



December 15, 2021 Climate Action Plan Task Force Meeting

Background Information for Transportation Actions

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Zero-Emission Vehicles

Background:

Zero-Emission Vehicle Types. The State of California identifies three types of electric vehicles as Zero-Emission Vehicles, or ZEVs, as shown in Table 1.¹ In Marin County, most ZEVs are battery electric vehicles (BEVs), comprising two-thirds of the 9,709 ZEVs registered with the California Department of Motor Vehicles (DMV) in Marin County by the end of 2020. Plug-in hybrid electric vehicles (PHEVs) represent about one-third of all ZEVs, and there were 52 fuel cell electric vehicles (FCEVs) registered in Marin County in 2020. The CAP uses the term electric vehicle (EV) to describe a BEV or PHEV.

In addition to supporting the accelerated adoption of electric light, medium, and heavy-duty vehicles, the CAP also supports the widespread use of electric bikes, scooters, and motorcycles.

TABLE 1: ZERO-EMISSION VEHICLE TYPES

Vehicle Type	Abbreviation	Description	Example
Battery Electric Vehicle	BEV	Runs fully on electricity (no internal combustion engine.)	Nissan Leaf 
Plug-In Hybrid Electric Vehicle	PHEV	Can operate on electricity alone but once the electric driving range is depleted, the internal combustion engine extends the driving range.	Ford Fusion 

¹ California Energy Commission (2021), <https://www.energy.ca.gov/data-reports/energy-insights/zero-emission-vehicle-and-charger-statistics>. Although plug-in hybrid electric vehicles (PHEVs) have an internal combustion engine and use fossil fuels, the state includes them as zero-emission vehicles. This Plan similarly includes PHEVs as zero-emission vehicles.

Fuel Cell Electric Vehicle	FCEV	Powered by hydrogen, which is converted to electricity in the fuel cell. Produces no tailpipe emissions, just water vapor and warm air.	Toyota Mirai 
Electric bike	e-bike	Charged by plugging into a standard 110 outlet and most are fully charged after 4 hours.	Trek E-Bike 

California DMV [registration data](#) shows that Marin had 9,709 ZEVs by end of 2020, representing 4.7% of the county’s light-duty vehicles (Figure 1). Of all counties in California, Marin has one of the highest rates of adoption, second only to Santa Clara County at 5.3%. Within Marin, ZEV registration rates range from a high of 8.7% for Ross to a low of 3.2% for Novato (Figure 2). In Mill Valley, 6.8% of passenger vehicles were EVs at the end of 2020.

FIGURE 1: ZEV REGISTRATIONS IN MARIN COUNTY

In 2020, BEVs accounted for 66% of all ZEVs registered in Marin County, PHEVs made up nearly 34%, and FCEVs less than 1%. Across the state, ZEVs made up 10.7% of new car sales in Q1-Q2 2021, with Tesla accounting for 47% of ZEV sales and the Model Y being the most popular EV.

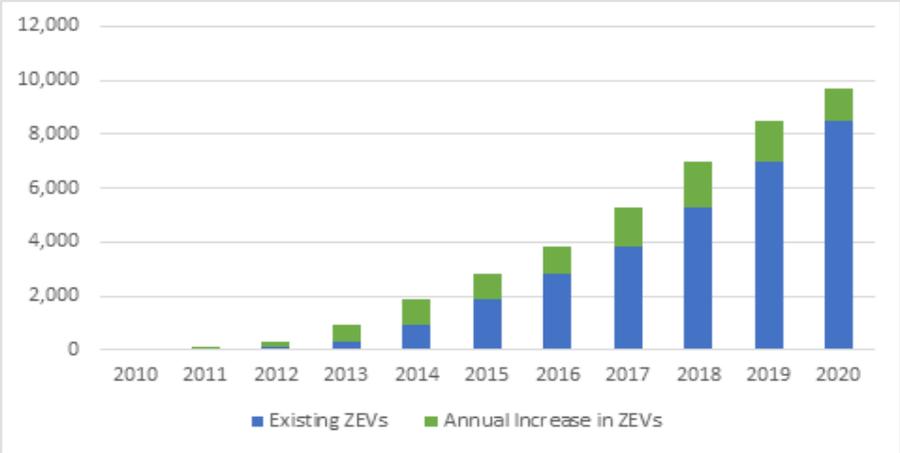
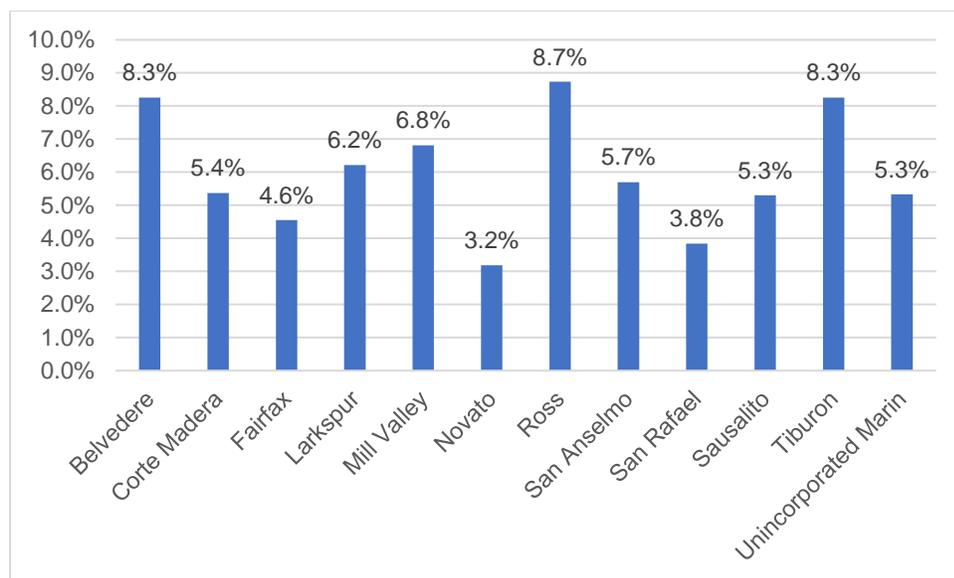


