ARCCA Alliance of Regional Collaboratives for Climate Adaptation

June 23, 2017

Secretary John Laird
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95816

RE: Draft Safeguarding California Plan: 2017 Update

Dear Secretary Laird and Staff:

The Alliance of Regional Collaboratives for Climate Adaptation (ARCCA) welcomes the opportunity to provide comments on the draft report, *Safeguarding California Plan: 2017 Update* ("Plan").

We thank the Natural Resources Agency for producing this important document that outlines strategies for and ongoing actions of State agencies and departments working to address climate change impacts and build community and statewide resilience in California. We appreciate the hard work that has resulted in this draft and the meaningful efforts undertaken to seek public input.

ARCCA is a robust network of leading regional climate collaboratives – each encompassing a diverse group of public agencies, nonprofits, universities, and private sector companies – working together to build resilience to climate change impacts throughout California. As a statewide network bringing together some of the leading voices and thinkers on climate adaptation at all levels of society, ARCCA provides critically-needed infrastructure to:

- Streamline coordination efforts between State, regional, and local agencies and activities;
- Support existing and emerging regional climate collaboratives to develop coordinated landscape-level strategies and build effective local responses; and
- Cultivate a robust network of adaptation practitioners in California to foster the exchange of best practices and replicable strategies to accelerate actions.

We respectfully offer a few key recommendations for the overall Plan below, as well as more specific comments and suggestions organized by chapter which have been solicited through our membership and are generally supported by ARCCA. Our recommendations and comments:

1. Strengthen the Plan's regional approach and framework to prioritize collaboration and cross-sectoral partnerships, especially with sectors that are not as engaged but are critical to achieving state goals and building resilience such as the business and technology sectors. We appreciate the acknowledgement of the local government role in advancing adaptation practices, strategies, and projects at the community level, and in collaborating with key State agencies. While the Plan highlights the importance of utilizing a regional approach, the role of regional entities is absent or vague in many sector-focused recommendations. Engaging with regional agencies can help streamline State-to-local coordination efforts, and better leverage limited resources while avoiding maladaptive practices. We recommend partnering

with agencies, organizations, and collaboratives working at the regional scale and investing in regional planning and implementation efforts more deliberately throughout the final Plan.

We greatly appreciate the acknowledgment of regional climate collaboratives, particularly of ARCCA member regional collaboratives, in several sector-focused recommendations and in the sixth recommendation of the Comprehensive State Adaptation Strategy. Our member regional collaboratives directly engage with a diverse range of stakeholders including cities, counties, regional agencies, non-governmental organizations, community-based organizations, universities, private-sector companies. We are also actively working with the newly-formed Central Coast Climate Collaborative, the North Coast Resource Partnership, and stakeholders in Orange County, the Inland Empire, and San Joaquin Valley to support emerging collaboratives and to encourage engagement with ARCCA. We believe our engagement to date with key State agencies has been mutually beneficial and look forward to ongoing, expanded, and new opportunities to coordinate and collaborate. We encourage the State to continue leveraging ARCCA's network to work together in advancing our shared adaptation goals.

2. Prioritize the development of a comprehensive funding and financing strategy to accelerate the transition from planning to implementation.

    a. For each ongoing action and next step, the final Plan should describe the level of funding required, the existing funding stream(s) currently being leveraged or exhibiting strong potential to be leveraged in the near future, and the perceived gap between funds required and funds available with strategies to fill this gap. Additionally, we suggest developing a more comprehensive funding strategy with defined timelines and including a maintained list of funding opportunities in readily available online resources such as the ARB Funding Wizard, the Adaptation Clearinghouse and, where appropriate, linked to Cal-Adapt.
    b. Local Governments have been and will be the primary laboratory for innovation on climate action. As such, increased levels of funding to support local government climate adaptation efforts are critical to achieving the State's resiliency goals. Local governments throughout the state are pressed to expand social services, create new plans, engage a broader range of stakeholders and State work groups, and build broad expertise in rapidly-evolving fields. At the same time, existing funding sources (e.g. sales tax revenue and federal grants) are under threat. We encourage the State to increase funding opportunities for local governments and to prioritize regional projects with multiple co-benefits to maximize the impact of limited funds. We feel this will ultimately realize statewide benefits that will reduce state burdens as local solutions mature and are scaled out. However, the investment upfront needs to happen now.
    c. A substantial increase in investments for infrastructure improvements is required to safeguard Californians from the accelerating impacts of climate change and extreme weather events. The Oroville Dam Crisis, which made national headlines and resulted in public mistrust, demonstrates a clear need to invest in infrastructure improvements. Additionally, infrastructure should be built and upgraded to

appropriate specifications to withstand the anticipated near- and long-term climate change impacts and implications.

d. We recommend a greater focus on capacity building, public outreach, and education to increase understanding, buy-in, and political support for building community resilience. Capacity building, outreach, and political engagement should not be seen as secondary to direct investment but rather should be seen as essential to investment. Communities will only be able to deploy the most creative and innovative solutions when local governments have the technical and staffing resources to understand and plan their responses; the public understands the threats of climate change, preparedness and response strategies; and leaders have opportunities to become stewards and build individual and community adaptive capacities. Investments in these aspects of adaptation will help local communities unlock additional revenues and allocate a greater portion of existing funds to adaptation activities. Additionally, we encourage the State to provide or incentivize additional funding and financing opportunities for low-income, hard-to-reach, rural, and underserved community members to ensure that all Californians are included in our transition toward a low-carbon, resilient future.

e. We encourage the State to invest in projects that foster the verification of metrics and outcomes to make a compelling case for adaptation activities, the integration and deployment of new technology, and piloting of new, innovative ideas. California has thrived by advancing environmental goals, developing groundbreaking technology, and leading the nation with exemplary policies, models, strategies and tools. To foster this level of creativity will require fluidity and flexibility, which can be accomplished while still achieving measurable outcomes. By working at both the state and local levels to aggregate projects and match funding, we can streamline implementation, better leverage private sector investments, and diversify funding mechanisms to create a strategic and sustainable approach to implementing local climate initiatives.

