CHAPTER 3 HIGHLIGHTS

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Sonoma County streets and highways would stretch all the way to New York if laid end-to-end. The system has more road miles than any other Bay Area county and combined has a huge rural network with urban and suburban systems.
In most Bay Area counties, cities own approximately two-thirds of the mileage, and the county only a quarter. In Sonoma County, this formula is reversed, with the County of Sonoma responsible for maintaining over half of the roadway system. There are over 2,700 miles of public roadways countywide, by far the greatest amount among the regions counties. The reconstruction value of this infrastructure is estimated at $3.3 billion in 2016, excluding state highways. The California State Department of Transportation (Caltrans) owns and maintains more than 230 centerline miles of highway, with more than three-quarters of it in the rural portions of the county. The State highways are among the most heavily traveled routes (e.g., Highway 101), and because of this, carry half or more of the daily vehicle miles traveled (VMT) in Sonoma County.

Table 3-1  Sonoma County Centerline Mileage of Public Roads, 2013

<table>
<thead>
<tr>
<th>Owner/Maintenance Responsibility</th>
<th>Miles</th>
<th>Percent</th>
<th>Daily Vehicle Miles Traveled</th>
<th>Percent</th>
</tr>
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<tr>
<td>County of Sonoma</td>
<td>1,397</td>
<td>52</td>
<td>2,407,670</td>
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<td>Cities</td>
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<tr>
<td>Cloverdale</td>
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<td>Cotati</td>
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<td>Petaluma</td>
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<td>6</td>
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<tr>
<td>Rohnert Park</td>
<td>83</td>
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<td>2</td>
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<tr>
<td>Santa Rosa</td>
<td>521</td>
<td>19</td>
<td>1,797,640</td>
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<tr>
<td>Sebastopol</td>
<td>21</td>
<td>1</td>
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<td>Sonoma</td>
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<td>1</td>
<td>102,920</td>
<td>1</td>
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<tr>
<td>Windsor</td>
<td>59</td>
<td>2</td>
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<td>State Highways</td>
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<td>9</td>
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<td>50</td>
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<td>State Parks Department</td>
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</tr>
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<td>1</td>
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<td>0</td>
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<td><strong>Total Maintained Mileage</strong></td>
<td>2,703</td>
<td>100</td>
<td><strong>10,899,390</strong></td>
<td>100</td>
</tr>
</tbody>
</table>

Note: Miles and percentages rounded

2  SCTA calculated the reconstruction value escalated at 3.3% from 2004 estimates.
Highway 101

Highway 101 is the county's principal freeway and the primary north-south trunk highway linking the county to Marin County and San Francisco to the south and Mendocino County to the north. Much of Highway 101 was constructed as a typical rural freeway, at-grade with two lane overpasses that use hook on and off-ramps, in the 1950s and 1960s. Expansion of the freeway to six lanes by converting wide medians to High Occupancy Vehicle (HOV) lanes began over a decade ago, with completion of the first segment in 2003. Highway 101 is now six lanes, including HOV lanes, for the 23 mile stretch between Windsor River Road and Old Redwood Highway in Petaluma. Segments between Highway 116/Lakeville interchange and Petaluma Boulevard South interchange in Petaluma; and the Redwood Landfill interchange and Highway 37 in Marin County are also complete. In 2015, two sections of the highway in southern Sonoma County remain four lanes and do not meet freeway standards (frequently known as the Marin-Sonoma Narrows), but are under construction and estimated to be completed by the end of 2018. There are plans for widening the remainder of Highway 101 in phases; however, the gaps are currently

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3 'Hook ramps' are ramps that exit (or enter) the freeway from a paralleling street, using a ramp curved at (approximately) a 90-degree angle. Because hook ramps are often forced into tight situations, they frequently have less than desirable geometrics.

4 This section, from north of Atherton Avenue in Novato to south of the Petaluma Boulevard south ramps, is classified as an expressway. It lacks access control, i.e., intersections and private property driveways access directly onto 101 at several locations.
unfunded (see Figure 3-2). The four-lane sections of Highway 101 correspond with locations where bottlenecks frequently occur.

**Figure 3-2** Highway 101 Projects Map
Highway 37

Highway 37 constitutes a major regional east-west vehicular transportation corridor in the northern Bay, connecting Highway 80 and Highway 101. The portion of Highway 37 near its intersection with Highway 121, where the four lane expressway ends, was the fourth worst congested area in Sonoma County in 2007.

This corridor is also under threat from sea level rise as it is one of the lowest-lying highways, in terms of elevation relative to mean higher high water, in California. Highway 37 was considered by Caltrans to be the best case study with which to develop an adaptive planning process to deal with flooding from sea level rise. As such, it is currently being studied to understand how adaptive transportation planning could address issues related to climate change and sea level rise. The projected rise of 1 to 1.7 meters in the next 90 years poses a potential threat to the Highway. Because of its position upon a berm passing through existing marshes and marshes under restoration, Highway 37 also poses a threat to the ability of nearby coastal-marsh systems to adapt. These marshes are nationally important as habitat for endangered species, so the role of the highway in their adaptation must be considered in corridor planning.\(^5\)

Figure 3-3  Highway 37 Map

Highway 12

State Highway 12 links Sebastopol, Santa Rosa, the Sonoma Valley, and Napa County. It also provides an important connection to the Interstate 80 corridor, including a link for interstate trucking. Within Santa Rosa, between Fulton Road on the west to Farmers Lane on the east, State Highway 12 is developed to freeway standards. The two lane sections in Sebastopol and in the Sonoma Valley are severely congested on both weekdays and weekends. The congestion is particularly bad during summer months, because of a variety of uses (wineries, special events, the Sonoma Raceway, and so on) that attract large numbers of day and overnight visitors. Although Arnold Drive provides an alternative route for much of the Sonoma Valley, most visitor traffic tends to stay on the state highway. State Highway 12 is also congested at its western terminus in Sebastopol, where it joins State Highway 116.

Condition of Roads

Physically, Sonoma County’s unincorporated and municipal road system suffers from a number of problems:

- Restricted maintenance budgets over the past 25 years have resulted in poor pavement conditions. For example, Sonoma County’s roads average a Pavement Condition Index (PCI) of 47 in unincorporated areas, whereas a PCI of 80 is considered optimum. This is the lowest of any county in the Bay Area, and the County has one of the largest deferred maintenance backlogs in the Bay Area.

- Many roads, especially in rural areas or older urban areas, lack standard shoulders or pedestrian walking areas to enhance the safety and pleasure of walking and cycling.

- Roads (including state highways and freeways) have been subject to serious flooding problems in the past 20 years. Some bridges are obsolete and do not meet 100 or even 50 year flood levels.

- Portions of some roads do not meet current safe sight stopping distance standards.

- Many city streets become congested during peak commute times, school bell times, and special events.

Recent pavement condition data compiled by MTC is shown by road type for each Sonoma County jurisdiction in Figure 3-4. This figure illustrates how local roads are generally in worst condition than collectors and arterials, especially in rural areas. A critical point is that although pavements deteriorate only 40 percent in quality in the first 75 percent of their life, this deterioration subsequently accelerates rapidly, resulting in another 40 percent drop in quality in the next 12 percent of life. A single dollar spent on renovation when the pavement is still in ‘fair’ condition can save five dollars in maintenance cost over spending maintenance funds when the pavement has already deteriorated to ‘very poor’ quality.

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6 Metropolitan Transportation Commission, Pavement Management Program (2013). For up to date information on PCI see Vital Signs at http://www.vitalsigns.mtc.ca.gov/street-pavement-condition.
Figure 3-4  Pavement Condition Index by Road Type

Figure 3-5  Pavement Condition Index (PCI) Description

Pavement allowed to deteriorate below a PCI of 55 (65 for PCC) will require costly reconstruction to restore it to operational condition.

Source: Arizona Department of Transportation
Congestion

Congestion on freeways and local roads fluctuates over time due to changes in the economy, infrastructure, and travel patterns. While specific locations on highways and arterials regularly become congested during peak commute times, weekend travel also causes delay in several locations throughout the County.

Spotlight — Measuring Transportation Impacts: Vehicle Miles Traveled vs. Level of Service

On September 27, 2013, California Governor Brown signed Senate Bill 743, which requires that the Governor’s Office of Planning and Research (OPR) amend California Environmental Quality Act (CEQA) guidelines for analyzing transportation impacts. Traditionally, environmental review of transportation impacts has focused on vehicle delay occurring at intersections or on roadway segments. This delay is usually measured using a metric called level of service (LOS). Mitigation for degraded LOS is often focused on increasing roadway capacity. Increased capacity may encourage auto use and increase emissions from vehicles, and discourage travel using other transportation modes such as transit, walking and biking. SB 743 seeks to reorient the focus of transportation analysis away from driver delay to a way of analyzing transportation impacts that support statewide goals related to infill development, public health, creating multimodal transportation networks, and reducing greenhouse gas emissions.

