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REORGANIZATION OF THE EPA SCIENCE ADVISORY BOARD (SAB)

**A REPORT OF THE EPA SCIENCE
ADVISORY BOARD STAFF
OFFICE**

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REORGANIZATION OF THE EPA SCIENCE ADVISORY BOARD

EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB or Board) was established in 1978 by the Environmental Research, Development, and Demonstration Authorization Act (ERDDAA). Composed of outside experts, the SAB provides the EPA Administrator with external, independent advice on the scientific and technical aspects of environmental issues to help inform environmental decision-making. The SAB has a distinguished record of providing valuable and sound advice on a wide range of scientific, engineering, economics, and social science issues that impact the technical bases of EPA policies, regulations, research and science programs. Some past examples of SAB advice include consultation and advising the Agency on the development of *EPA's Guidelines for Preparing Economic Analysis* (1999), a review of the *EPA Arsenic Rule Benefits Analysis* (2001), and two major SAB conceptual works that integrate science with the policy-making paradigm, *i.e.*, the *Reducing Risk* report (1990) and the *Integrated Environmental Decision Making* report (2000).

Over the past 25 years, the SAB has grown in importance and stature and has become a highly-regarded Federal advisory committee. For the past several years, the SAB's work has been carried out through eight Standing Committees and has been ably guided by an Executive Committee that has organized, reviewed, and approved the work of the Committees. The Chairs of two other separately-chartered advisory committees — the Clean Air Scientific Advisory Committee (CASAC) and the Advisory Council on Clean Air Compliance Analysis (COUNCIL), which are mandated under the Clean Air Act Amendments of 1977 and 1990, respectively — also serve on the SAB Executive Committee. The EPA Staff Office forms SAB Consultative, Advisory, or Review Panels for specific topics. SAB Panels are composed of one of the following: one of the eight Standing Committees; a Standing Committee plus expert consultants; or SAB members and expert consultants (*ad hoc* panels). Draft reports of SAB Panels have been reviewed and approved by the SAB Executive Committee before transmittal to the EPA Administrator. As of this date, the SAB has 89 distinguished, nationally- and internationally-recognized experts as members, and they are supported by more than 400 consultants who serve when needed.

The SAB's original structure and functions have served EPA well through the beginning decades of environmental protection actions. As environmental challenges have become more complex, and the demands placed on the SAB have continued to increase, it has become important for EPA to adjust and realign the SAB's structure and functions to ensure the continuing relevancy and effectiveness of its actions in support of EPA's mission to protect human health and the environment. Based on information gained during interactions with the SAB, within the Agency, and with the public, as well as from its own deliberations, the SAB Staff Office recommended a structural and functional realignment of the SAB to address the issues and concerns that have been identified and to attain the following objectives:

- to underscore the advisory role of the SAB in elevating the development and use of science in environmental decision-making within EPA through its strategic and technical advisory function and through its independent peer review function;
- to continue to conduct the highest quality SAB peer reviews of particularly complex and highly-visible Agency technical work products that may impact major EPA

policies and decisions, as requested by the Administrator, or the Congress through the Administrator;

- to separate the SAB's peer review function from other advisory activities, to the extent feasible and appropriate;
- to clearly define the functions of its organizational components including the interaction across its components; and
- to incorporate flexibility and agility into the SAB's organizational structure to meet rapidly changing demands.

Highlights of the realignments of the SAB structure and functions along with the rationale for the changes are provided below.

- The EPA SAB will consist of a Board and Standing and *Ad Hoc* Committees. The Board will be composed of about thirty Members, with a Chair and a Vice-Chair. The Board will exercise oversight and approval both of the work of its Committees and of peer review panels created for a specific purpose, or *De Novo* Review Panels. Board members will serve as Chairs of SAB Standing and *Ad Hoc* Committees or *De Novo* Review Panels. In effect, the realigned Board will replace the existing SAB Executive Committee. This recommendation is consistent with the mandate of the SAB authorizing statutory authority in ERDDAA which mandates that "*The Board shall be composed of at least nine members, one of whom shall be designated Chairman,*" and that "*each committee or investigative panel shall be chaired by a member of the Board.*"
- The traditional SAB function of providing strategic and forward-looking advice to the Administrator on complex technical and emerging issues is reemphasized and will be performed by the Board and its Standing and *Ad Hoc* Committees. This function will be accomplished by direct consultations or through special workshops, or original studies as deemed appropriate.
- The SAB Standing and *Ad Hoc* Committees are a source of knowledge and provide continuity to the SAB and EPA interactions that provide strategic and technical advice in their specific areas of expertise. These SAB Committees will continue to benefit the Agency by developing advice and recommendations for SAB approval on major technical activities of EPA offices and on completed EPA work products that are important but do not have direct impact on EPA policies or risk management decisions (*e.g.*, research strategies, science plans). These committees are "standing" in the sense that they will exist as long as they are needed. *Ad Hoc* Committees will be established for shorter periods to provide advice on matters that cannot be addressed by existing Standing Committees. The Board and EPA will periodically evaluate the appropriate mix of Standing and *Ad Hoc* committees based on the current and future demands and the nature of anticipated environmental challenges.
- The two separately-chartered science advisory committees, the CASAC and the COUNCIL, which have been highly effective in supporting the agency's implementation of the Clean Air Act, will continue in their present structure. The Chairs of the CASAC and the COUNCIL will continue to serve as Members of the Board.

- A Council of Chairs, composed of the Chairs of SAB Standing and *Ad Hoc* Committees, CASAC, and the COUNCIL, will be created to foster open and constructive dialogue and cross-disciplinary interactions among the committees. Through formal and informal communications, the Council of Chairs will advise the Board as a whole on matters that are considered important to the SAB mission.
- SAB peer reviews of Agency completed technical work products that have direct impact on EPA policies or risk management decisions will generally be conducted by *De Novo* Review Panels. These panels will be created *de novo* for each specific review using the recently-adopted SAB panel formation process. To reinforce the objectivity of the peer review process, membership of a *De Novo* Review Panel should not be of the same composition as the Standing or *Ad Hoc* Committee that may have provided advice on the same subject matter at an earlier stage. Members of *De Novo* Review Panels will generally be drawn from the scientific community, SAB Committees, and other EPA Federal advisory committees having the appropriate expertise relevant to the topics of the review.
- To strengthen the quality of peer review reports, a Quality Review Committee (QRC) will be established to review the draft report of each *De Novo* Review Panel to ensure that the charge has been adequately addressed. The Board Vice Chair will chair the Quality Review Committees. In addition to the Vice Chair, each Quality Review Committee will generally include three Board members with appropriate and relevant expertise for a particular quality review. In the course of its work, the QRC will consult with experts (three to four) drawn from the scientific community as needed. These experts will generally be identified during the panel formation process for the *De Novo* Review Panel. Based on its review and written input from expert consultants, each QRC will provide the Board with its evaluation of the draft peer review report and its recommendations. Original works of SAB Standing or *Ad Hoc* Committees will similarly undergo a review by a Quality Review Committee before submission to the full Board for final review and approval, prior to transmittal to the EPA Administrator.
- Members of the Board, Committees, and Panels will continue to be drawn from the scientific community, to provide a collective breadth and depth of experience and expertise and a diversity of scientific perspectives. Board members and Committee members will continue to be appointed by the Administrator, for a term of three years, renewable for one additional three-year term, for a maximum of six years of consecutive SAB service. Expert consultants invited to assist SAB Committees or serve on *De Novo* Review Panels will continue to be appointed by the SAB Staff Office Director for the duration of specific advisory activities.

