

**Comments from Members of the Chartered SAB and SAB Liaisons on the
draft report entitled
*Science Advisory Board Comments on the President's Requested FY 12 2013
Research Budget (March 13, 2012 Draft)***

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Lead Discussants

Comments from Dr. David Allen

Were the charge questions adequately addressed?

Yes.

Are there any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report?

The draft report correctly notes and emphasizes in its initial sections the lack of specific resources dedicated to integration across ORD's six research areas. It then proceeds to separately discuss the six research areas, and while there is some reference to cross cutting activities in each of the area discussions, the overall structure of the report reinforces the silo structure of the research efforts. I recommend that the report team add a section to the end of the report that describes a vision for an ORD-wide integration effort.

Is the draft report clear and logical?

Yes.

Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Yes.

Additional comments:

Page 9, lines 4-9: This description of a single project related to cook-stoves seems out of place in the document and is inconsistent in level of detail with the remainder of the document. While the project may be a good example of interactions with other agencies, it is not clear why this project was singled out. There are other portions of the document where specific projects are discussed, but those examples, in the remainder of the report, seemed to have a better rationale for inclusion than exists here. I suggest either making it clearer why this is a particularly compelling example of inter-agency collaboration, or to delete it.

Page 8, line 5: Suggest replacing "cheaper" with "less expensive"

Comments from Dr. David Dzombak

This is a well written and well organized report. I commend the SAB Research Budget Work Group for the depth and breadth of analysis in a short period of time. I also commend the Work Group for their use of four common charge questions to evaluate each major area of the President's budget. This is an effective vehicle for conducting the review and for a reader to follow the review. It facilitates coherence and consistency in the review document.

My comments largely focus on the section of the report on the "Safe and Sustainable Water Resources" activity in the budget, but I also offer some comments and suggestions in relation to the Letter to the Administrator and Section 2 Overarching findings and observations.

1. Were the charge questions adequately addressed?

The four charge questions which guided the analysis of each of the major areas of the President's budget are adequately addressed.

I would note, however, that with respect to the part of the first charge question pertaining to identification of "areas where the EPA should increase investments or reduce investments," I could not find any recommendations of reduced investments anywhere in the draft report. I did find one approval for a proposed reduction, for the Beaches Program (page 10, line 28), but no proactive suggestions of other programs that could be reduced to make funds available for the expanded funding recommended by SAB for various programs. The hard job of making reductions is thus left to the ORD, with SAB only proactively suggesting increases in investments. In my view, the lack of any suggested areas for which funding should be reduced decreases the overall value of the advice given in the report.

2. Are there any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report?

I did not identify any technical errors or omissions in the draft report.

3. Is the draft report clear and logical?

Overall, the draft report is clear and logical. As noted in my introductory remarks, the use of four common charge questions to evaluate each major area of the President's budget is an effective vehicle for clarity of organization and presentation.

There are some specific locations in the Safe and Sustainable Water Resources section where some clarification would be helpful.

- (a) Page 10, line 19: The source and nature of the previous "comments from the SAB" is unclear; a reference would be helpful.
- (b) Page 10, lines 20-24: Increased funding for two specific projects is noted as "important", but it is not discussed why this funding is important.
- (c) Page 10, lines 25-26: The statement that "the requested investment demonstrates that the Administration understands the importance of research generally and the Safe and

Sustainable Water program specifically” sounds condescending and I recommend that it be modified or removed.

- (d) Page 11, line 19: The sentence that begins “It is not clear ...” should start a new paragraph, as the ensuing discussion of social, behavioral and decision-sciences research is a different topic than the preceding discussion.

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Overall, the conclusions and recommendations are adequately supported in the body of the report.

I would note that in the Safe and Sustainable Water Resources section (page 11, lines 19-24), and in other parts of the report, including the letter to the Administrator (3rd page of letter, lines 16-18), and Section 2 (page 3, lines 31-33), it is stated that ORD needs to expand social, behavioral, and decision sciences research. This repeated comment is offered with little explanation and no references. It would be useful to reference an SAB document where the meaning and justification for this recommendation is provided in detail.