Current Freeway Congestion Locations

Caltrans freeway congestion monitoring data indicates that in 2014 roughly two percent of freeway travel throughout the state occurred in congested conditions. About five percent of regional freeway travel in the San Francisco Bay Area occurs in congested conditions. Congested freeway travel in Sonoma County was higher than the regional average from 2004–2007, and dropped below the regional average from 2008–2014. The economic recession of last decade and improvements to the Highway 101 corridor have contributed to improvements in freeway congestion since 2008. However, the duration of congestion—from the time it starts until the time it ends—continues to increase. Some segments of Highway 101 now begin experiencing congestion in the early- to mid-afternoon. Southbound Highway 101 in south Petaluma becomes congested by 5:30 AM. Freeway congestion is defined as conditions where vehicle speeds regularly drop below 35 mph for at least 15 minutes each weekday.

Figure 3-6  Sonoma County and Bay Area Congested Travel on Freeways

Source: MTC Vital Signs

**Weekend Traffic Congestion**

State Highway 116 connects the coastal city of Jenner (at Highway 1), Forestville, Sebastopol, Petaluma, and the Sonoma Valley and is a two-lane road with varying widths. Congestion is most severe on weekends due to recreational traffic, particularly in Guerneville and Sebastopol. Other State highways with substantial weekend traffic are State Highway 121 (between Highway 37 and the Napa County line), Highway 37, and Highway 1. There are relatively few quantitative measures available for weekend traffic congestion.

Highway 1 north of Jenner experiences heavy weekend traffic as a result of steep, winding grades; the presence of heavy vehicles (including RVs); presence of coastal development (e.g., Sea Ranch, Gualala) and tourist attractions (e.g., beaches). Many “sightseeing” trips use this scenic road. River Road, Alexander Valley Road, Dutcher Creek Road, Bohemian Highway, Westside Road, Fort Ross Road, and Lakeville Road also experience varying degrees of weekend congestion from visitor traffic, sometimes related to holiday or seasonal periods. Some shopping areas, e.g., Santa Rosa Avenue, experience heavy weekend traffic due to a large number of retail centers concentrated in a fairly small area.

Petrified Forest Road suffers from some weekend delays, because it is two lanes with few passing opportunities, and there are a moderate number of heavy vehicles that slow other vehicles on the mountainous grades. This route is a popular connection between northern Napa County and Sonoma County.

**Weekday Traffic Congestion on Arterials**

Main Street, in the unincorporated community of Penngrove, suffers considerable peak period weekday traffic congestion due to drivers avoiding congestion on Highway 101, and new development in northeast Petaluma and east Rohnert Park. Arnold Drive, River Road, Old Redwood Highway, Bodega Highway, Lakeville Highway, and Petaluma Hill Road have heavy weekday traffic. Todd Road, Llano Road, Crane Canyon Road experience congested conditions on weekdays and many roads within incorporated cities also experience severe congestion. While some other local roads may need safety or physical improvements, they have adequate levels of service.

**Freeway Management**

Key systems management features that have been implemented in Sonoma County are Freeway Service Patrol and on-ramp metering. The Bay Area Freeway Service Patrol (FSP) is a congestion management program implemented by the Metropolitan Transportation Commission Service Authority for Freeways and Expressways (MTC SAFE), Caltrans, and the California Highway Patrol (CHP). FSP drivers rove the freeways during hours of peak congestion, providing quick and efficient response to incidents. Every year, FSP trucks save Bay Area motorists nearly four million hours of delay time, reduce fuel use by nearly two million gallons, and reduce tailpipe emissions by several hundred tons.

In 2014, on-ramp metering lights were activated at 56 Sonoma County locations along Highway 101 from Old Redwood Highway in Petaluma to Arata Lane in Windsor. Ramp metering lights help ensure freeways are able to carry all the traffic they have capacity for by managing the rate at which vehicles enter the freeway through the use of traffic signals. Traffic at metered locations is monitored by Caltrans to optimize the operations and function of the system. Many of the on-ramps in Sonoma County have a carpool lane marked with a diamond to promote high occupancy vehicles (HOV). A technical report analyzing conditions before and after implementation of the on-ramp metering lights found that travel times on Highway 101 decreased for all time periods surveyed. These decreased travel times were realized despite traffic volume growth over the two year period and the opening of the Graton Resort and Casino in Rohnert Park. All ramp metering in the corridor will be activated by 2020.

**Arterial Management and Intelligent Transportation Systems**

Many traffic signals today are activated by the presence of traffic and so can respond to changing traffic conditions at individual intersections. Sometimes signals are also coordinated or synchronized to improve traffic flow and

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reduce delay. Arterial management takes this a step further, and attempts to look at all signals in a corridor and provide flexible and adaptive traffic controls best suited to the traffic conditions on a minute-by-minute basis. The intent is to reduce delays and the number of stops experienced by motorists.

Traffic signal management is the proactive operation of traffic signals to achieve traffic control objectives and improve efficiency. Through the use of vehicle detection technology, traffic signal management strategies have been implemented in several locations throughout Sonoma County to improve the flow of traffic on arterial roadways and provide signal priority for transit vehicles.

These strategies can have a substantial impact on reducing congestion and corresponding emissions, and improving on-time transit performance. Signal timing for arterial management is often used to sync signals during peak commute hours to optimize directional traffic flow. The City of Petaluma has recently coordinated signal timing during peak commute hours at several intersections on major arterials throughout the City to reduce congestion and corresponding emissions. Signal timing technology can also be used to detect vehicles in left turn lanes to trigger a left turn signal to avoid running the signal when no vehicles are traveling in that direction. The Town of Windsor is converting several signals from protective left turn phasing to protective-permissive left turn phasing to reduce average delay.

Transit signal priority (TSP) uses technology to detect approaching buses and allow a phase advantage, where a green light may be extended for around 10 seconds to allow an approaching bus to make it through the intersection. In addition, TSP can shorten a red light by around 10 seconds for a bus that is stopped behind the light. The City of Petaluma has replaced older signal preemption equipment with state-of-the-art GPS enabled detection equipment at several key intersections. Petaluma’s TSP equipment communicates with both Petaluma Transit buses and City of Petaluma Fire Department response vehicles to enable reduced transit route cycle times and improve safety.

BICYCLE AND PEDESTRIAN SYSTEM

Bicycling and walking are key components of vibrant, livable, healthy communities, and are an integral part of a complete transportation system. These active transportation modes support all of the CTP Goals (see Chapter 4) by assisting in reducing traffic congestion, greenhouse gas emissions, air and noise pollution, and energy consumption, while also helping to improve the health and quality of life of residents and communities. Bicycling and walking are zero emissions travel options and are particularly effective in reducing greenhouse gases when replacing short car trips by eliminating the “cold start” vehicle emissions produced by gasoline-powered motorized vehicles. For every 1 mile pedaled rather than driven, nearly 1 pound of carbon dioxide (CO2) is saved. Bicycling and walking are low cost and provide the health benefits of physical activity, which are well documented and numerous.

Spotlight — Safety and Education Programs

Safety has a substantial influence on the decision to walk or ride a bike. Safe and complete bicycle and pedestrian facilities, as well as education and awareness, reduce the potential for injuries. A detailed discussion regarding measuring and reducing traffic injuries in Sonoma County is provided in Chapter 4.

Safety and education programs, such as those sponsored by the Sonoma County Bicycle Coalition, and law enforcement efforts aimed at correcting motorist, pedestrian and bicyclist behavior, are important supports to maintaining safety for bicyclists and pedestrians. Other programs such as bicycle fairs, events, races, Bike to Work Day, and the Center for Climate Protection’s ECO2school program promote biking for commute and recreation purposes as well as safety and education. Employer incentive programs also provide support for electing bicycling or walking as an alternative to driving.
**Spotlight — Sonoma County Safe Streets Coalition**

The Sonoma County Safe Streets Coalition task force was formed by Sonoma County Supervisor Shirlee Zane in 2012. The Coalition brings together relevant public and nonprofit organizations to collaborate on improving the safety of pedestrians and bicyclists. Several successful public service campaigns have developed through this Coalition.

**Spotlight — Safe Routes to School**

SCTA supports the Countywide Safe Routes to School Program and Bike to Work Day initiatives through Measure M funding. The Safe Routes to School Program also receives State and Federal funding through Caltrans. Facilitating the ability of school children to walk and bicycle to school is important as a means of increasing childhood health, as well as fostering behaviors that curb local traffic congestion and vehicle emissions. Over the past forty years, the percentage of children walking and biking to school has dwindled dramatically from about 50% of all students in 1969 to just 13% in 2009. Parents cite long distances as the most common barrier. Even though fewer children live within a mile of school (41% in 1969, 31% in 2009), of those who live within one mile of school, 88% walked or biked to school in 1969 versus only 38% in 2009.

The International Walk and Roll to School Day is included as an event in the Countywide Safe Routes to Schools Program, which encourages and educates students to safely walk and bike to and from school, and educate parents, school officials, and staff about the benefits of walking and biking to school. The number of students participating in International Walk and Roll to School Day has increased nearly 20%, from 2,139 in 2007 to 11,026 in 2013.

With its moderate climate, diverse scenic vistas, and swaths of gentle terrain, Sonoma County is in general an ideal place to bicycle and walk. Additionally, while each of Sonoma County’s cities have unique constraints, all of the cities are of such a scale as to make many desired destinations within reasonable distances for bicyclist and/or pedestrian access. Likewise the distances between many cities are feasible for bicycle commute and recreational trips. SCTA envisions a broad network of safe routes that will connect all desired destinations. However, the bicycle and pedestrian infrastructure is currently incomplete and relatively few people use bicycling or walking as their primary mode of transportation. In 2010, only eight percent of all trips in Sonoma County were taken bicycle or walking. Although nearly all trips begin and end as pedestrian trips, the mode used for the majority of a trip is used to calculate mode share.