3. Deliberately integrate equity into all recommendations to support the evolution of the adaptation field to become more people-centric, holistic, and equitable. While many sector chapters included a stand-alone recommendation on equity, we recommend embedding equity across all recommendations and sectors. As the Plan appropriately notes, climate change results in a disproportionate impact on vulnerable populations and disadvantaged communities, and strategies that protect and benefit these communities should be prioritized. We suggest specifically integrating and prioritizing Recommendation CA-2 – which directs agencies to partner with vulnerable populations to increase equity and resilience through investments, planning, research, and education – in all sectors. While there are several existing programs supporting underserved communities – many of which are related to energy efficiency measures – it is important to consider and address barriers to participating in existing programs, and to expand and layer services for streamlined community engagement.

   a. We encourage the State to partner with community-based organizations and coalitions of environmental justice and equity to better serve vulnerable populations. Efforts should be taken to meaningfully engage with community members to better understand their needs and concerns rather than being overly prescriptive. We

encourage the State to also seek resiliency strategies *from* community members since many employ creative resource saving and sharing strategies (e.g. micro-lending) that can help other communities increase social cohesion and build adaptive capacity.

b. Climate change is not the greatest concern for most low-income and underserved communities (unless their livelihoods are directly threatened), but rather employment, income stability, safety, housing stability, food security, and health are far more pressing daily concerns. The State has done an exceptional job at strengthening the link between climate and health, and we recommend expanding such efforts to create a vision and invest in programs that tackle this broader range of social issues through resiliency strategies. This also demonstrates the importance of coordinating across sectors and programs to achieve co-benefits.

4. Foster cross-sectoral collaboration and integration by including a clear and comprehensive cross-sectoral strategy, outlined in the beginning of the document, and designed to facilitate collaboration among the various agencies to efficiently achieve a more comprehensive vision of a resilient and equitable future for California. While we recognize the overarching challenge with adaptation planning is its interdisciplinary nature, we recommend, at minimum, creating a stronger link between the following sectors in the final Plan:
    a. Energy and Transportation,
    b. Energy and Forests,
    c. Energy and Water,
    d. Forests and Water, and
    e. Health, Energy and Water

    Additionally, IT infrastructure and cybersecurity should be incorporated, where relevant, in the final Plan. Data centers should be modern and energy efficient, located in areas that are less vulnerable to natural disasters (cloud computing makes this very feasible), and old or underutilized infrastructure should be retired. The State should also consider cybersecurity threats and vulnerabilities that may impact both open/public and closed/private servers, databases, systems, and all other connected devices and facilities. Key sectors to prioritize include emergency management, energy, and transportation.

    We also recommend engaging with higher education and professional networks (e.g. engineering, architecture, and construction) to assess the level and quality of climate change information integrated in their existing curricula and programs. We suggest developing partnerships to ensure that current and incoming workforces are properly trained to integrate climate change mitigation and adaptation strategies into project planning and implementation.

5. Lift up adaptation "opportunities" to emphasize a positive future for California. Broadly, the Plan places heavy emphasis on risks – particularly in the Executive Summary and Introduction sections - but there are considerable opportunities associated with adaptation and resilience that could be woven throughout the report to emphasize market opportunities, new and innovative technology possibilities, and advancements in creative community planning that can arise through effective adaptation actions. As opposed to focusing on risks, which can

emphasize maintaining the status quo, the Plan should lift up opportunities for enhancing social cohesion, creating new jobs or transitioning from previous industries to provide a positive outlook and encourage agencies and other stakeholders to engage with the overall process as a forward-looking exercise that aims to take California into a robust, healthy and vibrant future.

We thank you again for your hard work in producing this impressive draft and for your ongoing support for California's communities, local governments, and regional agencies to prepare for and build resilience to climate change impacts.

We hope these key recommendations and the various chapter comments provided by our collaborative members (pp. 6-25) are helpful to your efforts and welcome the opportunity to provide additional clarification or to support the development of specific language desired. We look forward to working alongside and in collaboration with State agencies and departments to realize our shared goals.

Sincerely,

Jonathan Parfrey, ARCCA Chair

The Los Angeles Regional Collaborative for Climate Action & Sustainability

Kerri Timmer, ARCCA Vice Chair

Sierra Climate Adaptation & Mitigation Partnership

Kathleen Ave, Executive Committee Member

Capital Region Climate Readiness Collaborative

Phil Gibbons, Executive Committee Member

San Diego Regional Climate Collaborative

Kate Meis, Executive Committee Member

Local Government Commission

Introduction

- "The State has committed to fight climate change at the subnational level as a founder of the Under2 Coalition – a global pact among cities, states and countries to limit the increase in global average temperatures to below 2 degrees Celsius, the level of potentially catastrophic consequences." (p10)
    - We suggest revising this statement to "…2 degrees Celsius, the level at which potentially catastrophic consequences would occur."

- "Already these changes have rendered unreliable our 117 years of weather-related record-keeping as a state." (p10)
    - As written, this suggests that climate change is questioning the reliability of the act of historical weather record-keeping itself – not how effectively these records can predict current and future weather.

Comprehensive State Strategies to Safeguard California

- Overall
    - We commend the inclusion of cross-cutting strategies and agree that such guiding principles are important to support a holistic response. We also find that these strategies strongly resonate with ARCCA's guiding principles, and are happy to see such strong alignment.
    - Application of these principles does not seem to be equally integrated throughout the following chapters, and we would encourage the plan to more carefully delineate how each sector is supporting all of the strategies to the degree possible and using them to define and frame activities and actions for the future.
- CA-1
    - We agree that the outpouring of policy and legislation has greatly accelerated the incorporation of climate change in core functions of government, and while it is still early to document outcomes, we encourage focusing more on implementation over the next 3-5 years to help show what this will mean in practice for state agencies.
- CA-2
    - While we fully agree with the concept of this strategy, the articulation in this section does not speak to what the state is doing itself. CalBRACE is a relatively modest program, and the Barriers study is an important set of findings, but does not by itself translate to action. SB 1000 and SB 379 are landmark legislation, but actually are local requirements for implementation as opposed to actions taken by the state. We encourage this section to speak more directly to what the state is and will do to partner with vulnerable communities as we move forward.