Some statements are made in the letter to the Administrator that are not supported in the body of the report. Also, some statements in the body of the report that are important and/or well formulated do not appear in the letter.

- (a) In the discussion of the STAR Grants and Fellowships in the letter (3rd page, lines 27-30), it is stated that “these extramural programs are strategic investments that will benefit future environmental research.” In the body of the report, there is not specific discussion of how these investments fit with EPA ORD strategic objectives. The justification provided in the report (page 3, lines 40-42) for the recommendation regarding the STAR Grants and Fellowships is very good and, I recommend, should be used in the letter in place of the statement about “strategic investments.” The statement on page 3 is: “These programs, which foster ORD interactions with the wider scientific community, are important for stimulating innovation and cross-program integration.”
- (b) In the last line of the bullet point summary for Safe and Sustainable Water Resources (2nd page of letter, line 19), it is stated that “additional resources ... will be needed to fully explore the public health implication[s] of water reuse and water-energy nexus.” In Section 3.2 on Safe and Sustainable Water Resources, the case is made for more study of the public health implications of water reuse, but not for “the water-energy nexus”. I recommend that “and the water-energy nexus” be removed from the letter.
- (c) In Section 3.2 (page 12, lines 12-14), it is noted that the EPA has made “a strong commitment to engage in collaborative and partnering research, both among its programs, and with other federal agencies.” The draft report goes on to note that this is evident in the strategic action research plan for the Safe and Sustainable Water Resources program, but that it is unclear how these expanded collaborations are addressed in the budget. I believe that the expanded collaborative and partnering research is important and that this point should be considered for inclusion in the letter to the Administrator, in the bullet summary for Safe and Sustainable Water Resources.

- (d) There are several statements in the letter that convey emotions which may not be shared by the entire Work Group, and likely won't be shared by the entire Chartered SAB. These include the words "greatly appreciates" (1st page, line 38), "troubled" (3rd page, line 2), and "concerned" (3rd page, line 22). These words do not appear in Section 2 Overarching findings and observations, where the language is more neutral (e.g., page 3, lines 16-19), and more appropriately neutral in my view.

Comments from Dr. Amanda Rodewald

Were the charge questions adequately addressed?

Yes, generally. However, the response to charge question 1 for Sustainable and Healthy Communities seemed somewhat vague. In the Letter to the Administrator, I was surprised at the fairly neutral tone (i.e., noting the reduction and funding trend) for the 2.5 reduction in Safe & Healthy Communities in contrast to the explicit disappointment (i.e., “the SAB is troubled”) for the 0.1 percent reduction in Homeland Security and the admonition that the amount of funding is not sufficient for NCEE. This was a particularly striking contrast when it was simply “noted” that the funding had been halved since 2004. In addition, the sentence “*This research 22 program will be able to achieve its ambitious goals only if it is able effectively to 23 integrate work with the other ORD programs in the many areas where their goals and 24 tasks are interdependent*” implies that it is possible for Safe & Healthy Communities to achieve the goals but simply requires more cooperation.

On page 14 of the report, the language similarly suggested to me that the reduced funds would necessitate more collaboration across programs, but the text did not specifically indicate that the budget would impair the program’s ability to meet goals.

Are there any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report?

One typo is in the Letter to the Administrator, the bullet on Sustainable and Healthy Communities incorrectly reads “Safe and Healthy Communities”.

On page 9, lines 4-9 (under opportunities to leverage resources), the panel gives the excellent suggestion of partnering with Peace Corps to address cook stove emissions. The report might also highlight and suggest partnering with the Global Alliance for Clean Cookstoves by the United Nations Foundation (<http://cleancookstoves.org>) that is a public-private partnership and a centerpiece of Secretary of State Hillary Clinton’s Global Partnerships Initiative.

On page 22, the formatting is inconsistent with charge questions being initially italicized and then underlined.

Page 24, line 13, change to “As indicateded above”

Is the draft report clear and logical?

Yes.

Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Yes.

