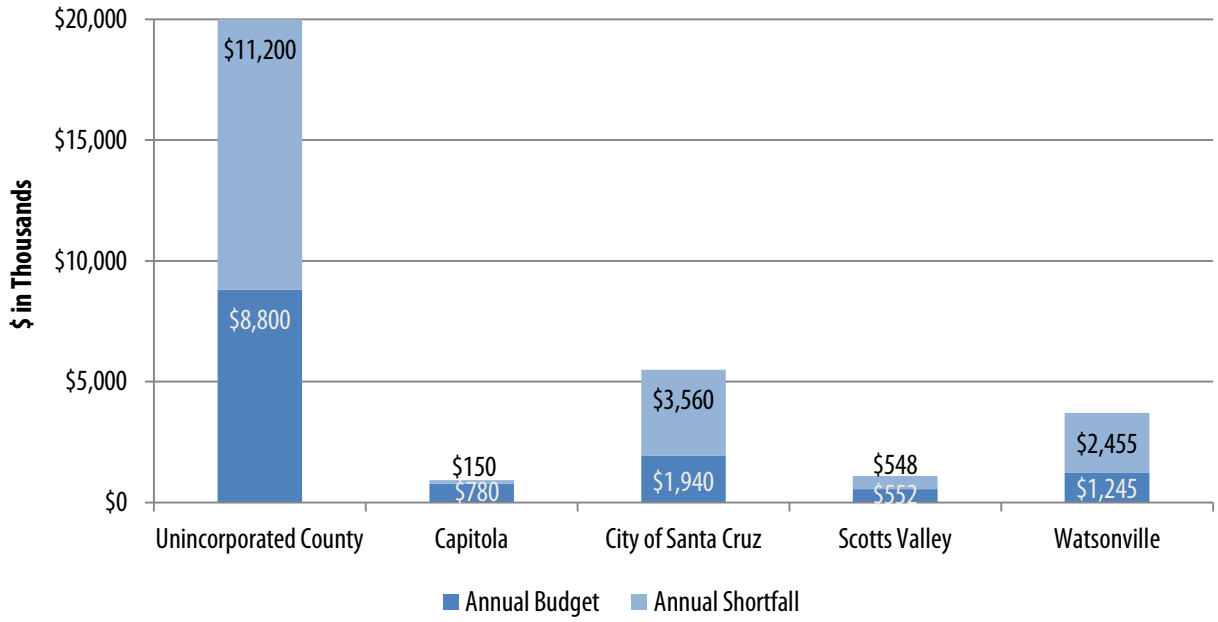


**Figure 1.1 – Local Jurisdiction Annual Pavement Maintenance Budget versus Annual Need**

*Source: California Statewide Local Streets and Roads Needs Assessment (2016) and public works departments*

Caltrans has faced a similar challenge maintaining the state highway system (SHS). As noted in the 10-Year State Highway Operation and Protection Program (SHOPP) Plan,[2] as the roadways and bridges on the SHS age and near the end of their service lives, vehicle and truck traffic have accelerated the deterioration of these assets. Deteriorating highway conditions result in lower operational performance, higher user operating costs (additional vehicle repair costs, increased fuel consumption, increased tire wear, and accelerated vehicle depreciation), and ultimately higher overall long-term costs when needed repairs to the highway are eventually undertaken. In addition, the ever-increasing cost of meeting legal, statutory, and regulatory mandates is a significant contributor to the operating and maintenance needs. Approximately 35% of SB1 revenues are being invested in maintenance and rehabilitation of state highway infrastructure, including pavement, bridges, and culverts.

Maintenance of the transit system is critical to keep existing transit vehicles running and to ensure bus service is reliable. Buses and paratransit vehicles need to be replaced on a regular basis; transit centers require regular upkeep and rehabilitation; bus stops need to be maintained and operations facilities need to be maintained and upgraded. FTA defines the useful life of transit buses as 12 years and 500,000 miles. The Santa Cruz Metropolitan Transit District (METRO) has over 60 fixed-route buses, with an average age of 16 and over 600,000 miles, that need to be replaced or refurbished (2017); and nearly 40 paratransit vans which need to be replaced every 5-10 years.

