

To: Tom Tracy, DFO, EPA Board of Scientific Counselors

Cc: Angela Nugent, DFO, EPA Scientific Advisory Board

From: Susan Cozzens, BOSC member

Subject: Comments on documents for SAB/BOSC meeting July 24-25, 2014

Date: July 26, 2014

I want to take the opportunity to add some comments to those of my fellow BOSC members on the StRAPs and Roadmaps presented at the meeting this week. Overall, the opinion was that the research topics have been chosen well and that there is much evidence of integration across the programs. I agree. I also agree with the many comments about the need to set priorities and find the particular EPA niche. Once one gets to the level of specific activities in the plans, one is overwhelmed with the variety of things that could be done; but it is clear that not all of them can be, given the limited resources. Which are the most important to do? That is the crucial question at this stage, so that resources can be focused where they will have the most impact.

I am impressed with the approach of Roadmaps, which appear to be an effective mechanism for identifying gaps with regard to particular important topics that would appear if only the program approach was taken. I pointed out at the BOSC pre-meeting that the BOSC will need to evaluate the portfolio from the roadmap angle in addition to the program angle; the roadmaps are well structured to allow for that.

There are a few elements that I find missing in the documents that will be important for any evaluation efforts. The most important, and perhaps overarching, is an articulation of the logic model linking research activities to the intermediate and long term outcomes indicated in the plans. There is an implicit linear model which is much too simple: ORD hears needs from the offices and regions, does research, and feeds information back to the offices and regions. The offices and regions translate the information into regulations and procedures and work with local authorities to protect human health and the environment. There is some recognition in the plans of the need for information loops rather than one-way transmission; I particularly like the relationship among the three technology projects in the SSWR plan (p. 26-27). But there needs to be more. This information sharing process should be multi-directional, indeed must be if the goals are to be achieved.

A second, related weakness is the description of other actors in the environmental protection scene and what they contribute to the specific goals and objectives in the plans. There are frequent references to "partners," but no definition of the term. I assume you intend to make a difference between "partners" and "stakeholders," but the difference is not articulated in the plans. In some plans the partners are listed and in others not. It sometimes appears (going back to the last point) that ORD's "partners" are the regulatory offices and regions within EPA and that EPA's "partners" are state, tribal, and local authorities and utilities. There are also references to industry "partners"; "sister federal agencies,

nonprofit organizations, private industry, and colleagues across the scientific community”; “grantees”; etc. These actors and organizations are not incidental to the work; EPA would not be able to function without them, since it would be making regulations in an information vacuum and passing them into the ether for implementation. The roles and contributions of partners deserve explicit, organized attention throughout each plan. Only this kind of attention can identify the gaps in partnerships that might be reducing the impact of the research programs.

The third concept missing is also related to the linearity of the implied logic model, and that is EPA’s learning process and the role of research within it. Both regulatory and research activities within EPA must, to be effective, continually absorb, synthesize, adapt, and use information from outside the agency. “Absorptive capacity” is known to vary greatly among organizations. The knowledge absorption process and the variation in its effectiveness across EPA activities should be getting significant attention in EPA’s performance framework. Research activities typically play an important role in absorptive capacity. This concept should therefore also be figuring importantly in ORD’s concept of its role and in its performance plans. It is missing now. How do EPA researchers learn about the state of knowledge and find their particular niches? The knowledge and ideas EPA produces are surely going to be only a small part of a larger body of research, information, and creativity around water systems. The plans give no attention to how ORD or EPA offices will locate, access, and absorb that information, from the research community; the state, tribal, and local partners; or the wider community of interest in environmental outcomes. Perhaps the attention to results involved in such frameworks as PART and GPRA distract attention from this crucial process, but it can be brought in through logic models that link what the agency does to what it hopes to accomplish.

I am also concerned that there is no description in the StRAPs of the state of current knowledge. The programs need baseline data on the state of current knowledge production in the research topic areas and where EPA’s current projects fit. This analysis can inform the priority-setting and triage that the SAB and BOSC recommended. Some areas of the plan clearly list many more possible research activities than EPA can carry out. What information will the BOSC teams have available to help them determine whether the right priorities have been set? (This information could also help with the “EPA niche” question.)

In general, the programs and roadmaps appear to organize their plans around the roles of providing information and tools (understanding, modeling, data, and forms of analysis that help state, tribal, and local decision makers). While the research topics themselves may be well chosen, it seems there could be a danger of focusing on particular tools already under development without asking whether they are the best or exploring new avenues.

Last but not least, it is great to get these documents in pdf format so that they can be reviewed electronically, but they desperately need active links from the tables of contents and tabs in the pdfs to allow navigation among the various sections for those using them electronically. I heard many calls in the discussion for graphics that clarify the structure of goals and objectives. Better tables of contents, more numbering of objectives and research objectives, and associated pdf tabbing would also be very helpful in this regard.