- CA-3
    - California has a world-class climate research program and we have been very much engaged (as a whole and as individual members) in a number of the 4th assessment research projects. We value the increasingly applied focus of the research and welcome and support ongoing efforts in this arena. With the emphasis on climate action at the Federal level, California's work is more important than ever, and we as partners in that research and users of the products of that research will strongly support a strong climate research program.
- CA-4
    - As with CA-2 we strongly concur that significant and sustainable funding sources of climate investments needs to be an overarching strategy for state climate efforts, this section does not really address what the state could be doing in this arena, and more importantly illustrates the limited progress we have made on this front. Local funding while important is not state action, and the two other funding programs identified - while vitally important and a huge step in the right direction - speak only to a fraction of the needs seen throughout the rest of the report. As noted in our opening, we encourage the report to speak to any efforts that might identify the scale of the funding gaps and begin to lay out a strategy to address those gaps especially utilizing existing funding sources.
- CA-5
    - We recognize and support the importance of natural infrastructure as a key adaptation strategy and suggest focusing on the development of practices and deployment of scalable pilots to build experience and share knowledge and best practices with practitioners at all scales.
- CA-6
    - Local, regional, and state coordination is very important to ARCCA and we are grateful to see this topic identified as a core strategy for the state. As important as it is, interjurisdictional coordination across scales is challenging, and we look forward to working with state partners to strengthen coordination capacities among all stakeholders. At the same time, public sector coordination with state agencies should not be the sum total of this strategy - there are many non-governmental actors and stakeholders who are deeply engaged in adaptation at the regional and local levels and should be a partner in this effort as well. As you will see throughout this document we highlight a number of cases where this linkage could be reinforced for our collective benefit.

Emergency Management

- Overall
    - Emergency Management planning should include integration with regional bodies and organizations since the footprint of emergency situations and response needs

will often be at the regional scale, impacting multiple cities and counties with fire, flood, smoke, drought, and other climate change impacts.

- California's aging infrastructure, including water systems, energy infrastructure, roads and bridges, cannot withstand the additional strains that climate change will bring. Failure at the Oroville Dam and the Big Sur landslide demonstrate a clear need to invest in infrastructure to prevent and build resilience to catastrophes. We recommend taking measures to increase public support for massive infrastructure investments.
- Additionally, the Oroville Dam emergency highlighted the importance of local emergency planning personnel communicating directly with the disabled community to understand their needs. The lack of such coordination during the emergency and in emergency plans has been highlighted in several news reports following the event. We recommend state guidance to call out such coordination as an important next step.
- We recommend mentioning the State's Tree Mortality Task Force and related emissions to potential wildfire or decomposition of 100 million dead trees.

- Introduction:
  - We recommend expanding the second to last sentence of the first paragraph to include slower onset changes like rising temperatures, which we are already experiencing in California, and noting that these are important contributors to the conditions associated with extreme events (e.g. higher temperatures and wildfire risk).
  - We recommend modifying the last sentence of the first paragraph to replace "all phases of emergency management" with "emergency preparedness, response, and recovery."
  - In the third paragraph, we recommend explaining what "incorporate climate change" entails. Particularly for those who are not as familiar with climate change adaptation, it would be helpful to discuss the scope of this endeavor.
  - In the "Preparing for the Worst as Extreme Weather Tests Dams" section, we suggest changing "largely irrelevant" to "no longer reliable indicators of future climate."
- EM-1
  - We recommend removing the word "exacerbate" in the recommendation as it is a directional assumption of climate change impacts. It is important to note that both impacts and conditions contribute to disasters in order to identify preventive actions.
  - We recommend changing the first paragraph to: "Research, data and modeling provide CalOES and partner agencies with the information necessary to more effectively manage risk and support sustainable insurance and disaster programs."

  - We support EM-1.3. Counties that are engaged in regional adaptation collaboratives, such as the County of Sacramento with the Capital Region Climate Readiness collaborative, benefitted greatly from its informed members to ensure that climate-related hazards were recognized and accommodated for in their Local Hazard Mitigation Plan. Having specific guidance would be very helpful, especially for jurisdictions that are not yet engaged in adaptation work. As this action is more planning oriented, it may be better suited as a next step under Recommendation EM-3.
  - EM-1.4 is the most important and relevant next step under this recommendation, yet it is too vague and does not provide sufficient guidance. We recommend this next step go beyond supporting asset risk assessment to include the pursuit of research regarding climate impacts, identification of vulnerable populations and other risk factors, as well as the physical risks to essential services and facilities.
  - We suggest including information about the ongoing work and data development of California's Fourth Climate Change Assessment.
  - Overall, there seems to be a disconnect between the overarching recommendation and the next steps. A greater focus on data development, acquisition, and standardization, and tool deployment would strengthen this section.
- EM-2
  - We recommend changing EM-2.2 to develop and expand mechanisms since not all methods of increasing climate awareness and investment need to be novel. Leveraging existing mechanisms and pathways may be more effective and may be a more efficient use of limited resources to implement climate integration into planning and emergency management.
  - We strongly support the ongoing action of expanding training opportunities.
- EM-3
  - We recommend expanding the list of key actors in Recommendation EM-3 to include regional partners.
  - We recommend discussing the barriers and solutions for properly integrating climate considerations into planning.
  - We recommend including extreme heat as a key climate change impact.