FIGURE 2: ZEVS AS A PERCENT OF LIGHT-DUTY VEHICLE REGISTRATIONS BY JURISDICTION BY END OF 2020



Source: California Energy Commission Zero Emission Vehicle and Infrastructure Statistics. Data last update April 30, 2021.

Note: Data is by zip code and includes unincorporated areas. DMV combines Belvedere and Tiburon under one zip code.

Auto manufacturers are currently producing 21 BEV models and 33 PHEV models.² The emergence of new EV models at lower price points, in addition to the inclusion of popular models such as the Ford F-150 pickup truck, present an opportunity for increased conversion. Many automobile manufacturers have also announced plans to phase out and ultimately stop producing internal combustion engine vehicles, some as early as 2025.

State and Regional ZEV Goals, Legislation, and Plans

The State of California has adopted legislation to reduce statewide emissions 40% below 1990 levels by 2030 (Senate Bill 32) and has set longer term goals to reduce emissions 80% below 1990 levels by 2050 and to achieve carbon neutrality by 2045 (Executive Order B-55-18). To meet these goals, significant reductions in passenger vehicle travel through walking, biking, public transportation, and shared transportation, along with the wide-scale adoption of EVs and electrification of all types of transportation are required.

The State uses various regulations to reduce transportation emissions including increases in fuel economy standards, promotion of alternatives to vehicles with internal combustion engines (ICEs), and reduction in vehicle miles traveled (VMT) in passenger vehicles. The [Low Carbon Fuel Standard](#) is designed to reduce the carbon intensity of transportation fuels in California, and the [Advanced Clean Cars Program](#) establishes fuel efficiency standards that require automobile manufacturers to produce a certain number of ZEVs each year based on the total number of cars sold in California by the manufacturer.

² Drive Clean Bay Area, <https://drivecleanbayarea.org/electric-vehicle-makes-and-models/>

The State has also set specific targets for ZEV adoption. In January 2018, Governor Brown signed Executive Order B-48-18, setting a target of 250,000 electric vehicle charging stations and 200 hydrogen fueling stations installed to support 1.5 million ZEVs on California roads by 2025, with a longer-term goal of 5 million ZEVs by 2030.

In September 2020, Governor Newsom issued Executive Order N-79-20, setting the following ZEV targets for California:

- 100% percent of in-state sales of new passenger cars and light-duty trucks to be ZEVs by 2035,
- 100% of medium- and heavy-duty vehicles operating in the State to be ZEVs by 2045 where feasible,
- 100% zero-emission off-road vehicles and equipment operations by 2035, where feasible.

The California Governor’s Office of Business and Economic Development’s [California Zero-Emission Vehicle Development Strategy](#) (February 2021) presents a high-level roadmap to achieve these ambitious targets. The Strategy is centered on four market pillars – vehicles, infrastructure, end users, and workforce – and identifies the roles and responsibilities of each public and private market player. The Strategy identifies local governments’ roles in permitting, code development and adoption, municipal fleets, planning (e.g., Climate Action Plans and EV Readiness Plans), directional charging signage, and vehicle and infrastructure incentives.

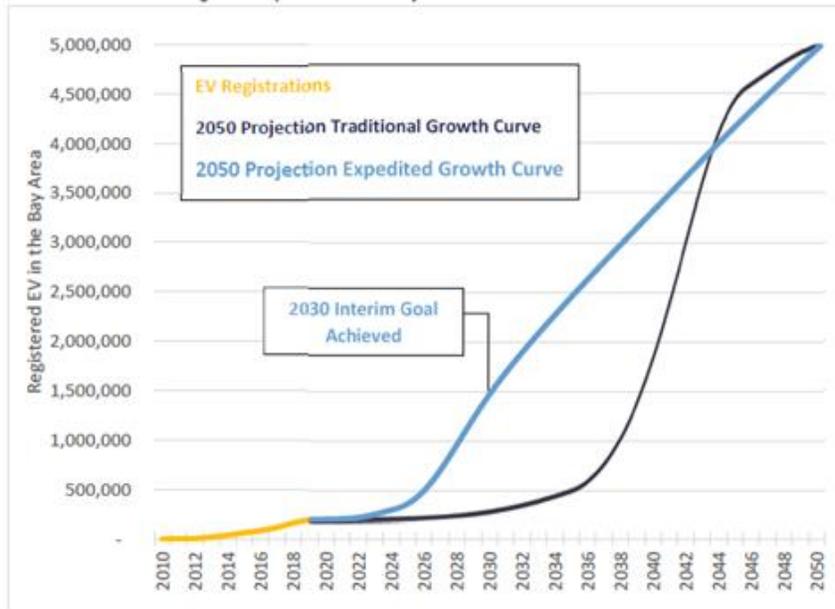
Regionally, the Bay Area Air Quality Management District (“Air District”) has set a target for 1.5 million ZEVs in the Bay Area by 2030 (equivalent to 27% of the 2020 registered vehicle population) and for 90% of vehicles in the Bay Area to be zero emissions by 2050. The Air District released a draft [Bay Area Electric Vehicle Acceleration Plan](#) in March 2021 that encourages local governments to enact EV ready reach codes by 2030, adopt EV charging station permitting and streamlining procedures and policies by 2022, and prioritize and empower low-income and communities of color that are disproportionately impacted by air pollution and climate change. The Air District’s Plan details 23 specific actions that local governments can take. These actions were considered in the development of this Plan, along with the eleven local government strategies identified in the California Zero-Emission Vehicle Development Strategy discussed above.