The overall benefit of this SAB realignment will be an enhanced capacity to fulfill the broader roles and functions for the collective SAB, *i.e.*, by providing strategic, forward-looking advice on emerging environmental challenges and early technical advice on issues of particular importance to the Agency. In addition, the reorganization is intended to strengthen the objectivity and quality of SAB peer reviews of major EPA technical work products. Moreover, the SAB will become more flexible and effective, have explicit roles and responsibilities, and possess a greater ability to meet and adapt to increasing and changing demands.

The SAB Staff Office has developed a plan to implement these changes.¹ The plan includes measures to improve the efficiency and effectiveness of the SAB's delivery of timely, high-quality advice and peer reviews while maintaining the high standards embodied in SAB policies and procedures in accordance with the SAB's enabling statute, the Federal Advisory Committee Act (FACA), EPA policy and other Federal requirements. The SAB Staff Office expects to implement this reorganization at the beginning of fiscal year 2004.

1. INTRODUCTION

The EPA SAB was established in 1978 by the Environmental Research, Development, and Demonstration Authorization Act (ERDDAA) (42 U.S.C. § 4365)² (see Appendix A). Composed of outside experts, and guided by an Executive Committee (EC), the SAB provides the EPA Administrator with external, independent advice on the scientific and technical aspects of environmental issues to help inform environmental decision-making. Since the SAB is a chartered Federal advisory committee,³ it operates in the "sunshine," *i.e.*, providing the public with contemporaneous access to the advisory committee deliberative process.

As outlined in its current FACA Charter (see Appendix B),⁴ the mission of the SAB is to provide independent advice and peer review on the scientific and technical aspects of environmental problems and issues as requested by the Administrator and Agency officials and as required by various environmental statutes.⁵ Specific objectives of the SAB are to provide advice and recommendations on:

- the adequacy and scientific basis of any proposed criteria document, standard, limitation, or regulation under the Clean Air Act, the Federal Water Pollution Control Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Toxic Substances Control Act, the Safe Drinking Water Act, the Comprehensive Environmental Response, Compensation, and Liability Act, or any other authority of the Administrator;
- the scientific and technical adequacy of Agency programs, guidelines, documents, methodologies, protocols, and tests;
- new or revised scientific criteria or standards for protection of human health, ecological health and the environment;
- new information needs and the quality of Agency plans and programs for research, development and demonstration; and

¹ See the "*Implementation Plan for the New Structural Organization of the EPA Science Advisory Board (SAB)*" (November 2003).

² The SAB had previously existed as a discretionary Federal advisory committee of EPA, established by the Administrator in connection with the performance of his duties under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332 *et seq.*

³ Under the provisions of the 1972 Federal Advisory Committee Act (FACA or Act), as amended (5 U.S.C. App. 2).

⁴ The SAB charter will be revised to reflect the new organization.

⁵ While the SAB reports to the EPA Administrator, scientific advice may also be requested, through the EPA Administrator, by the appropriate Committees and Subcommittees of the U.S. Senate and House of Representatives.

- the relative importance of various natural and anthropogenic physical, biological and chemical stressors.

Although the SAB's original structure and functions have served it well over time, as environmental challenges have become more complex and the demands placed on the SAB have continued to increase, the SAB Staff Office has determined that there is an important need to evaluate whether improvements can be made to enhance the ability of the SAB to carry out its mission even more effectively and efficiently. Accordingly, the SAB Staff Office established the Reorganization Subcommittee (RSC) of the SAB in October 2002 to review the existing SAB organization and to develop organizational changes. The RSC was comprised the EC Chair and five other EC members. The SAB Staff Office developed this reorganization based on the input from the RSC and the SAB, as well as EPA and the public (see Appendix C).

This document first describes the existing organizational structure of the SAB, and then discusses recommendations regarding how best to realign the SAB to meet the anticipated challenges in the coming years. The document also identifies the anticipated benefits of the reorganization and discusses implementation steps that will be used to ensure an effective transition as the SAB continues to accomplish its ongoing advisory activities.

2. STRUCTURE AND ORGANIZATION

2.1 Structure and Functions of the SAB

The SAB is part of an administrative unit composed of three legislatively-mandated, and separately-chartered, Federal Advisory Committees — the SAB itself, the CASAC and the COUNCIL.⁶ The latter two advisory committees, however, are independent of the SAB and report directly to the Administrator. The SAB Staff Office performs management and administrative functions and provides technical assistance to the three advisory bodies.

The SAB initially consisted of five Standing Committees⁷. However, over the ensuing years, the SAB was changed in response to increased needs for its services. Several Standing Committees were either changed or renamed between 1979 and 1985, with additional committees added between 1986 and 1990. As a result, the existing SAB consists of eight Standing Committees⁸.

Since the early 1990s the SAB has been expanded by establishing a wide range of *ad hoc* subcommittees and panels that provide advice in areas of special interest as needed. In addition, Standing Committees are frequently supplemented with expert consultants to provide

⁶ CASAC, mandated by the 1977 Clean Air Act Amendments (CAAA); and the Advisory Council on Clean Air Compliance Analysis (COUNCIL), mandated by the 1990 CAAA. The CASAC and the COUNCIL are independently-chartered committees under FACA. The CASAC and the COUNCIL are administratively-housed within the SAB Staff Office and their Chairs participate as members of the SAB Executive Committee.

⁷ The Ecology Committee (now the Ecological Processes and Effects Committee or EPEC); the Environmental Measurements Committee (now the Environmental Engineering Committee or EEC); the Environmental Health Committee (EHC); the Environmental Pollutant Movement and Transformation Committee (EPMTC), and the Technology Assessment and Pollution Control Committee (TAPCC).

⁸ EPEC; EEC; EHC; the Radiation Advisory Committee (RAC); the Integrated Human Exposure Committee (IHEC); the Research Strategies Advisory Committee (RSAC); the Drinking Water Committee (DWC); and the Environmental Economics Advisory Committee (EEAC)

recommendations or peer review on specific topical areas. The SAB Standing and *Ad Hoc* Committees have performed several functions, including:

- receiving informational briefings from the Agency and providing comment on pertinent scientific and technical issues and activities;
- providing advice (through the Executive Committee) early in and during product development (*i.e.*, through non-consensus “*consultations*” and consensus “*advisories*”);
- conducting *peer reviews* of Agency’s completed technical reports (*e.g.*, guidelines, assessments, research strategies) and other work products (*e.g.*, analytical methods, models, databases); and
- conducting *de novo studies* or reports in response to an Agency request.

The SAB’s EC has been the officially-chartered advisory committee. The EC met on a regular basis to:

- act on Agency requests for peer reviews by approving the formation of panels, delegation of the task to a Standing or *Ad Hoc* Committee; or other actions.
- hear briefings and provide comment on pertinent issues and activities within the Agency;
- initiate reviews and other activities by the SAB that it deems appropriate; and
- review, discuss, and approve final reports and other advice from Committees and panels prior to transmittal to the Administrator.

The SAB structure prior to the reorganization is shown in Figure 1 (see page 8).

2.2 SAB Membership

The members of the SAB constitute a distinguished body of scientists, engineers, economists, and social scientists who are recognized, outside experts in their respective fields. These individuals are drawn from academia; industry; Federal, State and Tribal governments; and non-governmental organizations (NGO) throughout the United States and, in some limited cases, from other countries. Each of the SAB’s eight Standing Committees are comprised of seven to twelve members. The EC had most recently consisted of 17 members — a Chair, Chairs of the eight SAB Standing Committees, CASAC and COUNCIL Chairs, and six other members designated as At-Large EC Members. Additional outside technical experts have been invited by the SAB Staff Office Director to serve as SAB Consultants on various Committees or *Ad Hoc* Review Panels where their expertise is needed. All SAB members and consultants are appointed and serve as Special Government Employees (SGEs) and are subject to all relevant Federal requirements including compliance with the conflict-of-interest statutes. All SAB Committees and Panels are formed consistent with the FACA openness requirements, taking into account the need for a balance in the points of view represented.