Energy

- Overall
  - We greatly appreciate the broad range of programs, resources, and funding and financing opportunities available to local governments and community members to

reduce energy consumption and increase energy resilience. However, progress toward a low-carbon future is undermined by the persistent underfunding of technologies and infrastructure that compete with fossil fuels. We recommend integrating strategies that reduce fossil fuel dependency throughout this chapter including:

- Expanding transit rather than roads,
- Including a clear plan to combat single occupancy vehicles,
- Highlighting opportunities to beneficially deploy vehicle to grid systems, and
- Other strategies to reduce fossil fuel demand and consumption.

- The definition and scope of the energy sector in this chapter seems to be limited to investor-owned utilities. We recommend expanding the scope of recommendations to include organizations that have an energy-related mandate, including Community Choice Aggregations, public/private energy generation developers, municipal or publicly-owned utilities, and local governments, as well as JPAs and special districts with microgrids and local utility-scale energy generation.
- The recommendations in this chapter primarily focus on level actors with only a few references to coalitions of local governments. We recommend recognizing the importance of working with and empowering local governments in their vital role of defining and authorizing land uses, as well as their role in providing and maintaining critical services and infrastructures.
- While we appreciate the emphasis on biomass utilization in the Forests chapter, we request that it be explicitly identified in the Energy chapter as it addresses not only a critical climate need but provides the co-benefits of renewable energy and rural job creation.

- Introduction
  - We recommend acknowledging the inherent connection between energy and transportation by including a discussion around better planning to reduce vehicle miles traveled, expanding access to and use of transit, and encouraging alternative modes of transportation.
  - We suggest expanding this section to consider how renewable energy can be affected by climate change given the variable conditions that are described.
  - In the “Reaching All Californians with Energy Programs” section, we strongly recommend revising the first paragraph to more accurately portray split incentives. Renters should not bear the responsibility of installing solar panels or to repair broken doors, roofs, or furnaces. Landlords should be incentivized and encouraged to install such measures and tenants should be educated and encouraged to reduce energy consumption.

- E-1
    - This section only mentions heat waves as a primary climate change impact to the energy sector. However, research of vulnerabilities should include other impacts including erosion or land-wasting (of land areas with energy infrastructures due to storm events or flooding), flooding, subsidence (due to drought and/or groundwater overdrafts), and wildland fires.
    - For E-1.4a, we recommend focusing on strategies and mechanisms to reduce fossil fuel consumption and emissions and shift the California economy to a low-carbon future.
    - We recommend adding the electricity system overall and renewable energy as E-1.4d.
    - We suggest highlighting the Energy Commission's grant program – The EPIC Challenge: Accelerating the Deployment of Advanced Energy Communities – as a catalyst for pilot projects and innovation in the energy sector.
- E-2
    - We recommend expanding this recommendation to include sharing of climate change scenarios and impact data with local governments. Climate change scenarios should be shared with local governments in a practical, accessible, and actionable manner, so that the information can be easily applied to local planning and governance including land use, energy and climate action planning, emergency preparedness, economic development, housing, water resources management, and local government operations.
- E-3
    - It is unclear whether "infrastructure" is limited to transmission and distribution systems or if it includes generation facilities, rooftop solar, and other types of distributed generation technologies and systems. We suggest considering the latter definition and scope, and including collaboration with a broad set of energy infrastructure interests throughout this section.
    - We recommend elaborating on who would be impacted by updates to engineering codes and standards, as well as who would be responsible for implementing and enforcing those codes and standards.
    - Recommendation E-2 refers to the 2016 Integrated Energy Policy Report while this recommendation refers to the 2017 update. We recommend utilizing the 2017 update and ensuring consistency throughout these recommendations.
- E-4
    - We suggest expanding the second ongoing action – to support local implementation of energy resilience measures – to ensure that these programs are available to all

Californians, not just Investor-Owned Utility ratepayers. These programs also need to be scalable so that they are useful at all income levels.

  - We strongly suggest modifying E-4.3 to replace "the statewide network of local government commission led regional climate adaptation collaboratives" with "the statewide Alliance of Regional Collaboratives for Climate Adaptation (ARCCA) and its member regional climate collaboratives." ARCCA's member collaboratives are organized and led by local partners, and many focus on both mitigation and adaptation.

- E-6
  - In order to successfully increase climate resiliency in low-income and disadvantaged communities, plans for ongoing development and expansion in the Disadvantaged Communities project areas are critical to avoid one-time drop-in projects that do not solve communities' needs.
  - There are many Local Government Partnerships (LGPs) that provide low-income and disadvantaged community energy efficiency and demand response services. Coordinating with these programs will help meet the objectives of this recommendation.

Land Use and Community Development

- Overall
  - We recommend highlighting the critical relationship between state programs and local government GHG reduction programs working complimentarily to mobilize action, address concerns about overlap, and to mitigate potential issues related to quantification of benefits in a way that avoids duplication.
- L-1
  - We applaud the state's commitment to developing innovative engagement strategies to develop and build community capacity to participate meaningfully in local adaptation. We emphasize the need for robust, authentic, and effective community engagement that bring people up and enable them to have a say in their community. In support of this, we suggest highlighting CivicSpark, a Governor's Initiative AmeriCorps Program that directly supports local climate capacity building through deployment of 70 Fellows a year. In addition to the specific steps outlined in L-1.4, we hope the State will also look at successful engagement activities from other communities around the U.S. to develop best practices for local and regional governments around the state. In particular, Detroit and Baltimore have effectively engaged their low-income and disadvantaged communities with strategies such as training community members to serve as climate ambassadors who then bring policies and plans back to the community; providing stipends for participation;

providing food and childcare at public meetings held within the community; responding to community members' concerns; and more.

  - We also recommend accounting for the differing approaches needed to engage urban and rural low-income and disadvantaged communities.