Countywide EV Readiness Plan. In 2020, the Marin Climate & Energy Partnership (MCEP), with funding from the Transportation Authority of Marin, began a planning effort to develop a countywide EV Readiness plan. MCEP conducted interviews with various stakeholders, including the Marin jurisdictions, regional agencies, and advocacy groups, to understand barriers to widespread EV adoption and explore potential strategies to meet Marin’s aggressive EV goals. A public review draft is expected in January.

EV Market Projections. In California, the Bay Area Air Quality Management District has developed two potential pathways to reaching its 2050 goal of EVs accounting for 90% of the fleet (or roughly 5 million EVs). Figure 3 shows historic share of EVs in the Bay Area based on DMV data through 2019, then charts two different trajectories (i.e., traditional and expedited) to reaching the 2050 goal. The projections assume EVs achieve cost parity with ICE vehicles in 2024, resulting in varying degrees of impact based on the projection trajectory. The traditional trajectory assumes economic stagnation and only a slight uptick in new EV sales as range anxiety continues to be a large barrier to adoption, and the expedited trajectory assumes consumer demand increases as price outweighs range anxiety. The graph also

considers the enactment of a ban on new ICE vehicle sales in 2035, as outlined in Executive Order N-79-20. While these projections use estimates for the actual EV share increases, they show two different paths the Bay Area EV market might take to 2050.

FIGURE 3: BAY AREA EVS AND PROJECTED INCREASE TO MEET BAY AREA 2050 GOAL



Source: Bay Area Air Quality District, Bay Area Electric Vehicle Acceleration Plan.

In Marin County, ZEV registrations will need to increase 25% annually to reach a ZEV penetration rate that is 25% of all passenger vehicles registered in Marin by 2030; an annual growth rate of 39% is needed to achieve a 45% adoption rate. Between 2016 and 2020, annual EV growth rates have averaged 28%. This suggests that ambitious targets are achievable but will most likely require concerted and coordinated efforts among local governments, public agencies, and community partners, as well as a continuing expansion of EV programs and infrastructure that address existing barriers to widespread EV adoption.

Local Climate Action Plan Goals and Targets for ZEVs. The cities and towns in Marin and the County of Marin have adopted Climate Action Plans that set long-term targets to reduce emissions within the communities they serve. Currently, six of the 12 jurisdictions have adopted ZEV targets for the percentage of passenger vehicles registered in Marin County in their updated CAPs (Table 2).³ Meeting these ZEV targets is critical to achieving their overall GHG reduction goals for 2030.

³ The target applies to Marin-registered vehicles and trips that start and/or end within the jurisdiction.

TABLE 2: LOCAL ZEV TARGETS

Jurisdiction	GHG Reduction Goal for 2030	ZEV registrations as % of total passenger vehicle registration by 2030
Town of Corte Madera	40% below 1990 level	25%
Town of Fairfax	Zero emissions	100%
City of Larkspur	40% below 1990 level	33%
County of Marin	40% below 1990 level (mitigation only)	45%
Town of San Anselmo	45% below 1990 level	25%*
City of San Rafael	40% below 1990 level	25%
City of Mill Valley	To be determined -- at least 40% below 1990 level	<p><u>Task Force Action Required.</u> This target applies to all passenger vehicles registered in Marin County that make trips that start and/or end in Mill Valley, not just vehicles registered in Mill Valley. An EV target may be set for Mill Valley passenger vehicle registrations, too, but that alone will not have a large impact on overall GHG reduction targets.</p>

