



Connect SoCal 2024 Subcommittee Draft White Paper

RESILIENCE AND CONSERVATION

Connect SoCal 2024 Subcommittee Draft White Paper

RESILIENCE AND CONSERVATION

INTRODUCTION

SCAG is currently developing Connect SoCal 2024. Three special Regional Council subcommittees have been created around Next Generation Infrastructure, Resilience and Conservation, and Racial Equity and Regional Planning. Each subcommittee met four times between September 2022 and January 2023, to identify recommendations that will inform how these emerging issues are addressed in Connect SoCal 2024.

The purpose of the Resilience & Resource Conservation Subcommittee is to advance the direction set in the SCAG Regional Council Resolutions on Climate Change Action (21-628-1) and Water Action (22-647-3) to consider opportunities for enhanced conservation and how Connect SoCal can support our communities in adapting to changing conditions or mitigating risks to become more resilient in the context of future growth, as well as to identify and integrate policies and strategies to align investments in water infrastructure with housing needs and the adopted growth forecast and development pattern featured in Connect SoCal 2024.

By 2050, the SCAG region is anticipated to grow by an additional 1.7 million people, with a significant 15% increase in employment. Further, the region is expected to experience shocks and stressors related to climate change, such as more intense wildfires, drought, extreme heat and rising sea levels, as well as seismic events that will negatively impact the region's public health, welfare, and the greater economy. Our region's built environment, natural and social systems, as well as the greater economy could be significantly affected by these hazards as well as the associated constraint on essential resources, with particularly acute and disproportionate impacts on vulnerable communities. Significant regional public health and economic benefits could accrue if targeted strategies and investments are prioritized now to address potential impacts of climate-related shocks and stressors. Within the resilience policy space, shocks are commonly defined as sudden and acute events that threaten immediate safety and well-being, whereas stressors are commonly defined as chronic challenges that weaken natural, built, or human systems and resources.

As such, the Subcommittee's policy question at hand is:

- How can Connect SoCal mitigate and adapt to the impacts of climate and seismic-related hazards on our built and natural systems and increase our region's resilience?

To tackle this question and formulate recommendations for inclusion in Connect SoCal, the goals of the body, as established by the members, are to:

- Advance the direction set in the SCAG Regional Council Resolution on Climate Change Action and Water Action to consider opportunities for enhanced resilience & resource conservation; and

- Develop recommendations on how Connect SoCal can support our communities in adapting to changing conditions or mitigating risks to become more resilient.

SUBCOMMITTEE FOUNDATIONS

Resilience and conservation are embedded across the number of SCAG’s work. Within Connect SoCal 2020, resilience and conservation were integrated into the core vision, key goals, and guiding principles of the plan. Looking further at the Connect SoCal 2020 goals, the following elements are featured:

- Enhance the preservation, security, and resilience of the regional transportation system;
- Reduce greenhouse gas emissions and improve air quality;
- Support healthy and equitable communities;
- Adapt to a changing climate and support an integrated regional development pattern and transportation network; and
- Promote conservation of natural and agricultural lands and restoration of habitats.

Additionally, SCAG includes a number of resilience and conservation mitigation measures in the Connect SoCal 2020 Program Environmental Impact Report (PEIR) that address resilience and resource conservation.

Through SCAG’s unanimously adopted Climate Change Action Resolution (Resolution No. 21-628-1) from January 2021, SCAG resolved to develop a Regional Resilience Framework to “help the region plan and prepare for a changing climate, as well as potential near- and long-term disruptions to Southern California.” As part of that work, SCAG conducted a landscape resilience assessment to understand how jurisdictions are planning for climate change. Looking towards the development of Connect SoCal 2024, the Climate Change Action Resolution also called on SCAG staff to “include climate adaptation and mitigation analysis and strategies in the 2024 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS).”

