

US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

WATER QUALITY MID-CYCLE SUBCOMMITTEE

Meeting Summary
September 23, 2008
Arlington, VA

Welcome and Opening Remarks

Herb Windom, Ph.D., Chair, Water Quality Mid-Cycle Subcommittee

Dr. Herb Windom welcomed the Board of Scientific Counselors (BOSC) Water Quality Mid-Cycle Subcommittee members and other participants to the meeting and introduced Dr. Richard Sakaji, the only Subcommittee member who did not serve on the subcommittee that conducted the Water Quality Program Review 2 years ago. Dr. Windom explained that Dr. Sakaji is serving as a consultant to the Water Quality Mid-Cycle Subcommittee. His work focuses on drinking water and watershed management issues. Dr. Windom introduced himself and asked the other Subcommittee members to do the same. The Subcommittee members include: Dr. Windom, Professor Emeritus, Skidaway Institute of Oceanography; Dr. Kevin Kleinow, Professor of Toxicology, Louisiana State University School of Veterinary Medicine; Dr. Laura Ehlers, Senior Program Officer, National Research Council (NRC); Dr. Judith Meyer, Emerita Professor, Institute of Ecology, University of Georgia; Dr. Gary Sayler, Professor of Microbiology and Ecology, University of Tennessee, and Chair of the Executive Committee of the BOSC; and Dr. Steven Weisberg, Director, Southern California Coastal Water Research Project Authority. Ms. Beverly Campbell of The Scientific Consulting Group, Inc., under contract to EPA, served as rapporteur.

Designated Federal Officer (DFO) Remarks

Susan Peterson, DFO, Water Quality Mid-Cycle Subcommittee, U.S. Environmental Protection Agency (EPA), Office of Research and Development (ORD)

Ms. Susan Peterson welcomed the Subcommittee members and thanked Dr. Windom and the other members for their interest, time, and effort in conducting this mid-cycle review. Ms. Peterson serves as the DFO for the Water Quality Mid-Cycle Subcommittee and, as such, is responsible for ensuring that the Subcommittee complies with the Federal Advisory Committee Act (FACA). She explained that the BOSC is a federal advisory committee that provides independent scientific peer review and advice to EPA's ORD. The Water Quality Mid-Cycle Subcommittee was established by the BOSC Executive Committee to review the progress made by ORD's Water Quality Research Program (WQRP) since the full program review in 2006. The Subcommittee consists of six members and one consultant. The Subcommittee was asked to respond to charge questions and provide a draft report for the BOSC Executive Committee's deliberation.

1 This is the Subcommittee's face-to-face meeting for the mid-cycle review of the WQRP. Notice
2 of this meeting was published in the *Federal Register*. The Subcommittee held one conference
3 call prior to this meeting on September 4, 2008, and there likely will be one or more follow-up
4 conference calls in October or November, with dates yet to be determined. When determined,
5 these dates will be published in the *Federal Register*.
6

7 As DFO, Ms. Peterson serves as the liaison between the Subcommittee and EPA and ensures that
8 the Subcommittee meetings comply with FACA requirements. In accordance with these
9 requirements, Subcommittee meetings are open to the public and include an opportunity for
10 public comment. Meeting minutes will be made available to the public on the BOSC Web site
11 after approval by the Chair.
12

13 Ms. Peterson asked the Subcommittee members to fill out their homework sheets and return
14 them to her before the end of the day. She instructed the Subcommittee members to record all
15 time spent reading documents and/or preparing written materials, prior to or following any of the
16 Subcommittee meetings. Subcommittee members also should complete their travel vouchers,
17 including original receipts for hotel expenses, car rentals, and any other expenditure that exceeds
18 \$75 and provide them to her before the end of the day.
19

20 There were no requests to make a public comment prior to the meeting; nevertheless there will
21 be an opportunity to provide public comments at 2:00 p.m. Each comment should be limited to 3
22 minutes.
23

24 Dr. Windom introduced Dr. Chuck Noss, the National Program Director (NPD) for the WQRP.
25

26 **Water Quality Research Program Overview**

27 *Charles Noss, Sc.D., EPA, ORD*
28

29 As a result of the 2006 BOSC program review, the WQRP has been working to develop a
30 process for setting research priorities. In summer 2006, Dr. Noss brought together regional
31 representatives and Office of Water (OW) staff members to discuss the Program's Multi-Year
32 Plan (MYP) priorities. This meeting, subsequent conference calls, and questionnaires yielded
33 valuable information that informed the draft MYP, which was included in the Subcommittee
34 members' binders. After the MYP was drafted, OW developed and released its research strategy,
35 which is a major step toward identifying EPA's corporate priorities.
36

37 **Subcommittee Discussion**

38 *Herb Windom, Ph.D., Chair, Water Quality Mid-Cycle Subcommittee*
39

40 Dr. Windom said that he combined and edited the Subcommittee members' draft responses to
41 make the report text clearer and to eliminate redundancy. The next step is for the Subcommittee
42 to discuss this combined draft of the report and come to a consensus on the content. He asked
43 each writer to serve as the moderator for his/her section and take responsibility for revising the
44 section based on the discussion.
45

46 *Charge Question 1 – Do the currently planned revisions to the Water Quality Research Program*
47 *adequately address the 2006 BOSC review recommendations?*
48

1 In the 2006 program review, the BOSC recommended that the WQRP identify research
2 priorities. The WQRP is working to develop prioritization criteria, but this task is not yet
3 completed. It also was recommended that the WQRP perform an annual accounting of program
4 outcomes, including six specific metrics. The Program has proposed the development of a
5 measure of regional use of the tools/products from ORD's Annual Performance Measures
6 (APMs) as a possible measure of environmental outcomes. Dr. Meyer's concern with this metric
7 is that it relies on the actions of others; the recent NRC report on measuring research efficiency
8 argues against the use of indicators that depend on the actions of others. Dr. Sayler pointed out
9 that EPA research programs need to show how their research results are used for the Office of
10 Management and Budget's (OMB) Program Assessment Rating Tool (PART) review. If a
11 tool/product is not used, the Program needs to know why it was not used. Dr. Windom agreed
12 and added that WQRP is working to determine if its tools are used and if not, why. He expressed
13 concern about including the NRC statement in the report.

