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*Armstrong Center for Energy and the Environment*

# The State of the Environment: Evaluating Progress and Priorities

## Response to Questions for the Hearing Record

*Questions from The Honorable Randy Neugebauer*
*Response from The Honorable Kathleen Hartnett White*

*Response to Hearing Questions for the Record before the U.S. House of Representatives Committee on Science, Space, and Technology: Subcommittee on the Environment*

**Question 1. Regarding Drought Impacts in Texas.**
I have been privileged to make many decisions affecting water supply as former member of the Texas Water Development Board, a former Chairman of the Texas Commission on Environmental Quality (TCEQ), and now as an Officer and Director of the Lower Colorado River Authority (LCRA).

The extraordinarily intense droughts during three of the last four years have awakened Texas to the urgency of increasing the state's available water supply. The record breaking drought of the single year of 2011 created water shortages, in some local areas, perhaps more severe than Texas' historical drought of record in the 1950s. For decades, Texas has determined water availability and has managed water supply on the basis of the average hydrological conditions during the decade of the 1950s—the historical drought of record. Yet, 2011 created conditions in some areas never experienced within a twelve month period.

As a single example of unprecedented drought impacts, farmers in the lower Colorado River basin were in 2012 denied irrigation water for the first time in 75 years. Because the storage levels in the reservoirs in question fell so low in 2011, irrigators have again been denied water in 2013 for the second year in a row. Current or near term water shortages now face many areas in Texas.

Texas has developed state of the art regional water plans, compiled into a State Water Plan, that project increased water demands in 16 different regions of the state through 2060 when the state's population is expected to have doubled. Until recently, water shortages were not projected until the outlying years. The plans identify thousands of specific water supply projects to increase supply to meet future demand. With few exceptions, the projects have not been completed or even begun in most cases.

The drought of the last few years, however, has made water shortage a current condition and no longer a future projection. River authorities like LCRA, water supply districts, and cities announce bold projects to increase supply, but timely implementation still remains elusive.

Inadequate financing and regulatory impediments are the chief obstacles to increasing water availability in Texas. The Texas Legislature is poised to use $2 billion of the state's Rainy Day Fund to provide low interest loans for water supply projects. The authorizing legislation for this State Water Infrastructure Fund for Texas (SWIFT) would invest significant portions of this fund to eventually generate the $27 billion needed.

In my judgment, regulatory impediments flowing from state and federal law are an equal, and perhaps more formidable, barrier to Texas' increasingly urgent need to increase water supply. After the landmark legislation in 1997 that created the framework for the states' regional water planning process intended to expedite water projects, Texas passed water law that did not facilitate, but indeed complicated, water projects. One new law required development of regulatory environmental flow standards in every river basin of the state. Other recently enacted law gave local groundwater districts the authority to limit pumping and transfer of groundwater and for the first time gave the state the authority to determine the future conditions of aquifer.

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Other issues surrounding the inter-basin transfer of water and amendments to existing water rights have stymied private water markets, previously envisioned to be the most efficient means of meeting water demand in this rapidly growing state. Legislative efforts and legal challenges have made little headway.

The federal impediments, especially through the Endangered Species Act (ESA) and the Corps of Engineers/EPA's authority, increasingly challenge Texas. Last week, a federal judge ruled that TCEQ's allocation of the water in the Guadalupe River violated the Endangered Species Act, and the court enjoined the state from any future allocations until U.S. Fish and Wildlife Service approves a plan to protect the endangered whooping cranes in Aransas Bay. The Fifth Circuit Court of Appeals granted the state's request to stay the district court's order pending complete appellate review. This is the first, and may be the most damaging, federal interference in the state's authority over water since the federal court rulings under the ESA to limit withdrawals from the Edwards Aquifer on which San Antonio is wholly dependent to provide municipal water.

Texas is blessed with prodigious water resources, but the state has entered a new era when aging and outdated water infrastructure must be expanded and replaced. This is a story across many states. With less regulatory impediment, most effectively achieved through strategic reform of the federal laws at issue, private financing and private actors could proceed with dispatch.