2.3 Process for Selection and Appointment of SAB Members

As of this date, the SAB consists of 89 members appointed by the Administrator for a term of two years each, which was renewable for an additional two terms. SAB members are appointed by the EPA Administrator based on recommendations from the SAB Staff Office Director in consultation with the Chair of the SAB Executive Committee and SAB technical staff serving as the Designated Federal Officer (DFO) of the Committee with the vacancy. The Committee DFO has responsibility for developing a list of candidates, based on recommendations from credible sources, such as current members of the SAB, other DFOs, EPA staff, staff at the National Academy of Sciences/National Research Council, trade groups, environmental groups, professional organizations, scientific societies, regulated industries, and public comments. Recommendations are obtained via numerous methods, including through *Federal Register* notices, direct contacts, and electronic searches. Appointment of SAB members includes an internal EPA evaluation of expertise, potential conflicts of interest, bias, and balance. Final appointments are announced publicly on the SAB website, normally at the start of the fiscal year.

2.4 The SAB Panel Formation Process

The SAB has conducted consultations, advisories and peer reviews through three mechanisms: (a) an existing SAB Standing Committee or the EC; (b) an existing SAB Standing Committee, supplemented by consultants; or (c) an *ad hoc* Panel. The Panel Formation Process⁹ is used to form panels involving either an existing Committee supplemented with additional expert consultants or a new *ad hoc* Panel. The Panel Formation Process is a multi-step process in which candidates are drawn from the scientific community to either supplement an existing Standing Committee or to form a new *ad hoc* Panel. This multi-step process includes public solicitation of expert nominations via a *Federal Register* notice, internal EPA evaluation of expertise, potential conflicts of interest, bias, and balance, and then an opportunity for public comment on the candidates. The final roster is posted on the SAB website prior to the first meeting of the panel.

2.5 Criteria for Selection of EC Members, Committee Members, Panel Members

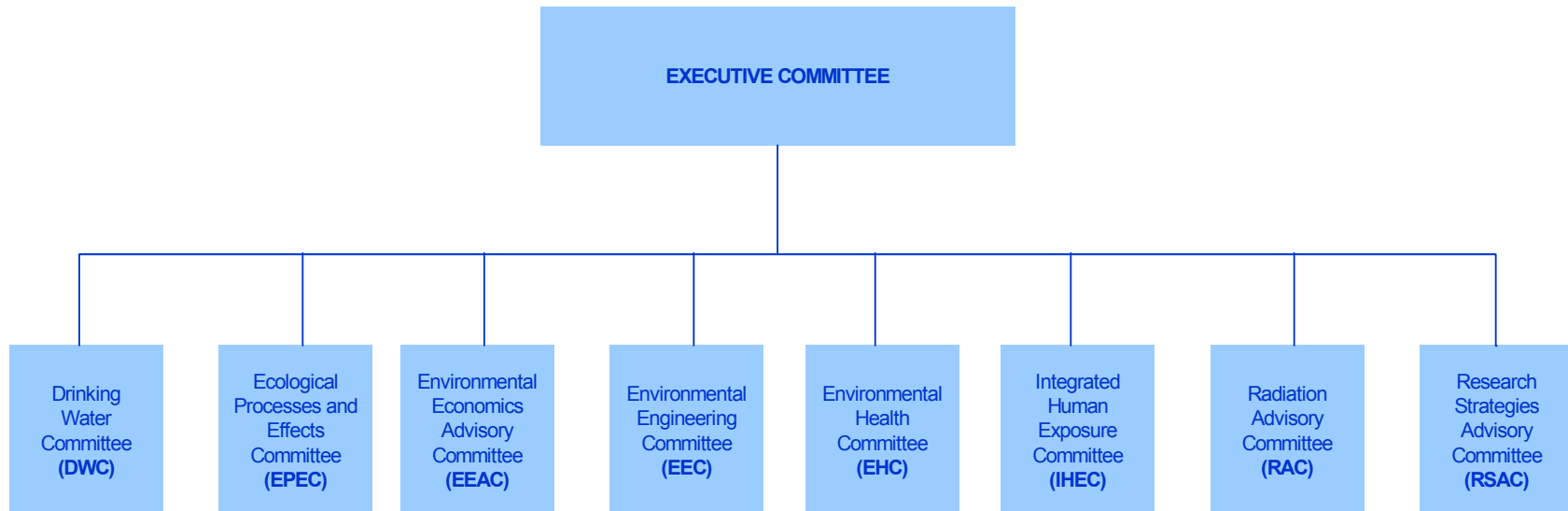
The SAB EC has been chartered as a Federal Advisory Committee, subject to FACA. The SAB enabling statute, FACA, and the current SAB charter provide criteria for selection of SAB members. The four most significant of which are:

- (a) Members must be qualified by education, training and experience to evaluate scientific and technical information on matters referred to the Board.
- (b) The composition of the SAB and its Committees must be “balanced” in terms of points of view represented.
- (c) No member of the SAB may be a full-time Federal government employee.
- (d) Members are subject to Government ethics laws and conflict-of-interest regulations.

⁹ *Overview of the Panel Formation Process at the Environmental Protection Agency Science Advisory Board* (EPA-SAB-EC-02-010, September 2002). This document is available on the SAB Web page at: <http://www.epa.gov/sab/pdf/ec02010.pdf>.

Figure 1

Structure of the EPA Science Advisory Board



The SAB has formed [**Consultative, Advisory or Review**] Panels for Specific Topics. SAB Panels are composed of one of the following: one of the eight Standing Committees; a Standing Committee plus Expert Consultants; or SAB Members and Expert Consultants [*ad hoc* Panels]. Draft reports of SAB Panels have been reviewed and approved by the Executive Committee before being transmitted to the Administrator.

The scientific and technical quality and the credibility of those selected is a paramount consideration. Secondary factors considered include the individual's geographic area, and the person's ethnicity, gender, and affiliations. Other factors that contribute to (but do not determine) the selection include demonstrated ability to work well in a committee process, write well, and complete assignments punctually, and a willingness to serve.

3. BASIS FOR REORGANIZATION

Although the SAB has been structured, and has operated, in much the same manner since 1978, it has faced a broadening of its mission, a significantly-increased overall workload, requests for rapid turnaround of critical peer reviews and advice, and the need to continually form new *ad hoc* panels to deal with this ever-increasing and diverse workload. In addition to these increased demands on the SAB, the EC has been responsible for maintaining quality-control over SAB reports and ensuring that the Agency continued to receive the best advice and recommendations available in a timely and usable form. The SAB Staff Office considered a number of issues identified by SAB members, EPA offices, and external stakeholders in developing reorganization. These considerations are discussed below.

3.1 Provide Clear Authority and Leadership

The enabling statute, ERDDAA, mandates that the SAB “...shall be composed of at least nine members, one of whom shall be designated as Chairman ...,”¹⁰ without suggesting an upper limit. In practice, the SAB membership has grown over the years to keep up with the increasing needs of technical expertise. Furthermore, the SAB Standing Committees operate almost independently from each other. To manage the functions of the SAB, and to provide a mechanism for ensuring quality and conveying advice to the EPA Administrator, EPA established the SAB EC to review and approve the work of the SAB Committees and Panels. To some observers, the EC was the SAB's Board of Directors, while, others saw the SAB as the entire 89 members. For this reason, there was a need to better identify formal roles and responsibilities for the SAB, a task which could best be accomplished in concert with a reorganization of the SAB and a revision of the SAB FACA Charter.