## Safety


Safety is a significant concern in operating the transportation network. The federal transportation act, Fixing America's Surface Transportation Act (FAST) identifies safety as a national goal area and requires each state to set Safety Performance Management Targets in order to achieve a significant reduction in motorized and non-motorized traffic fatalities and serious injuries on all public roads. The California Department of Transportation (Caltrans) and the Office of Traffic Safety (OTS) has adopted 2018 safety targets in order to meet these requirements. The targets for 2018 include a reduction from 2017 of 7.69% in the number of fatalities and the rate of fatalities (per 100 million VMT), a 1.5% reduction in the number of serious injuries and the rate of serious injuries (per 100 million VMT) and a 10% reduction in the number of non-motorized fatalities and non-motorized severe injuries.[3] These targets are consistent with the California Strategic Highway Safety Plan (SHSP) and the California Strategic Management Plan to reduce fatalities and serious injuries on public roads. The Metropolitan Planning Organizations must also establish targets for these same five measures in coordination with the state.

Primary collision factors as identified by the California Highway Patrol include driving under the influence of alcohol, unsafe speeds, improper turning and more recently distracted driving due to cell phone use. The SHSP has identified various actions that state and local agencies can perform to reduce collisions based on these factors. These include the capital projects on the state highway system funded through the State Highway Operation and Protection Program (SHOPP), added CHP enforcement – especially of vehicle speeds, and local education programs led by a coalition of police departments, health service agencies, and public works.

The safety of those traveling on non-motorized transportation needs to be emphasized. The number of bicyclist and pedestrian injuries and fatalities in our county from 2007 through 2016 are shown in **Figure 1.2**. The California Office of Traffic Safety ranked Santa Cruz County as the worst county in the state for the number of bicyclist collisions in 2014 and 8th highest for the number of pedestrian collisions

### 2016 Collision Facts

California

- 3680 Total Fatalities
- 13,017 Total Severe Injuries
- 985 Bike and Pedestrian Fatalities
- 3500 Bike and Pedestrian Severe Injuries
- 26.9% Bicycle and Pedestrian Fatalities and Severe Injuries

Santa Cruz

- 21 Total Fatalities
- 117 Total Severe Injuries
- 1722 Total Fatalities and Injuries
- 18.1% Pedestrian Fatalities and Severe Injuries
- 21.9% Bicycle Fatalities and Severe Injuries
- 11 Motorist Fatalities
- 7 Pedestrian Fatalities
- 3 Bicyclist Fatalities

based on population.[4] Santa Cruz County has a higher percentage of trips by bicycling and walking than the California state average.[5] Without a better understanding of how many miles people are biking and walking, it is difficult to assess whether the collision rankings for Santa Cruz County are high relative to other regions based on use. Regardless of the rankings, reducing the number of fatalities and injuries for the most vulnerable users of the transportation system is critically important, especially given the multiple benefits of active transportation.

Locally, the Community Traffic Safety Coalition is working to address the traffic safety issues in Santa Cruz County by promoting a "Vision Zero" target for traffic fatalities and serious injuries with an emphasis on non-motorized transportation. The goal of their efforts is for each jurisdiction in Santa Cruz County to adopt a Vision Zero policy and to develop strategies for preventing injuries and deaths among all road users.