While many challenges for both pedestrians and bicyclists exist throughout the County, much has been done to improve facilities and encourage walking and bicycling. During the last several decades, and increasingly in recent years, interest has grown in creating a transportation system that fully integrates bicycling and walking. “Complete street” policies now require that transportation agencies routinely accommodate safe access for all users when investing in road improvements, i.e., designing and operating the right-of-way for pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Patterns for new development is shifting toward more walkable, bikeable, and transit oriented communities focused in Planned Development Areas (PDA). Infill development and complete networks of paths, sidewalks, and bicycle facilities reduce distances between destinations and provide safe and accessible routes for bikes and pedestrians. While much remains to be done, steady progress has been made by Sonoma County and its cities to upgrade and add facilities that foster bicycle and pedestrian travel. Class I pathways, Class II striped bike lanes, Class III signed bicycle routes, multi-use trails, pathways and sidewalks have been added in rural, suburban and urban settings.
The Pedestrian System

Across the County, common patterns are evident regarding the pedestrian system. Historic downtown core areas developed before the automobile era retain much of their walkability, where a variety of destinations are reachable by foot from residences. Sonoma, Sebastopol, Petaluma, Cotati, Santa Rosa, Windsor, Healdsburg and Cloverdale all have such long-established central areas. For the most part sidewalks have been in place for many decades in these areas. Rohnert Park was developed after automobile ownership became common and its neighborhoods provide pedestrian access to schools and parks but more limited access to other destinations.

Sidewalks are also in place in almost all of the most recently developed residential, civic, and business developments. System gaps are frequently found in locations between the older and newer development. Often closures of such gaps have needed to await development, or re-development, of adjacent parcels, at which time sidewalks are made a permit condition. Discontinuous sidewalk systems are also prevalent in the County’s unincorporated towns. Additionally, most rural roads lack sidewalks and only some have a shoulder area to walk on.

The most daunting barriers to safe pedestrian travel are freeways, particularly Highway 101, and high-speed and/or multiple lane arterials. Traversing on-ramps and off-ramps, and traveling under or over freeways on foot can be an unpleasant experience for many. Likewise, crossing high-speed and/or multiple-lane principal arterials is a challenge many would-be pedestrians find too difficult. Various approaches are being used to address this issue by redesigning roadway facilities. On a number of streets bulb-outs have been added to slow traffic and shorten the distances pedestrians must travel from curb to curb. Other roads have been redesigned to calm traffic speeds and add human scale to roadways and crossings. Various signal and warning devices have been implemented, and strategies including medians, and pavement treatments have been employed. In the case of Highway 101, its current re-construction has created opportunities to upgrade pedestrian accommodations.

Pedestrian connectivity to public transit can sometimes be a challenge. Convenient access to bus stops, bus shelters, and complementary amenities such as seating and lighting encourage use of public transit and add to pedestrian comfort and safety.

People who use wheel chairs are by definition also pedestrians. As new pedestrian facilities are built and older ones are upgraded, they must be constructed to be accessible per the regulations of the Americans with Disabilities Act of 1990. Curb ramps and accessible user devices are some of the accommodations routinely installed.

While reasonable walking distances may vary from person to person, it is clear is that people will walk more if they feel safe and comfortable, and can experience interesting and pleasant surroundings. A comprehensive pedestrian system is comprised of more than just walking surfaces. Many cities have added amenities such as landscaping, tree plantings, lighting and street furniture to create pedestrian friendly environments. Design standards are being used to create pedestrian areas that are welcoming and feel safe. Land-use is critical to the viability of a pedestrian system, with pedestrian facilities designed to provide access to attractors like schools, offices, eating establishments, retail sites, and transit routes.

The Bicycle System

The countywide bicycle system includes, but is not limited to, the following facility types: Class I, Class II, Class III, Class IV, bicycle boulevards, multi-use trails, traffic calming, signage, bicycle-activated signal detection, and bicycle parking. See Appendix 6.

- Class I Bikeway (Bike Path) provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow by motorists minimized (such as the Joe Rodota Trail);
- Class II Bikeway (Bike Lane) provides a striped lane for one-way bicycle travel on a street or highway, with the lane designated with striping and signage and/or pavement markings;
• Class III Bikeway (Bike Route) provides for shared use with pedestrian or motor vehicle traffic with the route indicated just with signage; and a

• Class IV Bikeway (Cycle Track or Protected Bikeway) provides an on-street bike lane that is buffered from traffic using a physical barrier, such as curbs, planters, or parked cars.

• Additionally there are unpaved recreational trails.

A range of users must be considered in building a bicycle system. Some experienced riders might prefer the shortest and fastest on-road route regardless of the type of facility; however, most riders will likely prefer a Class I separated bicycle facility or a Class II bike lane. Bicycle riders of all ages and abilities, and those who are riding for both recreation and transportation or commuting, must be considered in system implementation.

In 2008, Sonoma County had more than 241 miles of built bicycle infrastructure, of which the vast majority were in the form of bike lanes on street networks. Since then, the bicycle network has grown by approximately 24 percent, with over 77 miles of bicycle infrastructure have been built, including more than 10 miles of Class I facilities, 46 miles of Class II facilities, and 19 miles of Class III facilities.

Class II facilities have been and continue to be the dominant form of bicycle infrastructure built, with 61% of the overall bicycle infrastructure built since 2008 throughout the entire Sonoma County area. Class I and Class III bike-ways were approximately 14% and 26%, respectively, of the total miles built. The table below includes the total miles of the existing bicycle system by Class for each jurisdiction.

### Table 3-2  Total Miles of Existing Bicycle Facilities by Class

<table>
<thead>
<tr>
<th>Class</th>
<th>I</th>
<th></th>
<th>II</th>
<th></th>
<th>III</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>Proposed</td>
<td>Existing</td>
<td>Proposed</td>
<td>Existing</td>
<td>Proposed</td>
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<td>13.0</td>
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<td>20.3</td>
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<td>7.9</td>
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<td>2.4</td>
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<td>4.4</td>
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<td>4.8</td>
<td>2.4</td>
<td>3.4</td>
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<tr>
<td><strong>Total by Class</strong></td>
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<td>275.7</td>
<td>141.9</td>
<td>511.8</td>
<td>39.8</td>
<td>344.9</td>
</tr>
<tr>
<td><strong>Total Existing Facilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>257.7</td>
</tr>
<tr>
<td><strong>Total Proposed Facilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1132.3</td>
</tr>
</tbody>
</table>

Source: Countywide Bicycle and Pedestrian Master Plan, 2014.

### Class 1 Facilities

Across the County, opportunities exist to use public rights of way to establish off-road Class I trails. Many Class I facilities have been, or will be, constructed along creek alignments owned by cities or the County (e.g., Sonoma County Water Agency) and along prior or existing railroad rights-of-way. Additional opportunities might exist along pipeline and other utility easements. An extensive Class I facility is being implemented along the Sonoma Marin Area Rail Transit (SMART) railway, which is discussed in more detail below.
The major existing Class I facility in the County is the Joe Rodota Trail (3 miles) leading east to west from Santa Rosa to Sebastopol. It links to the West County Trail, a Class I facility, which currently extends to Forestville (with County plans to extend it further along Mirabel Road and to the Prince Memorial Greenway, which continues into downtown Santa Rosa). Traversing scenic areas of the West County, mostly in alignments that were formerly rail lines, these two multi-use trails are utilized by commuters and recreational users of all ages. The alignment of the proposed SMART Pathway would intersect the Joe Rodota Trail. In addition to the facilities utilizing public rights-of-way, others have been, and will be, constructed as part of private development.

**On-Road Facilities**

On-road bicycle facilities include bike lanes (Class II) and shared lane facilities or bike routes (Class III). There are currently more than 230 miles of Class II and II facilities throughout the County. Class IV bikeways, or cycle tracks, are a new classification adopted by Caltrans in 2015. While cycle tracks have not yet been implemented in Sonoma County, a recent study in the United States showed that bicyclists feel safer using cycle tracks and that they increase bicycling.9 The existing roadway system presents many barriers and safety concerns for bicyclists. Many roads are narrow, not having been constructed to accommodate bicycle and foot traffic, and current traffic volumes. In many rural areas, shoulder widths are sub-standard and along some roadways virtually non-existent. Additionally, freeways and high-speed and multiple-lane arterials present challenges for the on-the-road bicyclist. These inadequacies of older roadways are being addressed incrementally. Roads are sometimes widened to include room for bicyclists or redesigned, often with “road diets” or other safety measures, to create environments that are friendlier to bicyclists. Gap closures, particularly those on facilities with high demand and those that are part of the regional network, are in general given priority for improvement.

Implementations can be costly and are sometimes controversial, especially when accommodations may mean the need to acquire additional right-of-way, engineer and construct drainage, culverts and bridges; relocate utilities; remove parking; and take projects through the public review, approval and environmental clearance processes. The range of objectives, which at times can compete, make solutions difficult to devise. The needs of pedestrians, bicyclists, motorists, people who use wheelchairs and other mobility aids, transit and emergency vehicle operators all must be considered in designing new facilities and retrofitting older ones.

