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Hearing of the Committee on Science, Space, and Technology
Subcommittee on Investigations and Oversight

"EPA's IRIS Program: Evaluating the Science and Process Behind Chemical Risk Assessment"

My name is J. Christian Bollwage, and I am Mayor of the City of Elizabeth, New Jersey and Chair of the Conference of Mayors Brownfields Task Force for the past 15 years. I appreciate this opportunity to provide comments to the House Science Committee and I thank the Chairman for extending the invitation to participate in this panel.

I am here representing The United States Conference of Mayors which is the non-partisan organization that represents cities with populations of 30,000 or more through their chief elected official, the Mayor. There are over 1,200 cities throughout the United States.

I want to emphasize that I am a Mayor, not a scientist and therefore I am not accustomed to participating in scientific and technical discussions. However, I was asked to come before you today to provide comments on the real-world impacts of applying scientific assessment tools at the community level, and this I have done since becoming a locally-elected official.

I am certainly not an expert on the IRIS system, but for want of a better tool, my staff are users of the IRIS system approach to hazard and human exposure assessment.

Mayors, with their City Councils and Department Managers, have to make decisions on the ground every day to run a city. While many of these decisions require the careful application of common sense, some are more complicated, and these types of decisions require the use of more sophisticated decision-making tools.

Risk management is one of those areas where local elected officials must make decisions, and we like to have the best tools available to assist us with our efforts.

The IRIS system is not some sort of "sacred tool" that should never be questioned or evaluated. It does seem, however, that it is shrouded in a mix of scientific measurement, expert guesswork, and deals with a high level of uncertainty.

I have been told that the IRIS method is one that combines measurement precision and a lot of guesswork about what might happen in humans if they are exposed to chemical substances. But, in the end, it is just a tool used by decision-makers.

I have learned through the experience of governing a city for nearly 2 decades that when you use a tool to guide decision-making, you want the right tool, applied to the right problem. And you want to use that tool the right way.

So, even though the IRIS method has some valid scientific components, it still has to yield a result that makes sense, even to the laypeople in the community.

That is what I want to comment on here today.

I worked closely with the Conference of Mayors starting 15 years ago to convince the EPA and Congress that not all contaminated sites in communities are the same.

There are grossly contaminated sites that are Superfund sites with New Jersey having more than its fair share. But there are hundreds of thousands of less contaminated sites, known as brownfields that could be a potential public health threat but could also be cleaned up and turned into property that contributes to the well-being of that community. As a Mayor, the public health in my community is a paramount consideration. I am seriously concerned about the health of our children, our pregnant women, our average citizens and our city employees. However, I also don't want to unnecessarily cordon off pieces of property that should be properly evaluated, cleaned up, and reclaimed.

That is why I worked so hard with the Conference of Mayors to get Congress and the Administration to establish Brownfield redevelopment policies.

Brownfield legislation has helped us remove the public health threat, and we have put these lands back into productive use creating jobs, urban redevelopment and new sources of revenues that are used to support public safety, public health and maintain our physical infrastructure.

One of the greatest impediments to this type of progress was the way EPA and the popular press characterized contaminated land in the 1980s. EPA was, in our opinion, 'less than careful' about how they originally characterized the risk to the public. In public hearings in many communities across the nation there was an unpardonable stigma attached to any site with contamination whether the contamination was serious or negligible. The popular press played an important role in fanning the flames of fear among the public. This made it virtually impossible to redevelop these properties. Developers wouldn't touch them, banks wouldn't lend money, and instead we had the abandonment of previously developed sites in favor of greenfields which contributed to urban sprawl.

Generally, the risk was so over-played that it became a burdensome task to educate Congress and the public about the difference between a brownfield site and a Superfund site. This was the case even after EPA Administrator Carol Browner released over 30,000 sites that were on the CERCLIS list and said that these were not contaminated enough to warrant any further EPA action.

I have a Superfund site in Elizabeth New Jersey. It is severely contaminated, and would pose a public health problem if it were not cordoned off properly- which it is. This site will likely plague the city for the next century because it was determined that it will cost too much money to clean it up.

I also have quite a few brownfield sites in Elizabeth. I am proud to report that we have redeveloped many of them including the IKEA Super Center and the Jersey Gardens, an economically thriving shopping center that has created hundreds of jobs, promoted redevelopment and has been an enormous help to the city's economy.