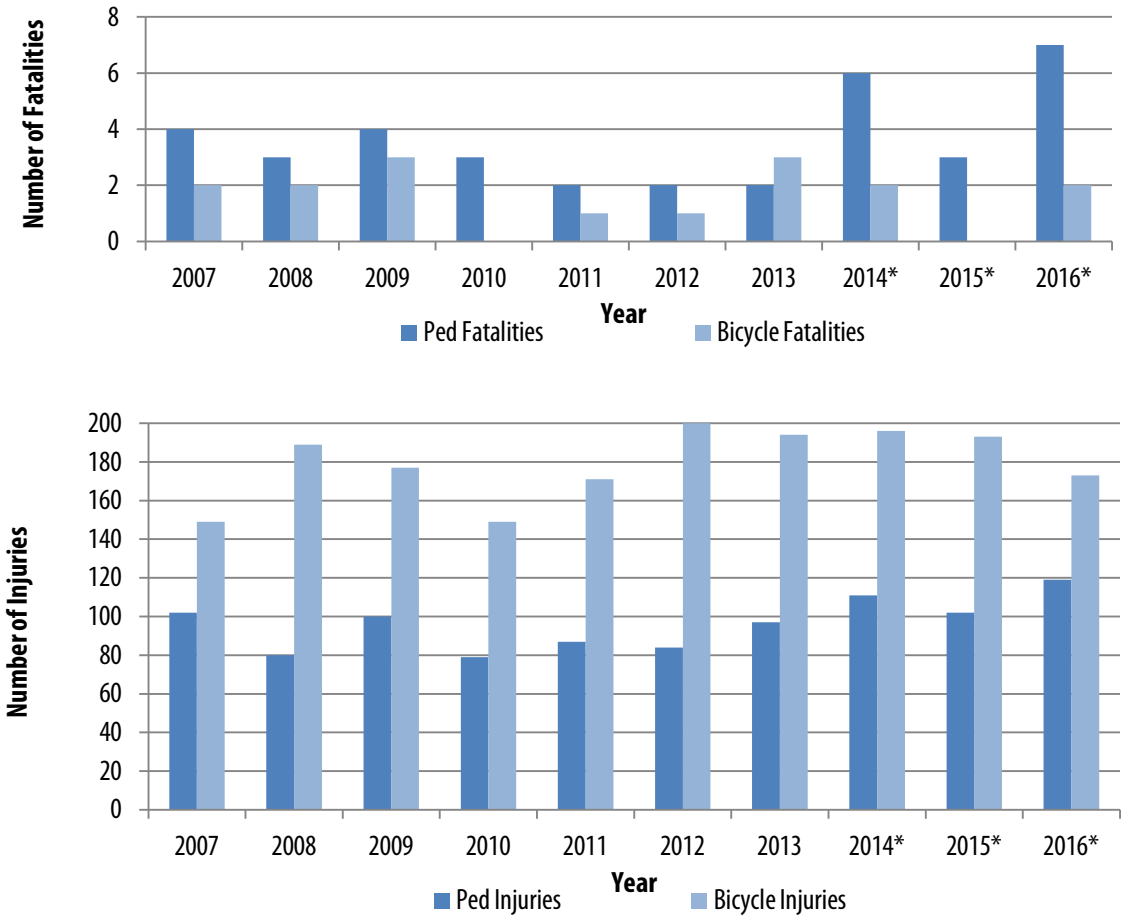


**Figure 1.2 – Santa Cruz County Bicycle and Pedestrian Injuries and Fatalities from 2007 through 2016**

*Source: Statewide Integrated Traffic Records System (SWITRS) via UC Berkeley Transportation Injury Mapping System (TIMS)[6]*

## Congestion

Traffic congestion has become considerably harder to avoid. Congestion nationwide has increased two to threefold over the last 30 years.[7] In Santa Cruz County, segments of Highway 1 and a number of our local roads are notorious for being congested particularly at peak commute hours. Congestion on highways and arterials can encourage cut through auto traffic on neighborhood streets which can degrade the local road system and discourage walking and biking. The economic recession at the end of the last decade reduced congestion slightly in Santa Cruz County[8] but now that the economy has recovered, traffic volumes have increased again to previous highs.


Santa Cruz County residents have suggested many strategies to respond to congestion and reduce how long it takes to get places, but with increased demands on even more limited financial resources, an aging system that is already difficult to maintain, and requirements for reducing greenhouse gas emissions, it is no longer expected that the community can completely eliminate congestion. The region must find ways to operate and utilize our existing highway and transit networks more efficiently and sustainably over the long term.

## Environmental and Public Health

Not only in Santa Cruz County, but all over the world, communities are working to balance the movement of people and goods with environmental and public health priorities. Greenhouse gas emissions have global environmental and public health effects and air pollutants can affect both the environment and public health on a regional scale. The link between limited active transportation, such as biking and walking, and adult and childhood obesity is being strengthened as research and strategies for addressing this concern are being discussed at federal, state and local levels. A sustainable transportation system can play a vital role in the environmental health of Santa Cruz County and the health of its residents.