Maintenance of existing non-motorized facilities is also crucial. Roadside sweeping and debris removal, pothole repair, tree trimming, and the monitoring and maintenance of roadway shoulders, sidewalks, trails and signs are all examples of essential maintenance program tasks.

As with the pedestrian system, the bicycle system includes more than bicycling surfaces. Bicyclists need an integrated support system of helpful signage, signal detectors, bike racks for temporary parking at destinations, secure longer-term parking/storage at work and school sites, and facilities that include restrooms, showers and clothes storage. In many cases, the lack of such support facilities presents a major deterrent for bicycle use.

**Proposed Physical Improvements**

Sonoma County and all its cities have engaged in recent planning for bicycle and pedestrian improvements through the 2014 update of the Countywide Bicycle and Pedestrian Master Plan (Countywide BPMP). The Countywide BPMP includes approximately 278 miles of Class I facilities, 511 miles of Class II facilities, and 269 miles of Class III facilities, with a total of 1,058 miles of bikeways connecting all of the jurisdictions. A complete list of proposed projects by jurisdiction can be found in Appendix B of the Countywide BPMP. Projects that have been identified as priorities for completion within the next 10 years are highlighted in the Countywide BPMP project list. Table 3-2 above provides the number of miles of proposed bicycle facilities by type (Class I, II or III) per entity. With Sonoma County’s expanse and volume of road miles, it is not surprising that the County’s share of proposed miles of improvements are high compared to the cities.

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In addition to multi-use Class I pathways, pedestrian only improvements are proposed in all of the jurisdictions. A complete list of proposed pedestrian projects can be found in Appendix B of the Countywide BPMP. Sidewalk gap closure projects and sub-standard crossings in locations where there is high demand are a high priority for improvement. Creating environments that are safe and attractive for pedestrians important in many areas.

Large capital bicycle and pedestrian projects (over $1M) and projects of countywide significance are highlighted in this plan. These projects are summarized in Table 3-3 and detailed in Appendix 10A. These 116 large capital/countywide significance bicycle and pedestrian projects combined will cost a total of $479.41M to complete. Many of these projects are currently unfunded. It is apparent that there is significant work to be done and funding to be acquired to complete the major projects that make up the planned bicycle and pedestrian system.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Number of Projects</th>
<th>Cost (in $M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloverdale</td>
<td>4</td>
<td>$5.29</td>
</tr>
<tr>
<td>Cotati</td>
<td>2</td>
<td>$1.58</td>
</tr>
<tr>
<td>Healdsburg</td>
<td>2</td>
<td>$8.59</td>
</tr>
<tr>
<td>Petaluma</td>
<td>8</td>
<td>$35.85</td>
</tr>
<tr>
<td>Rohnert Park</td>
<td>10</td>
<td>$23.31</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>13</td>
<td>$49.60</td>
</tr>
<tr>
<td>SCTA*</td>
<td>1</td>
<td>$0.00</td>
</tr>
<tr>
<td>Sebastopol</td>
<td>2</td>
<td>$0.69</td>
</tr>
<tr>
<td>SMART</td>
<td>1</td>
<td>$108.05</td>
</tr>
<tr>
<td>Sonoma County</td>
<td>65</td>
<td>$213.40</td>
</tr>
<tr>
<td>Windsor</td>
<td>8</td>
<td>$32.04</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>116</strong></td>
<td><strong>$479.41</strong></td>
</tr>
</tbody>
</table>

*Project cost is included in Highway 101 widening project.

**Connectivity to Transit**

Convenient bicycle and pedestrian connections to public transit are vital components of the bicycle and pedestrian network. Transit has the potential to extend trip ranges for bicyclists and pedestrians beyond comfortable walking or biking distances or during extreme weather. Likewise, bicycling and walking provide essential “last mile” connections to and from transit. Completion of the bicycle and pedestrian network would fill gaps in the current connections to transit. Sufficient bicycle carrying capacity on buses, and bicycle racks at transit stops, are also needed to make such trips a reliable option. Currently all of the public transit operators are equipped to carry bicycles and some bus stops have bicycle racks.
**Spotlight — Sonoma Marin Area Rail Transit (SMART) Pathway**

Operation of the SMART train will provide new opportunities for pedestrians and bicyclists to connect to public transit. The SMART Pathway paralleling the railroad alignment will provide bicycle and pedestrian access to the train stations, as well as independent travel north to south across the Sonoma and Marin counties (see Figure 3-8). The SMART Pathway is a planned multi-use/Class I trail along the 70-mile SMART rail project and former Northwestern Pacific Railroad (NWPR) corridor. This facility will eventually extend from Cloverdale to the ferry terminal in Larkspur in Marin County. The SMART Pathway will provide access to all fifteen SMART stations and serve both commuter and recreational bicyclists and pedestrians; joggers and other users.

SMART’s environmental studies predict that 7,000 to 10,000 people will use the Pathway in a day. Several sections of the Pathway are now complete and several others are currently in the construction or design phase. While there has been progress on the Pathway, many segments remain unfunded and complex environmental, permitting, and design issues have delayed progress of others. Local cities and counties are tasked with completing segments that are on city streets and that are part of local bicycle and pedestrian master plans. In Healdsburg, Windsor and Santa Rosa, Class I facilities have already been constructed along parts of this right-of-way. All jurisdictions through which this rail corridor passes have prioritized this multi-use pathway in their plans.

**Other Bicycle-supportive Programs**

In addition to bicycle lanes and paths, projects and plans are underway that support bicycling as a means of transportation and recreation. Many cities are implementing comprehensive bicycle signage programs to enhance the safety and navigability of existing facilities. Bicycle parking programs aim to provide adequate bicycle parking amenities to meet the needs of existing and future bicyclists and enhance the overall bicycle system.

Bicycle sharing programs are emerging in several cities around the world and in the Bay Area. These systems provide access to short-term bicycle rentals in public locations. Bike share is often used for short trips between key destinations, trips between transit hubs and work or school, tourism and recreation. SCTA is conducting a feasibility study for bike share systems in Sonoma County. The study will provide recommendations for bike share sites, operating and funding models.

**BUS TRANSIT SERVICES**

Several bus operators provide service within Sonoma County, each covering specific communities and trips. Sonoma County Transit operates inter-city and local routes throughout the County, including all cities along the Highway 101 corridor, the Sonoma Valley to the east, and the City of Sebastopol and Russian River areas to the west. Santa Rosa CityBus (CityBus) and Petaluma Transit, the two largest cities in the County, provide local transit service within their communities. Golden Gate Transit offers regional transit service and commuter routes to and from Marin County and San Francisco. The Mendocino Transit Authority provides inter-county service between Santa Rosa and Ukiah in Mendocino County, and to several communities along the Sonoma/Mendocino Coast. Napa VINE has indicated interest in serving directly to the SMART system in the future and Marin Transit provides dial-a-ride services from West Marin into Petaluma.

**Table 3-4 Sonoma County Bus Transit Services in 2015**

<table>
<thead>
<tr>
<th>Operator</th>
<th>Number of Routes</th>
<th>Number of Buses in Fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golden Gate Transit</td>
<td>6</td>
<td>180*</td>
</tr>
<tr>
<td>Petaluma Transit</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Santa Rosa CityBus</td>
<td>17</td>
<td>39</td>
</tr>
<tr>
<td>Sonoma County Transit</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td>Mendocino Transit Authority</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

* Includes Golden Gate Transit buses that do not serve Sonoma County routes
There are several transit hubs in the County providing connection points for the transit services. The Santa Rosa Downtown Transit Mall is the largest and is estimated to serve 30 routes and over 10,000 passengers daily. The Santa Rosa Transit Mall feeds into the Santa Rosa Avenue/Mendocino Avenue corridor, which has the highest ridership in the County, providing roughly 7,000 trips a day, between CityBus, Sonoma County Transit and Golden Gate Transit.

Additional transit hubs have been constructed at or adjacent to several of the future SMART stations. The existing facilities are currently functioning as bus transfer hubs and will eventually be served by SMART. Some of the facilities also serve as park-and-ride lots. These transit hubs include:

- Petaluma Transit Mall — Transfer hub for Petaluma Transit, Sonoma County Transit, and Golden Gate Transit. The downtown Petaluma SMART station is located just east of the Transit Mall. Completed in 2005.
- Cotati Depot — Transfer hub for Sonoma County Transit and park and ride lot. Completed in 2015.
- Windsor Depot — Transfer hub for Sonoma County Transit (including feeder bus routes to SMART). Completed in 2007.
- Healdsburg Historic Depot — Transfer hub for Sonoma County Transit (including feeder bus routes to SMART) and park and ride lot. Construction began in 2015.
- Cloverdale Depot — Transfer hub for Sonoma County Transit (including feeder bus routes to SMART), Amtrak Thruway Service, and park and ride lot. Completed in 1998.

**Real-Time Information**

In the recent years, transit operators in Sonoma County have installed Automatic Vehicle Location (AVL) equipment on buses providing real-time Global Positioning Systems (GPS) location information for dispatching and tracking vehicles. AVL systems allow operators to provide real-time information to transit riders through websites, mobile applications, and hub and bus stop signage.