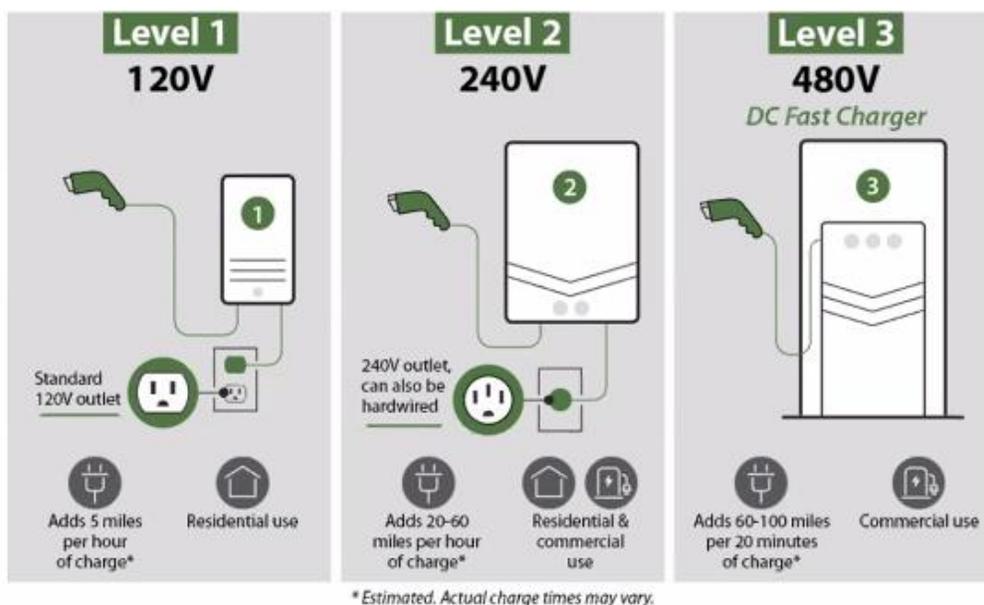
*The Town of San Anselmo has also adopted a local target of 3,000 ZEVs registered in San Anselmo by 2030.

Charging Infrastructure and Projected Need. Electric Vehicle Supply Equipment (EVSE) is available at three different power levels (Level 1, 2, and 3) as shown in Figure 4.

The California Energy Commission (CEC) tracks the number of public and shared EV chargers, which may have one or multiple connections, in California counties. Public chargers are located at parking spaces available and accessible to the public. Shared chargers are located at parking spaces designated by a property owner or lessee to be available to employees, tenants, visitors, and residents.

According to CEC statistics, there were 730 public and shared EV chargers with one or multiple connections in Marin as of August 2021. The majority of these are Level 2 chargers, representing 87% (or 634) of the total number of chargers. In addition, there were 92 Level 3 chargers and four Level 1 chargers. Approximately 73% of the chargers were public, and 27% were shared private chargers. This data does not include private EV chargers installed in single family homes. Although the Marin jurisdictions do not track this data in a manner that allows robust analysis and aggregation, anecdotal evidence from Building Department staff indicates that private EV charging installation has been increasing rapidly.

FIGURE 4: ELECTRIC VEHICLE SUPPLY EQUIPMENT TYPES



Publicly accessible EV charging is needed to support the growing number of EV drivers, especially for long-distance trips and for drivers that do not have access to charging infrastructure at home. Since EV owners tend to live in single-family homes⁴, extending the EV market beyond those living in single-family homes, will require a substantial expansion of EV charging infrastructure at multi-unit dwellings, workplaces and in public spaces.

According to CEC data, Marin County's current 726 charging stations (634 Level 2 and 92 Level 3) is sufficient to support 9,657 EVs with an unreported number of charging ports (many charging stations

⁴ International Council on Clean Transportation, *Quantifying the electric vehicle charging infrastructure gap across U.S. markets*, January 2019.

are dual port). According to EVI-Pro⁵, Marin needs approximately 4,000 charging ports to support the charging needs of 16,518 EVs by 2025 (914 Level 2 public charging ports, 600 Level 2 workplace charging ports, 316 Level 3 public charging ports, and up to 2,204 multi-family charging ports).

In Marin County, approximately 27% of housing units are in multi-unit dwellings.⁶ Installing charging infrastructure has been challenging for this segment of the housing stock, requiring EV owners living in multi-unit dwellings to charge their vehicles at public charging stations or work (if available). In addition, the need for drivers to take longer-distance trips and with a wide range of transportation patterns also requires public charging.

In 2019, TAM prepared the [Marin County Electric Vehicle Charging Station Siting Plan](#) (“Siting Plan”) which identifies opportunity sites for additional EV charging stations in Marin. Locations for Level 2 charging stations included the locations below:

- Southern Marin, especially around TAM junction and in Mill Valley and Strawberry, where there is a limited supply of existing charging stations. Opportunities along frontage roads next to Highway 101, as well as Miller Avenue, Blithedale Avenue, Highway 1, Camino Alto, as well as other major road corridors.
- Shopping centers such as the Strawberry Shopping Center, Town Center in Corte Madera, and Bon Aire Shopping Center in Larkspur, and an expansion of EV charging at Northgate Mall in Terra Linda.
- School parking lots that can be used by students and staff during the day and nearby residents overnight.
- SMART stations.
- Ferry terminals.
- Park and Ride lots.
- Marin City in Southern Marin and the Canal Neighborhood of San Rafael, where increasing EV infrastructure would support equitable EV access and adoption in Marin.

Municipal Fleet EVs. The City of Mill Valley has six electric passenger vehicles in its fleet. Electric golf carts are used at the golf course. In 2015, City vehicles and equipment fleet using gasoline consumed 32,558 gallons of gasoline, resulting in 287 MTCO_{2e}. This was a 26% decrease from the 2005 level. The vehicle fleet using gasoline in 2015 was comprised of the following:

- Police: 21 vehicles and one motorcycle
- Parking Enforcement: 3 vehicles
- Fire: 5 vehicles
- Building and Engineering: 5 vehicles (now EV vehicles)
- Streets and Sewers: 8 vehicles

⁵ The [National Renewable Energy Laboratory](#) and the CEC have developed a computer simulation tool, [Electric Vehicle Infrastructure Projection](#) (EVI-Pro), which uses the results of a statewide transportation habits survey to quantify the charging infrastructure needed to ensure that future EV drivers can meet their transportation needs. This analysis accounts for shifts in vehicle and charging technologies, user demographics, market adoption conditions, and shared use of charging stations, as well as travel and charging preferences.