### Greenhouse Gas Emissions

In 2005, Governor Schwarzenegger issued an Executive Order for the state of California to reduce greenhouse gas emissions from all sectors to 1990 levels by 2020 and to 80% below 1990 levels by 2050. To support these goals, the California legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32) which established a statewide target to reduce greenhouse gas (GHG) levels to 1990 levels by 2020.[9]

**California Global Warming Solutions Act (AB 32)**

- Reduce GHG emissions from all sectors to 1990 levels by 2020

With transportation responsible for approximately 27% of the total GHG emissions nationally[10] and approximately 60% of the total GHG emissions in Santa Cruz County,[11] this bill set in motion a series of events that will change transportation planning for decades to come. A decade later in 2016, California Senate Bill 32 was passed expanding upon AB 32 by requiring the reduction of greenhouse gas emissions by 40% below 1990 levels by 2030.[12]

The three primary approaches for reducing greenhouse gas emissions from transportation are through:

- Improvements in vehicle technology creating greater fuel efficiencies
- Improvements in low carbon fuels
- Reduction in the number of vehicle miles traveled

None of these approaches alone will result in meeting the GHG emission reduction targets. Like other regions, pursuit of all three in combination will be necessary. Clean car standards, such as those set forth in regulations approved by the California Legislature, establish specific requirements for increasing the efficiency of, and reducing greenhouse gas emissions from, new passenger vehicles. The Low Carbon Fuel Standard establishes performance standards for reductions in carbon in transportation fuels that fuel producers and importers must meet each year. These measures are anticipated to result in the greatest reductions statewide.


The third approach, reducing the number of vehicle miles that are traveled (VMT), requires changes to how much we drive. While some reductions in VMT are achievable by changes in individual travel behavior, modifications to land use patterns and the transportation system are also needed to support these changes. Reducing passenger vehicle use is supported through the requirements of the California Sustainable Communities and Climate Protection Act of 2008 (SB 375). The emphasis of this bill is to promote compact, mixed-use commercial and residential infill development and the transportation infrastructure to support it to improve people's ability to meet many of their daily needs through walking, biking and taking transit thereby reducing the per capita number of vehicle miles traveled.

### California Sustainable Communities and Climate Protection Act of 2008 (SB 375)

AMBAG Region Targets (relative to 2005)

- 3% reduction in per capita GHG from passenger vehicle use by 2020
- 6% reduction in per capita GHG from passenger vehicle use by 2035

SB 375 requires each of the state's 18 metropolitan areas to reduce per capita greenhouse gas emissions from cars and light trucks. The law requires that the Association of Monterey Bay Area Governments (AMBAG) as the metropolitan planning organization for the region develop a new element of the Metropolitan Transportation Plan (MTP) called the Sustainable Communities Strategy (SCS). This strategy coordinates land use and transportation

planning to strive to reach the greenhouse gas (GHG) reduction target established for the region by the California Air Resources Board.

For the Monterey Bay region, the California Air Resources Board's proposed new reduction goals (2017) for per capita GHG emissions from passenger vehicle use of 3 percent and 6 percent by 2020 and 2035 respectively relative to 2005 levels. The previous reduction goals for the AMBAG region were 0 percent by 2020 and 5 percent by 2035 for the 2014 MTP/SCS. SB 375 streamlines the California Environmental Quality Act (CEQA) for housing and mixed-use projects that are consistent with the SCS and meet specified criteria, such as proximity to public transportation. The Santa Cruz County 2040 Regional Transportation Plan has been developed to be consistent with the SCS planning effort of the Association of Monterey Bay Area Governments (AMBAG).

Senate Bill 391 required the California Department of Transportation to prepare the 2040 California Transportation Plan[13] (CTP) to demonstrate how GHG emissions can be reduced to 1990 levels by 2020 and 80% below 1990 level by 2050. The CTP provides strategies for GHG reduction and recommendations on how agencies can coordinate planning efforts to achieve critical statewide goals.

