Protecting Public Health and the Environment in a Changing Climate

Presentation to
EPA Tribal Climate Adaptation Seminar

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February 11, 2020

Why Does Climate Adaptation Matter for EPA's Mission?

- Many of the outcomes EPA, ***in partnership with states, tribes, and local communities***, is trying to attain (*e.g.,* clean air, safe drinking water, Superfund remediation) are sensitive to weather extremes and changes in climate.
- Until now, EPA and its partners have been able to assume climate is relatively stable and future climate will mirror past climate.
  - But the past is no longer a good predictor of the future.
  - The climate is changing unprecedented rate – outside the range to which society has had to adapt in the past.
- EPA and its partners in the states, tribes, and local communities must anticipate and plan for ("adapt to") future weather extremes and changes in climate.

Examples of the Importance of Climate Adaptation for EPA's Core Mission

Adaptation can help protect water quality and ensure the effectiveness of billions of dollars of investments

- Approximately 772 cities in the U.S. have **combined sewer systems**.
- These systems combine stormwater and waste water (domestic sewage and industrial wastewater) into a single system. It is all transported to a sewage treatment plant, where it is treated and discharged to a water body.
- Many of these systems are very old (some built over 100 years ago) and cities have outgrown their capacity.
  - ✓ When there are intense storms, the systems can overflow, spilling raw sewage into nearby rivers and streams.
  - ✓ 1.2 trillion gallons of sewage and stormwater are discharged every year during combined sewer overflows.
  - ✓ This affects the ability of EPA and the states to ensure clean water is provided to their communities.

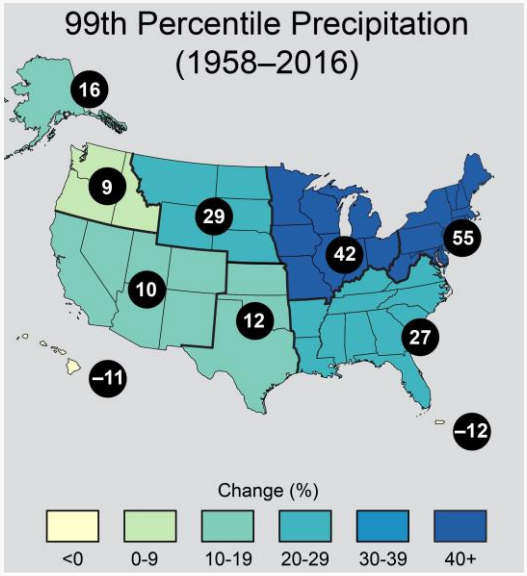
Sewage overflow discharge point into the Potomac by the Kennedy Center

- It is estimated cities will invest **$48 billion** redesigning and rebuilding the systems so their capacity can handle the larger size to which they have grown.

What does this have to do with changes in climate?

- The frequency of intense storms has been increasing.
- These are exactly the sorts of storms that cause combined sewer systems to overflow.
- As the climate continues to change, the frequency of intense storms is expected to increase even more.

Observed changes in intense storms



- It is important for city planners and engineers to consider these expected impacts as they design new systems.
  - ✓ **Anticipating an increase in the frequency of intense storms will help ensure the investments made with scarce taxpayer dollars are effective in the future.**
  - ✓ The investments are being made in long-lived infrastructure that will be costly to modify in the future.

Ensuring the effectiveness of investments to clean up contaminated sites

- EPA is responsible for working with the states to clean up hazardous waste sites (*e.g.,* Superfund; Brownfields).
- Flooding from more frequent and intense storms and sea-level rise may lead to contaminant releases from Superfund sites, Brownfield sites, and landfills.
- These contaminant releases may pose an increased risk of adverse health and environmental impacts.
- ***Good News*: The effectiveness of investments made by local communities with scarce taxpayer dollars to clean up contaminated sites can be ensured if these climate impacts are anticipated and incorporated into cleanup mechanisms.**

3.3 acre Highlands Acid Pit Superfund site: One of 13 toxic waste sites in Texas flooded or damaged by Hurricane Harvey

Vision for EPA's Work on Climate Adaptation

EPA continues to fulfill its core mission and deliver real results to provide Americans with clean air, water, and land *even as the climate changes*.

"I skate to where the puck is going to be, not where it has been."

- Hockey great, Wayne Gretzky

Adaptation is Smart Government

Climate adaptation helps ensure that investments (*e.g.,* water infrastructure) made with scarce taxpayer dollars are effective even as the climate changes.

(Since 1980, the U.S. has incurred over **$1.5 trillion in damages** from weather and climate disasters, each of which cost at least $1 billion.)

Central Elements of EPA's Work on Climate Adaptation

- Building and strengthening the "adaptive capacity" of partners in the states, tribes, and local communities
- Supporting their efforts to integrate climate adaptation into the work they do by:
  - ✓ **Training:** increasing awareness of ways climate change may affect their ability to implement effective programs
  - ✓ **Financial incentives:** supporting climate-resilient investments in communities across the country
  - ✓ **Tools:** providing necessary data, information and tools

Many Communities Are Still Struggling to Adapt

- Particularly challenging for middle- to smaller-sized communities
- The challenges:
  - ✓ Often lack technical expertise and experience with adaptation
  - ✓ Also limited resources to devote to adaptation
  - ✓ Overwhelmed by huge volume of information about climate adaptation, much of which is irrelevant to their community
  - ✓ Challenging to integrate available information into a single package that will provide them with a complete recipe for how to evaluate and prepare for the risks posed by climate change

> *"We don't need any more stinkin' tools. What we need is the technical assistance to understand which tools are the right ones for us to use given the issues of concern to us, and the technical assistance to understand how to use the tools."*

EPA's Climate Adaptation Resource Center (ARC-X) Meets These Challenges.

Unlike any other resource currently available to the public.

EPA/OP's Adaptation Resource Center (ARC-X): Responding to the needs of local communities

- EPA/OP's Adaptation Resource Center (ARC-X) is an interactive resource to help local governments effectively deliver services to their communities even as the climate changes.
- Using the ARC-X, decision makers can obtain an integrated package of information ***tailored specifically to their needs***.
- Once users select the areas of interest to them, they will find information about:
  - ✓ the risks posed by climate change to the issues they care about;
  - ✓ adaptation strategies they might consider implementing;
  - ✓ case studies illustrating how other communities have successfully adapted to those risks;
  - ✓ tools to replicate the successes of other communities **(the relevant tools & technical support!)**
- The ARC-X is designed to help ***all* 40,000 communities** across the nation anticipate, prepare for, and adapt to the impacts of climate change.
- The ARC-X system is non-prescriptive. It is intended to help local government officials make more informed decisions. It is not intended to tell them what to do.

www.epa.gov/arc-x

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