### Question 2. Regarding the Status of Cooperative Federalism under the Clean Air Act

The EPA may occasionally acknowledge the original Clean Air Act's federalist structure but in practice either undermines or flatly denies the states' authority under the statute. (*See* my "EPA Process and Texas Results: Understanding the Dispute Between the Two Largest Environmental Agencies" and "The Clean Air Act: The Case for Reform.")

If the EPA actually deferred to the cooperative federalism articulated in the original Clean Air Act, states could more efficiently, effectively, and rapidly improve air and water quality. As stated in 1977, "Congress carefully balanced State and national interests by providing for a fair and open process in which States and local governments, and the people they represent, will be free to carry out the reasoned weighing of environmental and economic goals and needs." Or in the words of the 1970 CAA, the "prevention and control of air pollution is the primary responsibility of the States and local government" because those closest to the resource are best able to effectively manage them. In a nutshell, the CAA provides that EPA will set the national standards, but the states will choose how to attain those standards.

How far EPA has strayed from this statutory framework, a path made easier by the 1990 amendments to the Act which substantially expanded EPA's oversight authority. EPA increasingly treats state agencies as instruments of the federal government rather than as partners, much less equal sovereigns. EPA acts, perhaps, most intrusively under the federal authority to approve State Implementation Plans (SIP) for the criteria pollutants. EPA uses SIP authority to threaten disapproval of all state regulation vaguely related to air quality including procedural rules. A study by the National Research Council in 2005 agreed that EPA's procedural micromanagement of state agencies impedes efficient environmental improvements.

Of note is EPA's disapproval of the Texas Flexible Permit Program. This program, in place for over 16 years before EPA decided to disapprove, was a major success in reducing emissions of criteria pollutants and toxics. EPA legally nixed the program (very similar to the EPA's permitting program utilizing Plant-wide Applicable Limits–PALS) on the basis of hair-splitting differences in terminology. A recent D.C. Circuit Court of Appeals decision upheld the Texas program and sharply rebuked EPA for denial of the state authority under the CAA. But damage to the Texas environment and economy was already done.

### Question 3. Regarding Current EPA Science and the "No Safe Threshold" (NST) Statistical Methodology in Risk Assessment

*See* my "EPA's Pretense of Science: Regulating Phantom Risks." My paper draws upon two excellent studies noted below that are related to EPA's use of NST methodology.

Anne Smith, Ph.D., "An Evaluation of the PM2.5 Health Benefits Estimates for Regulatory Impact Analysis of Recent Air Regulations," NERA (December 2011).

Louis Anthony (Tony) Cox, Jr.,"Reassessing the Human Health Benefits from Clean Air," *Risk Analysis* (November 2011).

In my view as a former regulator, EPA's current science lacks credibility, is not an adequate justification for the many new air quality rules, and misleads policymakers and the general public. As one example of the problem with EPA's regulatory science, I confine my response to EPA's increasing reliance on the No Safe Threshold (NST) statistical methodology.

In 2009, EPA made a methodological change with huge ramifications. EPA now calculates mortality risks from PM2.5 not

only below the health protective level of the NAAQS, recently changed from 15 to 12 ug/m3 (annual), but also below the lowest measured level (LML) in the original studies and even below natural background levels approaching zero. Remarkably, EPA now assumes that there is no level of PM2.5 below which risks to premature death cease. Statisticians call this a "no threshold linear regression to zero analytic model." In laymen's terms, no risk is too low.

Prior to 2009, the EPA did not estimate risks below the lowest ambient level measured in the epidemiological studies. If the PM level in a given location was already below the LML (typically–10 ug/m3), the EPA did not assume additional reductions in PM2.5 would generate additional health benefits. "However, starting in 2009, EPA decided that it would calculate risks to the lowest level projected by its air quality models, even though no observed or empirical evidence exists … in that low concentration zone."[1]

The statistical associations between premature mortality and PM2.5 identified in the epidemiological studies cease below the lowest measured level in the study. But EPA now imputes, by extrapolation, the same risks (and at the same rate) for PM2.5 levels for which no statistical evidence exists. "Extrapolation is the use of quantitative relationships outside the range of evidence on which it was based."[2]