## Air Pollutants

Much progress has been made in the reduction of air pollutants from transportation nationwide in the past several decades.[14] Since the U.S. Clean Air Act was enacted in 1970, there has been a downward trend in the six criteria air pollutants (ozone, lead, particulate matter, carbon monoxide, sulfur oxides, and nitrogen oxides). Although substantial improvements have been made, there is still public health concern over the levels of air pollutants from transportation and many regions in California do not meet the National Ambient Air Quality Standards for these pollutants. Respiratory illness, asthma, cardiovascular disease and lung cancer are all associated with increased levels of air pollutants. Santa Cruz County, as part of the North Central Coast Air Basin, has met the National Ambient Air Quality Standards for all criteria pollutants and thus is not subject to Federal Clean Air Act conformity requirements in this plan. Santa Cruz County is on the "cleanest counties" list for low levels of ozone but is also on the list of top 25 counties with the most polluted short term particulate matter (24 hour PM 2.5) as published by the American Lung Association in their State of the Air 2017 report.[15] Particulate matter 2.5 is emitted from fuel vehicles although numerous other sources exist such as dust, sea spray or fires.

## Obesity

A growing body of evidence suggests that the design of our communities influences the likelihood that people will use active transport for their daily travel.[16] The act of walking or biking to school, work, the store, transit or to other places that are a part of our daily routine affect our health. Multiuse trails, bicycle paths, sidewalks, safe street crossings, and availability of public transit are all examples of transportation infrastructure that promote greater physical activity. Combined with increased housing density and mixed land use, people more often choose active forms of transportation which have the potential to lower obesity rates. The relationship between active

transportation and obesity was examined in a study published in 2008 which showed that countries with the highest levels of active transportation had the lowest obesity rates (**Figure 1.3**).[17]