In October 2022, SCAG’s Regional Council also unanimously adopted a Water Action Resolution that resolved to “further explore regional water challenges and solutions [through the Resource & Conservation Subcommittee] and report findings for consideration by SCAG’s Energy & Environment Committee.” This resolution called on local and regional partners to join together to adopt an “all of the above” approach to addressing the region’s water challenges and catalyzing opportunities, and for SCAG to take action and support partners to reduce water use; improve water conservation, reuse, and efficiency; enhance water systems’ health and resilience; pursue and potentially implement new water supply and storage opportunities; and support investments in water infrastructure and conservation practices that support the region’s economic and population growth and fosters planning for the region’s housing needs.

SUBCOMMITTEE: DISCUSSION & KEY FINDINGS

In fulfilling direction from SCAG’s Regional Council, the four meetings of the Resilience & Conservation Subcommittee included presentations from staff and subject matter experts, followed by facilitated dialogue amongst subcommittee members. Each meeting built off the previous and informed and shaped the recommendations that are included in the white paper. Meeting topics included:

- **Where We Are: Level Setting & Work Plan Prioritization**

Meeting 1 of the Resilience & Conservation Subcommittee provided the group with an overview of the Subcommittee's purpose and proposed outlook; SCAG's proposed definition of "resilience"; and resilience and conservation principles, goals, and strategies embedded in Connect SoCal 2020 and Connect SoCal 2020 Programmatic Environmental Impact Report (PEIR).

Resilience and conservation are key parts of the core vision, key goals and guiding principles outlined in Connect SoCal to advance the region's economic vitality, improve mobility options, and grow in a sustainable way that builds healthy and vibrant communities. As part of the Connect SoCal Guiding Principles, resilience and conservation are most prominently featured across three major efforts: Land Use & Sustainable Development, Transportation & Mobility and Planning. Furthermore, the Connect SoCal 2020 PEIR includes approximately 20 mitigation measures which address resilience and resource conservation. These mitigation measures span efforts to address wildfire risk, water conservation and planning, greenhouse gas mitigation, agriculture and forestry, biological resources, and more.

In evaluating the proposed definition of resilience for inclusion in Connect SoCal 2024, members of the Subcommittee provided feedback that the effectiveness of responding to climate hazards should be emphasized within the plan. As such, the definition was updated to include "effectively respond to climate hazards", and subsequently reviewed in Meeting 2 of the Subcommittee.

Other guidance from members included the need to:

- Prioritize strategies that promote long-term and short-term responses to resilience shocks and stressors, and monitor effectiveness;
- Build strong partnerships to ensure shocks and stressors can be effectively addressed; and,
- Secure resources for local agencies to promote disaster preparedness.

Potential opportunities for integrating this guidance in Connect SoCal 2024 include:

- Identify how Connect SoCal 2024 strategies address long-term and short-term responses to shocks and stressors;

- **How Can SCAG Have an Impact: Policy Areas of Focus & Implementation Tools**

Meeting 2 of the Resilience & Conservation Subcommittee provided an overview of SCAG's landscape analysis of resilience planning efforts across the SCAG region, as well as a more detailed analysis of resilience planning within the Inland Southern California Region. Kristopher Eclarino, Technical Project Manager at Climate Resolve, and Michelle Baron, Consultant at Climate Resolve, provided a presentation examining the state of climate adaptation planning across jurisdictions within the Southern California region. The study explored the impacts of climate-related shocks and stressors on the SCAG region to further SCAG's understanding and approach to addressing resilience at a regional scale, and involved the review of climate-related resilience planning efforts and documents, such as climate action plans, sustainability plans, resilience plans, general plans, local hazard mitigation plans, and more.

The study area consisted of 191 cities and two tribal nations within the SCAG region. Through the climate resilience landscape analysis, the following trends were found:

- 86 out of 193 (45%) of jurisdictions have adopted a standalone climate, sustainability and/or resilience plan, with 30 of the 86 plans including adaptation strategies;
- 141 out of 193 (73%) of jurisdictions have adopted a local hazard mitigation plan (LHMP) at either the local or multijurisdictional level, with 105 of the 141 LHMPs accounting for climate change impacts;
- 19 out of 193 (10%) of jurisdictions have updated general plans to meet the requirements of SB 379 and SB 1035;
- 104 out of 193 (54%) of jurisdictions contain disadvantaged communities, as defined and identified via CalEnviroScreen 4.0. Of the 104 jurisdictions, 17 have adopted environmental justice goals, policies and objects and 10 have updated general plans which meet the requirements of SB 1000; and
- Drought, flood and wildfire were found to be the most frequently cited climate resilience disruption noted across jurisdiction plans.

