



California's Fifth Climate Change Assessment
Draft Research Topics

Infrastructure and Built Systems

This category includes California's Fifth Climate Change topic suggestions regarding climate impacts on land use, development, transportation and built infrastructure, and how these systems respond to these impacts, including climate-related human migration and displacement. **Each roundtable discussion includes considerations for equity, traditional knowledges, governance, and economics and financing.**

Draft Research Topics & Gaps for Discussion	
IB 1	The potential responses and emergency system capacity to the loss or damage to major infrastructure (e.g., major roads, water conveyance structures, Delta levees).
IB 2	Economic impacts and benefits analysis of nature-based infrastructure and adaptation solutions.
IB 3	The impact of extreme weather and precipitation events (including rainfall and drought) on the risk of landslides to California communities.
IB 4	The health, social, and economic impacts of community displacement due to wildfires and post-fire recovery/resilience factors?
IB 5	The effect of climate-related events (e.g., such as extreme heat or loss of snowpack) on short-term (tourism) and long-term (displacement) movement of people to climate refugia locations, including the impact on economies, transportation systems, and land management planning.
IB 6	Potential changes in population distribution and density statewide due to climate change migration patterns. Identification of geographic areas that will be or are especially vulnerable to events precipitating mass displacement.
IB 7	The impacts of changes in water availability on future land use, development, and housing growth.
IB 8	Impacts of drought on landscape transformation in residential areas, including strategies to improve access to residential water supply efficiency and increase drought resilience.
IB 9	Effects of drought on subsidence in California's Central Valley.
IB 10	Role of new methane detection satellites on the quantification and mitigation of methane sources such as landfills and fossil fuel wells.
IB 11	The capacity of public lands to help build resilience and the impact of climate change on access to public lands.
IB 12	Urban greening strategies for supporting biodiversity, improving public health, and building resilience to climate change.
IB 13	Climate-related risks and impacts to the California real estate market.
IB 14	Connections between affordable housing and improving climate resilience.
IB 15	Carbon sequestration in the built environment.



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IB 16	Impacts of projected sea level rise on existing and future coastal infrastructure.
IB 17	Potential groundwater and structural corrosion/foundation failures from saltwater intrusion due to sea level rise.
IB 18	Impact of sea level rise on waste facilities (toxic, solid, recycling) and contaminated sites.
IB 19	Sea level rise impacts on inland waterways, including saltwater intrusion, groundwater contamination, groundwater inundation, changes in tidal reach, and the combined flood risks from tides, surges, and river discharges.
IB 20	Potential economic impacts of sea level rise.
IB 21	Cascading impacts of climate change that should be considered in transportation infrastructure analysis, including potential risk of landslides.
IB 22	Effectiveness of neighborhood-level cooling strategies, such as cool surfaces and shade structures, on street-level heat exposure in different climates.
IB 23	Effectiveness of passive cooling strategies for existing buildings (e.g., multifamily homes) on personal heat exposure inside the building. Strategies such as cool/green roofs, window shades and pane replacements, tree/vine/bamboo planting, etc.
IB 24	The effect of building codes on reducing greenhouse gas emissions and improving resilience to climate change extremes, such as extreme heat.
IB 25	Intersections of decarbonization trends and threats to urban and residential areas from climate-related extreme weather events, including power outages.
IB 26	Impacts to energy demand and infrastructure associated with the increased need for air conditioning due to rising temperatures.
IB 27	The warming effects of black carbon on emissions.