Comments from Dr. R. Thomas Zoeller

The following comments are provided in response to the March 13th, 2012 memo by DFO Dr. Angela Nugent concerning the Quality Review of the SAB workgroup's document of the same date entitled, "Science Advisory Board Comments on the President's Requested 2013 Budget". In particular, I will address two program areas: Chemical Safety for Sustainability and Human Health Risk Assessment. This memo asked contributing SAB members to specifically address the four quality review questions from the vantage point of our own expertise. These questions are:

1. whether the original charge questions to SAB Standing or Ad Hoc Committees were adequately addressed;
2. whether there are any technical errors or omissions in the report or issues that are inadequately dealt with in the Committee's report;
3. whether the Committee's report is clear and logical; and
4. whether the conclusions drawn or recommendations provided are supported by the body of the Committee's report.

Chemical Safety for Sustainability

Quality Review Question #1: Whether the original charge questions to SAB were adequately answered?

In general, the charge questions are clearly addressed. The SAB review group did an excellent job reviewing the materials provided. There are some specific areas that were somewhat confusing for this reviewer. First, in the breakdown of the budget, "other research" accounted for greater than half of the total budget, but no additional detail is provided. As such, it is difficult to see how the requested budget will affect the mission of this program within the 2013 fiscal year since the level of detail appears too limited. The budget review committee correctly point to the value of enhancing molecular design and its importance for the mission of the program, but the ability to link this effectively to other components of computational toxicology and to hazard identification/characterization and risk assessment is not well described.

2. **Quality Review Question #2:** Whether there are any technical errors or omissions in the report or issues that are inadequately dealt with in the Committee's report;

I did not observe technical errors or omissions.

3. **Quality Review Question #3:** Whether the Committee's report is clear and logical; and

In general, the report is clear and logical.

4. **Quality Review Question #4:** Whether the conclusions drawn or recommendations provided are supported by the body of the Committee's report.

The conclusion that the budget is sufficient to advance the goals of the program is not well supported by the concern that the information provided does not provide a picture clear enough to make this determination. Is it possible to address this in the strength of the wording of the conclusion?

Human Health Risk Assessment

Quality Review Question #1: Whether the original charge questions to SAB were adequately answered?

In general, the charge questions are adequately answered and the committee did a good job of articulating their points of view. As in other programs, the information provided to the committee left a great deal of information out, but the committee did a good job in identifying those areas of ambiguity. The committee did a good job also of pointing out strengths and weaknesses of the program.

Quality Review Question #2: Whether there are any technical errors or omissions in the report or issues that are inadequately dealt with in the Committee's report.

I did not observe technical errors or omissions.

Quality Review Question #3: Whether the Committee's report is clear and logical; and

In general, the report is clear and logical.

Quality Review Question #4: Whether the conclusions drawn or recommendations provided are supported by the body of the Committee's report.

The conclusion that the budget is sufficient to advance the goals of the program is not well supported by the concern that the information provided does not provide a picture clear enough to make this determination.

Comments from Dr. James Johnson

1. Yes for the most part the charge questions are addressed. The response to one of the questions requires greater clarification, however.

- Changes since FY2012 budget -The response to the question acknowledges the production of quality and useful products for the water program users. It does not indicate the alignment of the products with the mission and objectives of the program. If the products are not in alignment, the need for additional resources would not be appropriate.

2. No technical errors or omissions were noted.

3. Yes

4. Yes

Other - In the FY2012 Joint SAB/BOSC review of the Strategic Research Directions of ORD, the Homeland Security Program is described as a "model of coordination within and outside EPA." The response to the last charge question should acknowledge and build upon this acknowledge in its response.

Comments from Dr. Joseph Arvai

1. Were the charge questions adequately addressed?

In my view, yes, and I am in general agreement with all of the specific points made by the review team.