- L-2
  - We strongly support L-2.6. We recommend that the state prioritize this action, for the following reasons: 1) extreme heat is already a serious health threat in the Central Valley, Sacramento, and the Inland Empire: 2) trees and other green infrastructure that help to mitigate the UHI effect take time to grow to maturity; and 3) pavements as well as roofing have a long lifespan. A statewide map of the projected UHI effect, both currently and in 2030, as well as the projected benefits of mitigation measures, would be very helpful, especially in conjunction with social vulnerability mapping. As an example, Louisville, Kentucky, has developed an effective program in this area that could be looked to for reference.
- L-4
  - Current actions under this recommendation focus largely on building economic resilience through developing new jobs in the clean energy and sustainability sectors, but it is also critical to the local economy to ensure the resilience of *existing* economic activity - especially of local businesses. Small businesses are the backbone of local economies, making up to 90 percent of businesses in many regions. At the same time, only a small percentage of people will be able to transition into the clean energy workforce, and around 40 percent of small businesses fail after a natural disaster. Thus it is imperative that we ensure that local economic activity - principally small businesses - is equipped to survive extreme weather, flooding, drought, and other near- and long-term climate impacts. While there are already many existing resources on building resilience for small- and medium-sized businesses, such as the Business Resiliency Toolkit developed by Valley Vision, many businesses ignore these resources due to their limited capacity and resources. The State can help ensure more businesses are aware of their climate risks and guidance available by incorporating this information into existing resources and information from the Governor's Office of Business and Economic Development, the Department of General Services' Office of Small Business & Disabled Veteran Business Enterprise Services, and the Secretary of State Business Enterprise office. The key is to rely on existing communications channels to businesses. In addition, there should be assistance to regions whose jobs rely largely on winter tourism, as they are likely to be affected both by the loss of snowpack in winter, atmospheric river damage to roads and other infrastructure, and the risk of summertime forest fires.
- L-5

  - We recommend providing safeguards and programs to help disadvantaged communities return to their homes and communities after evacuations and natural disasters if their homes are lost.
  - We recommend facilitating community cohesion rather than displacement, as occurred with low-income communities in New Orleans after Hurricane Katrina.

- L-6
  - We recommend developing actions and programs to ensure that affordable housing units and developments are not overlooked in the climate adaptation process. New affordable housing developments should not be sited in areas of greater climate vulnerability, such as floodplains. We recommend conducting a vulnerability assessment for existing affordable housing to identify their risks and mitigation solutions.
  - We recommend developing incentives and other policies to increase passive cooling and other energy efficiency measures to help affordable housing units save energy and remain cool in the summer while saving low-income residents money on their energy bills.
  - We recommend facilitating community solar, battery storage, and other programs to help affordable housing development to maintain reliable, clean power, while simultaneously creating a buffer for ongoing operations in times of climate shocks.

Public Health

- Overall
  - We greatly appreciate the State's efforts to strengthen the connection between health and climate change, particularly in regards to vulnerable populations. Climate change is and will have profound public health implications on all Californians, particularly the most vulnerable among us. At the same So it's critical that we have a well-integrated approach that is coordinated across sectors.

- P-1
  - The American Psychological Association in partnership with Climate for Health and ecoAmerica published the report Mental Health and Our Changing Climate that highlights impacts, implications, and guidance. We recommend reviewing this resource and incorporating its findings into the Statewide Plan.
  - We recommend including violence and other trauma stressors as a force that shapes living conditions.
  - We recommend expanding P-1.2 to include both mental health impacts and necessary recovery from climate change.

- We recommend expanding P-1.3 to include the expansion of low/no interest loans for weatherization programs.
- In order to meaningfully address food insecurity, solutions need to address food distribution. The Sacramento Area Council of Governments Rural-Urban Connections Strategy program has conducted research and compiled data on food distribution, making an economic case to keep food local and to not sell crops to major exporting distributors, similar studies and findings could be replicated across the state.
- Weatherization efforts should also extend to middle-income property owners whose property in the future may be rented to low-income families. We recommend providing no/low interest loans for energy efficiency improvements for middle-income property owners. While there are Property-Assessed Clean Energy (PACE) programs, they offer higher interest rates and participation varies across the state. We also recommend targeting multi-family units. Split incentives continue to remain a barrier – where there is no incentive for landlords to make energy efficiency improvements since tenants pay utility bills. We recommend providing more funding for retrofits and upgrades to older affordable multifamily units. Broader participation in energy efficiency programs is needed to reduce urban heat island effects.
- We recommend matching funds for photovoltaic solar systems with funds for roof replacements, preferably cool roofs. Many low-income families require new roofs to support solar installations, but the current CSD program does not cover these costs.

- P-2
  - We recommend expanding P-2.1 to work with local government planning and public health departments and community-based organizations (e.g. neighborhood associations) to build community capacity to participate in and influence decision-making processes.
  - We recommend expanding P-2.2 to utilize existing preparedness programs and guides (e.g. County of Sacramento's "Are You Prepared" guides).
  - For P-2.3, we recommend encouraging community organizations and businesses to engage with regional climate collaboratives through the statewide Alliance of Regional Collaboratives for Climate Adaptation. Local organizations can benefit greatly from participating in regional climate collaboratives by staying updated on the latest news and opportunities, leveraging limited resources to collaborate with other local organizations, and having a stronger voice in State policy engagement.
  - Climate change has become a priority for many large organizations throughout the country. The State should leverage existing efforts of national and state-wide organizations that are engaged in initiatives and calls to action on healthy communities and climate resiliency that include and are not limited to the: American Planning Association, American Public Health Association, Urban Land Institute,

American Institute of Architects, American Society of Landscape Architects, American Public Works Association, Medical Society Consortium on Climate & Health and other organizations bringing together multiple sectors working at the intersection of climate change, adaptation, equity, and health.