⁶ Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Census Benchmark*.

- Building Maintenance, Equipment Maintenance, and Commute Van: 5 vehicles
- Parks, Recreation, and Golf Course (excluding 4 golf carts): 14 vehicles

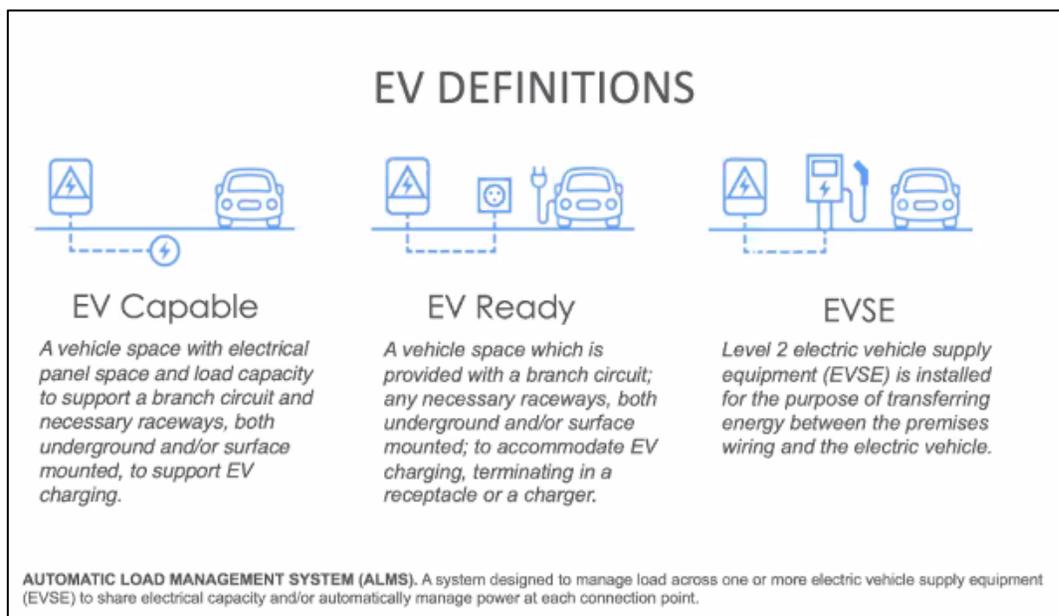
Most Marin cities and towns prioritize purchasing and leasing of EVs over internal combustion engine vehicles, even if the electric version is more expensive. Several jurisdictions have purchased or leased passenger electric vehicles used for site inspections, code enforcement, police undercover work, off-site meetings, and commuting. However, these types of vehicles typically make up a small percentage of a municipal fleet. Mission critical and/or emergency response trucks and sport utility vehicles (e.g., police patrol vehicles), are difficult to convert due to the lack of electric models that can provide the necessary utility. In addition, some specialized heavy-duty public works trucks are used and replaced infrequently.

EV Charging Stations on Municipal Land. The City of Mill Valley has one dual-port Level 2 charging station at Hauke Park. The City charges \$1 per hour at this station.

Nearly all Marin jurisdictions have installed EV charging stations on land owned by the jurisdiction. However, a few jurisdictions have concerns about the cost effectiveness of installing charging stations because the revenue generated from charging rarely covers the full cost of installation, subscription fees, electricity, maintenance, and depreciation. Installation costs for trenching and electrical capacity upgrades can be prohibitive.

CALGreen Requirements and Reach Codes. The [California Green Building Standards Code](#) or “CALGreen” (California Code of Regulations, Title 24, Part 11) currently requires EV capable spaces for new residential and non-residential development. “EV capable” means that electrical panel capacity must be allocated, and conduit installed for a future Level 2 charging station (see Figure 5). The property owner would still need to run wiring from the electrical panel and install the charger at the parking space. CALGreen requirements are as follows:

FIGURE 5: ELECTRIC VEHICLE SUPPLY EQUIPMENT DEFINITIONS



The County of Marin and the City of Mill Valley have adopted ‘reach codes’ that require EV infrastructure above the base CALGreen code, including EV ready space for some projects. “EV ready” means that wiring and a receptacle needs to be installed in addition to electrical panel capacity. In this case, the resident could simply plug in a Level 2 charger. CALGreen is currently being updated for the 2022 Building Code, which will go into effect in January 2023. Current and proposed EV requirements are summarized below:

Mill Valley Existing Reach Code	Proposed Reach Code for 2023 Implementation
<p>Single family: In addition to new construction, if a project is for an addition or alteration that is upgrading the main electrical service panel, one EV capable space must be installed.</p>	<p>Pending</p>
<p>Multifamily: For new construction, one EV ready space per dwelling unit. For additions and remodels where the service panel is modified, 20% of the onsite parking spaces must be modified to be EV capable.</p>	<ul style="list-style-type: none"> • EV Capable: 10% of all parking spaces to be Level 2 EV Capable • EV Ready: 25% equipped with low power Level 2 EV charging receptacles • EV Chargers: 20 or more parking spaces, 5% of the total number of parking spaces must be equipped with Level 2 EVSE • Tier 1: 35% EV capable spaces and 10% EV chargers installed • Tier 2: 40% EV capable spaces and 15% EV charger installed
<p>Non-residential: For new construction 10% of the spaces must be EV ready and the remaining spaces must be EV capable, or 20% of the spaces must be EV read and EV charging station installed in 5% of the spaces (no less than 2 charging stations). For additions and remodels where the service panel is modified, 20% of the onsite parking spaces must be modified to be EV capable.</p>	<ul style="list-style-type: none"> • EV Charging for new buildings with 10-25 parking spaces. Require 20% of all parking spaces to be Level 2 EV Capable. • EV charging for new buildings with 25+ parking spaces. Require 20% of all parking spaces EV capable and 25% of the number of EV Capable spaces must have EVSE. • EV charging for new warehouses, grocery stores, and retail buildings • those with off-street loading spaces must install infrastructure to support future EV charging of medium-duty and heavy-duty vehicles • Tier measures: similar to residential

Bicycling and Walking

Please review the City of Mill Valley [Bicycle and Pedestrian Transportation Plan](#). Two sustainability-related mobility goals in the Plan include:

- Goal #5: Create a safe and sustainable transportation network that balances the needs of pedestrians, bicyclists, motorists and transit users. (General Plan Mobility-3 Goal); and
- Goal #7: Reduce transportation related emissions by reducing traffic congestion and vehicle miles traveled while promoting the use of lower emission vehicles and non-automotive modes of travel. (General plan Mobility-2 Goal)

Pages of relevance in the Bicycle and Pedestrian Transportation Plan are:

- Page 9 (goals)
- Page 12 (for context)
- Page 18 (Proposed section)
- Appendix C page 40 for those interested in related policy
- Appendix D page 57 for list of proposed programs and policies
- Appendix G page 81 for proposed facilities

Please also review the Bicycle Friendly report card.

https://bikeleague.org/sites/default/files/bfareportcards/BFC_Fall_2018_ReportCard_Mill_Valley_CA.pdf

Safe Routes to School

Safe Routes to Schools [surveys](#) most Mill Valley students in the fall and spring of each school year to gather information on students' trips to and from school. Information collected includes the following travel modes: walk, bike, school bus, family vehicle, carpool, transit, and other. Due to the Covid pandemic, the last time surveys were conducted was in Fall 2019. A comparison of 2016 and 2019 data is shown in Tables 3 and 4. Overall, the percent of students arriving to school in a family vehicle increased from 49% in 2016 to 50% in 2019.

TABLE 3: FALL 2016 (unless noted otherwise) MORNING TRAVEL MODES

School	Enrollment	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Edna Maguire	580	16%	13%	5%	58%	7%	0%	2%
Marin Horizon	303	6%	4%	3%	68%	18%	0%	0%
Mill Valley Middle	1,072	23%	33%	4%	29%	5%	2%	4%
Mt. Tam (2018)	300	1%	0%	41%	56%	2%	0%	0%
Old Mill	392	40%	9%	1%	45%	4%	0%	2%
Park	349	42%	9%	0%	47%	0%	0%	3%
Strawberry	416	21%	5%	7%	60%	6%	0%	2%
Tam Valley	497	19%	9%	0%	65%	5%	10%	2%
Tam High	1,329	18%	7%	5%	49%	13%	7%	1%
TOTAL/AVERAGE	5,238	21%	13%	6%	49%	8%	3%	2%

TABLE 4: FALL 2019 (unless noted otherwise) MORNING TRAVEL MODES

School	Enrollment	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Edna Maguire	543	16%	14%	7%	57%	7%	0%	1%
Marin Horizon (2016)	303	6%	4%	3%	68%	18%	0%	0%
Mill Valley Middle	1,043	21%	24%	6%	38%	6%	2%	4%
Mt. Tam (2018)	300	1%	0%	41%	56%	2%	0%	0%
Old Mill	320	29%	11%	0%	56%	2%	0%	2%
Park	349	61%	4%	0%	35%	0%	0%	0%
Strawberry	330	30%	2%	3%	60%	5%	0%	1%
Tam Valley	450	31%	13%	0%	48%	7%	0%	1%
Tam High	1,329	18%	1%	5%	51%	15%	7%	2%
TOTAL/AVERAGE	4,967	23%	9%	6%	50%	8%	2%	2%

Public Transit

The California Air Resources Board (CARB) adopted the Innovative Clean Transit (ICT) Rule in December 2018. This rule outlines a transition of California transit agencies to a zero-emission fleet by 2040. 100% of transit agencies' bus purchases must be zero emission beginning in 2029.

Marin Transit's Draft Fixed Route Vehicle Replacement Plan (2019) identifies purchases that will achieve the ICT zero emission fleet mandate in 2040. The Plan indicates 3% of Marin Transit's fleet will be comprised of zero-emission buses in 2020 and 33% of its fleet will be zero emission by 2030.

Both Marin Transit and Golden Gate Transit have been using renewable diesel since 2016. In 2019, 72% of Marin Transit buses were using renewable diesel and 3% of the fixed route buses were zero-emission.

Employee Trip Reduction

The [Bay Area Commuter Benefits Program](#) is an air quality rule administered by the Air District and the Metropolitan Transportation Commission. Under this regulation, Bay Area employers with 50 or more full-time employees in the Air District's nine-county jurisdiction are required to provide a commuter benefit option(s) to their employees. Options include pre-tax benefits to exclude transit or vanpool costs from taxable income, employer provided shuttle, van pool or transit subsidy, a telework policy, or other effective benefit. The City can assist the Air District in enforcing the regulation by contacting non-compliant businesses and/or requiring conformance through the business license program. The Air District will provide the number of non-compliant businesses in Mill Valley and an estimated number of employees.