14
15 Dr. Meyer asked if the statement would be acceptable if she added the word "solely" to make the
16 sentence read "solely dependent on." Dr. Windom thought that might help, but he was still
17 concerned about the language because it is expected that clients will use the end product. Use or
18 nonuse of a product by clients is an important outcome that will affect a research program's
19 future direction. Dr. Weisberg agreed, noting that the ultimate endpoint is adoption. Dr. Meyer
20 suggested changing the text to read, "Although success in this metric is in part a consequence of
21 the actions of others...."

22
23 The 2006 program review recommended that the MYP be revised to better communicate the
24 goals of the WQRP. The Subcommittee agreed that the most recent version of the MYP more
25 clearly articulates the goals of the Program. There is still, however, room for improvement. For
26 example, the MYP does not discuss research that overlaps with water quality research. Dr. Noss
27 said that the Program recognizes the need to connect the overlapping issues. The Subcommittee
28 suggested some ways to incorporate this information, including adding a section on the topic or
29 including it in the Long-Term Goal (LTG) section. Climate change is an important issue and, if
30 nothing else, it could be addressed by adding a parenthetical note in the MYP to identify where
31 WQRP research is related to climate change. Dr. Windom noted that the MYP will be
32 continually revised as needs change. Therefore, it must have a solid framework but still be
33 flexible enough to incorporate changes. Dr. Meyer agreed to edit this response to reflect this
34 discussion.

35
36 Dr. Meyer noted that the first author on many of the highly cited papers in the bibliometric
37 analysis were extramural rather than intramural researchers. Dr. Noss explained that, in most
38 cases, EPA researchers were on the research teams that developed those papers. Dr. Weisberg
39 noticed this as well and stated that EPA researchers should be encouraged to collaborate on
40 projects and publish with others, but it seems that there were a number of Science To Achieve
41 Results (STAR) Program grantee-published papers in the bibliometric analysis that included no
42 EPA researchers as authors. Dr. Sayler urged the Subcommittee to minimize its focus on the
43 origin of the research (i.e., extramural vs. intramural); the focus should be on the quality of the
44 research program as a whole. Dr. Noss noted that EPA has funded a number of projects that have
45 provided leadership in different topic areas. Now that there is no STAR funding available for the
46 WQRP, it will be interesting to compare future bibliometric analyses to the current one and the
47 previous one. Dr. Weisberg suggested that the bibliometric analysis might be improved by
48 organizing it into three categories: (1) papers authored by EPA researchers alone, (2) papers

1 authored by EPA in partnership with others, and (3) papers authored by EPA-funded extramural
2 researchers. Dr. Sayler explained that ORD is making an effort to make the bibliometric analyses
3 consistent across the different research programs so that they can be used for an ORD-wide
4 analysis and are consistent for PART reviews. Currently, ORD analyzes the combined
5 extramural and intramural bibliography produced by the program. Any change to the structure
6 of the analyses would have to be initiated by ORD. Dr. Meyer said that she would add text
7 suggesting the creation of subcategories and the addition of more detail on the types of papers
8 included in the analysis.

9
10 Dr. Sayler noted that neither of the two quality recommendations in 6B had been achieved. In the
11 text, Dr. Meyer indicated that the Program is no longer using outside reviewers for Requests for
12 Applications (RFAs) and there is no direct link to the grant program Web pages. Dr. Sayler
13 agreed.

14
15 Under 6C, Dr. Sayler pointed out that the text read “establishing water research coordination.”
16 He thought it might be more appropriate to use “reestablishing” rather than “establishing”
17 because there was a previous Water Research Coordination Team. Dr. Noss confirmed that the
18 team had been reformed, but it is working with a different focus related to the priority-setting
19 process that is being developed. The team was involved in the development of the WQRP MYP,
20 but its current efforts are focused on developing a communications and outreach plan. Dr. Meyer
21 said that she was impressed with OW’s research plan and asked if the plan was an outcome of
22 the MYP development process. Dr. Noss confirmed that the MYP development had helped OW
23 clarify its key research needs. Dr. Meyer suggested specifying the OW products that came out of
24 the process in the MYP. Dr. Noss thought that these types of contributions from the WQRP
25 might be highlighted by a joint PART review with OW. Dr. Sayler said that the OW research
26 plan could be considered an intermediate outcome; he would say the same about WQRP’s
27 involvement with EPA’s Report on the Environment (ROE). The WQRP’s work has had a great
28 impact in many areas. Dr. Meyer proposed adding text to the MYP on the Program’s significant
29 contribution to the ROE to show the value of these linkages. Dr. Windom asked if there was an
30 effort to track these types of contributions, especially contributions that may have an impact
31 several years later. Dr. Noss responded that ORD has selected a number of programs to
32 demonstrate accountability, but there is nothing specific for water quality. Dr. Weisberg said that
33 he thought the response to Charge Question 1 should be complimentary, as the Program has
34 made great efforts to increase transparency and to seek input from others. He agreed to provide
35 Dr. Meyer with text on the workshop held by the WQRP to include in the response to Charge
36 Question 1.