- P-3
    - We recommend highlighting existing certification programs in P-3.3, such as Living Futures Buildings and LEED, that address both health and climate.
    - We recommend expanding P-3.6 to include bridging access challenges during non-emergency times to build individual and community adaptive capacities (i.e. improved pedestrian, bicycle, and trail infrastructure, and electric car share programs at affordable housing developments).
    - For P-3.7, we recommend working in collaboration with local building and/or utility departments to better understand building update cycles, as well as key barriers and needs, in order to be successful and to obtain early buy-in.
    - As an ongoing action, we recommend highlighting the CalTrans 2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations. Many health-promoting policies can be found throughout Regional Transportation Plans that often incorporate many or all of the following: safe routes to school programs, complete streets strategies, equity considerations, transportation safety, and policies to promote transit, bicycling, and walking. These types of transportation-related strategies foster more accessible, livable, healthier, and resilient communities.
- P-4
    - We encourage the inclusion of engaging with and leveraging regional climate collaboratives, many of which are committed to conducting research, developing educational tools, and engaging communities to reduce heat and wildfire-related health impacts.
- P-5
    - We suggest adding the following in the introduction: “Good health prior to disasters supports greater resilience in the disaster setting. Those with chronic or poorly treated health conditions have found it more difficult to reestablish housing and healthcare following a catastrophe. Psychological resilience is the ability to maintain positive adaptation and mental health despite stressors in the immediate and broader environment. Disasters can also impair psychological resilience if they disrupt social networks; thereby worsening overall population health. Neurological factors may also play a role in psychological resilience. These are necessary considerations that need to be incorporated into preparedness and emergency response plans and after-event resiliency assistance and support.”

- We recommend expanding P-5.1 to include locating clinics and making provisions for temporary clinics that can be mobilized in neighborhoods for improved access to care.
- We recommend expanding P-5.2 to ensure that communities not only have access to tools, but that they are utilizing them and have sufficient understanding of what the warnings entail and what they should do.
- We recommend expanding P-5.3 to include making provisions to accommodate pets since pet-owners are less likely to take advantage of cooling centers if their pets are not welcome.
- We recommend expanding P-5.6 to include both resources and services. The aforementioned report, Mental Health and Our Changing Climate, includes relevant guidance that can be incorporated.
- We suggest mentioning efforts being taken by the Department of Public Health's California Building Resilience Against Climate Effects (CalBRACE) project as an ongoing action.

- P-6
  - We recommend highlighting green infrastructure in the introduction: Use of green infrastructure for complete streets, landscape and creek/drainage corridors provides additional urban greening opportunities while also creating public health benefits through development of attractive places for people to increase physical activity, walk, bike, and socialize.
  - We recommend expanding P-6.4 to include connecting vulnerable populations and local health departments with local utility providers to take advantage of discounted utility rate programs and energy efficiency rebates.
  - For P-6.5, we encourage the inclusion of regional and local agencies with shared interests in inter-agency work groups on extreme heat. Regional and local agencies can share best practices and replicable strategies, as well as pilot intervention strategies at a smaller scale prior to statewide deployment.
  - Additional next steps recommended include:
    - Connecting the Department of Water Resources, Natural Resources Agencies, and CAL FIRE with local and regional water agencies to implement demonstration projects on urban greening and green infrastructure projects that have co-benefits for health, adaptation, and energy.
    - Working with other State departments that have grant funding to include in their scoring rubric additional points when applicants and grantees engage with a local health department to identify climate adaptation and health benefits that can be or are incorporated into projects.

- Engaging with ARCCA and its member regional climate collaboratives on urban heat island reduction efforts and to advance health and climate resiliency benefits. ARCCA can serve as a valuable channel to ensure alignment and coordination, and to avoid duplication. We also recommend engaging with ARCCA on urban-rural interface initiatives related to advancing health and climate resiliency benefits.
- Engaging with the Local Government Commission to leverage the California Adaptation Forum as a venue to share and advance health, equity, and adaptation goals and the CivicSpark AmeriCorps program as a capacity building resource for local communities.
- Providing resources to CDPH to support their efforts in providing technical assistance to local health departments in developing interventions, policies, and implementation plans to address climate change, adaptation, affordable housing, and health impacts. While many counties are leading climate and health discourse in their regions, many lack sufficient expertise and resources to meaningfully advance climate and health initiatives. CDPH staff and consultants can help fill these gaps.

- P-7
  - We encourage expanding the second bullet point of the introduction to include developing successful interventions for implementation.
  - We encourage expanding the third bullet point of the introduction to include collaborating with departments of the Natural Resources Agency and Water Resources to identify potential water management practices that can help mitigate algal blooms.
  - We recommend including the need to identify other opportunities for neighborhood cooling sites (e.g. libraries and shopping centers) as a priority research area.
  - We recommend acknowledging the important role that public health departments play in encouraging utility providers to provide incentives for homeowners and businesses to install weatherization and energy efficiency measures. Many California utilities are already providing free shade trees and rebates on cool roofing products, but these programs need to be expanded – particularly for lower-income communities.
  - We recommend highlighting the Living Futures approach to holistic buildings that include health benefits to occupants and capitalize on the use of natural systems.
  - We recommend continuing to work with CAL FIRE, Natural Resources Agency, Department of Water Resources, and CalTrans to maintain existing tree canopy and tree health. Given drought, disease, and wildfires, significant amounts of tree canopy, urban greening, and carbon capture has been lost. Efforts need to be increased by

local and regional agencies to maintain and increase greening projects and promote green infrastructure. We also recommend increasing public outreach, awareness, and education to care for existing trees and tree canopy, and encouraging increased tree planning on private and public lands. We encourage the State to partner with community organizations to provide meaningful jobs for tree maintenance to those who face barriers to employment.

