

Date of Hearing: March 20, 2023

ASSEMBLY COMMITTEE ON TRANSPORTATION

Laura Friedman, Chair

AB 824 (Calderon) – As Amended March 14, 2023

SUBJECT: Highway greening: statewide strategic plan

SUMMARY: This bill requires the California Department of Transportation (Caltrans) to complete a statewide strategic plan, as specified, to achieve a 10% increase of green highways, as defined, in urban areas, disadvantaged communities, and low-income communities by 2035. Specifically, **this bill:**

- 1) Requires Caltrans to complete a statewide strategic plan, in consultation with the California Department of Fish and Wildlife (CDFW), nonprofit organizations, cities, counties, other local governments of urban areas, disadvantaged communities, and low-income communities, to achieve at least a 10% increase of green highways in covered urban areas by 2035.
- 2) Requires the plan give priority for increasing green highways in disadvantaged and low-income communities.
- 3) Requires the plan only consider plants native to California.
- 4) Requires the plan include recommendations for the following:
 - a) State and local policies necessary to achieve the goal of increasing green highways in covered urban areas by at least 10% by 2035.
 - b) Targets and actions for green highways to be completed at the regional level by 2030 in a manner that is consistent with the California Urban Forestry Act.
 - c) Local resources needed for the maintenance and upkeep of green highways and strategies to secure these resources.
 - d) Resources and strategies to address threats to green highways, including climate change, extreme weather, pollution, drought and limited water resource availability, diseases, and pests.
 - e) Sustainable green highway expansion within disadvantaged communities and low-income communities.
 - f) Measures to reduce or eliminate net loss of any existing green highways.
- 5) Requires the plan be completed and submitted to the transportation policy committees of the legislature on or before June 30, 2025.

- 6) Defines “green walls” as all forms of vegetated wall surfaces, including:
 - a) Use of a trellis system to hold native vines and climbing plants that are rooted in the ground and grow vertically into the supporting structures attached to the walls.
 - b) Living plant wall systems, vertical gardens, and modular green biowalls that contain plantings rooted in wall modules.
- 7) Defines “green highways” as a section or sections of a highway that is now, or later may be, improved by green walls or plantings in or on at least one of the following portions of the right-of-way: shoulder, median, overpass pillar, community side of a sound wall adjacent to a highway.
- 8) Defines “plantings” as native lawns, trees, shrubs, flowers, moss, lichen, or other vegetation requiring reasonable maintenance.
- 9) Defines “reasonable maintenance” as the maintenance required to maintain vegetation in a healthy and attractive condition, including, but not limited to, watering, fertilizing, spraying, cultivating, pruning, cutting, mowing, replacing, weed control, washing, pest control, disease control, and litter removal. The fact that a plant may need less maintenance as it matures shall not be interpreted to mean that it does not require reasonable maintenance.

EXISTING LAW:

- 1) Establishes Caltrans and provides that the department has full possession and control of all state highways and property and rights in property acquired for state highway purposes. (Streets and Highways Code (SHC) 90)
- 2) Requires Caltrans to administer the Clean California Local Grant Program of 2021 to provide funding, upon appropriation, for grants to specified local entities for purposes of beautifying and cleaning up local streets and roads, tribal lands, parks, pathways, transit centers, and other public spaces, and administers the Clean California State Beautification Program of 2021 to provide funding, upon appropriation, for purposes of beautifying and cleaning up state highways. (SHC 91.43)
- 3) Requires Caltrans, when appropriate, to include California native wildflowers and climate-appropriate vegetation in planting projects, with priority given to those species of wildflowers that will help rebuild pollinator populations. (SHC 92.3)

FISCAL EFFECT: Unknown

COMMENTS: There are approximately 4.18 million miles of road in the United States as of 2017. Local governments maintain around 77% of road miles, state highway agencies maintain 19%, and the federal government is responsible for 4%. California has the second most paved lane miles in the country after Texas, with 396,540 lane miles. An estimated 20% of land in the country is impacted by the presence of roads. Over the last century, the world has been increasingly covered with impermeable pavements like asphalt, tarmac, and concrete to handle the rise of motor traffic.