37
38 Dr. Weisberg noted that while the WQRP has increased its partnering activities (including
39 engaging the practitioner early in the planning process), this is not clearly articulated in the
40 MYP. For this reason, he suggested that the Subcommittee’s response on the fourth
41 recommendation on partnerships be a little more negative. Dr. Sayler thought that the
42 Subcommittee could suggest that the Program be more aggressive in communicating its
43 partnership efforts. Dr. Noss stated that the Science Advisory Board (SAB) also recommended
44 that WQRP’s partnering activities be better articulated; the Program is working on this.

45
46 Dr. Sakaji expressed his concern about the Program being able to show progress with a 5-year
47 MYP when, in some cases, regulators are just beginning to apply the research 15 years later. Dr.
48 Windom explained that this issue would be covered in the next BOSC program review. The

1 focus of the Mid-Cycle Subcommittee needs to be on the Program's progress with respect to the
2 advice received in the 2006 BOSC program review.

3
4 In the 2006 review, it was recommended that the Program better communicate its past
5 accomplishments. Dr. Weisberg suggested that under each LTG, the Program include a
6 description of what has been accomplished and how that work serves as a foundation for the
7 Program's current work. Dr. Ehlers did not think that the WQRP should receive a passing grade
8 on this recommendation. The MYP is being revised, but it seems that it is being revised in a way
9 that does not reflect the Program's past accomplishments. Dr. Noss explained that the Program
10 did not ignore this recommendation. Upper level ORD management has encouraged the WQRP
11 to focus on where it is headed, rather than on its past accomplishments. Dr. Windom commented
12 that the program review subcommittee members strongly endorsed this recommendation because
13 including a description of what has been accomplished and how that work serves as a foundation
14 for the Program's current work would help reviewers understand how the Program reached its
15 current focus.

16
17 Dr. Sayler stated that the BOSC now requests a 1- to 2-page fact sheet that describes the
18 Program's past and current work. The Executive Committee has found this fact sheet to be
19 helpful in conducting the reviews. Dr. Noss said that WQRP has not yet developed its fact sheet.
20 He has proposed that every time an APM is met a fact sheet be developed. When an Annual
21 Performance Goal (APG) is met, the fact sheets will be compiled. Dr. Ehlers argued that it is
22 difficult to evaluate a long-term research plan without detail on the Program's work over a long
23 period of time. The LTGs have not changed in detail and substance, so it should not be too
24 difficult to review the old LTGs and determine how the accomplishment of those goals has
25 affected the current work.

26
27 Dr. Windom gave the example of mercury, an issue that had been on the radar screen, dropped
28 off, and then come back again. When mercury became a hot topic again, it was important to
29 review and take into account the previous work on mercury to ensure that future work is not
30 redundant. Dr. Meyer agreed to revise the text based on these comments.

31
32 *Charge Question 2 – Do the revised LTGs provide a coherent framework for presenting research*
33 *needs?*

34
35 Dr. Kleinow agreed with the earlier comment that the LTGs had not changed significantly. The
36 explanation in the first paragraph of how the LTGs were formulated was well done, as it married
37 the scientific and administrative processes. The LTGs provide a format for encompassing all
38 client needs, from criteria to measurements of success. Dr. Kleinow noted that the added
39 emphasis on management was deleted from his section; he thinks that the Program would benefit
40 from more emphasis on management. The APGs fit well with the LTGs as some of the LTGs
41 balance out the APGs. Dr. Kleinow was concerned that the scope of the last LTG was somewhat
42 limited as it seemed to focus on wastewater and biosolids.

43
44 Dr. Kleinow indicated that both the MYP development process and the flexibility of the
45 document are to be commended. Dr. Windom thought that the LTGs provided the appropriate
46 framework for the MYP while still remaining flexible enough to be responsive to future needs.
47 Dr. Meyer agreed and suggested commending the Program's work on the LTGs in the
48 Subcommittee's response to this question. She did note, however, that there appeared to be a

1 disconnect between LTGs 2 and 3. LTG 2 focuses on sources of water quality impairment, but
2 LTG 3 focuses on wastewater treatment plants, which are not the sole source of the problem. She
3 suggested adding text on this disconnect in the response to this question. Dr. Noss acknowledged
4 that there appeared to be a disconnect, explaining that the LTGs must be linked to the previous
5 LTGs and thus have evolved over time. Also, only the work the Program thought it was capable
6 of completing was included in the LTGs. It might, however, be a good idea to recognize the
7 other areas that need attention. Dr. Ehlers noted that it appeared that the Program focused on
8 topic areas that are most important to its three main OW clients, Office of Science and
9 Technology (OST), Office of Wetlands, Oceans, and Watersheds (OWOW), and Office of
10 Wastewater Management (OWM). If this is the case, it should be noted in the MYP. If not, she
11 suggested dividing LTG 2 into smaller sections aligned with the APGs. Dr. Noss explained that
12 this issue stems from the lack of EPA-wide corporate priorities and a possible consolidation of
13 the research programs. The future work of the research programs is dependent on EPA setting
14 corporate priorities. Therefore, the three LTGs are somewhat representative of the interests of the
15 different offices within OW. The WQRP has tried to focus its efforts on topic areas not covered
16 by other research programs.