Mobile applications, websites, and transit hub and bus stop signage that display real-time bus schedule and arrival information facilitate easier and more convenient travel by transit. Real-time information is currently available for Santa Rosa CityBus and Petaluma Transit on the MyStop mobile application and website, and for Sonoma County Transit on the Next Bus mobile application and website. Real-time information and trip planning tools for all Sonoma County bus systems, including Golden Gate Transit, are also available through 511.org. SMART is working to install AVL equipment on their rail vehicles and to connect that information into the regional transit traveler information systems.

Sonoma County Transit and Petaluma Transit have recently installed several real-time bus arrival signs at major bus stops and transfer points. CityBus is in the process of installing real-time bus information signs at the Santa Rosa Transit Mall that will display real-time bus arrival information for multiple operators serving the Transit Mall. The presence of real-time bus signage is expected to increase throughout the County in the coming years.

**Fares**

The Clipper® card (Clipper®), MTC’s universal fare card, is a fare instrument designed to operate on all of the different transit modes in the San Francisco Bay Area to pay fares for both inter-operator and intra-operator services. In January 2016, Sonoma County Transit, CityBus, and Petaluma Transit joined other Bay Area transit agencies in accepting Clipper®. The SMART train will accept Clipper® as its only fare medium. Clipper® will enable automated transfers between all transit operators with transfer agreements.

Currently, the base cash fares for Sonoma County Transit, CityBus, and Petaluma Transit is $1.50 for adults and $0.75 for the elderly (65+) and disabled. Base youth fares are $1.00 on Petaluma Transit and $1.25 for Sonoma County Transit and CityBus. Currently, operators offer free transfers between routes within a two hour period. Fare
Transportation System | 3-18  COMPREHENSIVE TRANSPORTATION PLAN — SEPTEMBER 2016

Transfer credits are also offered between connecting bus operator routes. SMART will offer $1.50 adult and $0.75 youth transfer credits for riders using Clipper® cards to transfer from any connecting transit agency. Likewise, connecting transit agencies will be accepting similar transfer credits for riders transferring from SMART.

Transit Ridership

Transit ridership in Sonoma County has grown throughout the years, with some fluctuations that have generally coincided with the economy and fuel prices (see Figure 3-7). Historically, a large portion of transit riders in Sonoma County have been transit dependent. An increase in transit ridership, on all systems, is anticipated with the addition of the SMART commuter rail service in 2016.

Figure 3-7  Historical Trend for Daily Transit Ridership in Sonoma County

![Historical Trend for Daily Transit Ridership in Sonoma County](image)

Sources: MTC Vital Signs, Petaluma Transit
Note: Petaluma Transit ridership between 1995 and 2006 is estimated based on available data.

Santa Rosa CityBus

Since 1958, CityBus has grown from three buses, two routes, and approximately 1,033 riders per day, to fourteen times the number of buses (39), nine times the number of fixed routes (17) and ten times the average number of weekday riders (10,155) in 2012. Annual ridership in 1983, the halfway point in the existence of Santa Rosa Transit - CityBus, was 1,020,000 passengers. In FY 2012–13 fixed route ridership was 2,869,065, representing a 181 percent increase in 30 years.

CityBus ridership increased steadily between 2003 and 2011; however, ridership fell in the aftermath of service cuts, a fare increase, and transfer policy changes implemented in 2013 to address a significant budget shortfall as a result of the recession. Routes with the highest ridership cover southwest Santa Rosa and the Mendocino Avenue corridor. CityBus passenger demand tends to peak between 7–8:00 a.m. and 3–4:00 p.m. CityBus currently operates 17 fixed routes on weekdays and Saturdays and 15 routes on Sundays, with frequencies ranging from 30 to 60 minutes.

As CityBus continues to maintain and replace its infrastructure, it is challenged with meeting long-standing demand for more service. In 2016, Santa Rosa CityBus completed a long-range planning effort for the system to create a blueprint for the build-out of the “ideal” transit system for Santa Rosa called Reimagining CityBus. The plan identifies current and future travel patterns, needs, and priorities; more closely links transit planning with land use planning; and improves the efficiency, effectiveness, and overall operation of the bus system. The plan

recommends a combination of changes to route alignments, schedules and the overall design of the transit system network, as indicated by planning analysis, public feedback, and Santa Rosa City Council guidance, to achieve these goals. CityBus has included connectivity to SMART as a major consideration in its Reimagining CityBus process. The plan for redesign of the CityBus system increases the frequency, directness, and connectivity of routes serving the Santa Rosa SMART stations. Implementation of the first phase of short-term revenue-neutral service recommendations is anticipated in 2016. In addition, a phased long-range plan will guide future system enhancements when additional funding becomes available.

This first phase of service changes will include two high-frequency, bi-directional bus service corridors and focused connections with the two Santa Rosa SMART stations. The high-frequency corridors would run north-south on Santa Rosa Avenue/Mendocino Avenue/Bicentennial Way/Range Avenue and east-west on Sebastopol Road/Third Street and target 15 minute headways, significantly higher frequency than the existing service levels. Ultimate build out of these projects could result in full-fledged rapid bus service.

In order to meet growing service demands, CityBus must also increase its fixed route and paratransit bus fleets. Over the twenty-five year life of this plan, facility enhancements to accommodate more buses, and technology enhancements to accommodate the technological changes that will inevitably occur over a quarter of a century, will also need to be implemented. All of these projects will require discretionary grant funds or other new funding sources for implementation.

**Petaluma Transit**

The City of Petaluma initiated fixed-route transit service in 1976. Today, Petaluma Transit provides scheduled service along six separate routes using a fleet of modern, 35-foot low-floor transit coaches. Routes currently operate on 30- or 60-minute headways, between 6:15 a.m. and 10:15 p.m. weekdays, from 7:20 a.m. to 10:15 p.m. on Saturdays, and from 8:20 a.m. to 5:45 p.m. on Sundays. Petaluma staff oversee operations performed in contract with MV Transit.

Annual ridership on the fixed-route system increased dramatically from roughly 160,000 in 2010 to 373,950 in 2015. Ridership growth slowed in FY 2015 and is expected to continue at a similar rate with a forecasted system-wide ridership of 414,489 by 2022. Petaluma’s fixed-route buses carry approximately 1,513 boarding passenger trips per weekday. In 2012, roughly a quarter of passenger trips were for work commute purposes and one third were for K–12 and college commute purposes; the remainder were primarily for shopping and recreational purposes. Ninety-seven percent of passengers said they walked to their first transit boarding point and the average walk time to the bus stop was 5.6 minutes, indicating a very high degree of coverage of land area. The remaining three percent of passengers bicycled to the bus stop. About 60 percent of riders report an annual family income of under $30,000. Over one third of riders are transit dependent and do not have any drivable vehicles in their household. Approximately 60 percent of riders are under 21 years old and only five percent are over 65 years old.

Petaluma Transit is developing plans for service expansion and modification to better support SMART on opening day. Petaluma Transit is planning to augment three routes that will together provide robust SMART station-based service timed with train schedules. The three routes will connect Downtown, West Petaluma, and the Southeast Petaluma/Lakeville Highway Business Park areas to the Downtown SMART Station.

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11 City of Petaluma, Short Range Transit Plan, November 2012.
12 City of Petaluma, Petaluma Transit, August 6, 2015.
13 Ibid.
14 Ibid.
15 City of Petaluma, Full On Board Survey, May 2014.
Sonoma County Transit

Sonoma County Transit’s fixed-route system provides countywide service along major travel corridors in rural areas of Sonoma County. The system also links most small towns and communities and all nine incorporated cities in the County including Cloverdale, Healdsburg, Petaluma, Santa Rosa, Sebastopol, Rohnert Park, Cotati, Sonoma and Town of Windsor. Sonoma County Transit’s major intercity routes consist of routes 20, 26, 30, 40, 44, 48, and 60. Express and commute intercity bus service is also provided via routes 22, 34, 38, 42, 46, and 62. The fixed-route system is operated with annual State Transportation Development Act (TDA) and State Transit Assistance (STA) funding from the County of Sonoma and funding contributions or reciprocal service agreements from each of the County’s nine incorporated cities.

In addition to intercity public transit service, Sonoma County Transit provides local public transit service, under contract, within the Town of Windsor (route 66), and the cities of Healdsburg (67), Sebastopol (route 24), Rohnert Park, Cotati (routes 10, 12, 14), Sonoma (route 32), and Cloverdale (route 60), respectively. Local service is also provided to the unincorporated Russian River communities of Rio Nido, Guerneville, Monte Rio and Duncan Mills, and Occidental (route 28), and to the unincorporated Sonoma Valley communities of Agua Caliente, Boyes Hot Springs, El Verano and Temelec (route 32). Summer weekend intercity service is provided to the unincorporated Sonoma Coast communities of Bodega, Bodega Bay, Doran Park, and Jenner (route 29).

Sonoma County Transit operates 22 routes Monday through Friday between 5:20 a.m. and 10:27 p.m., with the exception of holidays. Weekend service (including route 29) consists of thirteen routes operating on Saturday and ten on Sunday between approximately 7:05 a.m. and 9:31 p.m. Route 29 operates on weekends between the months of July and September only.

Sonoma County Transit plans to provide important feeder bus service to SMART, including enhanced east-west connections from the Sonoma Valley and from Sebastopol, and a circulator shuttle between the Airport Boulevard SMART station and the Sonoma County Airport. New feeder bus services to SMART from Cloverdale, Healdsburg and Windsor are also being coordinated with Sonoma County Transit.