Additionally, the following climate-related shocks and stressors were most commonly identified through the review of local planning documents:

SHOCKS	STRESSORS
<i>SUDDEN OR ACUTE EVENTS THAT THREATEN IMMEDIATE SAFETY AND WELL-BEING</i>	<i>CHRONIC CHALLENGES THAT WEAKEN NATURAL, BUILT, OR HUMAN RESOURCES</i>
<ul style="list-style-type: none"> • Avalanche • Drought • Earthquake • Extreme Cold • Extreme Heat • Flood • Hazard Material Release • Infrastructure Failure • Landslide • Non-heat-related Severe Weather 	<ul style="list-style-type: none"> • Access & Function Needs Population • Access to Open Space • Age Dependency Ratio • Aging Infrastructure • Car-less Households • Economic Security • Educational Attainment • Female Head of Household • Food Insecurity • Foreign Born

Furthermore, following feedback from the Subcommittee, SCAG finalized the resilience definition to the following:

The capacity of the SCAG region's built, social, economic and natural systems to anticipate and effectively respond to changing conditions, acute shocks, and chronic stressors by creating multiple opportunities for a sustainable, thriving and equitable future.

Meeting 2 also included presentations from resilience experts within the region as a means of exploring resilience in the context of the region's built, economic, and natural systems. These speakers included Leah Fisher, Office Chief for Air Quality and Climate Change at Caltrans (CA DOT); Rutger de Koning and Robert Mens, Bouwinvest Real Estate Investors based in The Netherlands; Charles Wilson, Executive Director and

CEO of the Southern California Water Coalition; and, Dr. Qinqin Liu, scientist and former analyst at California Natural Resources Agency, Department of Fish and Wildlife, and Department of Water Resources.

Charles Wilson focused on the current state and future of water supplies in the SCAG region, noting that the SCAG's region's primary water sources are severely stressed. In the coming decades, the region will have to prioritize increased conservation, and invest in new infrastructure for stormwater capture, large scale recycling, and desalination to ensure water supply.

Leah Fisher's presentation provided an overview of Caltrans' work to implement State guidance on infrastructure resilience. Caltrans has updated their climate vulnerability assessments to keep pace with the latest climate science, and adaptation consideration of climate risks is now required for early project planning.

Rutger de Koning and Robert Mens of Bouwinvest Real Estate Investors demonstrated the emerging practice of considering climate change as an integral part of risk management for real estate investment, and the need consider mitigation to lower investment risks.

Finally, Qinqin Liu, Ph.D., shared her conceptual model framework for water, energy, food and ecosystems with climate change, and its implications for integrated regional resource policy. For example, 12 percent of energy use is for water, so it is important to assess energy intensity for regional water planning on management. She concluded that resilience depends on the coordination of multiple sectors including water, energy, agriculture and fish and wildlife, and to assess benefits, trade-offs and conflicts between these systems.

From these presentations, members of the Subcommittee highlighted that data-driven climate vulnerability assessments can better inform decision-making in all areas, including infrastructure projects, natural resource systems, and financial investments. Other areas of importance for SCAG include:

- Providing widely accessible climate hazard and resource data to help inform small-scale and large-scale decision-making in the public and private sectors;
- Prioritizing the most vulnerable people, places, and infrastructure at risk for climate change impacts - recognizing that disadvantaged communities are often overburdened; and,
- Applying ecosystem-based approaches to promote sustainable resource management.

Actions to integrate these findings in Connect SoCal 2024 could include:

- Utilize climate hazard and resource areas data to help inform local input on jurisdictional and neighborhood-level forecasted growth, as demonstrated through SCAG's Local Data Exchange completed in December 2022;
- Integrate nature-based solutions and preservation/restoration of native plants to increase water resilience, and adaptation to climate change; and,
- Map climate hazards for disadvantaged communities.