However, if given the opportunity, I would underscore the observation that the mission statements for the NCEE and the Economics and Decision Sciences Research Program (Table 8; p. 23) provides a rather narrow definition of current work in the decision sciences. At the moment, the mission statements tilt heavily in the direction of the economic sciences. In my view, these mission statements should be updated to reflect contemporary thinking about—and work in—the decision sciences. If research in the decision sciences is not truly desired by these programs, then these references to it should be stricken so as not to be misleading. The SAB review comments make a similar point (p. 25, lines 1-3); however, in my view, the point may be slightly sharper. [NB: For reasons that are elucidated throughout the SAB comments, I strongly suggest that research grounded in the decision sciences be meaningfully included alongside research in the economic sciences as part of these two programs.]

Likewise, I agree with the SAB comment that: “...effective environmental management requires a thorough understanding of how humans systems operate, and how to design regulations to effectively manage human systems. Research on economics and decision sciences is essential to meeting this challenge, and SAB recommends that research should be a higher priority and with more substantial funding” (p. 25, lines 39-43). This provides a further rationale for my comment above.

Related, I would use the SAB review as an opportunity to urge the NCEE and the Economics and Decision Sciences Research Program to move beyond simply issuing a mission statement. More specific research questions would help to ensure that the more diverse mission of these groups be fulfilled; that is the missions related to both the economic and decision sciences. As it stands, many of the workshops and research initiatives flagged by the SAB review are economic (vs. decision scientific) in nature (see p. 26, lines 6-10). Further explication of specific research questions may help to ensure that both bodies—NCEE and the Economics and Decision Sciences Research Program—meet their stated objectives. (This suggestion is in line with the SAB comment that: “...effective environmental management requires a thorough understanding of how humans systems operate, and how to design regulations to effectively manage human systems. Research on economics and decision sciences is essential to meeting this challenge, and SAB recommends that research should be a higher priority and with more substantial funding.)

2. Are there are any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report?

If the SAB agrees, some additional emphasis could be placed on the nature of relevant research in the decision sciences; namely work on individual and collective judgments, and research aimed at expert and non-expert groups. For example, many EPA initiatives involve group decision making (not solely individual judgments). Likewise, it is not uncommon for EPA to

engage subject matter experts (in addition to lay or public respondents). A better working knowledge of judgmental processes at these different levels would likely be handy. Emphasis to this end could be placed in the passage on p. 25, lines 39-43.

With respect to opportunities related to extramural funding and specific agencies with whom to collaborate on research of joint interest (p. 26, lines 28-31), it's not clear to me that the NSF faces "...similar problems in assessing costs and benefits of actions, including non-market benefits..." (because they do not serve a regulatory role within the Federal Government). However, NSF would likely be interested in supporting (or co-sponsoring) research with clear intellectual merit and broader impacts related to these kinds of valuation questions.

Also related to the text on p. 26, line 32, it may be appropriate to note that research on "valuing ecosystems services" need not proceed only using economic methods; this is also a relevant question when viewed through the lens of the decision sciences.

A final point: The SAB's comments may be sharpened as they relate to the lack of research objectives (p. 26, lines 4-6). Making research objectives explicit would be an improvement in my mind. Further improvement may be realized by tying research objectives to the EPA's strategic and policy priorities.

3. Is the draft report clear and logical?

For the most part, yes.

If I were to make one suggestion it would be with respect to p. 24, lines 17-19 and p. 25, line 33. On p. 24, lines 17-19, the comments state that "Funding for economics and the decision sciences is not adequate...", and that the "...President's budget request of \$3 million is very modest, and far from adequate." Then, on p. 25, line 33, the relative budget increase from previous years is termed "appropriate". I understand the intended meaning of these lines of text in the SAB review. However, some readers may misinterpret them. To address possible confusion, the SAB review could modify the sentence on p. 25, line 32-34 to read (emphasis added): "The increase in extramural funding for this program area estimated for 2013 (a 33 percent increase from the FY 2011 enacted budget to \$3.0M for FY 2013) is welcomed and will help to restore stability to an important EPA research program."

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Yes.

Other Comments

Comments from Dr. George Alexeeff

1. Were the original charge questions adequately addressed?

The draft report does not have charge questions per se. Instead the report represents an opportunity for the SAB to comment on the proposed budget. The SAB did so by asking four questions for each program area.