- P-9
    - It is important to note that the health impacts of climate change should not be limited to emergencies and extreme events, but for all ongoing and gradual impacts of climate change. In many ways, Public Health has been siloed, which leads to reactionary and ineffective measures to address individual events rather than robustly building resilience and achieving meaningful adaptation outcomes.
    - We recommend expanding P-9.5 to include resiliency in the daily businesses and services of community-based organizations. Social cohesion, access to services, and mental health support should all be standard services provided by community-based organizations. With additional trainings and resources, these organizations can fill voids that exist, which will better prepare and reduce short- and long-term impacts of climate change, extreme events, and aftercare.
    - We encourage working with local governments and landlords to adopt rental property inspection programs in order to safeguard the interests of property owners, the character of neighborhoods, and to protect the public health, safety, and welfare of individuals throughout California.

Transportation

- Overall
    - We recommend that analysis of the climate vulnerability of roads and highways use a regional perspective, and coordinate with regional analyses and with regional climate collaboratives. Analysis should not focus on roads or transportation systems in isolation, but should focus on what they are linking.
    - We recommend greater coordination with the Energy chapter in regards to ensuring the resilience of vehicle fueling infrastructure, which should take into account the increasing proportion of electric vehicles (including electric transit and school buses), natural gas vehicles, and hydrogen vehicles. Solar-powered vehicle charging stations combined with microgrids and battery storage can help boost transportation resiliency while helping to power critical infrastructure.
    - It is not clear what kind of assistance, if any, will be provided to local jurisdictions for identifying the vulnerabilities of locally managed roads, transit infrastructure, and sidewalks. Under Ongoing Actions for T-1 and T-2, it appears that vulnerability

assessments conducted by CalTrans will only focus on the state highway system. We recommend CalTrans explore the additional costs of including local roads into the assessment as some of the baseline work of projecting climate impacts would apply to all transportation infrastructure within a system.

- T-4
    - We strongly support T-4 and the focus on resilience, mobility, and accessibility – not just infrastructure and concrete. Strategies like T-4.6 can help save lives, and we recommend that transit providers work with public health agencies to develop emergency programs such as free rides during extreme heat days and heat waves. Providing real-time bus arrival information, in combination with passive shading, can also help improve the comfort of riders during hot days.
    - For T-4.4, we recommend, where possible, maximizing the use of natural solutions to achieve multiple benefits, such as groundwater recharge, stormwater management and flood prevention, mitigating urban heat island effect, neighborhood beautification, and providing a more pleasant environment for pedestrians and bicyclists.
    - For T-4.7, we recommend integrating this strategy with urban heat island mapping and analysis to understand where shading and water would be most crucial.

Agriculture

- Overall
    - We recommend considering whether a transition in crop mix should occur and over what timescale.
    - Outreach described in this chapter is farmer to farmer or farmer to research institutions. The general public should also know more about the nutritional and environmental impacts of food choices, as well as the importance of reducing food waste. We recommend considering appropriate strategies and mechanisms for achieving greater levels of public education and engagement.
- A-4
    - We recommend that state policies and investments be geared toward assisting local communities in agricultural regions to reduce the conversion of agricultural land to urban uses through improved agricultural management practices.
    - We suggest addressing existing state policies and programs that are designed to reduce the conversion of farmland to urban use and propose improvements in implementation or the statutory authorities themselves that would make them more effective. Examples of such policies and programs include:

- Williamson Act
- Cortese-Knox-Hertzberg Act
- California Environmental Quality Act
- AB 857
- SB 375
- California Farmland Conservancy Program
- Sustainable Agricultural Land Conservation Program

Biodiversity and Habitat

- Overall
  - We greatly appreciate the recognition of the intrinsic value of biodiversity and natural systems and support the emphasis placed on the role of these systems in climate adaptation. Because of the critical role ecosystems play in human well-being, a robust adaptation response will require scaling our protection of and investment in biodiersity and habitat so we can sustain the systems we depend on as they are increasingly threatened.
- B-1
  - In addition to the planning efforts listed, we suggest adding the Delta Stewardship Council's Delta Plan and EcoRestore planning processes, the AB-2087 Regional Conservation Investment Strategy program, and the Integrated Water Resources Management Plans with climate change components.
  - Considering that the State Wildlife Action Plan was recently updated (and it will be another 8 years before the next update), we suggest modifying B-1.1 to include an action related to implementing current natural resources plans with climate adaptation measures.
  - We suggest a reference to including application of "traditional ecological knowledge" where it supports climate adaptation in B-1.3.
  - In addition to NCCPs, we suggest including Habitat Conservation Plans (HCPs) in the first ongoing action listed.
- B-3
  - We suggest a next step specifically oriented to helping California State Conservancies pursue climate adaptation actions as they play a major role in restoration in various ecoregions throughout the state.

Forests

- Overall
    - We strongly support the statement that investments must be made to improve the social and economic resilience of forested communities, and their capacity to carry out forest management activities, including creating jobs to manage forests, harvest biomass, and manufacture wood products. We also appreciate the acknowledgement of the co-benefits of improving forest health and resilience, such as greenhouse gas mitigation, enhanced economic, cultural, and recreational opportunities for communities across the state.
- Introduction
    - We disagree with the statement on page 84 that "There is no panacea for restoring resiliency in forested landscapes." There is strong consensus from forest managers and scientists on the critical need for ecologically sound restoration from fuel reduction treatments of mechanical thinning and prescribed burning – to return our forested landscapes to a condition that is stable and resilient to disturbance. Restoration objectives for mixed conifer forests ecosystems of the California Sierra Nevada are provided in greater detail in the following publications by the U.S. Department of Agriculture, Forest Service:
        - Science Synthesis to Support Socioecological Resilience in the Sierra Nevada and Southern Cascade Range
        - Managing Sierra Nevada Forests
        - An Ecosystem Managed Strategy for Sierran Mixed-Conifer Forests
- F-1
    - We suggest including a specific mention of the current tree mortality crisis and the forest transitions in process with climate change. We hope that these issues can also be addressed in subsequent next steps.
    - We recommend clearly acknowledging that the economic cost to perform the critically fuel reduction treatments is frequently higher than current tangible, fungible revenues. We recommend promoting and describing specific funding sources that can assist with conducting this important work – including properly monetizing the benefits of water quantity and quality, air quality, wildlife habitat, and recreation provided by healthy forests.
- F-3
    - We recommend considering whether urban gardening, in addition to urban forests, would be beneficial. There are clear co-benefits for encouraging urban gardening and community gardens: to address food insecurity and lack of access to fresh produce,

to develop more self-reliant and resilient local food networks, and to increase social cohesion.