In California's largest cities, a majority of land area is paved; 58% of San Jose's urbanized area is covered with buildings, asphalt or concrete, Los Angeles is 61% covered with impervious surfaces; San Francisco is 54% paved over. Statewide, as much as 65% of the total impervious cover in the landscape can be classified as 'habitat for cars'" — which includes roads, parking lots, driveways and garages.

Pavement, planet and people. Impervious surfaces cause heat island effects, floods, stormwater runoff into nearby waterways, and habitat degradation. It is estimated that for every percentage increase in roads, parking lots and other impervious surfaces that prevent water from flowing into the ground, annual floods increase on average by 3.3%. The atmospheric river weather conditions in California between December 2022 and January 2023 resulted in significant flooding and 22 fatalities.

In addition, air pollution is worse near the most congested highways. Given the association between highway traffic pollution and health, the California Air Resources Board (CARB) recommended in 2005 that residences, schools, and other sensitive land uses be positioned at least 500 feet from freeways. While new technology and stricter standards are supporting efforts to decrease harm from vehicle emissions, CARB reaffirmed in its 2022 Scoping Plan that high air pollution concentrations near highways are linked to serious health impacts. Low-income and disadvantaged communities in particular are more likely to be located near highways that produce concentrated air pollution, resulting in negative health effects such as asthma, lung cancer, and premature death.

The sides of highways are, in some cases, the only place left for native species to live. In northern Europe, for instance, up to 90% of the natural ponds and wetlands have disappeared over the past century. But in France, by law, there are stormwater ponds every two kilometers along highways, and by default they have become a partial substitute for natural bodies of water — though a somewhat problematic one due to roadkill and other factors. When researchers last year surveyed 58 such highway ponds, they found that they had become home for numerous amphibian species, including one that is now rare in nature.

In Iowa, where there is little left of the original prairie habitat, farmers who used to set land aside under the federal Conservation Reserve Program have instead withdrawn more than 1.5 million acres since 2008 to plant wall-to-wall corn and try to cash in on the market for ethanol. That makes roadsides "the last refuge, the last vestige of hope" for ground-nesting birds like quail, pheasants, meadowlarks, and bobolinks, as well as for many butterflies and other insect species, says Rebecca Kauten, manager of the integrated roadside vegetation management program at the University of Northern Iowa.

The U.S. Federal Highway Administration (FHWA) provides funds to states for roadside enhancement, but that can mean anything from sound barriers to decorative plantings: "Arizona does a pretty good job, with lots of natural grasses and cactus," said an FHWA spokesman. Iowa has also been a leader in protecting roadside habitat, with a program that times mowing to the natural cycles of ground-nesting birds and other species.

In October 2020, Governor Newsom signed his Nature Based Solutions Executive Order N-82-20, elevating the role of natural and working lands in the fight against climate change and advancing biodiversity conservation as an administration priority. As part of this Executive Order, California committed to the goal of conserving 30% of our lands and coastal waters by 2030, coordinated by the California Natural Resources Agency.

Caltrans may use native plants. According to Caltrans' Roadside Management Toolbox, native vegetation is naturally occurring plant materials existing in California prior to European settlement. Ongoing research has shown that certain species of native plants can function in the harsh environment of the roadside and over time when conditions are favorable to the native vegetation can out-compete weeds and annual grasses which require extensive maintenance to manage. Native plants enhance the roadside environment, water quality, and roadside visual quality.

If selected correctly and properly established, native plants are self-sustaining, surviving and thriving on naturally occurring rainfall and soil nutrients. Native plant materials generally require less maintenance than ornamental/non-native plants due to slow growth patterns, competition with other plants and little if any irrigation requirements.

The Landscape Architecture Program within Caltrans is responsible for the development of policies, programs, procedures, standards, and guidance for all aspects of the California Highway System Roadside Program including planting, irrigation, permanent erosion control, mainstreet livability, structure aesthetics, roadside safety features, and landform grading.

According to Caltrans' latest Highway Design Manual (CHDM), Caltrans is to design "roadsides to maximize sustainability and livability benefits through context-sensitive design solutions." Sustainable design solutions are those that consider balanced and long-term benefits to social, economic, and ecological well-being.