2. Are there any technical errors or omissions in the report or issues that are inadequately dealt with in the Panel's report?

I did not identify any technical errors or omissions in the report or issues that are inadequately dealt with in the Panel's report.

3. Is the Panel's draft report clear and logical?

The Panel's report is clear and logical.

4. Are the conclusions drawn or recommendations provided supported by the body of the Committee's report?

The report explains why the budget allows ORD to meet many but not all of its priorities and identifies which appear to be underfunded. The conclusions of the report are supported by the body of the Committee's report.

Comments from Dr. Ingrid Burke

Were the charge questions adequately addressed?

Yes, the charge questions were adequately addressed.

Are there any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report? Is the draft report clear and logical?

I have some minor comments for potential implementation.

Probably a 0.1 percent budget reduction should just be called “an essentially flat budget” for Homeland Security.

On the bottom of page 4, the comment is aptly made that it is not clear how the reorganization will ensure communication and data flow across the new program units. The “lack of transparency” phrase is probably unwarranted, as it implies that something is hidden, rather than just not elaborated.

There are opportunities for using the idea of ecosystem services, an EPA priority, to support several of the comments in the document. While the idea of ecosystem services (supposedly a new priority) is mentioned in the box on page 13, it is not elaborated. I think that ecosystem services are the key conceptual foundation for several of the comments on the budget, and suggest explicitly addressing this linkage in the following areas:

- the importance of a higher level of funding for ecosystem research (Safe and Healthy Communities”;
- the importance of more work on social and economic sciences, which are key for valuation and integrating work on ecosystems into “Safe and Healthy Communities”;
- and the importance of the NCEE, as above.

Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Yes

Comments from Dr. George Daston

We were asked to address four specific questions as part of the quality review.

1. whether the original charge questions to SAB Standing or Ad Hoc Committees were adequately addressed;
2. whether there are any technical errors or omissions in the report or issues that are inadequately dealt with in the Committee's report;
3. whether the Committee's report is clear and logical; and
4. whether the conclusions drawn or recommendations provided are supported by the body of the Committee's report.

Question 1: The charge of the committee, to review and comment on the proposed FY13 budget, was adequately addressed.

Question 2: I found no technical errors or omissions in the report. I was pleased to see that some of ORD's focus areas were explicit in how they were leveraging other federal resources to achieve their goals. I wonder whether there are even more possibilities, particularly in Sustainable and Healthy Communities, Homeland Security, and the Economics and Decision Sciences programs to rely on related programs in other federal agencies, either for data streams or tools and methods. These programs were highlighted as having decreasing and/or inadequate budgets. They are also programs for which other agencies have considerable activities.

Question 3: I found the report to be clearly and logically presented. I appreciated the judicious inclusion of material from ORD that illustrates budget changes.

Question 4: I found the conclusions of the report to be well documented and supported. The report appropriately highlights our support for the restructuring of ORD into six programs, along with the continuing admonition to integrate science across the programs wherever possible.

Comments from Dr. Bernd Kahn

My responses to the four questions are yes, no, yes, and yes, respectively. I have the following specific comments;

1. Page 2, line 42: Replace 'Research' with 'Risk' before 'Assessment'.

2. General: The comments seem one-sided in expressing concern about funding reduction but never identifying any appropriate cuts that would permit shifting funds. Surely, not all projects address priority needs and appear headed for success.

3. Page 3, line 2: Reduction from 26.7M to 26.6M to 26.4M over two years in times of serious cutbacks and vast spending on this topic for other agencies does not seem worth being troubled about.

Comments from Dr. Agnes Kane

The cover letter and draft report are very well-written, clear, and emphasize the major strengths and weaknesses of this annual research budget request. I suggest greater emphasis on these specific points that have been raised in previous SAB budget reviews that deserve urgent attention by EPA:

1. Cross-program integration and multi-agency themes: As clearly indicated in the draft report, these efforts are essential for successful implementation of ORD's strategic research goals. It is disappointing that EPA has made limited attempts for multi-agency approaches to life-cycle assessment, environmental justice, and environmental and health impacts of nanotechnology in partnership with other federal agencies (e.g., NIEHS, NSF, and the National Nanotechnology Initiative).