3.2 Accommodate a Larger Vision and More Effective Role

In earlier years the SAB provided the EPA Administrator with a mix of advice including advisories and consultations on ongoing Agency technical projects, peer reviews of major reports and special studies on emerging and cross-cutting issues. However, for the past decade or more, the SAB has for the most part only undertaken the function of scientific and technical peer review. Acknowledging this state of affairs, the SAB's 1997 Strategic Plan notes that:

“Since its founding, the Science Advisory Board's original structure and function have served it well: the Board is widely recognized for its success in advising the Environmental Protection Agency on science issues. However,... [t]o meet the changing needs of its customers and maintain a high level of success, *the SAB needs to be significantly more strategic in its approach to providing scientific advice on environmental issues.* That is, the Board needs to provide more up-front planning and scoping (e.g., strategic) advice, *as opposed to [solely] the ‘end of pipe’ peer review.* At the same time, [the SAB] must maintain and improve the quality of

¹⁰ 42 U.S.C. § 4365(b)

advice and peer review on specific issues.... *The SAB needs to devote about 20 to 30 percent of its efforts across the entire Board to the more strategic activities. The Executive Committee should be spending roughly half of its energies on strategic issues*" (emphasis added).

In the nearly five years since this SAB strategic plan was issued, progress toward achieving these goals has been sporadic and limited, with the result being that the SAB continues to be known, both internally and externally, almost exclusively as a "peer-review" body. The Agency could benefit significantly from the SAB's advice on strategic environmental science issues as the scientific basis of environmental protection increases in scope and complexity in addition to providing important peer review. Strategic advice on new threats to public health or the environment, use of genomics information in risk assessment, emerging technologies for remediation or pollution prevention, science-based alternatives to command and control strategies for risk reduction, and their potential costs or benefits with respect to the environment, are among many examples of strategic advice that the SAB can collectively offer to the Agency. It is essential that SAB activities be broadened to continue to be effective in promoting the use of credible science in the work of the Agency in protecting public health and the environment.

3.3 Reinforce the Objectivity in Technical Peer Review

Under the structure to date, SAB Standing Committees often provide advice to the Agency through the EC both at the beginning of and during the development of a technical project. When the Agency returns to the SAB for a technical peer review of a completed report or other work product, the SAB generally uses some of the same experts to perform the final review as it uses to provide any initial review¹¹. An advantage of this approach is that it retains the consistency of the advice throughout the advisory process. On the other hand, this approach could lead to an appearance of scientific compromise. Accordingly, it is desirable that there be a clear distinction made, and separation between, these early advisory activities and peer review functions to the extent feasible and appropriate, in order to reinforce the importance of the objectivity in technical peer review.

3.4 Ensure Highest Quality of SAB Peer Review Reports

Another closely-related issue is the matter of how the SAB conducts its peer reviews of Agency scientific and technical documents and particularly how the SAB reviews and approves its reports before transmittal to the EPA Administrator. The procedure generally consists of assigning the task of the peer review to a "panel" in accordance with the SAB panel formation process as discussed above. An SAB review panel is either comprised of members of an SAB Standing Committees supplemented by consultants or is assembled *de novo* from the pool of SAB members and consultants.

After the SAB review panel has completed a peer review, the final draft review report is then sent to the chartered (also know as the "parent") committee under FACA (which has been the EC) for review prior to final approval. It is important to note that the role of the parent committee in this process is not actually to review the particular scientific or technical issues involved, *per se*, but rather to determine whether: (a) the peer review panel's report has

¹¹ The statutory language for the CASAC and the COUNCIL specifically mandates that their members will perform the functions of early advice and consultation as well as that of peer review of Agency documents. The SAB Staff Office will continue to ensure that these committees are structured and managed in such a way as to maintain their reputation for providing a high level of scientific advice in the development and peer review of Agency products.

addressed the charge questions; (b) there are any technical errors or omissions in the report; and/or (c) the Panel has adequately dealt with all issues in the report. Typically, two EC members have been assigned as “discussants” charged with reviewing the work of the peer review panel. In a public session, the review of the draft report is discussed by the parent committee with advice from the discussants. The parent committee usually acts in a formal manner to: (a) approve the work of the peer review panel (sometimes with minor changes) for transmittal to the Administrator; (b) send it back to the panel for further work, without revisions; or (c) reject the work of the peer review panel and ask that the panel reconsider its conclusions and return with a revised report at a future meeting of the parent committee. No members of a particular peer review panel would serve as discussants for the issue under consideration, and any members of the parent committee who participate in the peer review panel generally recuse themselves from the parent committee’s deliberations.

Some have questioned the adequacy of the *level* of the EC’s review and the expertise needed for such a review. Others have noted that EC members were typically only afforded the opportunity to review the report of a peer review panel for a very short period of time immediately prior to the EC meeting. Accordingly, some have called for the SAB to strengthen its second-level review of each SAB peer review panel’s report utilizing additional experts as needed to complement the expertise of the EC.

3.5 Ensure Flexibility to Meet Current Needs and Emerging Issues

The SAB’s workload is not optimally allocated across its Committees. The Executive Committee has devoted the majority of its time to review and approval of SAB Committee reports and recommendations. While this has been a major function, it has been important for the EC to also focus on other priorities including providing strategic advice and consultations. SAB Standing Committees have been established over the years to support EPA. It is generally recognized that Standing Committees are important to the SAB and the Agency, in that they provide both a reservoir of easily-accessible expertise and, in turn, continuity among their members — and the accompanying familiarity with the Agency’s mission and programs. In recent years, however, the workload of the SAB Standing Committees has been uneven. Some Standing Committees are underutilized due to reduced requests from EPA offices in certain environmental areas, while others are overwhelmed with time-sensitive work. Furthermore, many *Ad Hoc* Committees have been newly-created due to an increase in demand for the SAB to address emerging and cross-cutting issues. A challenge before the SAB is to be able to effectively manage an appropriate advisory agenda focusing on the most highly visible and priority environmental science issues facing the Agency in the coming years. In addition, there is a great need to periodically determine the appropriate mix of Standing and *Ad Hoc* Committees to accommodate the Agency’s current and future needs.

3.6 Achieve More Efficient and Effective SAB Operations

In the last twenty five years the SAB has effectively changed from a small enterprise with limited clients and responsibilities and duties to a large enterprise with expanded responsibilities and a much more complex operating environment. In that time, expectations of SAB clients and stakeholders have grown due to an increased level of public interest in environmental policy. In addition, there have been increases in administrative responsibilities for the SAB Staff Office in meeting logistics and reviewing ethics and conflicts of interest, to name a few. Taken together, these factors make the delivery of timely, relevant advice more difficult. To address these concerns, EPA has established new policies and procedures (*e.g.*, the panel formation process, financial disclosure form, ethics training, etc.) designed to strengthen compliance with Federal laws. In addition, the SAB Staff Office has utilized contractor support to facilitate its activities.

As with any organization that has seen large increases in its responsibilities, the SAB will need to become more efficient to maintain its effectiveness in delivering the level and quality of service needed by the Administrator and EPA programs. These issues are addressed in the implementation plan for the SAB reorganization.

4. NEW ORGANIZATION

Based on the considerations as discussed in section 3, the SAB Staff Office recommended a realignment of the SAB's structure. The structural realignment underscores the importance of different advisory roles of the SAB in order to continue being effective in promoting the development and use of science in EPA environmental decision-making. The main advisory functions of the SAB will generally include:

- providing strategic and technical advice on emerging and cross-cutting issues of great importance to the Agency;
- providing counsel early and during the development process of Agency's technical reports and other work products;
- conducting peer review of Agency's completed technical reports and other work products; and
- sponsoring workshops and seminars aimed at fostering awareness of key emerging environmental issues and conducting original studies as deemed appropriate.

