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# news

## Global Warming May Threaten Boston's Waterfront

**By Mark Fitzgerald**

According to a recent study aimed at examining the effects of global warming on infrastructure in Boston, climate change could cause the sea level to rise more than 0.62 m by the year 2100 and enable a 100-year storm surge to spill over the Charles River Dam, engulfing low-lying areas of the city. Conducted by a team of researchers from Tufts University, the University of Maryland, and Boston University, the study, entitled "Climate's Long-Term Impacts on Metro Boston," considered how sea levels, temperatures, storms, and droughts could influence such infrastructure systems as those for flood management, water distribution, water quality wastewater treatment, transportation, public health, and energy distribution in Greater Boston. Funded by the Environmental Protection Agency's grant program Science to Achieve Results, the study also examined the possible effects of climate change on the local economy, government budgets, and society.

"The major finding that came out of the study is that it makes a lot more sense to take action beforehand rather than afterwards," says Paul H. Kirshen, Ph.D., the director of Tufts University's graduate program in water management and the team's principal investigator. "So it's much smarter to be proactive about this than reactive. For example, the study showed that if we continued past practices, the cost of coastal flooding could be tens of billions of dollars over the next one hundred years in terms of cumulative damages, but if you start taking action in the next couple of decades, you can reduce that cost significantly."

Flood-proofing buildings, constructing seawalls, and retreating from floodplains are among the preventive measures that the research team proposed to mitigate potential

damage. The study, which also received input from the Metropolitan Area Planning Council, an agency representing 101 cities and towns in the metropolitan Boston area, helped engage stakeholders and infrastructure planners in the process of preparing for potential climate change. “In some cases, adaptation can be as easy as changing some of the building codes,” explains Kirshen. “A lot of the codes are based on out-of-date climate information from the sixties, so one of the things we can do is update the building codes to the present climate or, even better, think about updating the building codes to what might be the future climate.”

The report promises to raise awareness of the dire effect that global warming could have on cities and of the sensitivity of infrastructure to climate. “Before this study, there hadn’t been much attention given to the impacts of climate change on cities,” says Kirshen. “But, as engineers, we know that the services provided by infrastructure are very tied to climate, and that infrastructure will only work well in the future if we are aware of the implications of the future climate. We really have to think ahead now, and part of this involves a massive education process for public officials as well. There’s no excuse now. We know the climate is changing, and we have to include that knowledge in our decision making.”