



ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS



Monterey Bay Electric Vehicle Climate Adaptation and Resilience Roadmap

September 2026

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This Monterey Bay EV CAR project created an opportunity to fill a critical gap in climate vulnerability analysis with respect to EV charging and to envision the role that the EV charging network can play in enhancing regional resilience.

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1 Project Background

1.1 Project Purpose

Electric vehicle (EV) adoption is growing across California and the Monterey Bay region, creating an important opportunity to reduce greenhouse gas emissions, lower dependence on fossil fuels, and expand access to cleaner transportation. The shift to EVs requires new charging infrastructure, sufficient grid capacity, and careful planning to ensure that charging remains reliable during power outages, extreme weather, wildfire conditions, and other climate-related disruptions. Without proactive public investment and coordination, EV infrastructure and adoption are likely to remain concentrated in wealthier and more urban communities, leaving underserved residents with fewer options. Advanced planning for EV infrastructure also presents opportunities to accelerate alternative transportation modes in the region, such as shared mobility, and build a resilient future for all community members.

The Monterey Bay region includes the Counties of Monterey, Santa Cruz, and San Benito with an overall population of 774,000 people.

The Monterey Bay EV Climate Adaptation and Resilience (EV CAR) Framework and this companion Roadmap is intended to help AMBAG and its partners plan for an EV charging network that is equitable and resilient across the region. Equity is central to the Roadmaps recommendations to ensure all residents can access the benefits of EV adoption, including lower fuel and maintenance costs, cleaner air, and access to reliable transportation. For underserved communities, advancing equitable EV infrastructure is not only about adding chargers; it includes ensuring that charging locations, pricing, design, information, and reliability respond to the realities of people who have unmet mobility needs.

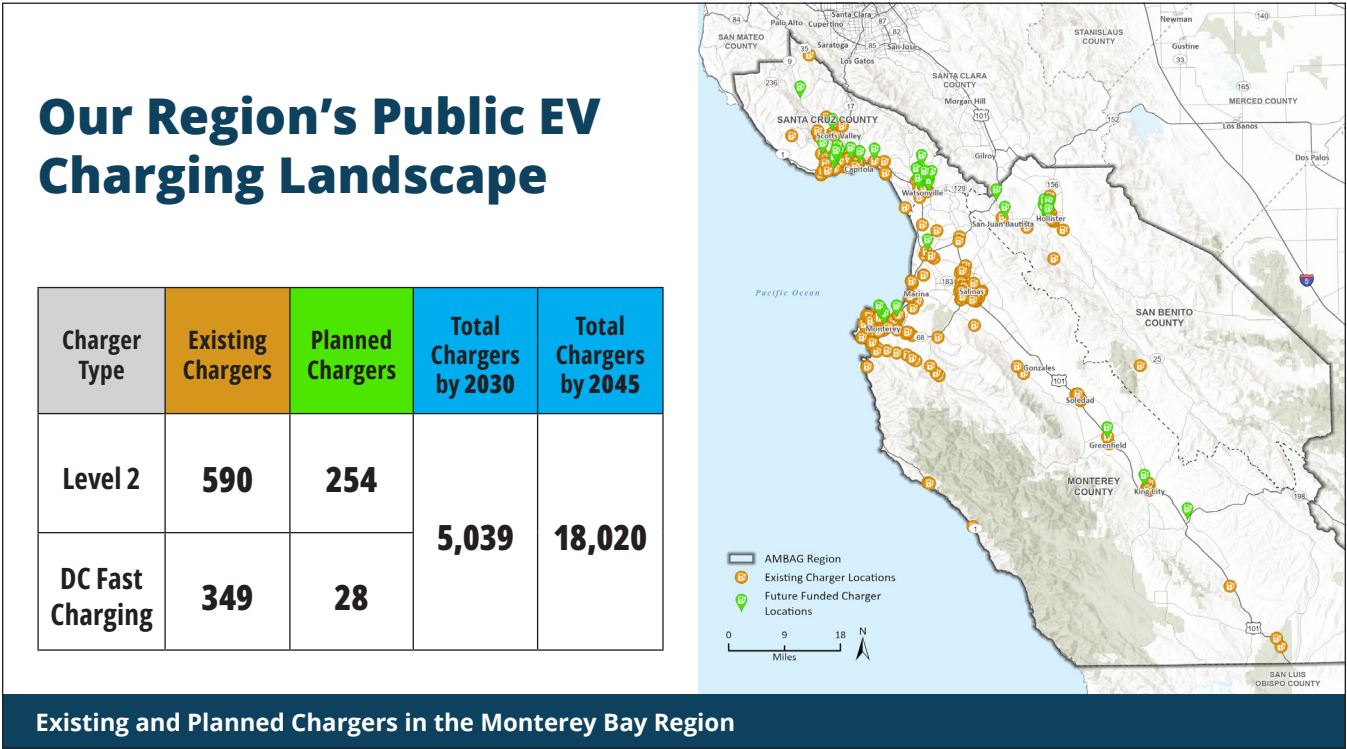
Both technical analyses and community engagement form the basis of the twelve strategies presented in the Roadmap. These strategies are designed to help AMBAG, local jurisdictions, utilities, community-based organizations, landowners, EV infrastructure providers, and other partners coordinate investments, prioritize underserved communities, strengthen charging reliability, and align EV infrastructure deployment with broader climate resilience and transportation goals. By linking infrastructure planning with affordability, community priorities, resilience, and safety, the Roadmap provides a practical guide for building a cleaner, more reliable, and more accessible regional charging network.