- **How Can SCAG Have an Impact: Policy Areas of Focus & Implementation Tools**

Meeting 3 of the Resilience & Conservation Subcommittee included a presentation from Dr. Meghan Jennings, conservation biologist from San Diego State University, who provided information examining ecosystem resilience in the context of climate change. SCAG Staff also provided further insight on social resilience via updates on SCAG's Regional Resilience Framework (RRF), and shared early feedback from community-based organizations (CBOs) and one tribal government participating in RRF outreach and engagement to supplement discussions on resilience and conservation principles and policies.

Findings from these presentations emphasized that ecosystem resilience is important to minimize impacts of climate change in natural lands (e.g. wildfires) and can be improved through nature-based solutions. Jurisdictions need additional staff resources and funding to address climate adaptation needs. In addition, social resilience and community networks should be prioritized and improved to minimize the impacts of shocks and stressors on the most vulnerable populations.

As such, members of the Subcommittee emphasized outreach with disadvantaged communities, and opportunities for maximizing co-benefits from conservation of wildlife and natural lands:

- Outreach and early involvement with disadvantaged communities is essential to identify potential climate vulnerabilities and potential resilience strategies, especially in the area of social resilience; and,
- Maximize mutual benefits to support resilience and conservation initiatives across built, social, economic, and natural systems, such as disaster preparedness, to ensure synergies across systems and reduce/avoid impacts of maladaptation.

In carrying over these findings to the development of Connect SoCal, approaches could include:

- Assessing and minimizing climate hazards for the most vulnerable populations, communities, natural systems, and infrastructure; and
- Integrating climate adaptation strategies that are responsive to the unique shocks and stressors present for focus areas, and avoid maladaptive impacts;

- **Resilience & Conservation Final Draft White Paper**

Meeting 4 included additional presentations from water experts and further discussion to solidify the resilience and conservation principles and policies for consideration by Policy Committees and Regional Council for inclusion in Connect SoCal 2024.

Waverly Klaw, Director of the Growing Water Smart program at the Sonoran Institute, provided information on land use strategies for local jurisdictions that can increase the resilience of the built and natural environment to the impacts of climate change. Growing Water Smart is a joint project between the Lincoln Institute and the Sonoran Institute featuring workshops that introduce communities to the full range of collaboration, communication, public engagement, planning, and policy implementation tools to realize their watershed health and community resiliency goals. Through Growing Water Smart, communities learn to better integrate land use and water planning.

David Sumi and Elise Goldman, Resource Specialists at Metropolitan Water District (MWD), spoke on the agency's WaterWise conservation efforts, as well as the 2020 Urban Water Management Plan that provides

an assessment of Metropolitan’s water service reliability, describes and evaluates sources of water supply, efficient uses of water, demand management measures, implementation strategy and schedule, and other relevant information and programs. In addition to the water reliability assessments, the plan includes an evaluation of frequent and severe periods of droughts, as described in the Drought Risk Assessment, and the preparation and adoption of the Water Shortage Contingency Plan (WSCP).

In reviewing the draft Resilience & Conservation Subcommittee White Paper, members requested that additional recommended implementation actions be included to:

- Support equitable distribution of efforts in economic development to help vulnerable communities have greater resources to respond to resilience shocks and stressors; and,
- Foster engagements across industry sectors and areas of expertise to support research and solutions development.

As such, these revisions were included in the final draft White Paper.

SUBCOMMITTEE RECOMMENDATIONS

Overall, feedback from members of the Subcommittee can be grouped into four broad recommendations. These recommendations will inform the Connect SoCal Policy Development Framework and on-going development and policy discussions related to Connect SoCal 2024, and will be taken to the Regional Council for further deliberation:

- **Define Resilience:** The capacity of the SCAG region's built, social, economic and natural systems to anticipate and effectively respond to changing conditions, acute shocks, and chronic stressors by creating multiple opportunities for a sustainable, thriving and equitable future;
- **Prioritize the most vulnerable populations and communities subject to climate hazards:** Help the people, places, and infrastructure that are most at risk for climate change impacts, recognizing that disadvantaged communities are often overburdened;
- **Build strong partnerships:** Coordinate across multiple sectors, scales, and stakeholders to ensure all people have access to the fundamental physical, health, and social benefits of our natural and built systems;
- **Apply ecosystem-based approaches:** Incorporate ecosystem resilience, protection of ecosystem services, and sustainable resource management; and,
- **Maximize mutual benefits:** Support resilience and conservation initiatives across built, social, economic, and natural systems, such as disaster preparedness, to ensure synergies across systems and reduce/avoid impacts of maladaptation.