City Employee Commute

The last time MCEP conducted a GHG emissions inventory for Mill Valley city operations was in 2015. Employee commute emissions were determined at that time from employee commute surveys. Fifty-three percent of City employees responded to the survey, and estimates for total employee commutes were extrapolated from that data.

There were 145 full-time city employees in 2015. Employee commutes generated 950,214 vehicle miles in that year, a 7% increase from 2005 levels when there were 137 employees (see Table 5). Emissions

per employee dropped 17% due to an improvement in the fuel efficiency of the vehicles Mill Valley employees drove to work.

TABLE 5: EMPLOYEE COMMUTE EMISSIONS, 2005 AND 2015

	2005	2015	% Change
Number of Full-Time Employees	137	145	6%
Vehicle Miles Traveled (VMT)	889,591	950,214	7%
VMT Per Full-Time Employee	6,493	6,553	1%
Emissions per Employee	3.2	2.6	-17%
GHG Emissions (MTCO_{2e})	433	382	-12%

Traffic Systems Management and Vehicle Idling

The City has continued to work on signal synchronization systems that utilize intelligent traffic management technologies to improve traffic flow and minimize idling times at traffic signals within the community and in coordination with CalTrans. These efforts also help to reduce GHG emissions.

The State of California currently has an idling regulation for commercial heavy-duty diesel vehicles and school buses. It is illegal to idle a [heavy-duty diesel vehicle](#) (Gross Vehicle Weight Rating of 10,000 lbs. or heavier) longer than five minutes in any location.

[Limits on Idling at Schools.](#) School bus drivers are required to turn off the engine when at school and when within 100 feet of a school and restart it no more than 30 seconds before departing. Transit buses and commercial motor vehicles are required to turn off the engine upon arriving at a school and restart it no more than 30 seconds before departing. They are also prohibited from idling for more than 5 minutes within 100 feet of a school.

While passenger vehicles — cars, SUVs, vans, pickup trucks — comprise more than 85% of the vehicles on California's roads, there is no restriction for idling of these vehicles when parked.

Smart Growth Development

With the passage of SB 375, California established a planning process that coordinates land use planning, transportation plans, and air quality plans to support meeting its GHG reduction goals. One of the state's priorities is to reduce VMT by encouraging the co-location of housing, jobs, services, and education so that people rely less on personal cars and trucks and more on transit, biking, walking, and micromobility options. Regional long-range transportation plans are required to reduce vehicle miles traveled (VMT) to meet mandated GHG reductions and focus on the interrelated elements of housing, the economy, transportation, and the environment.

[Plan Bay Area 2050](#) is the Bay Area’s draft regional transportation plan/Sustainable Communities Strategy and is required to meet a 19% reduction in GHG emissions. The plan identifies policies and investments over the next three decades to shape how Bay Area residents get around and to support land use policies that support multimodal transportation options. The transportation strategies outlined in Plan Bay Area 2050 maintain and optimize the existing transportation system, while creating healthy and safe streets and building a next-generation transit network. The VMT forecasts we use to project future GHG emissions for Mill Valley assume the regional transportation plan is implemented and transportation-related GHG emission reductions are realized.

Micromobility

Micromobility refers to forms of transportation, human-powered or electric, that can occupy space alongside bicycles. It includes electric scooters and skateboards, docked and dockless shared bikes, and other forms of small, lightweight devices operating at speeds typically below 20 mph. Micromobility devices do not have an internal combustion engine.

Subsequently, the passage of SB 743 introduced changes to how transportation impacts are measured through the California Environmental Quality Act (CEQA), requiring new developments to reduce VMT 15% per capita.

Parking Requirements

Parking requirements can be designed to promote walkable communities by minimizing the number of parking spaces required for commercial and residential development, especially in areas that are well-served by transit.

Mill Valley parking standards for commercial and residential development have not been updated in quite some time due to varying interests of the community. Commercial uses continue to evolve, and the Chamber of Commerce and City of Mill Valley is interested in working to help local businesses thrive and succeed. Possible relaxation of parking standards could be utilized to foster opportunities and ease restrictions in terms of use of a property. Similarly, reducing square footage dedicated to parking for residential development may also foster redevelopment opportunities of small commercial sites for mixed use (residential and commercial building). Striking the balance of providing sufficient off-street, private parking for a commercial, residential, or mixed-use development continues to be a key discussion point within the community.

Landscape and Other Small Off-Road Equipment

CARB is currently considering [small off-road engines \(SORE\)](#) rules that will reduce smog-pollutant emissions from mobile sources by 80% in 2031 through a combination of regulatory and incentive approaches. SORE are spark-ignition engines rated at or below 19 kilowatts (25 horsepower or less). Engines in this category are primarily used for lawn, garden, and other outdoor power equipment. Engines that use diesel fuel and engines that are used in stationary equipment, including standby generators, are not subject to the SORE regulations. Federal law also preempts states from regulating new engines which are used in construction equipment or vehicles or used in farm equipment or vehicles, and which are smaller than 175 horsepower. CARB’s goal is to require all new sales of regulated SORE to be zero emissions equipment by 2028.

