



AMWA Comments to NOAA on its Next Generation Strategic Plan Submitted September 10, 2009

What long-term trends (scientific, technological, socio-economic, etc.) will shape the future of NOAA over the next 25 years?

The Association of Metropolitan Water Agencies is providing these comments. Decision makers have an ever-increasing need for data. NOAA must be at the center of all aspects of the data issue, from gathering and generating data, to possibly serving as a clearinghouse of federal climate data and information, to providing education about and interpretive support of this data. NOAA must ensure that our nation continues to have a record of long-term observational data critical for information important for water resources management: stream flow, ice core, temperature, etc. This long-term record of data is important to identify and understand future trends when climate models are being developed.

Many federal agencies as well as universities and other organizations are conducting research and gathering data with respect to climate change. This is essential and will continue; therefore NOAA must determine how to create linkages across agencies in order to minimize redundancy and maximize limited research funds. While NOAA cannot and will not always be the lead agency for some of the scientific data gathering with respect to climate change and water information, NOAA will likely play an important role. For example, FEMA would take the lead in updating the nation's flood plain maps to reflect climate change. However, NOAA should provide the information FEMA needs to finish the task.

As the portion of society that is science-literate becomes ever smaller, it will be critical for NOAA staff to clearly articulate and interpret data.

Water utilities desire predictive and decision-support tools, including necessary data resources, to help plan for the future impacts of climate change. These tools and resources should include: climate models that forecast precipitation changes and address other issues pertinent to water quantity, quality and flooding on a national, regional, and subregional scale; climate models that address sea level rise and its effect on coastal water supplies; and assessments to determine – on a national, regional, and subregional scale – the vulnerability of different regions to the anticipated impacts of climate change over different timeframes. However, utilities recognize that high levels of uncertainty will remain within forecasting tools. Water utilities are experienced at planning under high uncertainty, but need assistance in understanding the range and implications of uncertainty within global climate change forecasts at various temporal and spatial scales. Water utilities need decision-support tools to help integrate planning under high uncertainty into their decision making processes.

2. What challenges or opportunities will NOAA face over the next 25 years?

The federal agencies that are addressing and researching climate change must be able to have honest conversations about scientific data and interpretations, and also be able to endure criticism and skepticism, which will inevitably result. From the perspective of a water utility, predictive models and

other predictive tools will be vitally important when making decisions about infrastructure modifications that may or may not be necessary as the result of climate change.

In developing decision-support tools, emphasis must be made to ensure that the tools are flexible enough to be used across multiple types of climate scenarios and impacts that could be felt by the various regions, local governments and utilities that will be affected by climate change.

In addition, uncertainty within the climate predictions and models will continue to remain very high. Water utilities are not seeking to know the outer bounds of specific predictions but rather to understand the range of the uncertainties they may face and therefore the range of possibilities to consider in planning. This is challenge in that it may not be the way NOAA has thought about modeling in the past, but it is a good opportunity as NOAA should work to help utilities understand the ranges of possibilities with respect to climate impacts in order to better plan for the future.

As more agencies and organizations are seeking to perform climate assessments based on their respective missions, AMWA believes that there should be a fully integrated national climate change assessment program to minimize gaps and overlaps between agencies and maximize limited research funds. NOAA is well positioned to potentially be the lead agency to develop a set methodology for using climate information to develop standard assessments or to be the climate change assessment program coordinator. Many organizations (such as USGS) are seeking public comment regarding how to use information for climate assessments and having a model assessment would save decision makers time and money, as well as reduce confusion that currently arises when different assessment methodologies are compared.

Ideally, in the next 25 years, water utilities and other stakeholders would have access to various federal scientific data resources (e.g., NOAA - ocean buoys and satellites; USGS stream gauges and water quality monitoring data, satellite imaging...) via a single portal. Utilities could use the portal to get needed information to determine local impacts (satellite pictures of vegetation changes) or see if they can use federal data to see if any correlations on which to make short-term or long-term predictions. NOAA should work with other federal agencies to determine the best way to proceed with determining how the wealth of data can be organized and stored for stakeholder and federal use.

3. Given the long-term trends, challenges, and opportunities that you identified, what should the agency seek to accomplish in the next 25 years?

NOAA currently has the ability to use many different technologies and resources beyond simply data gathering related to more traditional “climate change research” goals. Given increasingly limited funding, NOAA should leverage the abilities it currently has to use available technology to help in gathering satellite and other data related to algal growth, surface water runoff, farm practices, etc. This information would be valuable to decision makers in the water utility community and beyond.

Sustained funding for research and climate science support will continue to be a challenge in the years to come, but NOAA should continue to gather data, specifically climate data and other data useful for analyzing long- term trends and should increase funding in both of these areas.

NOAA should improve coordination with other agencies (EPA, USGS, etc.), as mentioned earlier, to develop more synchronized responses and information for water agencies.

NOAA should continue to develop (or help develop) predictive models and decision-support tools that water agencies can use to make infrastructure decisions regarding climate change, keeping in mind the challenges and opportunities outlined in AMWA's previous comments.

The importance of monitoring a variety of variables likely to indicate trends in climate change or be impacted by climate change becomes increasingly urgent. One trend over time will be improvements in monitoring technology leading to more data that will need to be analyzed. NOAA should seek to help decision makers understand the implications of the data and help to coordinate the data with past and updated Global Climate Change models. NOAA could also help decision makers focus their efforts to better understand triggers and turning points for decision making in light of changing data and model outputs.