The new organizational structure of the SAB is shown in Figure 2 (page 14). Examples of the types of SAB advisory activities that will be performed by the SAB organizational components under the new structure are illustrated in the text box (see Appendix D).

4.1 SAB Organizational Components

The SAB will consist of a Board and Standing and *Ad Hoc* Committees. The Board will be composed of about thirty members, with a Chair and a Vice-Chair. All Board and Committee Members will be appointed by the Administrator. The Board, which will serve as the parent advisory committee under FACA, will oversee and approve the technical reports and other work products of the Committees or Panels, as discussed below. As required by the SAB enabling legislation, a Board member will serve as the Chair of each SAB Committee or Panel, which are subcommittees of the Board. The Chairs of the two separately-chartered Federal Advisory Committees — the CASAC and the COUNCIL — will continue to be members of the Board.

In addition to this oversight role, the Board will provide the EPA Administrator and Agency Senior Leadership with strategic, forward-looking advice on environmental progress, trends and priorities, innovative approaches to meet future environmental challenges and the scientific and technical investments necessary to achieve greater and more cost-effective public health and environmental protection. This function is generally accomplished by direct consultations or through special workshops, studies and other activities. SAB Standing Committees and *Ad Hoc* Committees will further address any specific issues that are considered of great importance to the Agency, as appropriate.

(a) Council of Chairs

A Council of Chairs, comprised of the Chairs of the CASAC, the COUNCIL and each Standing and *Ad Hoc* Committee, will serve as the catalyst in facilitating open and constructive dialogue and cross-disciplinary interactions among the Committees. Through formal and informal communications, the Council of Chairs will advise the Board as a whole on matters that are considered important to the SAB as it carries out its mission.

(b) Standing Committees and Ad Hoc Committees

SAB Standing and *Ad Hoc* Committees will continue to serve as a principal source of expert knowledge for the SAB across its various scientific and technical disciplines. Standing and *Ad Hoc* Committees will provide strategic and technical advice and consultations to EPA offices through the Board on specific topics and perform reviews of the Agency's research and science strategies and plans. Certain Committees are considered "standing" in the sense that they exist as long as they are needed. *Ad Hoc* Committees will be established for shorter periods as needed to provide advice on matters that cannot be addressed by Standing Committees.

The SAB Standing and *Ad Hoc* Committees also sponsor workshops and seminars, and conduct original studies, as deemed appropriate, to further the SAB's mission in addressing specific emerging topical areas. An example of a current SAB project that falls into this category is the "*Valuing the Protection of Ecological Systems and Services*" project performed by an *Ad Hoc* Committee. EPA and the SAB will periodically evaluate the proper mix of Standing and *Ad Hoc* Committees based on the future demand and nature of anticipated environmental challenges.

(c) De Novo Review Panels

These panels will be created *de novo* for the peer review of Agency scientific and technical work products that are expected to have direct impacts on EPA major policies and risk management decisions. To ensure the objectivity in the peer review process, membership on the review panel should not have the same composition as the Standing or *Ad Hoc* Committees that may have provided early advice on the same subject matter. Each review panel should have the appropriate mix and balance of expertise and viewpoints for the topic under review as well as general knowledge and understanding of EPA's missions and programs.

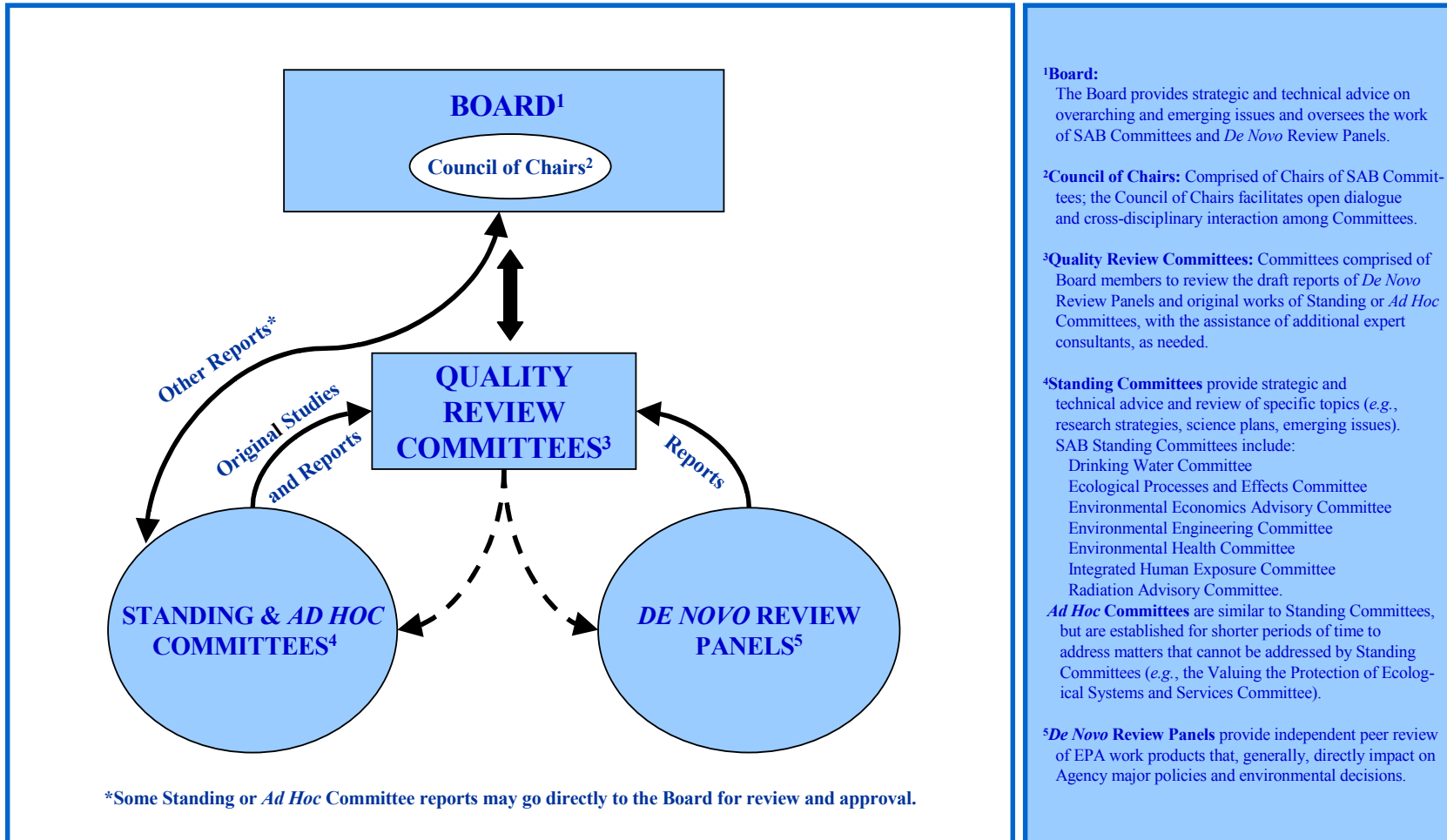
(d) Quality Review Committees

A Quality Review Committee (QRC) will be created to conduct a quality review of each *De Novo* Review Panel draft report before it is submitted to the full Board for its final review and approval prior to transmittal to the Administrator. Quality Review Committees will have a function similar to the "discussants" who were selected under the review process by the SAB Executive Committee. However, under the new structure, the SAB Staff Office Director will appoint, as needed, additional experts (three to four) drawn from the scientific community who possess the appropriate scientific and technical expertise to assist the QRC in carrying out this review. These experts will be identified during the panel formation process for each *De Novo* Review Panel.