This Roadmap is intended to serve as an implementation-focused companion to the EV CAR Framework; readers are encouraged to refer to the Framework for a more detailed discussion of the analyses, stakeholder input, and rationale underlying the strategies presented here.

1.2 EV Charging Growth Projections

The AMBAG project and technical consultant team conducted an analysis to understand what future charging infrastructure may be needed across the Monterey Bay region. The team studied current EV ownership patterns, driving behavior, and differences between EV and internal combustion engine vehicle use, and then modeled EV growth through 2050. The results of the analysis shows that current EV travel is concentrated in urban areas and corridors where charging is already more available, while many rural, agricultural, and underserved areas continue to have limited charging access. This pattern suggests that charging availability is shaping where EVs are used today and that infrastructure gaps may be limiting broader adoption, especially for residents without reliable home charging or convenient public charging options.

Currently, there are over 1,000 existing and planned chargers in the Monterey Bay region. Looking ahead, the region is expected to need substantial new charging infrastructure to support EV growth. By 2030, the Monterey Bay region is projected to need 5,000 additional public chargers and nearly 35,000 new home chargers. By 2045, projected demand increases to 18,000 additional public chargers and more than 111,000 additional residential chargers. Growth is projected to be concentrated along major corridors such as Highway 101, in urban centers, and in emerging communities including southern San Benito County, Hollister, Watsonville, Scotts Valley, Monterey, King City, and areas east of Monterey. These findings underscore the need for coordinated planning that prepares for rapid growth while correcting existing gaps so future EV infrastructure supports both regional mobility and equitable access.



Existing and Planned Chargers in the Monterey Bay Region

1.3 Challenges and Opportunities

By advancing and facilitating EV infrastructure deployment, AMBAG and its partners have the opportunity to enhance equity and resilience in the Monterey Bay region. Climate resilience must become a core part of EV infrastructure planning because extreme heat, wildfire, flooding, storms, PSPS events¹, and grid stress can affect not only individual charging stations, but also the electrical distribution system, access roads, evacuation routes, and the broader transportation network. At the same time, continued EV growth will increase electricity demand, shift when electricity is being used, and require closer coordination among transportation agencies, utilities, local jurisdictions, landowners, community-based organizations, and EV infrastructure providers. These challenges create a unique opportunity to plan charging investments more strategically, using resilience-oriented siting, backup power, managed charging, battery storage, microgrids, and bidirectional charging to not only meet the needs of increased EV adoption with a more robust charging network but to also strengthen the grid itself.

¹ A planned, temporary power outage initiated by an electric utility to reduce wildfire risk when weather and environmental conditions make energized power lines more likely to spark a fire.

Equity is also a central challenge and opportunity. Existing charging access is uneven across urban and rural communities; higher- and lower-income households, homeowners and renters, and communities already benefiting from EV investment compared to those that remain underserved. If future infrastructure is unreliable, unaffordable, poorly located, or difficult to use, it could reinforce existing transportation inequities and weaken public confidence in EVs. However, public agencies and partners can use this moment and the EV CAR Roadmap and Framework to guide investment where the private market may not provide sufficient service, target chargers and supportive programs toward residents facing the greatest barriers, and pair infrastructure deployment with culturally relevant outreach, multilingual communication, incentives, and community engagement. Done well, EV infrastructure planning can improve adoption, reduce household transportation costs, expand mobility options, and strengthen community resilience.