17
18 Dr. Kleinow asked Dr. Noss if he thought that the LTGs were a function of the process of taking
19 feedback from different clients. Dr. Noss did not think that this was the case. The LTGs were
20 determined based on where the Program thought it could have the most impact. Dr. Ehlers
21 suggested abandoning LTG 3 and dividing LTG 2 into the three temporal categories shown in
22 Figure 4 (assessment, source identification, and intervention). Currently, some LTGs are
23 temporal and some are spatial; it would make the plan more readable if the Program focused
24 either on temporal or on special categories. Dr. Sayler cautioned against making this change. He
25 thought that the current framework was very logical considering the way the Program operates.
26 He did not think that it was the Subcommittee's role to suggest reorganization of the MYP. The
27 Subcommittee's charge is to comment on where the Program currently is in relation to the
28 recommendations made in the last BOSC program review. Dr. Noss explained that, based on the
29 feedback received from the OW offices and the reality of limited resources, the WQRP decided
30 to focus its efforts where it could have an immediate impact.

31
32 Dr. Meyer thought the MYP would be strengthened by also listing what the Program is not
33 doing, explaining that the WQRP recognizes the importance of these issues, but has focused its
34 efforts where its work will have an immediate impact. Dr. Ehlers said that highlighting an
35 important issue by making it an LTG is different from spending a large amount of money to fund
36 research in that area. It seems to her that the purpose of the LTGs is to create a framework for the
37 Program. Dr. Windom thought the structure of the LTGs was logical. Dr. Sayler suggested that
38 the Subcommittee note that the Program has made progress on the MYP and LTGs. The LTGs,
39 however, are very client-oriented; the Subcommittee could suggest that the Program consider
40 restructuring the LTGs in the future. The other Subcommittee members agreed. Dr. Windom
41 proposed adding text to this response indicating that the Program may want to reevaluate LTGs 2
42 and 3 in particular, as they seem to overlap.

43
44 *Charge Question 3 – Does the Water Quality Research Plan adequately address critical*
45 *research to meet the regulatory mandates of the Clean Water Act?*

46
47 As a former regulator, the words that stood out to Dr. Sakaji in this question were “adequately
48 address critical research.” The way that research is translated into public policy, guidance

1 documents, or regulatory language is very important. The Water Quality Research Plan serves as
2 a good roadmap for the Program. Dr. Sakaji initially thought that the bibliometric analysis could
3 be strengthened by connecting it to regulatory programs, but he recognizes that the work often
4 does not come to fruition in the regulatory field until many years later. He thought that the
5 objectives under the LTGs in the Plan adequately addressed the recommendations from the
6 BOSC program review. Keeping in mind that ORD's resources have been reduced significantly
7 over the past 10 years, ORD has done a good job of managing those limited resources and
8 applying them to the areas with the most need.

9
10 One piece of information that was missing in the Research Plan was how different topics under
11 the LTGs were prioritized. Also, it seemed to Dr. Sakaji that the science plan takes the Program
12 down a single pathway. In research projects, there are typically multiple pathways and one is
13 eventually determined to be the critical pathway. This is important because things often change
14 along the way. He did not see enough flexibility in the plan to respond to changes in the
15 regulatory or legislative environments. Dr. Windom pointed out that the Program does have a
16 metric of success on providing regulatory advice. In fact, the results of the partner survey
17 showed that to be one of the areas where the Program was most effective. Dr. Sakaji agreed and
18 added that the survey seemed to be focused mostly on federal clients; he would like to see more
19 information from state regulators. It is important that people outside of EPA be able to apply the
20 Program's research to their particular situations. In addition, certain types of research could help
21 make regulations more consistent across the states. Dr. Noss said that it has been recommended
22 that the Program work in different areas of the country. Dr. Ehlers suggested that the Research
23 Plan list the major regulatory mandates of the Clean Water Act and explain how the APMs
24 address those mandates. Dr. Meyer thought the Subcommittee should mention that the OW
25 research plan will help to improve coordination between the research program and regulatory
26 needs. The Subcommittee also could make suggestions for more closely engaging with the
27 regulatory programs.

28
29 *Charge Question 4 – Does the proposed research adequately support watershed management*
30 *and contaminant source control programmatic needs?*

31
32 Dr. Weisberg noted that the progress report stated that LTG 2 was being restructured to include
33 five new research areas. He asked Dr. Noss if the Subcommittee members were reviewing the
34 most up-to-date document and Dr. Noss confirmed that they were, adding that the five categories
35 have not been finalized.

36
37 Overall, Dr. Weisberg thought that the proposed research plan to identify the biological
38 endpoints and work back to the stressors would support the watershed management and
39 contaminant source control programmatic needs. The Program's approach is powerful because it
40 allows the researchers also to consider chemical and physical stressors. The Environmental
41 Monitoring and Assessment Program (EMAP), which is the focal point of the section, is a good
42 example of EPA's success. Before EMAP, most states had chemically based programs. Today,
43 because EMAP is used in almost all 50 states, most approaches are biologically based. The
44 Causal Analysis/Diagnosis Decision Information System (CADDIS) is another example of
45 EPA's success.

46
47 There is, however, some room for improvement. The approach seems to be uneven, as if the
48 Program took the old APMs and APGs and simply re-categorized them. One example is the work

1 proposed to address hypoxia in the Gulf of Mexico. Here, there needs to be a larger strategy that
2 also is focused on understanding land use practices as they affect nutrient addition and potential
3 land use modification. Dr. Weisberg suggested that the Program re-review its research plans,
4 taking a larger perspective.

5
6 He was pleased to see a technology transfer section, but was confused about its location in the
7 MYP and why it was focused on the Web site and not on technology transfer in general. He also
8 noted three issues in the OW report that did not appear in the MYP, the first being
9 hydromodification. Dr. Noss explained that one of the five new categories for LTG 2 links
10 changes in pollutant loading and hydrology to ecosystems health.