SORE used in the following equipment are subject to CARB's current SORE regulations:

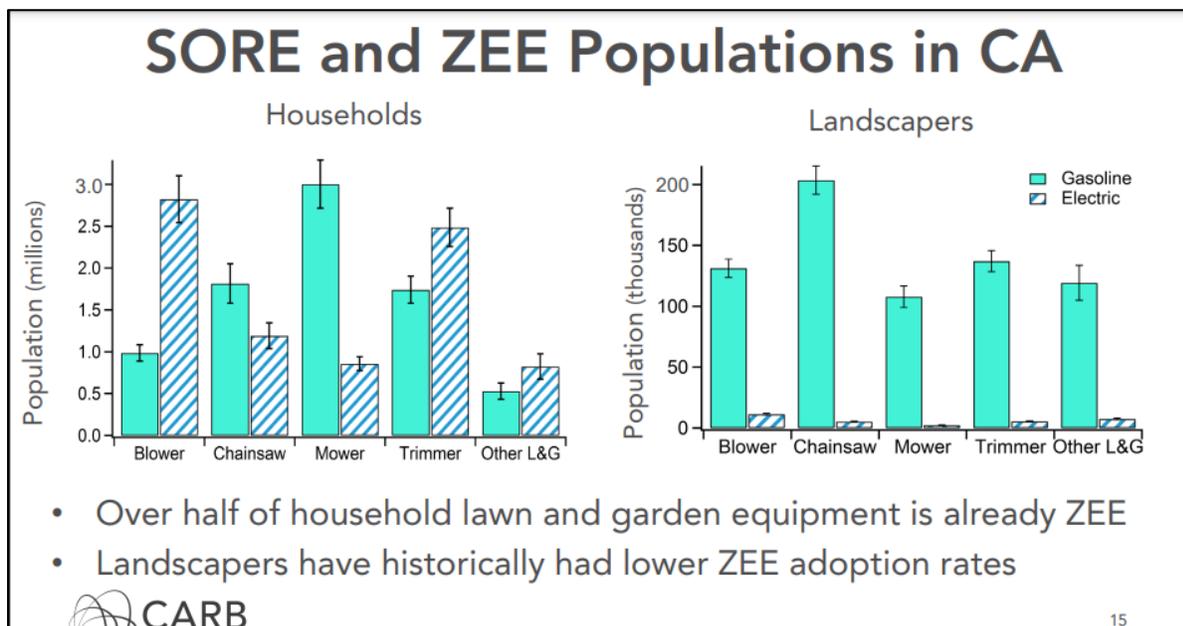
- Chainsaws < 45 cc
- Edgers, Hedge trimmers and string trimmers
- Mowers and Leaf blowers
- Log splitters
- Portable generators
- Pressure washers

SORE used in the following equipment are not subject to CARB's current SORE regulations:

- Air compressors
- Blade-capable brush cutters/clearing saws ≥ 40 cc
- Chainsaws ≥ 45 cc and saws (concrete, masonry, cutoff)
- Chippers and stump grinders
- Light towers
- Pumps ≥ 40 cc
- Shredders/grinders
- Stationary generators and equipment
- Welders
- Equipment with diesel fuel engines (generators, pressure washers, pumps, riding mowers)
- Equipment with LSI engines > 1 liter

As shown in Figure 6, over half of household landscape equipment in California is already zero-emission. In contrast, landscapers have very low adoption rates of zero-emission equipment.

FIGURE 6: SMALL OFF-ROAD AND ZERO-EMISSION LANDSCAPE EQUIPMENT IN CALIFORNIA



Mill Valley Municipal Code Section 7.16.090 prohibits “any person to operate a gas-powered device to blow leaves, dirt or other debris off sidewalks, driveways, lawns or other surfaces within any area of the City.” The ordinance was adopted in 1993 and mainly applies to leaf blowers.

Municipal Small Off-Road Equipment

In 2015, the City’s off-road equipment inventory using gasoline or diesel consisted of the following:

- 16 generators
- 87 pieces of landscape equipment (blowers, mowers, hedgers, trimmers, chain saws, pole saws)
- 24 pieces of other small off-road equipment (fans, pumps, saws, etc.)

Approximately one half of this equipment would not be subject to CARB regulations because it is rated higher than 19 kwh (25 horsepower), uses diesel, is used in construction, or is otherwise exempted as discussed in the Landscape and Other Small Off-Road Equipment background information above. Due to the way City tracks fuel consumption, it is not known how much fuel was used for this equipment.

Low Carbon Fuel

Renewable diesel combustion results in approximately 60% fewer GHG emissions than regular diesel. It is made from waste products, not from agricultural products like ethanol. Chemically, it is the same as diesel so it is a “drop-in” fuel, which means it can be mixed with regular diesel. Renewable diesel burns cleaner, so it is easier to clean engines and reduces vehicle maintenance costs. It can cost about the same as regular diesel because there are fewer taxes on it.

Renewable diesel is readily available on the west coast, and most petroleum suppliers can get it. It is used by the County of Marin, San Francisco, Alameda, and Oakland, to name just a few local governments, as well as Marin Transit and Golden Gate Transit for their buses and ferries.

In 2015, the City fleet and off-road equipment consumed 6,391 gallons of diesel, resulting in 65 MTCO₂e. Switching to renewable diesel would reduce these emissions 39 MTCO₂e.