Quality Review Committees should not repeat the work of the *De Novo* Review Panel. The Committee will conduct the review of the Panel's report in an open, public meeting consistent with FACA and determine whether:

Figure 2

EPA Science Advisory Board New Structure



- the original charge questions to *De Novo* Review Panels are adequately addressed;
- there are any technical errors or omissions in the report or issues that are inadequately dealt with in the Panel's report;
- the Panel's report is clear and logical; and
- any conclusions drawn or recommendations provided are supported by the body of the Panel's report.

Each Quality Review Committee will make its evaluation based on its own review of the *De Novo* Review Panel's draft report and the written input from the expert consultants. The outcome of a Quality Review Committee's evaluation will be one of the following:

- recommend to the Board approval of the review panel's report;
- return the report to the review panel for further work;
- reject the work of the review panel, and request a reconsideration and a revised report in the future; or
- recommend that the Board constitute an entirely new review panel.

It should be noted that the SAB Executive Committee formerly exercised the same options. The Board will consider the recommendations from Quality Review Committees and make its final decision. The addition of Quality Review Committees is intended to enhance the quality of SAB peer review reports to the Agency.

Quality Review Committees, with the assistance of additional experts, will be established to conduct a review of original works of SAB Committees and to make appropriate recommendations to the Board for its final review and approval before transmittal to the Administrator.

4.2. SAB Membership

As the SAB continues to provide credible strategic and technical advice concerning current and future environmental challenges, it is essential that the Board and its Committees encompass the breadth and depth of experience and expertise and a diversity of perspectives and demonstrates a broad knowledge and appreciation of EPA's missions and environmental programs. Board members and Committee members should constitute a distinguished body of scientists, engineers, economists and social scientists who are widely recognized for their distinguished record of scholarly and leadership achievement, as well as for their acknowledged ability to examine and analyze issues incisively and with high standards of scientific quality, objectivity and integrity. In addition, they should be known for having excellent committee-related skills and experience, including interpersonal, communication, consensus-building, and other skills in working alongside their peers in committees and advisory panels.

Board members and Committee members, and expert consultants used by the Board, are appointed by EPA as Special Government Employees and will continue to be subject to all relevant Federal requirements, including compliance with the ethics and conflict-of-interest statutes. It is important that the composition of the Board and its Committees and Panels continue to demonstrate balance in terms of the points of view represented and following current procedures outlined in Sections 2.3, 2.4, and 2.5.

(a) Board Members

The enabling legislation for the SAB mandates that the “*Board shall be composed of at least nine members, one of whom shall be designated Chairman*” [42 U.S.C. § 4365(b), emphasis added]. The enabling statute further requires that “[*t]he Board is authorized to constitute such member committees and investigative panels as the Administrator and the Board find necessary*” to fulfill its responsibilities and functions, and that “[*e]ach such member committee or investigative panel shall be chaired by a member of the Board*” [§ 4365(e), emphasis added]. In addition, since the EPA Science Advisory Board is an advisory committee chartered under FACA, the membership of the Board is required to be “*fairly balanced in terms of the points of view represented and the functions to be performed*” [FACA § 5(b)(2); and 41 C.F.R. § 102-3.30(c)].

Accordingly, the Board will consist of about thirty members. In addition to the desired attributes as described above, Board members, in particular, should have demonstrated experience and ability to integrate and cross-connect disciplines in the pursuit of public health, ecological health and environmental protection. Collectively, they should provide a broad range of scientific knowledge, expertise and experience needed to provide strategic and technical advice to the Administrator and Agency senior leadership. It is recognized that the Board’s membership and composition may change over time as new or emerging environmental challenges demand the need for different experience and expertise mix.

Board members will be appointed by the Administrator for a term of three years, renewable for one additional three-year term, for a maximum of six years’ consecutive SAB service. The Administrator will also appoint a Board Chair and Vice-Chair to serve for a two-year term, renewable for one additional term. Board members will serve in one or more of the following four roles at some time during their tenure on the SAB:

- Chair or Vice-Chair of the Board
- Chair of a Standing or *Ad Hoc* Committee
- Chair of a *De Novo* Review Panel
- Chair or a Member of a Quality Review Committee

Board Members selected for these positions will be expected to have appropriate stature and expertise in that relevant area.

(b) Council of Chairs

The Council of Chairs will consist of the Chairs of the CASAC, the COUNCIL, and the SAB Standing and *Ad Hoc* Committees. The Staff Office Director, in consultation with the Board Chair, will appoint a member to serve as the Chair for a term of two-years, renewable for an additional term.

(c) Standing and Ad Hoc Committees

Each SAB Committee will be chaired by a Board member having appropriate stature and expertise in the relevant area. The SAB’s current group of Standing and *Ad Hoc* Committees will provide the initial basis for the new SAB committee structure. It is anticipated that, over the coming years, the appropriate mix of Committees will change in terms of their advisory focus. Committee members should have the relevant experience and in-depth expertise and collectively,

the Committee should have the breadth of knowledge covering its purview. The size of each committee will vary but will typically be composed of ten to fifteen members.

SAB Standing Committee members will be appointed by the EPA Administrator for a three-year term, renewable for one additional three-year term, for a maximum of six years' consecutive SAB Committee service. *Ad hoc* Committee members will also be appointed by the Administrator, but for shorter periods of time (nominally, two-year terms) depending upon the judgment of the SAB Chair and Staff Office Director. Those serving on SAB Standing and *Ad Hoc* Committees will be designated as "Member, SAB _____ Committee."

(d) *De Novo Review Panels*

Each *De Novo* Review Panel will be chaired by a Board member having appropriate stature and expertise in that relevant area. *De Novo* Review Panel membership should reflect the relevant experience and in-depth expertise and collective breadth of knowledge required for the subject of review. Members of the Review Panel will be appointed by the SAB Staff Office Director only for the duration of the peer review. During their terms of appointment, those serving on these Panels will be designated as "Member, SAB _____ Review Panel."

(e) *Quality Review Committees*

A Quality Review Committee will be established to conduct a review of each *De Novo* Review Panel draft report and SAB Committee's original work. In order to provide management continuity for the Committee's activities, the Board Vice Chair will generally serve as the Chair of every Quality Review Committee. The Staff Office Director, in consultation with the Board Vice Chair, will appoint three Board members having the relevant expertise to serve on a given Quality Review Committee.

Each Quality Review Committee will be assisted by three to four expert consultants, as needed. These experts will generally be identified during the review panel formation process using the same criteria as those selected to serve on the review panels. These experts will be appointed by the Staff Office Director and will serve only during the course of the work of a Quality Review Committee. During their service, they will be designated as "Expert Consultant to the SAB Quality Review Committee for the review of _____."

5. BENEFITS OF REORGANIZATION

The SAB Staff Office expects positive outcomes from these changes in a number of areas. The first anticipated benefit from the SAB realignment will be an enhanced capacity to provide strategic, forward-looking advice that reflects the increased complexity that is characteristic of the environmental problems that EPA addresses. Collectively, the Board and its Standing and *Ad Hoc* Committees are a resource to the Agency in providing advice on overarching and emerging environmental challenges. Past examples of this type of activity include the development of major conceptual works for integrating science with the policy-making paradigm as was done in the SAB's "*Reducing Risk*" report of 1990 or its "*Integrated Environmental Decision Making*" report of 2000.

Standing and *Ad Hoc* Committees, with members who are knowledgeable in specific technical and/or programmatic areas (e.g., economic analysis, exposure assessment, ecology and human health assessment) will continue to provide advice and recommendations through the Board on the scientific and technical aspects of environmental problems. Specifically, these

Committees, through the Board, provide advice to EPA's Offices at the beginning or during the development of significant technical works. These Committees also provide review of important EPA technical work products such as research and science strategies and plans.