11
12 Dr. Weisberg added that the plan also does not mention invasive species or new generation
13 pesticides. If individual stressors are to be studied, these issues must be included. Dr. Noss
14 explained that the WQRP recognizes these important issues and is working to prioritize them.
15 Dr. Windom mentioned that he thought invasive species would be under the Ecological Research
16 Program. Dr. Noss replied that the WQRP decided that this was an issue that it could not
17 adequately address, so the Program has not taken it on. He confirmed that the issue is being
18 addressed by another research program. Dr. Weisberg said that if OW thinks that invasive
19 species is an important stressor identification issue, then it should be mentioned somewhere in
20 the WQRP research plan. Dr. Noss pointed out that this was another example of the importance
21 of linking the research programs. Ms. Mary Reiley (OW) explained that OW's plan focuses on
22 OW's needs, regardless of who is conducting the research. Some of the research will be
23 conducted by researchers outside of EPA; OW does not expect ORD to do all of the work. Dr.
24 Meyer agreed with Dr. Weisberg's suggestion to identify a national strategy and put the various
25 projects, including the Gulf of Mexico hypoxia project, into a larger perspective. In her view, the
26 response to this question was somewhat negative. In the case of the Gulf of Mexico hypoxia
27 project, while learning about that specific estuary may not be applicable to other areas, other
28 things learned from this project, such as the effects of agricultural practices on the watershed,
29 will have implications across the nation. She asked Dr. Weisberg to consider toning down the
30 negative text. Dr. Weisberg agreed to do so and said that he would work with Dr. Meyer to
31 revise the text. Dr. Windom added that there are many components of the Gulf of Mexico work
32 that are transferable to other systems. He stressed the importance of the WQRP communicating
33 that its research is not conducted in a vacuum; many of the insights gained from these projects
34 can be applied to other areas.

35
36 Dr. Meyer noticed that the Subcommittee is sometimes referred to as a subgroup and sometimes
37 as a subcommittee; this needs to be consistent throughout the report.

38
39 In the next to last paragraph, the text suggests that the MYP could be improved by identifying a
40 plan for pairing extramural research and EPA research. Dr. Meyer's understanding was that
41 currently there is no funding for extramural research; if that is the case, this sentence does not
42 make sense. Dr. Noss clarified that all of the funds previously allocated to extramural research
43 are now allocated to Program infrastructure.

44
45 Dr. Meyer did not agree with the sentence, "It's not clear if revisions to LTG 2 beyond those in
46 the present MYP draft are underway." As Dr. Noss indicated earlier, the Program is restructuring
47 this LTG, with five new research categories. Dr. Ehlers proposed that the Subcommittee suggest
48 research topics that the Program should address; Dr. Weisberg could use some of the text from

her section. Dr. Windom cautioned the Subcommittee members to keep the report focused on answering the charge questions. The Subcommittee's charge is to review the recommendations that were made in the 2006 program review and comment on the progress that has been made in responding to these recommendations. The Subcommittee can make some suggestions on revising the MYP, but should not go into too much detail. For example, the point about nutrient studies should be included because it is part of the response to the watershed question.

Dr. Kleinow pointed to a statement in the first paragraph on the first full page that reads, "numerous studies have demonstrated...aquatic biological integrity." He thought that the statement was so broad that it would not apply to some issues, such as the Great Lakes. He suggested changing the statement to put the issues listed on a more equal level rather than stating that hydrologic modification is more important than the others. Dr. Weisberg explained that his intent was to compliment the Program on their biologically based approach, but he would make the suggested revision. Dr. Kleinow noted that physical stressors also can be very important, especially in terms of the management of aquatic ecosystems. He suggested adding text indicating that there are some caveats to using larger endpoints.

Dr. Meyer suggested adding text acknowledging that LTG 2 is a work in progress and will change as different proposals are adopted.

Charge Question 5 – Does the Water Quality Research Program provide an appropriate balance among its three LTGs?

Dr. Ehlers said that from a qualitative standpoint there was an appropriate balance among the three LTGs. She reiterated her suggestion from earlier that the LTGs be reorganized and offered to draft her recommendations for the LTG reorganization. In terms of the comments made earlier about not including too much detail in the Subcommittee's response, she stated that she would eliminate the detailed bullets from her section.

Dr. Meyer noted that under biological criteria research, the focus is on coastal receiving waters. While the WQRP has good structural metrics in this area, it is not clear if the Program has determined how to incorporate functional metrics. Dr. Meyer agreed to send Dr. Ehlers suggested text on this issue.

Dr. Windom mentioned that the Subcommittee could make suggestions for improving the research program by listing them as items to consider before the next program review.

Charge Question 6 – Do the existing PART performance measures provide appropriate and quantifiable indices of progress? What improvements does the panel recommend?

Dr. Sayler stated that there was relatively little in the documents provided to the Subcommittee that addressed the PART performance measures. Two elements are usually considered: (1) R&D investment criteria and (2) the PART process. For the R&D investment criteria, OMB looks at program quality, leadership, performance, etc. Areas where the program is performing well should be highlighted. In the case of the WQRP, those areas are scientific quality and leadership. Also, the Program clearly is working to improve both the coordination of its work with others and its communication activities. It is important for the Program to look beyond the research products and the published documents to identify intermediate outcomes. Dr. Sayler said that he

1 liked Dr. Ehlers' idea of delineating the CWA requirements, and listing what the Program needs
2 to accomplish to meet each requirement.

3
4 Dr. Meyer suggested mentioning intermediate outcomes and the NRC report in the group's
5 response to this question. She also thought it important to mention that state partner participation
6 in the survey was limited for legal reasons (i.e., without OMB clearance, a survey cannot be
7 distributed to more than nine non-federal respondents). This also should be included in the MYP.
8 Dr. Noss mentioned that the Program was trying to get state input from the Association of State
9 and Interstate Water Pollution Control Administrators (ASWIPCA). Dr. Meyer proposed
10 mentioning that in the response to this question.