- F-4
    - We recommend acknowledging that electricity production from forest waste is a viable option with a greater focus on the waste disposal problems associated with forest restoration and fire prevention.
    - Material generated by commercial forestry as well as forest health, restoration, and hazard treatments should be utilized productively or disposed of in a manner that minimizes net greenhouse gas and particulate matter emissions. There is a significant amount of woody biomass waste that comes out of California's overstocked forests, and in many regions landowners struggle to find financially sustainable waste disposal methods. Transportation costs remain high and insufficient workforce capacity prevents proper removal of small-diameter trees, dead trees, and biomass. The lack of infrastructure to convert the biomass and non-merchantable trees for higher value products, such as electricity, durable wood products, compost and other soil amendments, results in this wood being left in the forest, where it can increase the risk of wildfire, or in many cases, is open-pile burned. Both of these activities undermine the objectives of greenhouse gas emission reduction goals, and can have negative implications for human health.
- F-6
    - Specific actions are needed to promote and accelerate forest restoration after overly intense wildfires, including recognition that the prior forest may need to evolve to new species with restoration to build resilience against climate change impacts.

Oceans and Coast

- Overall
    - We greatly appreciate the State's leadership in preserving the iconic natural resources of our coast and ocean in the face of changing conditions.
- O-1
    - We greatly support O-1.1 and appreciate the continued allocation of local assistance grants for certifying and updating Local Coast Programs.
    - We appreciate the inclusion of technical assistance in O-1.2 and recommend clarifying who specifically will be providing technical assistance and for what activities.

  - We applaud the inclusion of economic valuation, especially for non-market values in O-1.3. We recommend including guidance to ensure a consistent approach in making those determinations, particularly for non-market economic evaluations.

- O-2
  - This recommendation is critical to advancing strategies to combat issues pertaining to our changing coastline. In particular, O-2.2a-c are vital to address California's diverse coastline as well as to encourage creative solutions through pilot projects. It would be helpful for the State to elaborate on how guidance for natural infrastructure solutions will be provided to local governments in O-2.3.
- O-3
  - We suggest including as an ongoing action the State Coastal Conservancy's efforts in leveraging the Ocean Protection Council's investment in CoSMoS by supporting outreach workshops for local communities through the USC Sea Grant program. Additionally, USC Sea Grant and California Sea Grant fund relevant scientific research on ocean and coastal topics with facilitation through the Natural Resources Agency Sea Grant Advisory Panel (RASGAP) via the Ocean Protection Council to ensure the science is relevant for the needs of state managers.
- O-4
  - We appreciate how communities are specifically highlighted in understanding vulnerabilities to coastal resources in O-4.1a-b, as well as the acknowledgement of vulnerabilities to ecosystems in O-4.3a-b.
  - We suggest including as an ongoing action AB-2516. The Planning for Sea Level Rise Database should include finished, current, and planned coastal vulnerability assessments as well as a catalogue of implemented adaptation strategies.
- O-5
  - We commend the State for including this extremely valuable recommendation. We encourage the expansion of this section to include which agency or agencies will perform each of these specific outreach and communications activities. It would be particularly useful to include the lead agency conducting outreach and trainings to support local efforts to update plans (O-5.3). The City of Los Angeles is currently in the process of updating its Local Hazard Mitigation Plan, but the State seems somewhat removed from that process; it would be helpful to include the lead agency and engage with ARCCA member regional climate collaboratives to better engage in local planning efforts.
  - O-5.4 – O-5.7 can have dramatically positive implications. We encourage Natural Resources Agency to pursue permanent and innovative funding structures to ensure these efforts persist over time.

- O-6
    - Coordination and communication between State entities and local jurisdictions are seldom commonplace, sustained, or strategic. We encourage Natural Resources Agency to foster stronger state-local relationships to increase flexibility and the state's ability and capacity to adapt. We recommend Natural Resources Agency, to whatever extent possible, target funding towards collaborations and coordination of state agency, as well as with local and federal governments. We also encourage leveraging ARCCA's growing statewide network of regional climate collaboratives to engage with regional collaboratives and their local members.

Water

- Overall
    - The resiliency of California's water should be considered more holistically. The health of upper watershed forests and meadows is critical to maintaining the resilience of California's water supply. We recommend including a separate recommendation to address strategies to restore and maintain upper watershed forests and meadows, and potentially linking watershed health with the Forests chapter. By not explicitly addressing source watersheds explicitly in the Water chapter (beyond the benefit to habitat), the Plan risks perpetuating the same public perception disconnect between population centers and critical resources that it seeks to overcome in other education-focused sections.
- W-4
    - We recommend a greater consideration of saltwater intrusion in the Delta and its effects on drinking water, Delta residents, and agriculture.
- W-10
    - We recommend reframing this section to more clearly acknowledge the water supply benefits of source watersheds in the introduction (e.g. the Sierra Nevada region alone provides approximately two-thirds of the State's developed water supply). We suggest integrating recommendations from the Forests chapter (F-1.3 and F-5) in the next steps.
    - Additionally, in order to increase groundwater recharge, increase duration of floodplain inundation decrease annual surface runoff and provide habitat, an estimated 130,000 to 200,000 acres (40 to 60%) of Sierra meadows need restoration, according to the National Fish and Wildlife Foundation's Sierra Nevada Meadow Restoration Business Plan. Thus, we recommend increasing the mountain meadow habitat restoration goal to meet the non-federal portions of the NFWF plan.