The adjustment and realignment will also strengthen the objectivity in the SAB peer review process and the quality of SAB peer review reports. *De Novo* Review Panels are generally formed to conduct independent peer reviews of Agency's technical reports and other work products that have direct impact on EPA policies or risk management decisions, particularly, those that are considered by EPA and the Board to be highly visible and controversial. Every draft report of a *De Novo* will generally undergo a critical quality review by a Quality Review Committee, with the assistance of additional expert consultants as needed. Each Quality Review Committee will report its evaluations to the Board along with recommendations for the Board's disposition of the report.

Another anticipated benefit of these organizational changes will be an enhanced capability for the Staff Office in consultation with the Board to recruit and retain the most talented individuals to serve on the Board and its Committees and Panels, as their roles and responsibilities are more clearly defined. Furthermore, these changes will provide an explicit line of authority for the Board to oversee all advisory and peer review functions.

6. IMPLEMENTATION OF REORGANIZATION

The SAB Staff Office anticipates that the major components of the new structure will be implemented during FY 2004 and additional changes could continue into FY 2005. The implementation plan:

- Articulates the process by which members are nominated for appointment to the Board, Standing Committees and *Ad Hoc* Committees;
- Describes a process for the Agency and the SAB to identify emerging and cross-cutting environmental science issues for strategic advice;
- Provides the general criteria for determining whether a peer review request will be conducted by a Standing or *Ad Hoc* Committee or by a *De Novo* Review Panel;
- Describes the process by which the Quality Review Committees will review draft reports of *De Novo* Review Panels;
- Describes the process by which the Board will approve all SAB reports;
- Includes a rationale for a mix of Standing Committees and *Ad Hoc* Committees and an articulation of which existing Standing Committees will continue in the new SAB structure and when *Ad Hoc* Committees will be established; and
- Provides a management plan to ensure timely delivery of SAB advice and reports.

The SAB Staff Office also plans to develop a series of public and internal documents that will complement the implementation of the SAB reorganization. These documents will supplement existing documentation and explain:

- (a) how the public can effectively access SAB meetings, deliberations and report writing;

- (b) how the Agency can interact with the SAB and the Staff Office on topics of interest;
- (c) the roles and responsibilities of members of the SAB and Staff Office; and
- (d) the SAB Staff Office's standard operating procedures.

APPENDICES

- A – EPA SAB Enabling Legislation (42 U.S.C. § 4365)
- B – EPA SAB FACA Charter
- C – Summary of External and Internal SAB Reorganization Consultations
- D – Examples of SAB Advisory Activities

Appendix A – EPA Science Advisory Board (SAB) Enabling Legislation

UNITED STATES CODE ANNOTATED TITLE 42. THE PUBLIC HEALTH AND WELFARE CHAPTER 55--NATIONAL ENVIRONMENTAL POLICY SUBCHAPTER III--MISCELLANEOUS PROVISIONS

§ 4365. Science Advisory Board

- (a) Establishment; requests for advice by Administrator of Environmental Protection Agency and Congressional committees

The Administrator of the Environmental Protection Agency shall establish a Science Advisory Board which shall provide such scientific advice as may be requested by the Administrator, the Committee on Environment and Public Works of the United States Senate, or the Committee on Science, Space, and Technology, on Energy and Commerce, or on Public Works and Transportation of the House of Representatives.

- (b) Membership; Chairman; meetings; qualifications of members

Such Board shall be composed of at least nine members, one of whom shall be designated Chairman, and shall meet at such times and places as may be designated by the Chairman of the Board in consultation with the Administrator. Each member of the Board shall be qualified by education, training, and experience to evaluate scientific and technical information on matters referred to the Board under this section.

- (c) Proposed environmental criteria document, standard, limitation, or regulation; functions respecting in conjunction with Administrator

(1) The Administrator, at the time any proposed criteria document, standard, limitation, or regulation under the Clean Air Act [42 U.S.C.A. § 7401 et seq.], the Federal Water Pollution Control Act [33 U.S.C.A. § 1251 et seq.], the Resource, Conservation and Recovery Act of 1976 [42 U.S.C.A. § 6901 et seq.], the Noise Control Act [42 U.S.C.A. § 4901 et seq.], the Toxic Substances Control Act [15 U.S.C.A. § 2601 et seq.], or the Safe Drinking Water Act [42 U.S.C.A. § 300f et seq.], or under any other authority of the Administrator, is provided to any other Federal agency for formal review and comment, shall make available to the Board such proposed criteria document, standard, limitation, or regulation, together with relevant scientific and technical information in the possession of the Environmental Protection Agency on which the proposed action is based.

(2) The Board may make available to the Administrator, within the time specified by the Administrator, its advice and comments on the adequacy of the scientific and technical basis of the proposed criteria document, standard, limitation, or regulation, together with any pertinent information in the Board's possession.

- (d) Utilization of technical and scientific capabilities of Federal agencies and national environmental laboratories for determining adequacy of scientific and technical basis of proposed criteria document, etc.

In preparing such advice and comments, the Board shall avail itself of the technical and scientific capabilities of any Federal agency, including the Environmental Protection Agency and any national environmental laboratories.

(e) Member committees and investigative panels; establishment; chairmanship

The Board is authorized to constitute such member committees and investigative panels as the Administrator and the Board find necessary to carry out this section. Each such member committee or investigative panel shall be chaired by a member of the Board.

(f) Appointment and compensation of secretary and other personnel; compensation of members

(1) Upon the recommendation of the Board, the Administrator shall appoint a secretary, and such other employees as deemed necessary to exercise and fulfill the Board's powers and responsibilities. The compensation of all employees appointed under this paragraph shall be fixed in accordance with chapter 51 and subchapter III of chapter 53 of Title 5.

(2) Members of the Board may be compensated at a rate to be fixed by the President but not in excess of the maximum rate of pay for grade GS-18, as provided in the General Schedule under section 5332 of Title 5.

(g) Consultation and coordination with Scientific Advisory Panel

In carrying out the functions assigned by this section, the Board shall consult and coordinate its activities with the Scientific Advisory Panel established by the Administrator pursuant to section 136w(d) of Title 7.

Appendix B – EPA SAB Federal Advisory Committee Act (FACA) Charter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY CHARTER

EPA SCIENCE ADVISORY BOARD

1. Committee's Official Designation (Title):

EPA Science Advisory Board

2. Authority:

This charter renews the EPA Science Advisory Board (SAB) in accordance with the provisions of the Federal Advisory Committee Act (FACA), 5 U.S.C. App § 9 (c). SAB is in the public interest and supports EPA in performing its duties and responsibilities. The former Science Advisory Board, administratively established by the Administrator of EPA on January 11, 1974, was terminated in 1978 when the Congress created the statutorily mandated Science Advisory Board by the Environmental Research, Development, and Demonstration Authorization Act (ERDDAA) of 1978, 42 U.S.C. 4365. The Science Advisory Board charter was renewed October 31, 1979; November 19, 1981; November 3, 1983; October 25, 1985; November 6, 1987; November 8, 1989, November 8, 1991, November 8, 1993, November 8, 1995, November 7, 1997, November 8, 1999.

3. Objectives and Scope of Activities:

The objective of the Board is to provide independent advice and peer review to EPA's Administrator on the scientific and technical aspects of environmental problems and issues. While the Board reports to the Administrator, it may also be requested to provide advice to U. S. Senate Committees and Subcommittees and U.S. House Committees and Subcommittees, as appropriate. The Board will review scientific issues, provide independent scientific and technical advice on EPA's major programs, and perform special assignments as requested by Agency officials and as required by the Environmental Research, Development, and Demonstration Authorization Act of 1978, the Clean Air Act Amendments of 1977, and the Clean Air Act Amendments of 1990.