1.4 Community Needs and Priorities

Robust community outreach was conducted by Ecology Action with support from Regeneración Pajaro Valley and Proyecto Mixteco to identify transportation barriers, climate vulnerabilities, and EV adoption priorities across underserved communities in Santa Cruz, San Benito, and Monterey Counties. The engagement process emphasized trust-building, community-centered survey development, in-person outreach, and data collection with low-income residents, agricultural workers, undocumented individuals, and Spanish- and Mixteco-speaking community members. Feedback showed that many residents rely on personal vehicles while also facing affordability, infrastructure, and safety challenges; those who use public transit or walking as alternatives raised concerns about reliability, accessibility, and personal safety, especially during extreme weather or emergency conditions.

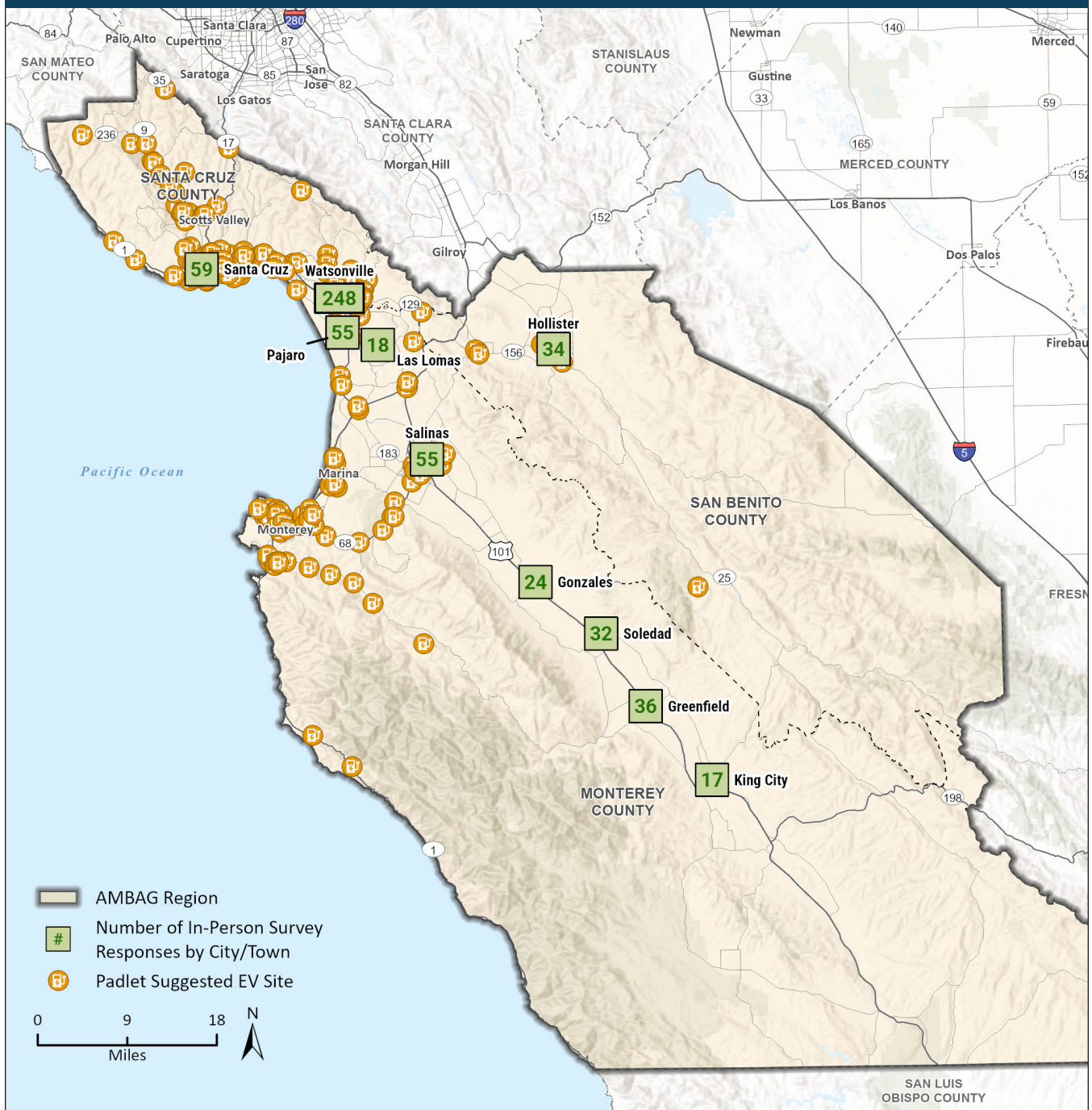
Community members expressed interest in EVs as part of a cleaner and more resilient transportation future, but significant barriers remain. Cost, limited charging access, lack of home charging for renters and multi-family housing residents, and limited information about EV technology all constrain adoption. Participants raised concerns about climate hazards such as flooding, extreme heat, wildfire, power outages, and evacuation challenges, particularly for residents without reliable vehicle access or air conditioning. These findings underscore the need for EV investments that are paired with education, multilingual and culturally relevant outreach, reliable and accessible charging locations, and a broader investment in transportation resilience strategies.

