



## Calif. refines its definition of 'resiliency'

<http://www.eenews.net/climatewire/2016/03/29/stories/1060034727>

Debra Kahn<[http://www.eenews.net/staff/Debra\\_Kahn](http://www.eenews.net/staff/Debra_Kahn)>, E&E reporter

Published: Tuesday, March 29, 2016

What do mosquitoes, toxic brownfield sites and water storage projects have in common? They're all being studied by California for their potential adaptation to climate change.

The state has been at the forefront of efforts to reduce greenhouse gases and now is turning its attention to perhaps an even more daunting task: making itself more resilient to the effects of rising global temperatures.

"No one in the world has come up with a metric system for measuring resiliency," said J.R. DeLaRosa, assistant secretary for climate change at the state Natural Resources Agency.

"How can we convey that because of this program, we are now 50 percent more resilient, or resilient against X, Y and Z? That's something we're actually going to come up with -- at least the framework to get the ball rolling," DeLaRosa said.

A report<<http://resources.ca.gov/docs/climate/safeguarding/Safeguarding%20California-Implementation%20Action%20Plans.pdf>> released earlier this month inventories a sweeping array of existing policies on adaptation, covering all facets of the state's economy. It deals with the energy sector, forests, land use, species' habitat, water and transportation infrastructure, sea-level rise and emergency management.

The state is casting a wide net in preparing for climate change. Beyond the obvious hazards of sea-level rise, wildfires and floods, it is considering things like how to promote the cleanup of toxic sites that might be flooded by rising seas, how to monitor the spread of mosquito-borne viruses, and how to quantify the public health effects of smoke from increasingly severe wildfires.

California has been aggressive in establishing its authority to mandate cuts in greenhouse gases -- in addition to its market-based programs for industrial and fuel-sector emissions, it has mandates covering everything from local transportation planning to efficiency standards for appliances and is currently writing rules to extend its carbon cap through 2050.

But when it comes to adaptation, the state is so far using soft power: setting guidelines and using state funding as an incentive to encourage climate-cognizant decisions.

"We're really looking for links -- what is out there already, and what can we start doing to take

into account climate adaptation?" DeLaRosa said. "Are there guidelines we can provide? Are there certain checklists that when we fund something, it's not going to be subject or vulnerable to sea-level rise [or] forest fires?"

### **Planning geographically rather than by sector**

One of California's biggest champions of adaptation concedes that the way forward will be more indirect than the state's pursuit of emissions reductions has been.

"I don't know that you can necessarily mandate adaptation in the way that we've been able to mandate mitigation, but I think what will need to happen over time is we'll need to find ways to incentivize people to engage in additional adaptation," said state Assemblyman Rich Gordon (D).

His 2015 bill, A.B. 1482, directed the Natural Resources Agency to coordinate with other agencies on adaptation.

Gordon represents San Mateo County, just south of San Francisco, which straddles both the Pacific Ocean and San Francisco Bay. Of all the expected effects of climate change, Gordon is most worried about sea-level rise, which threatens San Francisco International Airport as well as a stretch of expensive Silicon Valley real estate (ClimateWire<<http://www.eenews.net/climatewire/stories/1059974050/>>, Dec. 20, 2012).

Gordon also passed a bill in 2014 that created a database to collect sea-level rise data generated by state agencies, airports, utilities, water agencies and other private entities.

Gov. Jerry Brown (D) signed an executive order in April 2015 that directs agencies to factor adaptation into their planning and assess state infrastructure's vulnerability to climate change, but Gordon wanted to make sure that the state's commitment to adaptation continues past Brown's tenure.

"An executive order can be rescinded at any time by a sitting governor or a new governor," he said. "Legislation cannot be as easily overridden."

The new report is aimed at satisfying the requirements of Gordon's bill as well as the executive order. In addition to bringing more than two dozen state agencies together, it marks a strategic shift to thinking in terms of geographic regions, rather than statewide economic sectors.

"We're starting to pivot and start to look at regions," DeLaRosa said. "It makes more sense from a climate impacts perspective because each region will experience impacts a little bit differently. The Bay Area might be a little more concerned with sea-level rise than the Sierras or the Central Valley."

### **Predictions, not prescriptions**

Agencies are also figuring out how to write policies that incorporate the latest scientific findings as they come out.

"If we find out or get information that's been vetted and says sea-level rise is now going to be 6 meters by 2100, does that mean that we go back and make folks who have gone through a CEQA [California Environmental Quality Act] process or [other] formal process re-evaluate that?" DeLaRosa asked. "Because some of these processes take years."

The report warns of inevitable changes across the state and across many economic sectors but is light on prescriptions. In the agriculture industry, where debates are currently raging over how to limit groundwater pumping and whether to plant higher-value but more water-intensive crops, it says the goal of adaptation "should be sustainability and continued vibrancy in the agricultural community at all farm sizes."

More details on costs and benefits will come in subsequent reports, including a follow-up report due by July 2017 and a new synthesis of climate science, the Fourth Climate Change Assessment, which is expected in 2018.

The report also details a suite of sector-specific studies that will underpin future work on adaptation, like a study of the projected yield of new water storage projects under climate change and an analysis of the 50,000 miles of state highways' vulnerability to extreme weather events.

An initial assessment

<[http://www.dot.ca.gov/hq/tpp/offices/orip/climate\\_change/documents/ccps.pdf](http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/documents/ccps.pdf)> of the northwest corner of the state found that projected increases in high tide and coastal erosion would likely affect 12 separate sections of highway. It evaluated various adaptations, including elevating the roads, building dikes to protect them or rerouting them altogether. A statewide analysis is due out in 2017.

### **Should adaptation have a fund?**

Other studies underway include an analysis of the work being done currently to figure out where species are going to migrate due to climate change and whether there is enough available habitat to sustain them; a model of expected shifts in range for tree and shrub species; and a study of how to reduce power-sector emissions while simultaneously making the system less vulnerable to climate impacts.

A group that advocates for sustainable agriculture practices praised the report for bringing agencies together, as well as for recognizing existing climate mitigation programs that do double duty as adaptation programs. The state Department of Food and Agriculture plans to hand out up to \$16 million this year in proceeds from greenhouse gas auctions to pay for energy-saving irrigation upgrades on farms, for example.

But because cap-and-trade funding has to go to projects that first and foremost reduce emissions, adaptation can get short shrift, said Adam Kotin, associate policy director for the California Climate & Agriculture Network.

"Where the state's efforts so far have fallen down is we don't have a fund; we don't have any

adaptation-specific resources," he said. "All of our efforts that are currently being touted as adaptation programs in this action plan are sort of depending on their need to reduce greenhouse gases. There currently is a need for resources that specifically target adaptation and don't have other strings attached."

Kotin recommended that the state support its existing network of county-level resource conservation districts, which help educate farmers and coordinate local habitat restoration projects.

"They've been hobbled for a while by lack of resources, but we think they have a really important role to play as adaptation becomes an even greater priority," he said. "One very direct way that the state could help growers adapt would be by putting more resources in the hands of people that are tasked with providing on-the-ground, technical advice to growers."

Gordon said he thinks the state is at the beginning of its adaptation journey.

"I think it will gain in import, and it will gain equal status with what we do around mitigation, but it will take time for that to occur as we begin to think about this in a different way," Gordon said. "I think it's a good report for a first report. I suspect that future reports will be more robust as we think further about this."