11
12 Dr. Meyer asked if the WQRP had considered established a dialogue and interacting with
13 environmental groups such as the Clean Water Network. Dr. Noss responded that the Program is
14 working to increase collaboration with researchers outside of EPA. Dr. Meyer suggested seeking
15 feedback on the MYP from environmental groups concerning research needs. Dr. Sayler agreed,
16 adding that this would help increase the use of the information and products generated by the
17 Program.

18
19 Dr. Windom said that the updated MYP clearly reflects a better understanding of the PART
20 process than the previous MYP; this is illustrated by the logic model depicting the connection
21 between the Program's work and client needs. Previously, the Program viewed published papers
22 as its outcomes. The partner surveys are very instructive, as they indicate where the Program has
23 had an impact and where improvement is needed. Dr. Sayler agreed with Dr. Windom's
24 comments and added that the updated LTGs reflect the progress made by the Program.
25 Dr. Weisberg encouraged the Program to take credit for its high quality work. Specifically,
26 Dr. Windom suggested that the WQRP take credit for the Total Maximum Daily Load (TMDL)
27 assessment of streams and water bodies, which now is used across the country.

28
29 Dr. Weisberg noted that the Southern California Coastal Water Research Project Authority is
30 transitioning to the use of molecular methods. In his view, the WQRP should provide leadership
31 in this area, but he did not get the impression that the Program was taking this larger perspective
32 in the MYP. Dr. Noss agreed that this was a valid point, noting that while the Program must
33 work within the structure of corporate EPA, it is nevertheless working toward that goal. Dr.
34 Windom pointed out that the PART process encourages programs to provide this type of
35 leadership, so it would be wise to identify the steps the Program is taking to do so.

36
37 Dr. Ehlers asked Dr. Noss to list EPA's other National Program Directors (NPDs). Dr. Noss
38 stated that the NPDs are:

- 39
40
- Dan Costas – Clean Air
 - Rick Linthurst – Ecology
 - Sally Darney – Human Health
 - Audrey Levine – Drinking Water
 - Joel Scheraga – Climate Change
 - Alan Hecht – Sustainability
 - Elaine Francis – Safe Pesticides/Safe Products
 - Jeff Morris (Acting) – Nanotechnology
- 46
47

Dr. Meyer noted that the SAB has encouraged the WQRP to adopt a one hydrosphere approach. Articulating the Program's links to other research programs in the MYP should move the WQRP closer to this type of approach. Dr. Noss agreed and explained that the NPDs are working to develop these linkages in various ways. For example, the NPDs are working to make their program Web sites more consistent in hopes that this will make the tools more readily available to other programs. Dr. Meyer suggested adding this type of detail to the MYP.

Charge Question 7 – Please rate the progress made by the Water Quality Research Program in moving the program forward in response to the BOSC review of 2006 as exceptional, exceeds expectations, meets expectations, or not satisfactory.

The Subcommittee worked to come to consensus on a Program rating. Dr. Windom stated that the four possible ratings are: Exceptional, Exceeds Expectations, Meets Expectations, or Not Satisfactory. Members of the Subcommittee with previous experience in using these ratings advised the others to use the descriptive qualifiers provided in the Draft Charge for each of the four ratings to help in making the determination—for example, whether the Program is meeting all, some, or none of the goals; whether the Program is doing this in a timely fashion; and whether the Program is producing quality or superior research.

Dr. Windom noted that the rating should be made with regard to the previous BOSC recommendations, which is different from the way the rating is applied for a program review. He asked the Subcommittee to address how the WQRP has done in terms of quality, speed, and success in addressing the previous BOSC recommendations.

Dr. Meyer expressed her view that the Program has made a lot of progress. The WQRP has done something to address almost every one of the recommendations from the program review, but has not achieved all of the goals yet. In her view, Not Satisfactory would be an inappropriate rating. Dr. Windom agreed that Not Satisfactory was “off the table,” and other members of the group concurred.

Dr. Windom asked if any aspects of the Program could be rated as Exceptional. Dr. Meyer believed the Program had been Exceptional in terms of soliciting client input. Dr. Saylor commented that the report could convey this message without necessarily giving the Program a rating of Exceptional. Dr. Windom then asked about aspects of the Program that could be rated as Exceeds Expectations, according to the written descriptor of this rating. He expressed the view that the Program had shown leadership in certain areas of science, particularly in the use of molecular methods. Dr. Meyer stated that using appropriate science to meet the Program's goals is important. She also observed that meeting all of the goals is a very high standard. Other members of the Subcommittee noted that the criterion involves using appropriate science to meet all of the goals.

Dr. Weisberg said that the expectations are based on the recommendations that the BOSC made in the last program review. Dr. Ehlers added that those recommendations were based on 5 years of work, not 2 years, which makes assessment of progress at this point challenging.

Dr. Windom noted that the Program had provided a list of APGs and APMs that should have been met and that all of them had been met; thus, the Program is meeting its goals. The WQRP

1 also provided a bibliometric analysis, which indicates that both the output and the quality of that
2 output have been good—more than meeting expectations. Client survey responses indicate that
3 the Program is meeting expectations in many areas, though not all, and that clients are very
4 satisfied. Dr. Sayler commented that clients' views are related to output. Dr. Windom noted that
5 the Program seems to be meeting its APMs but asked whether the issue of clients getting results
6 on a timely basis was addressed in the client survey. Dr. Noss responded that this issue was not
7 addressed; only APMs were mentioned, and only in the past year did APMs relate to service.

8
9 Dr. Windom commented that the views expressed by the group seemed to be between Meets
10 Expectations and Exceeds Expectations.