2. The modest budget proposed for economics and decision sciences is very disappointing. A major factor impacting the ORD research budget is the current fiscal climate that would be better described as a fiscal crisis. The roots of this crisis stem from our overall lack of understanding of the roles of economic and social considerations in decision making by business, consumers, and politicians. This deficiency is beginning to be addressed in the ongoing debate about health care delivery and needs to be expanded to environmental protection, human health, and economic sustainability.

Comments from Dr. Judith Meyer

Quality Review of SAB Comments on the President's 2013 Budget – Judy Meyer

1. Were the original charge questions to the SAB Committee adequately addressed?

In general, YES BUT I find the analysis of the Sustainable & Healthy Communities program to inadequately express concern over the budget reduction and what this says about ORD's commitment to transdisciplinary research, i.e. the response to the first charge question for that program. The Letter does not adequately express the concern about this reduction, particularly given that this is the program charged with leading the cross-program integrative efforts.

2. Are there any technical errors or omissions in the report or issues that are not adequately dealt with in the Committee's report?

I have significant concerns with how the issue of the budget reduction for Sustainable and Healthy Communities is being discussed in the Letter and Report.

Letter, 2, 21: The SAB should do more than "note" the significant budget reduction for Sustainable and Healthy Communities. I would hope the SAB would be at the very least troubled or dismayed. Personally I am appalled. I think the cut in this program calls into question ORD's willingness to engage in transdisciplinary research. This is the one program where ORD has a history of doing transdisciplinary research; yet it is the program that has received the most significant budget cut. This does not speak very highly of ORD's commitment to doing transdisciplinary research. Or to their commitment to supporting cross-program integration since this is the program tasked with leading cross-program integration. Furthermore it continues the downward trajectory of funding for this area of research, which SAB notes every year. ORD's response is to continue to reduce funding. What does that say about our "effectiveness"?

8, 10: Isn't science also needed to guide effective regulation not just evaluate effects of hydraulic fracturing?

7, 31: Can we be more specific about what "other ORD programs" would provide the greatest opportunities for successful collaboration? Safe & Sustainable Water Resources and Sustainable & Healthy Communities come to mind immediately.

14, 33: I don't think the tone in other parts of the report and the letter adequately expresses SAB's continuing concern about the reductions in this area of research.

3. Is the Committee's report clear and logical?

In general YES, but ...

Letter 2, 21 and 29: Should be Sustainable and Healthy Communities – not Safe and Healthy.

5, 7: Should be Sustainable and Healthy Communities – not Safe and Healthy. But more importantly, here SAB is questioning the level of commitment to cross-program integration. Sustainable and Healthy Communities has been given the lead in this integration – and this is the program receiving the largest budget cut? That has to be pointed out! What does that say about ORD's commitment to cross-program integration?

10, 28-31: The connection between the Beaches program and pathogens in drinking water were not clear to me. Were both programs cut? Is the SAB saying it is OK to cut Beaches but not pathogens in drinking water? Needs to be clarified.

11, 14: I think “related to health risk” could be clearer and more specific, e.g., assessing and reducing health risk.

14, 6: In light of the fact that almost all other programs and ORD as a whole are getting a budget increase, I would not call a 2.5%, \$4.8 million reduction “modest,” particularly in light of the integration responsibilities vested in this program and described in the next paragraph.

4. Are the conclusions drawn or recommendations provided supported by the body of the Committee’s report?

In general, YES, but ...β

Letter 3, 25: I do not think what the report says is that the SAB “generally supports” the budget allocations. The SAB supports many of the budget allocations but does not support, but rather calls into question the significant reduction in the one program that has made progress in doing transdisciplinary research. The SAB has also questioned the allocation for social, behavioral and decision sciences. We should say what we support and what we do not support, not that we “generally support.” P. 3, lines 18-23 in the report do a good job of being more specific about what the SAB views as being lacking. That specificity belongs in the letter.