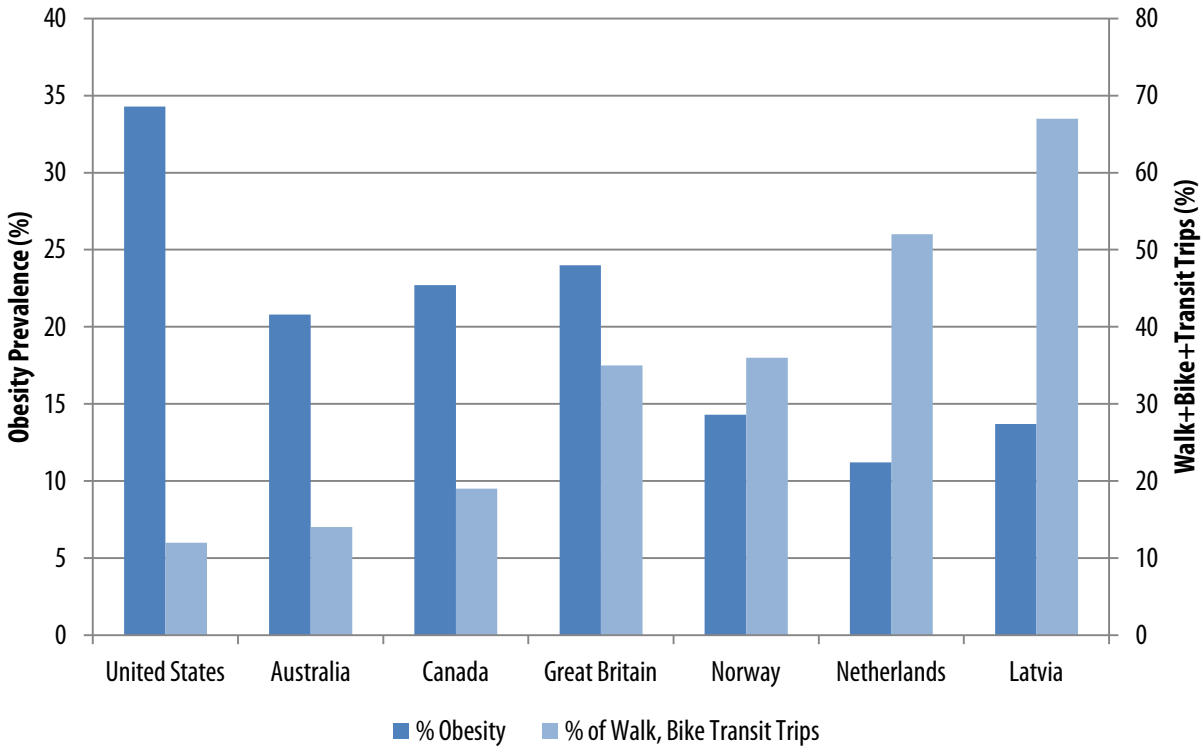


**Figure 1.3 – Obesity Prevalence and Rates of Active Transportation in Countries of Europe, North America, and Australia**

*Source: Journal of Physical Activity and Health*[18]

The percentage of people in the United States that are obese has almost doubled over the last two decades. In 2013-2014, 37.9% of adults and 17.2% of children and adolescents in the United States were obese compared to 22.9% adults and 10.0% children and adolescents in 1990.[19] Assembly Bill 441, championed by local Assemblyman Bill Monning and signed by Governor Brown in September, 2012, acknowledges the link between transportation infrastructure and health of California residents and required the California Transportation Commission to promote health and health equity as part of the updated 2017 Regional Transportation Plan guidelines. The 2040 California Transportation Plan also promotes active transportation through a goal of "fostering livable and healthy communities and promoting social equity."

In Santa Cruz County, the number of adults who are overweight and obese increased from 50% in 2007 to 59% in 2015.[20] In 2003, Santa Cruz County had a higher percentage of overweight children in low income families than more than half of the counties in California.[21] The Community Assessment Project identified obesity as a key issue of concern. In 2015, the percentage of healthy children in Santa Cruz County is greater than the statewide average.[22] Currently, there are a number of efforts in the county that are working to reduce both adult and childhood obesity through promoting a healthy lifestyle that includes bicycling and walking to school, work or other daily needs.

## Economy

Transportation and the economy are linked in a number of ways. Improved access and travel time reliability are likely to positively affect job markets, business delivery markets, freight supply chains, and visitor activity, all allowing businesses in the region to operate more efficiently and maintain their competitiveness. The economic recession that began about 10 years ago was challenging for Santa Cruz County as well as the entire nation. Unemployment rates in Santa Cruz County were up to 12.6% in 2010 from a low of 5.1% in 2000. The economy has mostly recovered with an annual unemployment rate of 6.9% for 2016. But signs of an improved economy include greater use of the transportation system as more people are traveling to work and more goods are being delivered, often resulting in increased levels of congestion and longer travel times. Transportation and the economy are also interlinked as the greater the number of transportation projects implemented, the higher the level of employment there will be for people in this area. Over the next 22 years, this plan proposes to fund $3.7 billion for transportation that will provide direct economic benefits, such as new construction jobs, as well as the indirect benefits of these investments, such as the demand for services and supplies to support the construction projects. And lastly, the economy can also be affected by the percentage of household income that goes towards transportation costs. The smaller the percentage of household costs needed for transportation, the more money there is available to go into the local economy. By reducing the amount spent on fuel through a reduction in vehicle miles traveled, more dollars are on hand for the local economy. The 2040 RTP strives for a more efficient, desirable, and competitive area where businesses can thrive over the long term.

## Energy

Transportation relies heavily on fossil fuels. In 2016, over 71% of petroleum use in the United States was for transportation and over 92% of energy for transportation comes from petroleum.[23] Fossil fuel is a finite commodity and the assumption that fuel will be abundant and inexpensive into the foreseeable future cannot be taken for granted. Global energy demands are predicted to grow by 30% by 2040 as the emerging economies of China, India, Southeast Asia, Africa, and the Middle East continue to increase their use of energy comparable to other major energy consuming nations.[24] Energy efficiency measures based on currently available technological solutions could play a large role in reducing energy needs. Only about a fifth of the energy that is used for transportation is converted into useful energy that moves your vehicle down the road, the rest of the energy is lost to engine and driveline inefficiencies and idling.[25] The potential to improve fuel efficiency with advanced technologies is enormous. Major energy consuming nations have announced new measures for improving energy efficiencies in the automobile including the fuel economy standard of the U.S. but a significant amount of the potential for improved efficiencies still remains untapped.[26]