11
12 Dr. Meyer asked whether other members of the Subcommittee had incorporated material from
13 Tab G (on accomplishments relative to the MYP APGs) into the responses that they wrote. She
14 and Dr. Ehlers stated that they had not used this material in their responses. Dr. Weinberg said
15 that his approach was to look at the six recommendations, rate the Program on each one, and
16 look at the average. He said that, in his view, the Program had exceeded expectations in terms of
17 a more transparent approach to research planning, but barely met expectations for an annual
18 accounting of Program outcomes. He could not rate the WQRP with respect to its STAR
19 component because it was out of the Program's control. In addition, he thought the Program
20 met, but certainly had not exceeded, expectations for partnering and collaboration. He said, and
21 other Subcommittee members agreed, that the Program had shown considerable improvement in
22 communicating its goals. Progress had been made in this area, but the Program may not have met
23 expectations. In terms of biosolids, the Program has met expectations.

24
25 Dr. Sayler found Tab G useful in determining whether the Program had met its APGs as
26 established in the 2003 MYP and noted that there is documentation of whether the Program had
27 met APGs for the previous MYP. Dr. Meyer mentioned that this relates to Recommendation 2,
28 which calls for an annual accounting of Program outcomes. She asked the other Subcommittee
29 members and Dr. Noss if they thought this was addressed by Tab G. Dr. Noss replied that Tab G
30 represents his attempt to find out what each laboratory had done to meet the Program's APGs.
31 Dr. Meyer said that she would include a statement in her revised response that this is a step in the
32 direction of accounting for meeting APGs.

33
34 Dr. Ehlers was concerned about damaging the Program by assigning it a lower rating. Is there a
35 major difference between Exceeds Expectations and Meets Expectations in the minds of those
36 who receive this report? Dr. Sayler responded that there probably is a significant difference, but
37 that it is important not to elevate the ranking if the metrics do not support it. He added that most
38 of the programs have received a rating of Meets Expectations; however, a few had received a
39 rating of Exceeds Expectations.

40
41 Dr. Windom commented that when doing reviews in his own laboratory, he considers "meeting
42 expectations" to be very positive. He thought one should only choose a rating of Exceeds
43 Expectations when performance warrants the elevated rating. A good program would only
44 exceed expectations if results were generated faster than expected. The WQRP has exceeded
45 expectations in terms of quality, soliciting client input, and prioritizing research, but in all other
46 respects the Program has met expectations.

1 The suggestion was made to rate the Program by secret ballot. Dr. Meyer said that in the
2 Subcommittee's writeup, they would need to articulate the point that the Program seems to be
3 between two ratings. Dr. Windom responded that he had made some notes on the areas in which
4 the Program had exceeded expectations and those in which it met expectations.

5
6 As the Subcommittee prepared to vote, Dr. Kleinow asked if there were any recommendations
7 from the 2006 program review that were not doable. Dr. Sayler mentioned that ORD had
8 responded to the program review and in that response, the Program's intended accomplishments
9 were explained. Dr. Kleinow asked whether this response should be taken into account, and
10 Dr. Sayler confirmed that it should. Dr. Windom said that the Program had met its APMs and
11 had exceeded expectations in a few areas that were not part of the BOSC review, such as
12 molecular approaches to water quality assessment.

13
14 The Subcommittee members voted unanimously for a rating of Meets Expectations. Dr. Meyer
15 noted, however, and Dr. Windom and others agreed, that it was really Meets Expectations "plus"
16 and that this should be indicated in the report. Dr. Windom offered to do that by summarizing the
17 discussion that had taken place at this meeting. He agreed to point out in his summary that
18 although the Subcommittee had unanimously voted for Meets Expectations, it is clear that the
19 Program is exceeding expectations in some areas. Dr. Meyer pointed out that the Program has
20 had only 2 years to implement the recommendations from the program review. It will not be
21 known for another 3 years whether the Program exceeded expectations. Dr. Windom said that he
22 would like to recommend that the BOSC Executive Committee elaborate on how to judge that a
23 Program has exceeded expectations, especially after only 2 years. He suggested asking the
24 BOSC Executive Committee to add criteria about expectations and to give examples of
25 exceeding expectations. Dr. Sayler agreed that it would be very pertinent to provide that
26 information.

27
28 Dr. Weisberg said that he made the judgment of Meets Expectations by differentiating between
29 whether the Program had met all versus most of its stated goals. One goal that had been specified
30 for the Program the last time—the annual accounting of Program outcomes—has not yet been
31 met.

32
33 Dr. Windom indicated that the next step was for each member of the Subcommittee to redraft his
34 or her section and send the revised drafts to him by October 1, 2008. Dr. Windom then would
35 combine the sections and compile a draft report; he will distribute the draft report to the
36 Subcommittee members for their input on October 8. Because Dr. Windom will be away from
37 October 9 through October 20, he requested input from the other Subcommittee members before
38 October 9, so that he could prepare the next draft by the end of October, after which, if needed,
39 there will be a conference call to discuss the revisions. A conference call was scheduled for
40 November 3, 2008, from 1:00 to 3:00 p.m. Eastern Time, but members agreed that the call would
41 take place only if it was necessary to discuss the revised draft.

42
43 Dr. Weisberg said that for the 2006 program review, a second member of the Subcommittee read
44 the draft report. He asked whether this should be done again. Dr. Windom replied that he did not
45 think it was necessary given that this was a mid-cycle report, which will be much shorter than the
46 program review report. Dr. Sayler also thought it would not be necessary because the main
47 points agreed upon by the Subcommittee already are included in the draft and the rating was
48 unanimous. Dr. Windom agreed, stating that most of the changes to be made will be editorial.