NEXT STEPS

The scope of the subcommittee discussions also illuminated opportunities for broader recommendations to inform SCAG’s work both in Connect SoCal implementation and other program areas. To realize these recommendations, potential actions to support integration into Connect SoCal 2024 and its implementation are summarized below:

- **Prioritize the most vulnerable populations, communities, and infrastructure subject to climate hazards:** Help the people, places, and infrastructure that are most at risk for climate change impacts, recognizing that disadvantaged communities are often overburdened

 - Incorporate climate change considerations into Connect SoCal 2024;
 - Map disadvantaged communities with critical infrastructure and assets, and assess vulnerability to hazards in the Equity Analysis for Connect SoCal 2024;
 - Identify and support local agencies to protect communities vulnerable to climate effects;
 - Support implementing agencies in incorporating equity considerations in climate risk management and/or emergency management plans and preparedness procedures;
 - Support equitable distribution of efforts in economic development to help vulnerable communities have greater resources to respond to resilience shocks and stressors;

- **Build strong partnerships:** Coordinate across multiple sectors, scales, and stakeholders to ensure all people have access to the fundamental physical, health, and social benefits of our natural and built systems

 - Support expansion of public outreach activities for Connect SoCal 2024 to align implementation of strategies with community needs;
 - Collaborate with local and regional partners to support building resiliency through preparedness education, trainings, and resources;
 - Foster engagements across industry sectors and areas of expertise to support research and solutions development;
 - Expand public outreach and education to policymakers, businesses, and the general public;
 - Develop templates to support jurisdictions in preparing a community-wide outreach program to educate a diverse population on how to prepare and recover from climate change effects;

- **Apply ecosystem-based approaches:** Incorporate ecosystem resilience, protection of ecosystem services, and sustainable resource management

 - Support use of systems-based risk-management methods and tools for implementation agencies, and help prioritize options that take into account nature-based solutions and considerations for reducing vulnerabilities;
 - Support preservation, enhancements, and protection of open space, as well as natural and working lands, that have climate adaptation and resilience benefits – including carbon sequestration, as well as groundwater capture and storage;

- **Maximize mutual benefits:** Support resilience and conservation initiatives across built, social, economic, and natural systems, such as disaster preparedness, to ensure synergies across systems and reduce/avoid impacts of maladaptation.

 - Incorporate climate change adaptation for natural lands into Connect SoCal 2024;
 - Support implementing agencies' efforts to include climate-ready home hardening strategies in housing construction to minimize the potential loss of housing units stemming from climate-related hazards, including sea level rise, wildfires, landslides, and extreme flooding, among others;
 - Support development of Local Hazard Mitigation Plans to help jurisdictions prepare for disasters and access federal disaster relief resources; and,

- Support integration of climate vulnerability assessments into infrastructure planning and delivery for implementing agencies.

MAIN OFFICE

900 Wilshire Blvd., Ste. 1700
Los Angeles, CA 90017
Tel: (213) 236-1800
scag.ca.gov

REGIONAL OFFICES

IMPERIAL COUNTY

1503 North Imperial Ave., Ste. 104
El Centro, CA 92243
Tel: (213) 236-1967

ORANGE COUNTY

OCTA Building
600 South Main St., Ste. 741
Orange, CA 92868
Tel: (213) 236-1997

RIVERSIDE COUNTY

3403 10th St., Ste. 805
Riverside, CA 92501
Tel: (951) 784-1513

SAN BERNARDINO COUNTY

Santa Fe Depot
1170 West 3rd St., Ste. 140
San Bernardino, CA 92418
Tel: (213) 236-1925

VENTURA COUNTY

4001 Mission Oaks Blvd., Ste. L
Camarillo, CA 93012
Tel: (213) 236-1960