EPA's adoption of this no-threshold approach to assessing risk increased EPA's estimate of total U.S. deaths attributable to PM2.5 pollution by almost four-fold—from a previous estimate of 88,000 to 320,000! This approach means that over two-thirds of the public's health risk from exposure to PM2.5 come from ambient levels not only far below the protective national standards known as the NAAQS, but even below the lowest modeled levels in the relevant studies.[3]

In short, EPA incredulously finds that mortal risks increase in proportion to the extent that a location's ambient concentration of PM2.5 exceeds natural background levels, which EPA now estimates to be an extremely low level of 1 ug/m3. "This created a major change in the level of national mortality estimated to be due to PM2.5 because the majority of the U.S. population resides in locations where the ambient PM2.5 concentrations are below 10ug/m3."[4]

After probing questions from members of Congress, senior EPA leadership recently defended adoption of the no-threshold approach:

> Studies demonstrate an association between premature mortality and fine particle pollution at the lowest levels measured in the relevant studies, levels that are significantly below the NAAQS for fine particles. *These studies have not observed a level below which premature mortality effects do not occur.* The best scientific evidence … is that there is no threshold level of fine particle pollution below which health risk reductions are not achieved by reduced exposure.

This is another way of saying: No risk is too low, improbable, or uncertain that it is not worth regulating.[5]

EPA claims that the two studies in question show no evidence of a threshold, but many studies ignored by EPA do show a threshold. EPA's Benefit Study admits that the "no-threshold" assumption is a "key uncertainty" but as usual assigns a "high" confidence to the model that incorporates this assumption. The single study that EPA cites to support this questionable "no-threshold" assumption is an EPA's Health-Effects Institute funded study.

And importantly, the "no-threshold" assumption violates the foundational principle of toxicology. It is the dose that makes the poison. EPA's defense of this absurdly precautionary assumption is another way of saying that the point at which all risk is zero cannot be proven. This is not surprising. How can any negative proposition be proven with complete certainty?

EPA also maintains that its adoption of a "no-threshold" assumption in 2009 was endorsed by EPA's various scientific advisory panels. The growing evidence of financial conflicts of interest among the members of EPA's technical review panels casts doubts on the objectivity of these review panels. Six of the seven members of the EPA's Clean Air Science Advisory Committee (CASAC) have received EPA grants to conduct research for the Agency.[6] CASAC Chairman Jonathan Samet was the principal researcher for grants of $9.5 million dollars.

And in addition to questionable peer review, the EPA did not give any public notice of the regulatory implications of this sea-change in risk assessment of current air quality conditions–now at extremely low concentrations of PM2.5 in most parts of this country. Public health scientists may have long debated the relative merits of no-threshold linear regression analyses, but these were scientific debates without the economic and societal implications at stake in EPA's regulatory agenda, unprecedented in its cumulative impacts. ✯

## Endnotes

[1] Ann E. Smith, Ph.D "An Evaluation of the PM2.5 Health Benefits Estimates in Regulatory Impact Analyses for Recent Air Regulations," NERA Economic Consulting (Dec. 2011) 23.
[2] Ibid.
[3] Ibid., 24.
[4] Ibid.
[5] Gina McCarthy, Assistant Administrator, Environmental Protection Agency, to Rep. Fred Upton (3 Feb. 2012).
[6] Steve Milloy, "Clearing the Air on the EPA," *Washington Times* (7 Mar. 2012).

## About the Author

**The Honorable Kathleen Hartnett White** joined the Texas Public Policy Foundation in January 2008. She is a Distinguished Senior Fellow-in-Residence and Director of the Armstrong Center for Energy & the Environment.

Prior to joining the Foundation, White served a six-year term as Chairman and Commissioner of the Texas Commission on Environmental Quality (TCEQ). With regulatory jurisdiction over air quality, water quality, water rights & utilities, storage and disposal of waste, TCEQ's staff of 3,000, annual budget of over $600 million, and 16 regional offices make it the second largest environmental regulatory agency in the world after the U.S. Environmental Protection Agency.

Prior to Governor Rick Perry's appointment of White to the TCEQ in 2001, she served as then Governor George Bush appointee to the Texas Water Development Board where she sat until appointed to TCEQ. She also served on the Texas Economic Development Commission and the Environmental Flows Study Commission. She is now serving in her fifth gubernatorial appointment as an officer and director of the Lower Colorado River Authority.id a tax increase.

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