Dr. Ehlers asked whether it was critical to address each of the questions independently or whether the Subcommittee members could collapse related questions such as Charge Questions 2 and 5. Dr. Windom suggested that Dr. Ehlers and Dr. Kleinow work on revising the responses to Questions 2 and 5 together and state in their section of the report that the Subcommittee had decided to address these two questions together. Dr. Sayler asked whether it would be better to refer to the response to Question 5 under Question 2 and vice versa. Dr. Windom said that he would leave that up to Drs. Ehlers and Kleinow. Dr. Noss did not see any reason why the responses to Questions 2 and 5 could not be combined.

Dr. Ehlers thought it best to address the issue of whether the three goals were balanced in a separate section. Dr. Meyer said that in her response about the transparency of the MYP she planned to refer readers to the responses to other questions.

Dr. Meyer asked who developed the charge questions. Dr. Sayler replied that ORD and the Program developed the questions, and Dr. Windom added that the BOSC has to approve them.

Dr. Sayler noted that Figure 4.1 of the NRC report contains an agency-wide logic model that shows how short-term outcomes fall out. It might be illustrative to look at that because it is a more expansive version of what Dr. Noss put together. Dr. Ehlers asked where the NRC report would be mentioned in the report. Dr. Meyer thought it should be referenced in the response to Charge Question 6.

Dr. Ehlers expressed concern that the Subcommittee had not discussed the Program's investment efficiency. Dr. Sayler responded that he did not think the Subcommittee was charged with evaluating efficiency and recommended looking more closely at the logic flow itself. Dr. Ehlers agreed that, in general, there was good correspondence between the two.

Public Comment

Susan Peterson, DFO, Water Quality Subcommittee, EPA, ORD

At 2:00 p.m., Ms. Peterson called for public comments. There were no comments offered.

Concluding Remarks

Herb Windom, Ph.D., Chair, Water Quality Mid-Cycle Subcommittee

Dr. Windom concluded the meeting by thanking the Subcommittee members for their time and effort. He mentioned that Ms. Peterson will notify members of the due date for the revised draft. Dr. Windom thanked Dr. Noss for his input and adjourned the meeting at 2:05 p.m.

Action Items

- ✧ Ms. Peterson will send the agreed upon task schedule to the Subcommittee members.
- ✧ Dr. Meyer agreed to send Dr. Ehlers suggested text concerning the lack of functional metrics under biological criteria research.

- 1 ✧ Dr. Weisberg agreed to provide Dr. Meyer with text on the workshop held by the WQRP to
2 include in the response to Charge Question 1.
3
- 4 ✧ Subcommittee members will revise their sections and send them to Dr. Windom by October
5 1, 2008.
6
- 7 ✧ Subcommittee members who have additional input, will send their comments to Dr. Windom
8 by October 8, 2008.
9
- 10 ✧ Dr. Windom will compile the sections and distribute the revised report to the Subcommittee
11 members by October 31, 2008.
12
- 13 ✧ The Subcommittee will have a conference call on November 3, 2008, from 1:00 to 3:00 p.m.
14 Eastern Time to discuss the revised report.

Participants List

Subcommittee Members

Herbert L. Windom, Ph.D., Chair
Professor Emeritus
Skidaway Institute of Oceanography

Laura J. Ehlers, Ph.D.
Senior Scientist
National Academy of Sciences
National Research Council

Kevin M. Kleinow, D.V.M., Ph.D.
Professor
Comparative Biomedical Sciences
School of Veterinary Medicine
Louisiana State University

Judith L. Meyer, Ph.D.
Distinguished Fellow
River Basin Center
Emerita Professor
Odum School of Ecology
University of Georgia

Gary S. Saylor, Ph.D.
Professor/Director
Center for Environmental Biotechnology
The University of Tennessee

Stephen B. Weisberg, Ph.D.
Executive Director
Southern California Coastal Water Research
Project Authority

Richard H. Sakaji, Ph.D.
Manager of Planning and Analysis for Water
Quality
East Bay Municipal Utility District

Designated Federal Officer

Susan Peterson
U.S. Environmental Protection Agency
Office of Research and Development
Office of Science Policy

EPA Participants

Heidi Bethel, Ph.D.
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Assessment

Gelena Constantine
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research

Charles Noss, Sc.D.
National Program Director for Water Quality
U.S. Environmental Protection Agency

Mary Reiley
U.S. Environmental Protection Agency

Bill Russo
U.S. Environmental Protection Agency

Claudia Walters
U.S. Environmental Protection Agency
Office of Research and Development
Office of Science Policy

Contractor Support

Beverly Campbell
The Scientific Consulting Group, Inc.

Susie Warner
The Scientific Consulting Group, Inc.

**WATER QUALITY MID-CYCLE SUBCOMMITTEE
FACE-TO-FACE MEETING
AGENDA
September 23, 2008**

Key Bridge Marriott
1401 Lee Highway
Arlington, VA 22209

8:30 – 9:00 a.m.	Registration	
9:00 – 9:10 a.m.	Welcome and Outline of Purpose	Dr. Herb Windom Subcommittee Chair
9:10 – 9:15 a.m.	DFO Welcome Administrative Procedures FACA Rules	Susan Peterson Subcommittee DFO
9:15 – 12:00 p.m.	Subcommittee Discussion	Water Quality Mid-Cycle Subcommittee
12:00 – 1:00 p.m.	Lunch	
1:00 – 2:00 p.m.	Subcommittee Discussion	Water Quality Mid-Cycle Subcommittee
2:00 – 2:10 p.m.	Public Comment	
2:10 – 3:00 p.m.	Wrap-up and Report Out	Water Quality Mid-Cycle Subcommittee
3:00 p.m.	Adjourn	