Caltrans requires plants used in roadside design to be well suited to local environmental conditions such as sun exposure, aspect, climate, annual precipitation, temperature extremes, wind, soil type, and recycled water quality. Plants should be selected for their anticipated ability to adapt to changing climatic conditions such as extreme temperature, wind or other weather events. Whenever possible, Caltrans should select drought tolerant plants that will survive if supplemental water is discontinued, and native plant species. The CHDM encourages species with a wide range of bloom times to enhance pollinator habitat, and carbon sequestration rates of species selected. In fire prone areas, Caltrans requires plants that will minimize fire risks.

The amount Caltrans currently spends to maintain the state's roadsides is relatively small compared to what the state invests in transportation projects annually. Much of this funding goes to litter abatement, but money is also spent on mowing, and maintenance of existing plants. In addition, the state's relatively new Clean California program is investing \$1 billion over three years to clean and beautify public spaces near roadways. Some of the projects funded in Caltrans districts include planting trees and other landscaping, as well as hardscaping such as murals on bridge columns and using rock, gravel and recycled glass, or decorative fencing.

Green is good. Studies have shown that adoption of green walls across large areas of street canyons reduced concentrations of Nitrogen dioxide (NO₂) and PM₁₀ by as much as 15% and 23% respectively. Children in green neighborhoods for example suffer 15% less often from obesity. Such connections have repeatedly proved to be strongest in disadvantaged groups. Children in poor green neighborhoods receive 10% fewer prescriptions for Ritalin than children in equally poor but obviously less green neighborhoods.

Like the climate challenges we face, the solutions are less about science at this point than public policy. A 2018 study found that things were trending in the wrong direction — tree cover in urban areas across the country was falling, and the number of impervious surfaces was increasing.

Staff comments: Mitigating some of the negative impacts of paving land in California by increasing greening along state highways could provide health and air quality benefits for people and native species. This bill would require Caltrans to strategically plan how to increase green spaces and habitat in an increasingly paved environment.

However, if the plan this bill requires Caltrans to develop were to be implemented it would increase state maintenance costs associated with purchasing and maintaining the plants. Without a new funding source, investments in plants could come at the cost of roadway maintenance which is already underfunded. In addition, there are other factors to consider such as worker safety. Roadside maintenance requiring workers on the side of the roadway increases the potential for accidents to occur that could injure those workers. It may be useful for the report to identify alternatives to the funding sources used to maintain state transportation infrastructure such as funding from the state's Urban Greening and Urban Forestry programs, as well as Clean California. Finally, it would be useful for the report to identify alternatives to greening that can also beautify highway landscapes, such as hardscaping. Hardscaping may have lower ongoing maintenance costs and does not increase the number of workers on and near the state highway system.

According to the author, "AB 824 establishes the Highway Greening Act, which requires Caltrans to develop a statewide strategic plan to increase green highways in low-income and disadvantaged communities by 2035. The health impacts of poor air quality have devastated vulnerable communities, resulting in high rates of asthma, especially among children. Low-income Californians and communities of color disproportionately inhale high concentrations of air pollution because of proximity to networks of highways with dense traffic congestion. Highway greening efforts in the U.S. and internationally have proven to reduce air pollution, contribute to improved quality of life, and preserve wildlife habitats. This bill will prepare California to be a leader in nature-based climate mitigation through strategic coordination and targeted action."

Prior Legislation. AB 2062 (Maienschein) Chapter 165, Statutes of 2018, requires Caltrans, when appropriate, to include California native wildflowers and climate-appropriate vegetation in planting projects, with priority given to those species of wildflowers that will help rebuild pollinator populations

AB 1530 (Gonzalez-Fletcher) Chapter 720, Statutes of 2017, requires the Department of Forestry and Fire Protection (CAL FIRE) to update the California Urban Forestry Act (Act) to reflect its current funding mix, establish local or regional targets for urban tree canopy, and provide more focus on the maintenance of urban forests.

SB 32 (Pavley) Chapter 249, Statutes 2016, requires the ARB to ensure that statewide greenhouse gas (GHG) emissions are reduced to at least 40% below the 1990 level by 2030.

AB 32 (Nunez, Pavley) Chapter 488, Statutes of 2006, creates a statewide greenhouse gas emission limit that would reduce emissions by 25% by 2020.

REGISTERED SUPPORT / OPPOSITION:

Support

None on file

Opposition

None on file

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