

Climate Change Potential Impacts on the Built Environment and Possible Adaptation Strategies

Dale A. Quattrochi

NASA

Earth Science Office

Marshall Space Flight Center

Huntsville, AL

The built environment consists of components that exist at a range of scales from small (e.g., houses, shopping malls) to large (e.g., transportation networks) to highly modified landscapes such as cities. Thus, the impacts of climate change on the built environment may have a multitude of effects on humans and the land. The impact of climate change may be exacerbated by the interaction of different events that singly may be minor, but together may have a synergistic set of impacts that are significant. Also, mechanisms may exist wherein the built environment, particularly in the form of cities, may affect weather and the climate on local and regional scales. Hence, a city may be able to cope with prolonged heat waves, but if this is combined with severe drought, the overall result could be significant or even catastrophic, as accelerating demand for energy to cool homes and water supplies needed both for energy supply and municipal water needs. This presentation surveys potential climate change impacts on the built environment from the perspective of the National Climate Assessment, and explores adaptation measures that can be employed to mitigate these impacts.