Adaptation in the Built Environment

Keely Maxwell & Susan Julius, US Environmental Protection Agency
Ch. 11: Built Environment, Urban Systems, and Cities

Disclaimer: EPA funded & managed the research described. It has been subjected to the Agency’s review & has been approved for publication & distribution. Note that approval does not signify that the contents necessarily reflect the views or policies of the Agency. All photos & graphics from NCA4.
Key Message 2: Forward-Looking Design for Urban Infrastructure

Impediments to long service life
- Age & deterioration
- Extreme weather & changing climate

Forward-looking design
- Is based on future climate projections
- Is not common
- Informs investment in reliable infrastructure

High tide flooding, Annapolis, Maryland

Flooding closes Interstate 44, Missouri
Cities across the US are doing

- Adaptation & mitigation
- Planning → implementation

Urban adaptation actions

- Mainstream into existing planning
- Modify the built environment
- Social & institutional changes
Key Message 4: Urban Response to Climate Change - Analyzing urban adaptation

1. It can have co-benefits
2. Challenges persist
   • Uncertainty about local projections
   • Time, resources, $
   • What effects does it have?
3. Cities address challenges by
   • Multi-city or regional networks
   • Participatory decision-making

Bee Branch Creek Greenway, Dubuque, Iowa
Urban Adaptation Research Needs Identified

1. Ways to assess its effects
   • Performance
   • Social equity
   • Cost-effectiveness

2. Resources designed for cities
   • Localized data & scenarios
   • Models & measures of built + natural + social environments

Community resettlement planning, Isle de Jean Charles, Louisiana