More than half of Sonoma County Transit’s fixed-route ridership is on three bus routes; 44, 48, and 60. Average weekday ridership in FY 2015 was 4,125. Sonoma County Transit passenger demand tends to peak in the mid-afternoon on weekdays. A passenger profile survey indicated that over one third (35%) of Sonoma County Transit riders do not have any drivable vehicles available for their trip, and that roughly half of riders were under 30 years old and 18 percent were 60 or over.

Sonoma County Transit pays its operations contractor, TransDev, on an “in-service” hourly basis. TransDev is paid a flat rate from the time a bus leaves the yard for revenue service to the time it returns to the yard from revenue service. Sonoma County Transit staff review paid in-service hour amounts each time schedules are revised or service is altered. Sonoma County Transit operated 89,397 fixed-route revenue hours during fiscal year 2015.

Under contract with Sonoma County Transit, the Mendocino Transit Authority (MTA) provides inter-county public transit service along the Sonoma Coast between Mendocino County and Sonoma County. MTA’s route 95 provides service 7-days per week between the coastal communities of Point Arena, Anchor Bay and Gualala in Mendocino County, and between Sea Ranch, Stewarts Point, Fort Ross, Jenner, Bodega Bay, Bodega, Freestone, Sebastopol, downtown Santa Rosa, Coddingtontown Mall, and the Charles M. Schulz — Sonoma County Airport in Sonoma County. MTA’s route 65 also provides service 7-days per week along the Highway 101, 20 and 1 corridors between Mendocino, Casper, Fort Bragg, Willits, Ukiah, and Hopland in Mendocino County, and between the Sonoma County Airport and downtown Santa Rosa in Sonoma County. As with route 95, this route provides one round-trip daily, originating in Mendocino County in the morning and in Sonoma County in the afternoon. Route 65 is subsidized solely by MTA.

16 Sonoma County Transit, October, 2015.
18 Sonoma County Transit, October 2015.
Golden Gate Transit

Golden Gate Transit (GGT) primarily provides regional inter-county transit service between Santa Rosa, Rohnert Park, Cotati, Petaluma, Marin County and the downtown San Francisco financial district. GGT currently operates 27 transit routes, six of which serve Sonoma County. Route 101 offers all-day service between Santa Rosa and San Francisco. Several inter-county commute routes offer peak hour and peak direction service during morning and evening commute periods (routes 72, 72X, 74, 76, 101X). Peak direction is defined as toward San Francisco in the morning and from San Francisco in the afternoon. These buses offer fast, express service with relatively few stops. There are few transfers from bus to bus on this system; most people either walk or drive to a Golden Gate Transit stop.

In FY 2013/14, ridership on all GGT routes throughout the Bay Area was 3,690,186, a five percent increase over FY 2011/12. The total ridership on routes serving Sonoma County was 1,149,293 in FY 2013/14.19

The County of Sonoma contributes funding to the Golden Gate Bridge Highway and Transportation District/Golden Gate Transit to provide public transit service within and outside of Sonoma County. The County and each of the County’s nine incorporated cities annually contribute a portion of their TDA/STA funds to support operation of the Golden Gate Transit fixed-route system and paratransit system.

PARATRANSPORT SERVICE

Transit agencies are required to provide complementary paratransit service to persons unable to use the fixed-route system when operating fixed-route transportation service for the general public. This requirement does not apply to commuter bus, commuter rail, and intercity rail systems. Paratransit service must be comparable to the public transit operator’s fixed-route service regarding the following service criteria: comparable response time, similar fares, same geographic area of service, no restriction of trip purpose, equal availability of information, and no constraints on capacity. All bus systems in Sonoma County provide paratransit service per Americans with Disabilities Act (ADA) requirements. The ADA became law in 1990. This civil rights legislation mandates equal opportunity in employment, transportation, telecommunications, and places of public accommodation for people with disabilities.

Santa Rosa currently contracts with MV Transportation to provide a curb-to-curb paratransit service that will deliver patrons anywhere within the city limits. Transfer arrangements can be made with Whistlestop Wheels or Volunteer Wheels in the event a scheduled trip destination is outside of Santa Rosa city limits.

In Fiscal Year 2015, Santa Rosa’s paratransit service carried an average of 191 passengers per weekday and averaged 2.5 weekday passengers per revenue hour. Paratransit ridership and productivity has remained relatively flat over the last several years. Santa Rosa Paratransit served 99% of trips within 30 minutes of the scheduled pick-up time during FY 2011, which exceeded its standard of greater than 95%. Santa Rosa Transit’s eleven bus and two minivan paratransit fleet is equipped with a full video security system ensuring both increased security and levels of responsibility. CityBus employs thirteen paratransit vehicle operators and uses Trapeze scheduling software to allow increased scheduling efficiency and enhance on-time performance.

Petaluma contracts with MV Transportation to provide door-to-door ADA paratransit services. In FY 2015, Petaluma Paratransit transported an average of 2,205 monthly passengers and averaged 2.88 passengers carried per revenue hour, which is a slight increase from FY 2014. With a six vehicle paratransit fleet, ten vehicle operators, and manageable trip distances, Petaluma Paratransit is able to accommodate most same day requests while enhancing, rather than compromising, productivity. Petaluma Paratransit operates the same time span as the fixed route and provides rides to eligible persons to and from any location in the Petaluma Urbanized Area, regardless of the proximity to active fixed route bus service. Petaluma Paratransit is able to provide this “premium” ADA

service while effectively balancing the passenger need and service performance. City staff and MV Transportation work closely together to outreach to the community and manage mobility in a coordinated manner. The City of Petaluma currently uses Trapeze NOVUS scheduling software and is researching new software options.

**Sonoma County** paratransit offers countywide intercity service as well as local service within the cities of Healdsburg, Windsor, Rohnert Park, Cotati, Sebastopol, Sonoma, and the unincorporated communities located in the Sonoma Valley area and the Russian River area. Route 68 in Cloverdale, which is operated by the Sonoma County Transit, provides a “deviated fixed-route” service. This means that route 68 offers door-to-door paratransit service, upon request, within the Cloverdale city limits by deviating, if necessary, from its normal fixed-route schedule. Route 95, operated under contract by Mendocino Transit Authority, is not required to provide ADA paratransit service because it is considered limited peak commute service. Annual paratransit ridership has increased consistently over the past three fiscal years. Total annual paratransit ridership for FY 2015 was 48,981 trips, which is an increase of over 25 percent since FY 2013.

Sonoma County contracts with the Volunteer Center of Sonoma County to provide paratransit service through Volunteer Wheels in a service area and during service hours comparable to Sonoma County Transit’s fixed-route system. Volunteer Wheels operates a combination of lift-equipped mini-buses and sedans provided by the County, which complement each other depending on the demand for service. In 2015, the Volunteer Center employed thirty persons including paratransit drivers, reservationists, schedulers, road supervisors, and management staff.

**Golden Gate Bridge, Highway and Transportation District (GGBHTD)** offers inter-county demand-response paratransit service within a ¾ mile radius of all non-commute Golden Gate Transit routes through Marin Transit’s current contracted paratransit provider, Whistlestop. GGBHTD has arrangements with Sonoma County Transit, Petaluma Transit and Santa Rosa City Bus to provide a limited amount of intra-county paratransit coverage during very early morning or very late evening hours, when those providers are not in operation.

Golden Gate Transit currently owns fourteen paratransit vehicles which are operated by Whistlestop. Annual paratransit ridership declined by 2.4 percent, from 9,377 to 9,152, between FY 10/11 and FY 12/13, while the vehicle service hours increased by about 2.2 percent. This trend in the balance between ridership and vehicle service hours could pose a challenge to the service hour productivity standards should it continue.20

**Sonoma-Marin Area Rail Transit (SMART)** station facilities and bicycle/pedestrian improvements, will meet ADA standards and provide transfer opportunities between modes, as required by the Federal Transit Administration (FTA).21 Requirements for complementary paratransit do not apply to commuter rail or intercity rail systems.22

### OTHER MOBILITY SERVICES

Volunteer driver programs also help meet the transportation needs of disabled and senior residents in Sonoma County. Volunteers currently provide rides for medical and social service appointments for seniors, visually challenged seniors, and others who are unable to use local transportation systems. The Sonoma County Area Agency on Aging currently manages several mobility programs that support the expansion of existing volunteer driver programs and establishment of new programs, expand taxi voucher programs, and provide mobility planning. Volunteer driver programs currently supported by the Area Agency on Aging include the Sebastopol Area Senior Center, iRide program through Petaluma People Services Center, Catholic Charities’ volunteer driver program, and Vintage House LIMO program. A transition to a uniform scheduling software platform, Assisted Rides, for these volunteer services is underway. Friends in Sonoma Helping (F.I.S.H.) also runs a volunteer driver program.

Information about mobility options that address the needs of disabled and senior residents of Sonoma County can be found through **Sonoma Access** (www.sonomaaccess.org), a one-stop website and referral center. Sonoma Access was established by the City of Santa Rosa and is now administered through the Sonoma County Area

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20 Ibid, 1-11-12, 2-6, 3-32.
22 49 CFR 37, Section 121, revised October 21, 2007.
Agency on Aging with funding from a federal New Freedom grant and a federal Enhanced Mobility of Seniors and Individuals with Disabilities grant. Website improvements to enhance user experience are underway.