The AMBAG project and consultant team also conducted a regionwide effort to gather public input, using an interactive, map-based public engagement digital tool called Padlet, on existing, planned, and potential EV charging locations across the Monterey Bay region. It allowed community members to review the existing and planned EV charging network and provide location-specific feedback to help inform future investments. The most frequently cited concerns with existing chargers included broken or unreliable equipment, insufficient charging capacity at high-demand locations, and a lack of basic amenities, while charging. Participants broadly supported planned EV charging sites and expressed the most interest in proposing new EV charging locations. Overall, suggested sites clustered in higher-density areas and popular tourist destinations.

Geographic Diversity Represented in Community Feedback

Community engagement on the EV CAR Roadmap reflected a broad spectrum of input within the Monterey Bay region. In-person surveys gathered feedback from community members living in Watsonville, Santa Cruz, Pajaro, Salinas, Greenfield, Hollister, Soledad, Gonzales, and Las Lomas. Based on the

proposed suggested EV sites provided via the online Padlet survey, respondents reflected a preference for Santa Cruz, Monterey, Pacific Grove, Salinas, and Watsonville areas. The combination of both engagement strategies offered insights from a broad representation of community in the region.



1.5 Climate Change Vulnerability

In the coming years, the region is expected to experience rising temperatures, more frequent and prolonged heat waves, wildfire risk, extreme precipitation, flooding, landslides, and coastal hazards. These hazards can disrupt the electrical distribution system, which is the part of the grid most directly connected to homes, businesses, and charging stations. As a result, EV charging may become unavailable during an outage even when the charger itself is not physically damaged.

