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Testimony of Dr. Peter H. Gleick[1]

For the Informational Hearing on

CLIMATE CHANGE AND WATER RESOURCES
Assembly Committee on Water, Parks & Wildlife

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California State Capitol, Room 437

Incorporating Climate Change into Water Resource Decisions

I would like to thank the Chair, Vice-Chair, and members of the Committee for inviting my testimony today. Reviewing my files, I see that I have testified before State and Federal legislative committees on the subject of climate change and water resources 15 times since 1987. Some of you may be getting tired of seeing me. The feeling is ***not*** mutual: I think this issue remains a critical one for the State of California, and I appreciate your interest in addressing it. We have the opportunity to lead the nation in thoughtful and effective actions to reduce climate-related risks to our water resources.

Let me make this short and concise:

The evidence that humans are already changing the water cycle of the United States, and California, is compelling.

Complex impacts on every sector of society, including our water resources and agricultural productivity, are now unavoidable.

California's water resources are especially vulnerable.

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I would like to summarize four key issues:

1. What has been done to deal with water-related risks of climate change?
2. What has not been done?
3. What should not be done?
4. What should be done?

What has been done to deal with water-related risks of climate change?

Very little. Despite a vast scientific literature, despite reams of reports and recommendations, despite uncounted meetings, conferences, and discussions, there are only a handful of places where major actions have been taken to improve our ability to adapt water systems to climate change. One example? The City of San Francisco is beginning to integrate sea-level rise and changes in precipitation patterns into new stormwater designs.

What hasn't been done to deal with water-related risks of climate change?

Unfortunately, despite extensive recommendations, far too little has been done to prepare the state's water systems for inevitable climate changes. For example, even after testimony on climate risks, the 2002 California Floodplain Management Task Force effectively ignored climate risks and made no climate-related recommendations. Flood mapping and flood insurance programs do not adequately incorporate the future risks of sea-level rise or changes in flood risks – both are climate impacts with a very high degree of certainty. Levee design and wetland restoration are not incorporating climate change. Development in floodplains continues unabated. No systematic assessment of reservoir reliability has been done for California. No new operating rules have been put in place for California reservoirs; nor has a plan been developed to put such rules in place. The California Water Plan mentions the seriousness of climate change, but has not integrated it into future scenarios or planning.

What should not be done to deal with water-related risks of climate change?

Sometimes, things should ***NOT*** be done because of the risks of climate change. In particular, water managers must stop assuming that the future climate will look like the past climate. Construction in some regions vulnerable to future flooding should be prohibited. In addition, some water-related policies have recently been proposed ostensibly because of climate change, but without the science to support them. Climate changes is a valid reason for re-evaluating new water-supply options, but it is not a valid reason for funding or building them yet. This means that large capital investments that may be vulnerable to future climate changes should be avoided if lower-cost options are available that can improve our water reliability and quality or reduce our climate-related risks.

Finally, what should be done to deal with water-related risks of climate change?

Let me conclude with five explicit recommendations, several of which would benefit from legislative action:

- **Existing State, federal, and local water systems should be tested under future climate change conditions to see how they respond and the extent to which they are vulnerable to expected changes. Where appropriate, management changes must be put in place now to reduce future climate-related risks.**

- **All water management decisions must take into account their energy and greenhouse gas implications, with a focus on identifying actions that can both improve water management and efficiency and reduce the State's energy needs and emissions.**

- **All future estimates of water supply and demand, at the State and local levels, must include the effects of rising temperature and other climatic factors. This includes the mandated California Water Plan.**

- **All new water infrastructure must be designed and built incorporating expected climate change over the expected life of the project, including levees, reservoirs, and constructed and restored wetlands.**

- **Water agencies should partner with other agencies and authorities to seek combined solutions to water, energy, and greenhouse gas problems.**

Thank you for the opportunity to talk with you today. I would be happy to respond to any questions, or to provide additional information.

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