### 2016 U.S. Energy Facts

- 71% of petroleum used in U.S. is for transportation
- 92% of energy is for transportation in U.S. relies on petroleum

## Transportation Funding


Transportation funding in Santa Cruz County comes from a combination of local, regional, state and federal sources. These include sales taxes, taxes and fees collected at the gasoline pump, vehicle registration fees, and bus rider fares, as described in Chapter 5 and Appendix D.

Measure D, approved by Santa Cruz County voters in 2016, provides approximately $20 million in revenues per year from sales taxes that are dedicated for use on the transportation categories approved by voters and cannot be taken away by the state.

In 2017, the California legislature provided more stable funding for transportation for the first time in nearly 25 years with passage of Senate Bill 1. SB1 was needed because revenues from gasoline taxes have been declining over the last many years for a number of reasons.

- The gas tax had not been indexed to keep up with inflation and thus has lost approximately 38% of its buying power since 1993;[27]
- Cars and trucks overall have become more efficient and use less gasoline than before, thus per gallon gasoline taxes and fees have not matched use of the transportation system;
- State and federal transportation funding distribution formulas favor major metropolitan areas over smaller areas such as Santa Cruz County; and
- As other parts of the state and nation grow at a faster rate than Santa Cruz County, the county's proportional share of limited transportation funds decreases.

## Equity

Transportation planning decisions often have significant equity impacts where equity refers to the fairness with which impacts (benefits and costs) are distributed. Transportation expenditures require significant public resources which can favor some people over others especially given the cost of transportation represents a major share of most household expenditures. The quality of available transportation affects people's economic and social opportunities. Title VI of the federal Civil Rights Act of 1964, Section 11135 of the California Government Code, and Executive Order 12898 on

Environmental Justice require planning agencies to be sensitive to how all residents, particularly disadvantaged communities, may be impacted by possible transportation changes identified in the RTP. The various "costs" associated with transportation include congestion delay, risk of injury, pollution, and undesirable land use impacts. The 2040 RTP has been developed to address the transportation needs of the entire community, and attempts to ensure that no one community enjoys more of the benefits or bears more of the burdens of transportation investments than any other.

## Public Input is a Critical Component


One of the RTC's primary goals is to foster broad public discussion about transportation issues in the community. This serves to deepen public understanding about the complexity of transportation issues and assists the public in providing informed input to the 2040 RTP. Public input is also important in order to ensure that the RTP accurately reflects the transportation issues that are of highest concern to the residents of Santa Cruz County. The RTC works to engage the public in an informed dialogue and to solicit input from a broad cross-section of the population. Public input is solicited at key stages of the plan development through email, newspaper, social media, RTC website and RTC meetings. Notifications about public hearings are provided through similar means. RTC Advisory Committees are kept informed of the development of the RTP and their input is sought at project milestones. . Consistent with federal requirements (23 CFR 450.316 and 23 CFR 450.322) and the Public Participation Plan for the Monterey Bay region, input from the public and various state, federal and local entities is solicited. **Figure 1.4** outlines the required procedures and methods for public participation based on state and federal laws. Refer to **Appendix A** for details on the public participation process including the timeline when input was solicited. See **Appendix B** for the roles and responsibilities of the Regional Transportation Commission and its partner agencies.

### Public Participation Procedures

- Define Purpose & Identify Stakeholders
- Consultation & Coordination with other Agencies
- Consultation with Interested Parties (Boards of Directors and Advisory Committees)
- Public Notice, Public Hearings, Comment Periods (per Brown Act)
- Use of Media & Informational Materials, and Visualization Techniques
- Encourage Bilingual Participation
- Respond to Public Input
- Distribution of Final Documents

**Figure 1.4 – Public Participation Procedures Based on State and Federal Laws**

*Source: AMBAG Public Participation Plan*[28]

## Notes for Chapter 1

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