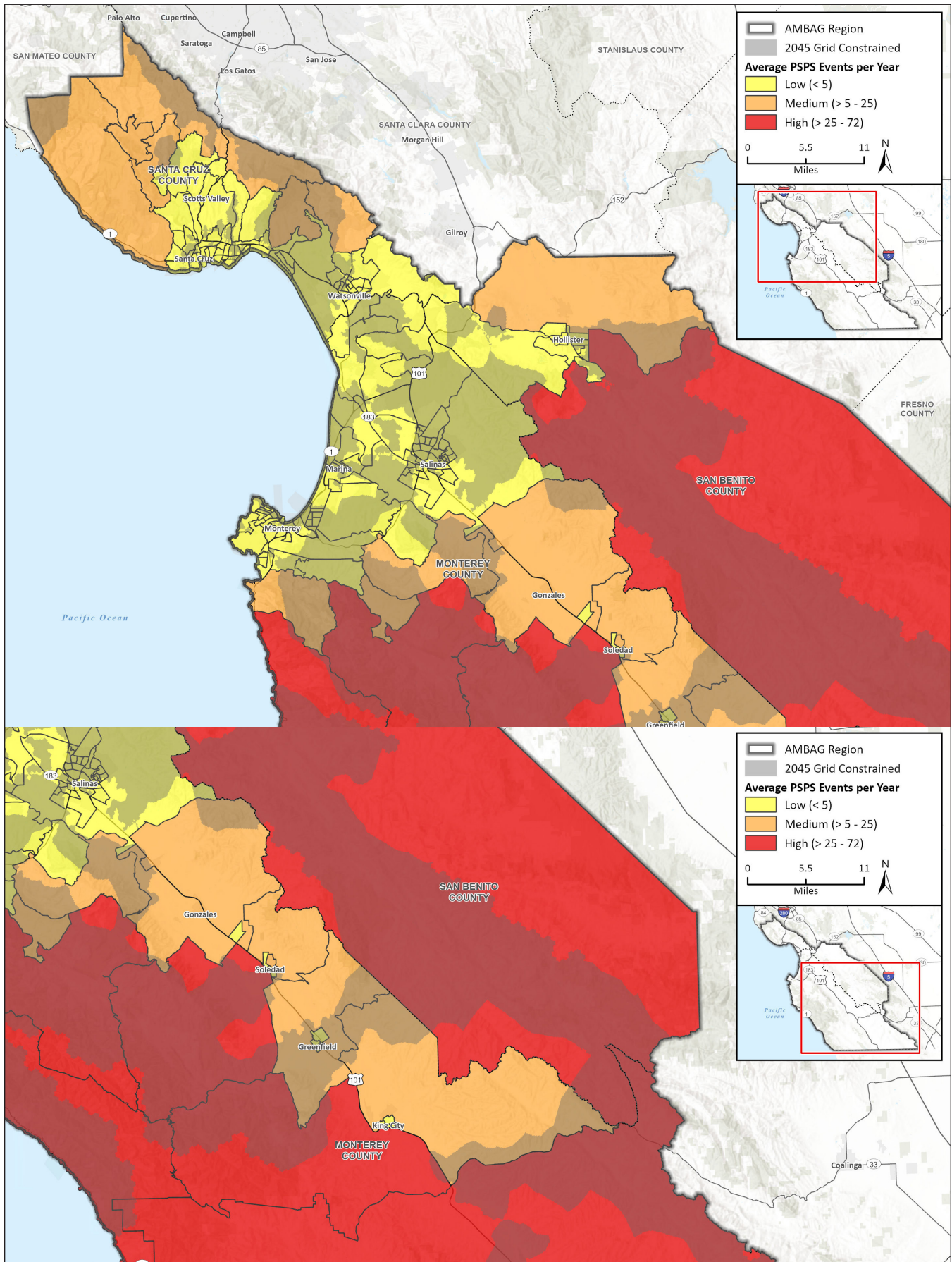
Wildfire-related conditions are the most significant climate-related threat to EV charging reliability because of their connection to grid outages and PSPS events. Climate modeling indicates that areas already prone to wildfire-related outages are likely to see increased exposure in the future, with some eastern and southwestern parts of the Monterey Bay region projected to experience roughly 40 additional PSPS-risk days per year under a mid-century global warming scenario. Hilly, forested, higher-elevation, and rural areas, are expected to experience the greatest increases in wildfire-related hazards and PSPS exposure. Many urbanized areas are projected to experience comparatively smaller changes in modeled PSPS conditions; however, they may still be affected when PG&E de-energizes parts of the grid that extend beyond the immediate high-risk area.

In addition to assessing where current EV infrastructure is located, future planning should consider where charging demand is expected to grow, where the grid is most vulnerable to climate-related outages, and where community members have the fewest transportation alternatives during emergencies. Pairing EV infrastructure deployment with resilience strategies and coordination with emergency planning can help ensure that the charging network remains reliable and accessible during climate-related disruptions.

Grid capacity and EV adoption analysis' identified areas where future charging demand may exceed available grid capacity, creating different types of planning challenges and opportunities, depending on the context. The figure below demonstrates the number of locations where grid limitations coincide with climate-related outage risk by 2045. In urban areas or locations with significant projected charger growth, grid upgrades, which are costly and time-intensive, may be more feasible because the cost can be spread across a larger number of users and greater electricity demand. In rural areas or locations with existing grid constraints, even a small number of chargers may strain the grid, and conventional upgrades may be less feasible. These areas will require targeted and creative solutions that also have notable resilience benefits such as distributed energy resources, smart chargers, managed charging, battery storage, or microgrids.

Building reliable EV charging infrastructure for the future will depend on how charging is sited and designed in relation to grid constraints, outage risks, travel corridors, and community needs. For AMBAG and its partners, the central planning insight is that charger deployment, grid readiness, climate resilience, and equity should be evaluated together rather than as separate considerations. Aligning these factors can help ensure that the region's EV charging network supports adoption goals while remaining reliable, accessible, and useful during climate-related disruptions.

2045 Risk Conditions



2 Approaches to Advance Resilient EV Deployment

2.1 Equity Guardrails Criteria

AMBAG is committed to expanding EV infrastructure through an equitable, community-driven approach. To support equitable outcomes in the EV CAR Roadmap, the project team developed the Equity Guardrails Criteria to evaluate strategies through an equity lens. Informed by community engagement, the guardrails help prioritize investments that benefit underserved communities and ensure EV infrastructure supports affordable access, emergency readiness, and long-term transportation resilience. The criteria also provide a consistent framework for incorporating community priorities into project planning and implementation.

