

County of Santa Clara
Board of Supervisors
Supervisorial District Four
Supervisor Ken Yeager



67457

DATE: May 21, 2013

TO: Board of Supervisors

FROM: Ken Yeager, Supervisor

SUBJECT: Referral relating to increasing electric vehicle chargers in Santa Clara County

RECOMMENDED ACTION

Referral relating to increasing electric vehicle chargers in the County of Santa Clara.
(President)

Possible action:

- a. Refer to Administration a request to update County building codes to require that all rebuilds and new mixed-use, residential, or commercial construction in unincorporated Santa Clara County includes the pre-wiring necessary to efficiently install electric vehicle chargers.
- b. Refer to Administration a request for a policy to be drafted to require the installation of electric vehicle chargers during parking lot projects at County facilities.

BACKGROUND

Purely electric vehicles and plug-in hybrid electric vehicles release less carbon dioxide into the environment than the average car. According to the U.S. Department of Energy, on average, 8,887 grams of carbon dioxide are emitted from burning one gallon of gasoline. Some electric vehicles operating in Santa Clara County have a total CO₂ emissions rate that is five times lower than the average gasoline-powered car. A conventional gasoline-powered vehicle emits over 13,000 pounds of carbon dioxide into the air every year. Accounting for the electricity sources used in the Silicon Valley to power a purely electric vehicle, an electric vehicle here only emits 4,300 pounds of CO₂. For a 100-mile trip, the fuel cost of a gasoline-powered compact sedan is \$13.36. The same length trip in a plug-in hybrid electric vehicle costs \$7.10 and only \$3.74 in a purely electric vehicle.

Considering that electric vehicles have proven benefits to the environment, their preponderance helps Santa Clara County reduce its fossil fuel emissions, a key objective of our County. The Cool Counties program and the California Global Warming Solutions Act of 2006 (also known as AB 32) both charge Santa Clara County with achieving a major reduction in fossil fuels by 2050.

Federal and state governments provide tax credits to those who purchase certain types of electric vehicles. Locally, the Bay Area Air Quality Management District, through the company Charge Point, offers residents a \$700 rebate (discount) for the purchase and installation of a home electric vehicle charger through 6/30/2013.

REASONS FOR RECOMMENDATION

Individuals throughout Santa Clara County are installing electric vehicle chargers in their homes and businesses. Each electric vehicle has a charging cable that can be plugged into an electrical outlet to recharge the battery of the vehicle. The common outlet seen in most homes delivers about 110 to 120 volts, which is the slowest and most basic means for charging an electric vehicle. A second and more efficient charge can be achieved by a Level Two AC charger delivering 240 volts. This is the type of outlet that powers the typical washing machine and dryer in a home. The third and fastest charge of an electric vehicle, sometimes known as a "Super Charger" because it can recharge a battery in less than 30 minutes, can be achieved using a 480 volt DC charger.

To install an electric vehicle charger, the wiring of a home or business must be set up to allow for such a charger. For instance, in the case of a single-family residence, this means installing wiring that allows for a 240 volt outlet in the garage. It is usually more affordable to install this wiring before a structure is built rather than retrofit it afterward. This process of installing wiring at the outset, allowing for easier and more affordable installation of electric vehicle chargers, is known as "pre-wiring."

There are no guidelines or building codes specific to Santa Clara County or its government that address, enable or encourage the construction of electric vehicle chargers, and there is a shortage of such chargers in the Bay Area. According to the U.S. Department of Energy, there are an estimated 494 chargers located at public buildings or private companies in Santa Clara County. However, the company Xatori, which helps electric vehicle drivers locate charging stations, points out that while Northern California ranks first for electric vehicle ownership per capita, the Bay Area ranked fourth for the number of public charging stations per 100,000 residents. To meet the growing demand of current electric vehicle owners and to promote the use of electric vehicles, new County ordinances will help strengthen local infrastructure for electric vehicle chargers.