I am submitting to the Committee a report prepared by the Conference of Mayors that shows that brownfield redevelopment in cities across the nation have had the same positive impact because local government made the decision to clean these sites up, remove the potential public health threat and returned the land to productive use.

But once again I am in Washington on the topic of not stigmatizing the redevelopment of brownfields unnecessarily. EPA's dioxin reassessment will converge with the IRIS system, and this combination will impact a wide range of policy decisions, including Preliminary Remediation Goals (PRGs) for dioxin levels in soil. The Conference of Mayors' believes this could have a severe impact on brownfields and other urban and suburban development.

The US Conference of Mayors is concerned that EPA's toxicity and exposure assumptions would drive dioxin PRG values down to levels that are below average concentrations in U.S. cities, and perhaps below current background levels in urban and suburban soils.

As a tool, the IRIS system relies on toxicity values that established with a very wide margin of error built in that is intended to allow for uncertainty. The system also relies on exposure assessment calculations that rely on substantial exaggeration on risk.

When the IRIS system is used to inform risk management decisions it must be noted that the compound effect of overly conservative toxicity values with overly conservative exposure scenarios yield a very distorted characterization of risk.

This type of calibration of the different parts of the tool leaves local decision-makers with a risk analysis that is not realistic.

For example, when EPA proposed to lower the dioxin soil concentrations for contaminated site remediation they intended to lower the existing guideline from 1 part per billion to 76 parts per trillion or even 3.7 parts per trillion. These lower standards were based on EPA's overly conservative approach to estimating dioxin toxicity in combination with assumptions about exposed children wallowing in the contaminated site soils.

Not only is the exposure scenario unrealistic, but at 3.7 parts per trillion of dioxin, the soil in every urban and suburban area would pose an unacceptable risk because background levels are normally two to four times higher than 3.7 parts per trillion.

Even lowering the dioxin standard in soil to 76 parts per trillion is lowering the so-called danger point to where the public will question their safety.

What is troubling about those proposals for a Mayor is two important facts:

1. All of our citizens are getting 95 percent of their dioxin from the foods they eat, not from a contaminated brownfield site, and,
2. Rather than rely on worst-case exposure scenarios, the University of Michigan published a study that looks at actual dioxin levels in people reports:

    - People who live on contaminated soil and have contaminated household dust do not have higher levels of dioxins in their blood. A study involving direct human measurement included 21 people who lived on soil contaminated at 1,000 to 11,200 ppt TEQ of dioxins.

- The study authors stated that they believe their results apply to populations whose soil is contaminated in this range.

EPA exposure assumptions are predominantly determined by policy judgments that are so overwhelmingly reliant on worst-case scenarios that they do not at all reflect the realities of potential human exposure

So, I have doubts about how this IRIS tool can be applied with any certainty. And I am very concerned that it is the wrong tool for making local decisions.

Our August 2010 Policy Paper highlights that these dioxin standards "at or below background levels and if implemented will have an immediate chilling effect on the successes achieved over the last two decades to clean-up [brownfields] sites and return these properties to productive use."

So using this tool with its distortion of risk does not pass the reasonable-sense test at the local level.

On the other hand, I understand the need for the EPA to develop assessment tools to help local decision-makers, so I would like to make the following suggestions.

1. The EPA should continue to improve IRIS and the information base on toxicity and exposure assessment
2. The exposure assessment assumptions should be evaluated by the National Academies of Science
    - I think we are too smart in today's world to rely on one-size-fits-all assumptions in risk management when the stakes are so high
    - Instead of EPA focusing on "worst case scenarios", they should also look at the "most likely case". This would be more useful to decision-makers to better understand the true risk of their decisions.
3. The EPA should not force local officials to rely on the IRIS system to make local decisions until the Agency improves the toxicity and exposure assessment methods to better reflect reality
    - In particular, EPA should not force state regulators to base brownfield site clean-up decisions on the IRIS system

Mayors need the best tools available to help us make sound decisions. Our goals for our cities are to protect the public health and the environment while encouraging the economic vitality. We need tools that are based in reality and common sense.

I want to thank the Chairman and this Committee for the opportunity to give a Mayor's perspective on this important issue.