Equity Guardrails

- | | |
|--|--|
| 1. Adopt a Fair and Transparent Process for EV Infrastructure Decision-making | 4. Prioritize EV Infrastructure Investments for Highest Need Communities |
| 2. Establish Pathways for Two-Way Communication and Engagement between Public Agencies and Communities | 5. Increase EV-related Knowledge in Underserved Communities |
| 3. Provide Fair, Safe, and Inclusive Access to EV Infrastructure | 6. Provide Affordable and Equitable Access to EV Infrastructure |

2.2 Adaptation Strategy Framework

Twelve adaptation strategies have been identified to provide a practical roadmap for strengthening the resilience and equity of the Monterey Bay region's EV charging network. The strategies are organized into four complementary categories:

1. **Energy Resilience**, which focuses on improving grid reliability and flexibility of during power outages
2. **Siting and Design**, which promotes resilient, accessible, and user-centered charging infrastructure
3. **Mobility**, which expands transportation options and integrates EV charging into the broader transportation network
4. **Collaboration, Funding, and Outreach**, which emphasizes regional coordination, equitable investment, and sustained community engagement

These strategies translate technical analyses and community-informed priorities into actionable approaches that AMBAG and its partners can pursue to build a more climate-resilient, reliable, and equitable EV charging system for the region. More detailed information about each strategy, along with implementation actions, is included in Appendix A.

EVCAR Framework Strategies

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01
Install Renewable Energy and Battery Storage at Priority Charging Sites



02
Enhance Community and Grid Resilience Through Bidirectional Charging



03
Preserve Grid Capacity Through Smart Charging and Load Management



04
Develop Installation Tools and Guidelines for Public-Benefit Sites



05
Create Accessible, User-Centered EV Infrastructure Design and Service Delivery



06
Address Charging Needs at Multi-Family Housing



07
Address Charging Needs at Rural and Agricultural Community-Serving Properties



08
Co-locate EV Charging at Mobility Hubs and Resiliency Centers



09
Design and Deploy Shared EV Mobility Options



10
Facilitate Regional Collaborative Planning and Implementation to Advance Equitable Climate-Resilient EV Infrastructure



11
Direct Funding and Incentives Towards Underserved Communities



12
Sustain Local EV Awareness Campaigns that Advance EV Adoption with Local Partners



2.3 Next Steps

Implementing the EV CAR Roadmap will require sustained coordination among AMBAG, local jurisdictions, utilities, community-based organizations, transportation agencies, property owners, and EV infrastructure providers. While the twelve strategies provide a long-term roadmap, several near-term actions can help build momentum and establish the foundation for equitable and resilient EV infrastructure deployment across the region.

The nearest-term actions include Strategies #8 and #9 from Appendix A, co-locating EV charging at resiliency centers and deploying shared EV mobility options, such as shared EV car-share, short-term rental, and vanpool services. These strategies are already underway with implementation partners actively seeking funding to deploy the strategies across the Monterey Bay region. Collaboration, funding, and outreach strategies (Strategies #10, #11, #12) are also near-term strategies that will be advanced through existing partnerships, community engagement efforts, and funding development. For these strategies, ongoing discussions among partners will continue while new opportunities for regional collaboration will be explored. The focus of these discussions will be to review priority geographies, track implementation needs, coordinate funding opportunities, discuss grid and permitting barriers, and identify where joint action could reduce costs or accelerate deployment.

Strategies #1 and #2, installing renewable energy and battery storage at priority charging sites and enhancing community and grid resilience through bidirectional charging, will be considered priorities as EV infrastructure grows across the region. These strategies are still in the conceptualization phase, and near-term steps will focus on identifying the partners, site types, operating models, and funding opportunities needed to move them from concept to implementable projects.

This Roadmap presents an important first step toward building a more equitable, resilient, and reliable EV charging network across the Monterey Bay region. The strategies presented here provide a practical foundation for coordinated action among public agencies, utilities, community organizations, and private-sector partners to ensure that EV infrastructure investments advance both climate resilience and transportation equity. As EV adoption accelerates and climate risks intensify, proactive planning and collaboration will be essential to ensure that all communities can benefit from a charging network that is reliable during disruptions, responsive to community needs, and aligned with the region's long-term sustainability goals. By acting now, the Monterey Bay region can position itself as a leader in advancing EV infrastructure that not only supports California's clean transportation goals, but also strengthens community resilience for decades to come.



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