Editorial

Letter

1, 34: “EPA’s” rather than “your”

2, 9: “understand” rather than “understanding”

3, 24: “its” rather than “your”

Report

22, 30-31; 23, 1-2; 23, 14-15: need to be italicized not underlined

Comments from Dr. James Sanders

Were the charge questions adequately addressed?

Yes. The report clearly and concisely covers the four questions for each of the program areas.

Are there any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report?

There are some differences in the wording used to describe concerns in two of the program areas, SHC and HSR. The budget reductions in SHC are not really noted, almost shrugged off. Yet, they are considerable, and build on years of similar reductions. The Board should note that it is concerned with this level of reduction, that the work proposed is unlikely to get done well or completely. This section (pp. 12-14) does not do so. Yet, the relatively much smaller reductions in HSR are noted with concern. These differences lead to some inconsistencies in interpretations, in this reviewer's opinion, particularly in the letter to the Administrator. In addition, there should be greater concern noted about the overall funding available to perform this important research.

Some suggested word changes are detailed below.

Is the draft report clear and logical?

Yes.

Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Yes, except for the concern noted above. Suggest the following word changes:

Letter

1st page, line 43-46. "Although these small requested increases recognize the importance of research to EPA's mission a time of reduced budgets, **THE SAB REMAINS CONCERNED BECAUSE** funding for ORD in real dollars has declined 28.5 percent...." Suggest adding the words in caps.

1st page, line 46. "This long-term decline **HAS LIMITED, AND WILL CONTINUE TO LIMIT**, the research that can be conducted to support the agency's effort..." Suggest adding the words in caps.

2nd page, line 21. "For safe and Healthy communities, the Board notes **WITH CONCERN** the requested FY 2013 budget reduction..." Suggest adding the words in caps.

Main body

p. 14, line 32. "As noted above" (refers to downward trend of funding). This is not noted above, but should be. The "modest" 2.5% reduction (line 6) builds upon a nearly 14% decrease from FY 2011 to 2012, and continues the decline over the years. This is noted briefly in the letter to the administrator, but is not repeated here. It should be. The only suggestion that the SAB has

concerns is in the subtle use of the word “only” in line 11. This reviewer recommends much stronger language.

p. 24, line 13. Indicate should be indicated.

Comments from Dr. Daniel Stram

I found the "problem statement, vision and themes" of Sustainable and Healthy Communities to be extremely vague especially the last two policy-relevant research themes. This vagueness in theme complicates (I would think) the committee's efforts to evaluate whether the requested budget permits the EPA to advance its strategic research directions.

It was also not clear from the report what the research program for Homeland Security really consists of. It was good to read (page 23) that the President's Budget identifies a number of important objectives and outputs for FY 2013. It would be nice to have some hint of what these might be.

Comments from Dr. Gina Solomon

Overall, I am concerned that although the SAB's comments do appropriately focus on the science research budget, the comments fails to question the impacts on science from other budget decisions across the Agency. The overall EPA budget was cut for FY2013, and it is important to consider which programs are being cut in order to fund these increases in the research budget. In addition, I have serious concerns about some of the budget cuts which are hitting important ongoing scientific programs, such as those that monitor water quality at beaches.

Were the charge questions adequately addressed?

Yes

Are there are any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report?

Not that this reviewer noted.

Is the draft report clear and logical?

Yes

Are the conclusions drawn or recommendations provided supported by the body of the draft report?

I disagree that some of the cuts were sufficiently justified. For example, reducing funding for the development of exposure assessment tools (p. 8, lines 18-19) does not make a lot of sense when the need for exposure science is significantly increasing. Similarly, I disagree that the decision to reduce funding for the Beaches Program is appropriate. There is an ongoing public health need for monitoring of water quality of beaches (p. 10, lines 28-29), and there is no good justification for cutting this program.

Comments from Dr. John Vena

1. Were the charge questions adequately addressed? Yes
2. Are there are any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report? No
3. Is the draft report clear and logical? Yes
4. Yes