**PASSENGER RAIL — SONOMA-MARIN AREA RAIL TRANSIT DISTRICT**

The State Legislature established the Sonoma-Marin Area Rail Transit (SMART) District in January 2003 to plan, construct, and operate a commuter rail line in Marin and Sonoma Counties. The SMART Board of Directors is made up of elected officials from both counties and representatives from the Golden Gate Bridge Highway and Transportation District. The project includes building and operating a 15-station, 70-mile passenger rail line from the Larkspur Ferry terminal, with connecting service to and from San Francisco, to Cloverdale using the previously long-dormant publicly owned right of way of the former Northwestern Pacific (NWP) Railroad line. The project accommodates freight rail services, which have been active on the corridor since 2011. The project also includes a Class I multi-use pedestrian and bicycle path parallel to much of the line. The SMART rail corridor parallels Highway 101. Stations in Sonoma County would include (from south to north): Petaluma Downtown, Petaluma North, Cotati, Rohnert Park, Santa Rosa Downtown (at Railroad Square), Santa Rosa North (at Guerneville Road), Sonoma County Airport, Windsor, Healdsburg, and Cloverdale. An operations and maintenance facility for the entire line is located adjacent to the Sonoma County Airport station on Airport Boulevard, north of Santa Rosa.

SMART will use “light” self-powered Diesel Multiple Unit (DMU) vehicles that comply with the latest federal Tier IV emissions standards and are quieter and cleaner than conventional locomotive-hauled equipment.

In 2008, Marin and Sonoma County voters passed a one-quarter cent sales tax to fund the bulk of the SMART project which is being built in stages. Phase 1 will connect the Sonoma County Airport in Santa Rosa to downtown San Rafael and will serve all of the cities along the 43 mile corridor. Passenger service on the first segment is expected to begin in late 2016. Phase 2, extends the project south to the Larkspur Ferry terminal, anticipated by 2018, and Phase 3 extends the project north to Cloverdale.

In 2015, Phase I construction completed includes replacement and reconstruction of track, road crossings, bridges, tunnels, signal improvements, systems infrastructure, and a maintenance facility. Several segments of the SMART Pathway have also been constructed (see Bicycle and Pedestrian section for more detail).

Initially, SMART service will focus on passengers commuting to work, beginning operations with seven two-car train sets that will carry up to 158 seated passengers, 160 standing passengers, and provide on-board storage for up to 24 bikes, depending on the mix of wheelchairs and use of flip seats. Additional cars resulting in three-car train sets will increase seated capacity by 52% during peak hour trips, or up to approximately 480 seated and standing passenger per train.

SMART’s initial estimates have the train carrying approximately 5,050 to 6,500 passengers weekday by 2035 with connections made to bus transit, bicycle/pedestrian facilities, and key destinations.

SMART passenger service will provide the backbone of an integrated transportation system that optimizes bus, bike, and pedestrian transportation. The SMART train is an important alternative to the car as the cost of driving continues to escalate and reducing GHG emissions becomes increasingly imperative.
GOODS MOVEMENT

Goods Movement refers to the transportation of products from the location of their manufacture or harvest to their final retail destination, and is a vital component of the regional economy and transportation system. Industries dependent on goods movement provided just under one-third of all jobs in the Bay Area in 2011, and the nation’s fifth largest container port is located in the Bay Area (the Port of Oakland). In Sonoma County, over 16,000 people are employed in the goods movement industry. Highway 101, Highway 37, and the SMART rail on
the Northwestern Pacific Railroad (NWP) line are the main arteries for freight distribution in Sonoma County. The Marin-Sonoma Narrows project on Highway 101 is called out as one of the highest priority freight route projects in MTC’s 2016 Goods Movement Plan. In addition, Highway 101 from 580 to Santa Rosa is part of the National Highway Freight Network established by the FAST Act for freight project investment.

The North Coast Railroad Authority (NCRA) began limited freight service on the SMART rail line in 2011 after an agreement with SMART coordinating construction and operations. Freight trains share the rail line with SMART, outside of SMART’s primary operating hours (6–10 am and 4–7 pm) in order to avoid conflicts with faster passenger trains on the single-track line once SMART service begins in 2016.

Highway 101 is the primary route that would benefit from diversion of freight from truck to rail. The NCRA’s Draft Environmental Impact Report for resuming operations on the Russian River Division of the Northwestern Pacific Railroad estimates that up to 400 truck trips would be removed in the loaded direction between Novato and Santa Rosa, 340 per day between Santa Rosa and Redwood Valley (near Ukiah). This is a beneficial impact for the North Bay’s transportation system for both congestion relief, pavement wear and emissions.

AIR TRANSPORTATION

There are six public-use airports in Sonoma County: two are privately owned, three are owned by cities (Cloverdale, Healdsburg, and Petaluma airports), and one is owned by the County of Sonoma—the Charles M. Schulz Sonoma County Airport (STS). Sonoma County Airport is the only airport in the County to offer an Air Traffic Control Tower (ATCT), a precision instrument approach, Aircraft Rescue and Firefighting (ARFF), and Automated Surface Observing System (ASOS). In addition, STS is the only airport in Sonoma County capable of accommodating commercial air carrier service.

The Charles M. Schulz Sonoma County Airport is located in central Sonoma County, approximately 7 miles northwest of the City of Santa Rosa and 18 miles inland from the Pacific Ocean. The Airport is conveniently accessible to most of the County via Highway 101.

The Airport currently occupies approximately 1,200 acres and features two runways. Runway 14-32, the Airport’s primary runway has a published length of 6,000 feet and is 150 feet wide. Runway 14-32 can accommodate aircraft weighing up to 184,000 pounds. This runway is lighted and has an instrument landing system serving the approach end of Runway 32. Runway 2-20 is designated as the crosswind runway. It has a published length of 5,202 feet and is 100 feet wide. The runway is lighted and does not currently have an instrument landing system.

COMMERCIAL FLIGHTS

Alaska Airlines, operated by Horizon Air, provides service to Los Angeles, San Diego, Orange County, Seattle, and Portland. The service by Horizon Air has resulted in the Airport’s peak period for passenger activity reaching 263,142 in 2015. A second commercial airline, Allegiant Air, began providing service to Las Vegas and Phoenix in 2016.

In August 2013, the airport started a project to decouple the ends of the two runways and extend runway 14/32 by 885 feet, to 6,000 feet and extend runway 2/20 by 200 feet, to 5,202 feet. This project was completed in 2015.

Table 3-5  Charles M. Schulz Sonoma County Airport Top Business Routes, January 2014 – December 2014

<table>
<thead>
<tr>
<th>Rank</th>
<th>Destination</th>
<th>Passengers</th>
<th>Carriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Los Angeles, CA</td>
<td>106,646</td>
<td>Alaska</td>
</tr>
<tr>
<td>2</td>
<td>Seattle, WA</td>
<td>53,634</td>
<td>Alaska</td>
</tr>
<tr>
<td>3</td>
<td>San Diego, CA</td>
<td>46,820</td>
<td>Alaska</td>
</tr>
<tr>
<td>4</td>
<td>Portland, OR</td>
<td>45,565</td>
<td>Alaska</td>
</tr>
</tbody>
</table>

In August 2013 the airport started a project to decouple the ends of the two runways and extend runway 14/32 by 885 feet, to 6000 feet and extend runway 2/20 by 200 feet, to 5202 feet. This project was completed in 2015.

More up to date information the Charles M. Schulz—Sonoma County Airport can be found at [http://www.sonoma-countyairport.org/](http://www.sonoma-countyairport.org/).

### Spotlight

Table 3-6  Charles M. Schulz Sonoma County Airport, Improvement Needs

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>YEAR OF CONSTRUCTION</th>
<th>COST (IN $M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runway Safety Area Improvements — Phase II — Service Roads</td>
<td>2017</td>
<td>$2.0</td>
</tr>
<tr>
<td>Terminal Expansion — Phase 1</td>
<td>2017</td>
<td>$10.2</td>
</tr>
<tr>
<td>Parking Lot Expansion — Phase 1</td>
<td>2017</td>
<td>$3.8</td>
</tr>
<tr>
<td>Apron A and D Rehabilitation</td>
<td>2017</td>
<td>$1.2</td>
</tr>
<tr>
<td>Airline Apron Rehabilitation — Phase 2</td>
<td>2017</td>
<td>$4.8</td>
</tr>
<tr>
<td>Airport Rescue and Fire Fighting Building</td>
<td>2018</td>
<td>$8.0</td>
</tr>
<tr>
<td>Airport Security Fencing</td>
<td>2018</td>
<td>$1.0</td>
</tr>
<tr>
<td>Parking Lot Expansion — Phase 2</td>
<td>2018</td>
<td>$1.0</td>
</tr>
<tr>
<td>Apron E and F Reconstruction</td>
<td>2018</td>
<td>$8.0</td>
</tr>
<tr>
<td>Taxiway A Reconstruction/Overlay</td>
<td>2019</td>
<td>$8.0</td>
</tr>
<tr>
<td>Taxiway C,D, and G Reconstruction</td>
<td>2019</td>
<td>$5.8</td>
</tr>
<tr>
<td>Apron D Reconstruction</td>
<td>2019</td>
<td>$9.2</td>
</tr>
<tr>
<td>Terminal Circulation Reconfiguration</td>
<td>2020</td>
<td>$20.0</td>
</tr>
<tr>
<td>Runway 14/32 Overlay and Centerline Lighting</td>
<td>2020</td>
<td>$10.0</td>
</tr>
<tr>
<td>Terminal Expansion — Phase 2</td>
<td>2021</td>
<td>$35.0</td>
</tr>
<tr>
<td>Runway 2/20 and Taxiway B and D Rehabilitation</td>
<td>2021</td>
<td>$1.8</td>
</tr>
<tr>
<td>Terminal Expansion — Phase 3</td>
<td>2025</td>
<td>$10.0</td>
</tr>
<tr>
<td>Total Airport Needs</td>
<td></td>
<td>$139.8</td>
</tr>
</tbody>
</table>

### TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation demand management (TDM) is a collection of methods and actions intended to improve the efficiency of the existing transportation system by reducing the demand for single occupancy vehicle travel, especially during congested peak hours. A variety of TDM strategies are currently in place in Sonoma County, which include subsidies and incentives, marketing and education, ridesharing programs, and supportive infrastructure. As a first step to expand TDM in Sonoma County, the SCTA is developing a TDM program plan that identifies implementable actions as part of the Mode Shift Action Plan.

Transit pass subsidies and alternative commute incentives are currently offered through the bus transit operators. Santa Rosa’s Free Ride Program allows Santa Rosa-based employers to offer their employees discounted bus
passes, guaranteed ride home, and incentives for walking, biking, and carpooling. Santa Rosa also provides subsidized monthly passes to students and youth. Petaluma Transit also provides subsidized monthly passes to youth. Sonoma County Transit offers free rides for veterans and currently has a pilot program that allows college students to ride for free. Some large employers, including Sonoma County and Sutter Health, currently provide free transit to their employees.

Marketing and education to spread awareness of the benefits and availability of alternative transportation options are important elements of TDM. Transit operators market their services and the various incentive programs described above. Youth education and encouragement programs like Safe Routes to School and ECO2school are focused on home to school commutes and help establish lifelong tools for alternative transportation.

MTC’s 511 system offers real-time traffic conditions and drive times, transit schedules and trip planning, and rideshare matching information through its website (www.511.org) or via telephone (by dialing 511). The GoSonoma.org website, managed by the Sonoma County Spare the Air Resources Team, provides information about how to use and find more information about various alternative transportation modes.

Ridesharing applications and services are rapidly expanding and evolving. Starting in 2012, SCTA participated in a two-year pilot program to develop Carma (gocarma.com) carpool service in Sonoma County. Carma is a dynamic carpool application that allows commuters to search for other users traveling in their direction and create real-time carpools. Private commuter vanpool companies, such as vRide, currently provide rides for commuters between San Francisco, Novato, Petaluma, and Santa Rosa.

Infrastructure that supports transit, ridesharing, and bicycling facilitates use of these modes. Secure bicycle parking at transit hubs and bicycle storage on transit are available to support bicycling to transit. There are 23 official park and ride lots in Sonoma County where motorists and cyclists can park their vehicle to either use transit or form a carpool (see Appendix 7). A new park and ride lot with a minimum of 100 spaces at the Highway 101 and Airport Boulevard interchange has also been proposed. The existing park and ride lots are owned by a variety of entities, including cities, the County, and Caltrans. Carpoolers using park and ride lots along Highway 101 can take advantage of High Occupancy Vehicle Lanes (HOV) where they exist. All of the existing park and ride lots in Sonoma County are served by bus transit.

Employers within the Bay Area Air Quality Management District (BAAQMD) with over 50 full-time employees are required to register and offer commuter benefits to their employees through the Bay Area Commuter Benefits Program as of September 2014. This program requires that employers offer pre-tax benefits, employer-provided subsidies, employer-provided transit, and/or alternative commuter benefits.

Beginning in 2016, pre-tax commuter benefits became a permanent part of the Federal tax code, allowing the use of tax-free dollars to pay for transit commuting and parking costs through employer-sponsored programs. For the 2016 taxable year, the tax code allows tax-free transportation fringe benefits of up to $255 per month per employee for transit expenses and up to $255 per month for qualified parking (including parking at transit stations, vanpool or carpool sites, or employer’s worksite). Employees do not pay federal income or payroll taxes and employers do not pay payroll taxes on income set aside for pre-tax commuter benefits.

Employers can incentivize bicycle commuting through direct benefits, incentive programs, and bicycle-supportive facilities. Pre-tax commuter benefits allow employers to provide a tax-free subsidy of up to $20 per employee per month ($240 per year) to offset an employee’s bicycle commuting expenses, including the purchase of a bicycle, bicycle maintenance, and bicycle parking. Employers can enroll in and encourage employees to use incentive programs like the 511 RideMatch Service and the Santa Rosa Free Ride program, which allow employees to enter drawings for rewards when trips are taken via alternative transportation modes. Bicycle-supportive amenities such as secure parking, showers, and lockers also help encourage bicycle commuting.
TRENDS AND INNOVATION IN TRANSPORTATION

Technology and communication are rapidly changing the transportation landscape. From integration of transportation information on mobile devices to autonomous vehicles, technological innovations are enhancing the efficiency of the current system and introducing new ways to travel. With the ubiquity of mobile devices, travelers now and increasingly have the ability to plan transit trips, reserve rides, form carpools, find and pay for parking, and do many other things that increase the efficiency of their trip from any location. New developments are fostering the collaboration between public transit and private companies.

Real-time transit information and trip planning tools can make taking transit more convenient and reduce anxiety while making connections. New technological developments could be used to further improve the transit rider’s experience as well as utility of the transit system. For example, emerging technologies use real-time dispatching to provide application-based on-demand transit services.

For hire ride sourcing, such as Uber and Lyft, have become very popular due to the convenience of on-demand mobile reservation systems and economic opportunities for drivers. Some of these services have expanded to offer shared rides, which may become more prevalent in the future.

Shared Mobility

Shared mobility, like the sharing economy, has been around in some form for a long time but has been gaining momentum with recent technological advances. Shared mobility includes shared rides (carpools and vanpools) and shared vehicles (bicycles, cars, scooters, etc.). Shared mobility provides transportation options for people without personal vehicles or who want to share rides. Real-time mobile reservation systems and dynamic ride-share matching have made these services more accessible and attractive.

Bike share systems provide access to bicycles for short trips at a low cost and can be an efficient last mile solution. Bike share systems eliminate the barriers to owning and maintaining or traveling with a personal bike. These systems have existed in some countries for decades. Over the years, the industry has evolved a variety of operational models and new technologies.

Car share programs can help break barriers for increased use of transit, carpool, vanpool, and biking by providing a last mile solution. Car share vehicles near workplaces can be used for short trips when commuting by alternative modes. Members can enjoy peace of mind when commuting by alternative modes and reduce their need for private vehicle ownership.

Private Automobiles

Technology advancements are also changing how we travel in private automobiles. Real-time traffic and parking information, and increasingly connected vehicles are providing efficiencies that improve travel and parking demand and are speculated to have large impacts on safety and roadway capacity in the future.

Electric Vehicles and Electric Vehicle Charging Network

The utilization of plug-in electric vehicles (PEVs or EVs) has the potential to reduce petroleum consumption and greenhouse gas emissions dramatically, and increase energy independence through the utilization of locally produced energy. Chapter 4 identifies the increase in EVs that would be needed to meet the GHG reduction goals of the CTP and discusses targets set by the state and CA2020. The long-term success of transportation electrification will depend in part on the near-term deployment of vehicles and charging infrastructure.

In 2015, there were over 2,000 plug-in electric vehicles (PEVs) in Sonoma County and over 175 public charging stations. Several private charging stations are also available at employment sites, residential developments, and other locations. An action plan for implementing an EV charging station network scalable to anticipated use in Sonoma County is currently being developed by the SCTA/RCPA through the Shift Sonoma County plan.
**Connected and Autonomous Vehicles**

Automation of vehicles and increased data connectivity to vehicles has been at the forefront of transportation research and development. Autonomous and connected or semi-autonomous vehicles have the potential to move more vehicles by safely driving closer together. Many believe that autonomous vehicles can help the elderly, young, and disabled gain mobility, ease parking issues, and make vast improvements to traffic congestion, safety, and fuel efficiency. Several researchers are focusing on the potential for shared driverless transportation to provide efficient first and last mile connections to transit.

**Trends in Goods Movement**

As highways, railways, and airports reach capacity, technological and land use strategies are being considered to address efficiency and demand management. Market trends such as e-commerce has increased the need for last-mile delivery, which poses increasing demand on delivery trucks and parking in urban areas. Freight intelligent transportation systems (ITS) and “connected” vehicles are currently being tested around the nation. Connected vehicles and ITS use technology to communicate between vehicles and transportation systems, allowing for safety and efficiency improvements such as navigation, platooning, and advanced communication. Researchers are experimenting with the development of further automating freight systems.\(^{27}\)

\(^{27}\) Metropolitan Transportation Commission, *San Francisco Bay Area Goods Movement Plan*, 2016.