The major objectives are to review and provide EPA advice and recommendations on:

- (a) The adequacy and scientific basis of any proposed criteria document, standard, limitation, or regulation under the Clean Air Act, the Federal Water Pollution Control Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Toxic Substances Control Act, the Safe Drinking Water Act, the Comprehensive Environmental Response, Compensation, and Liability Act, or any other authority of the Administrator
- (b) The scientific and technical adequacy of Agency programs, guidelines, documents, methodologies, protocols, and tests

- (c) New or revised scientific criteria or standards for protection of human health and the environment
- (d) Matters as required under the Clean Air Act, as amended in 1977 and 1990, through the Clean Air Scientific Advisory Committee and the Advisory Council on Clean Air Compliance Analysis
- (e) New information needs and the quality of Agency plans and programs for research, development and demonstration
- (f) The relative importance of various natural and anthropogenic pollution sources

As appropriate, the SAB consults and coordinates with:

- (a) The Scientific Advisory Panel established by the Administrator pursuant to section 21 (b) of the Federal Insecticide, Fungicide and Rodenticide Act, as amended; and other Agency FACA Committees; and
- (b) Other Federal advisory groups, as appropriate, to conduct the business of the Board.

4. Description of Committees Duties:

The duties of the SAB are solely advisory in nature.

5. Official(s) to Whom the Committee Reports:

The Committee will report with its advice and recommendations to the Administrator of the Environmental Protection Agency.

6. Agency Responsible for Providing the Necessary Support:

EPA will be responsible for financial and administrative support. Within EPA, this support will be provided by the Office of the Administrator.

7. Estimated Annual Operating Costs and Work Years:

The estimated annual operating cost of the SAB is \$2,109,028 which includes 22.7 work-years of support.

Appendix C – Summary of External and Internal SAB Reorganization Consultations

The Science Advisory Board Staff Office and the SAB Reorganization Sub-Committee held a series of internal and external consultation meetings from November 2002 through January 2003. The purpose of these sessions was not to seek consensus among participants, but rather to obtain their inputs with respect to a prospective SAB reorganization. A summary of the major points and issues identified during these meetings as follows:

1. Internal Discussions

- The Science Advisory Board is a very effective forum for peer review.
- The SAB may need more depth in specific expertise (*e.g.*, complex and controversial subjects).
- There is a generally favorable view of both Standing Committees (continuity, knowledge of EPA) and *ad hoc* Panels (depth of expertise).
- It is difficult for EPA Program Offices to interact with the SAB.
- Concerns were expressed about “quality assurance” of SAB reviews; a secondary review (*e.g.*, NAS/NRC model) was recommended, recognizing that this would likely add more time to an already-lengthy review process.
- The SAB is not “broken” — there is a good appraisal of the SAB’s work, and most comments are not related to the SAB’s structure, *per se*.
- The tension between *engagement* and *independence* was noted — *i.e.*, a tension between Agency familiarity and continuity vs. erosion of credibility and the danger of being “co-opted,” especially with respect to Standing Committees; the perception of an “entrenched” membership is also an issue.
- The SAB needs to maintain a balance between its reliance on Standing committees (continuity, institutional memory) and *ad hoc* Panels (in-depth, fresh expertise).
- The timeliness of the SAB’s reviews is a concern, although many problems relate to *management* (as opposed to structure) and can be addressed accordingly.
- The vast majority of the SAB’s work should be peer review rather than self-directed projects (80%/20%).
- Secondary (content) review of the SAB’s work is generally seen as not necessary, and would affect timeliness; it was proposed that secondary review might be conducted selectively as determined at the beginning of the review process.
- The SAB’s open, deliberative process (*i.e.*, in accordance with FACA) enhances the Agency’s credibility with public and external stakeholders.
- The importance of retaining a “mix” of both Standing Committees (continuity, familiarity with EPA) and *ad hoc* Panels (depth of expertise) was recognized.

- The SAB may need to expand its efforts in cross-cutting or “cross-media” directions.

2. Public Session, December 4, 2002

- SAB may need additional Standing Committees (*e.g.*, for data quality issues, statistical quality, social and behavioral sciences).
- SAB Committees and Panels need greater inclusion of other, less-traditional scientific disciplines (*e.g.*, social and behavioral scientists, statisticians).
- Elimination of Standing Committees entirely in favor of only *ad hoc*, *De Novo* Review Panels is an option — although both Committees and Panels are generally seen as desirable.
- Suggestions were made to “farm-out” work to outside organizations to assist the SAB in conducting preparatory work for reviews.
- The SAB provides high-quality work (reviews and reports).
- The SAB’s panel selection process seems to have improved over past 6 months.

3. Session with External Stakeholders, January 8, 2002

- The SAB exceeds the requirements of FACA with regard to its subcommittees.
- The SAB would benefit by a thorough and independent secondary (content) review of SAB products (*e.g.*, NAS/NRC model).
- The SAB is uniquely positioned to conduct peer review — it is a “core competency.”
- The Agency needs the SAB, but concerns were raised about the gradual erosion of the “impact” (*i.e.*, importance or relevance) of both the SAB and its work products.
- Self-initiated projects should be an exception in the SAB’s work slate — the SAB should be reserved for select, high-priority Agency projects rather than on consultations.
- Questions were raised concerning the independence (actual or perceived) of the SAB.
- There is a large and growing ignorance that exists as to what SAB *is* and *does* — within the Agency, on Capitol Hill, and with external stakeholders.
- The SAB should interface more with other FACA and non-FACA bodies within EPA (SAP, BOSC) and other disciplines (*e.g.*, economics, social sciences).
- Most of the SAB’s challenges are not related to its structure.

Appendix D - Examples of SAB Advisory Functions and Activities

This table describes the functions and provides examples of how previously completed or current SAB activities will be handled under the new SAB organizational structure.

Examples of SAB Advisory Activities Conducted by:		
Board	Standing & <i>Ad Hoc</i> Committees	
<p>General:</p> <ul style="list-style-type: none"> • Provide strategic advice and consultation to the EPA Administrator and senior Agency leadership. Review and approve products and advice from SAB Committees and <i>De Novo</i> Review Panels for submission to the Administrator. <p>Prior Examples of providing leadership and guidance to SAB Standing and <i>Ad Hoc</i> Committees on the development of <i>de novo</i> SAB projects:</p> <ul style="list-style-type: none"> - Reducing Risk: Setting Priorities and Strategies for Environmental Protection (1990) - Beyond the Horizon: Using Foresight to Protect the Environmental Future (1995) - Toward Integrated Environmental Decision Making (2000) <p>Prior Examples of Other Activities:</p> <ul style="list-style-type: none"> • Review of the Agency’s Science and Technology Budget (Annual Review) • Formation of <i>Ad Hoc</i> Committees (<i>e.g.</i>, on EPA’s homeland security efforts) • Consultation on Data Reproducibility as a feature of Information Disseminated by the Agency (OMB Guidelines) (2003) 	<p>General:</p> <p>Through the Board –</p> <ul style="list-style-type: none"> • Providing forward-looking and technical advice to Agency and Office leadership on issues under their purview • Peer reviewing research/science strategies or plans • Conducting consultations on topics relevant to individual Committees • Conducting <i>de novo</i> projects <p>Prior Examples:</p> <ul style="list-style-type: none"> • <i>Ad Hoc</i> Committee Review of the Contaminated Sediments Science Plan (2003) • <i>Ad Hoc</i> Committee Review of the Metals Action Plan (2002) • <i>Ad Hoc</i> Committee Review of Scientific and Technological Achievement Award Nominations (Annual Review) • Radiation Advisory Committee Review of the Multi-Agency Radiological Lab Analytic Protocols (MARLAP) Review (2002) • Environmental Health Committee Review of the Human Health Research Strategy (2002) • Environmental Economics Advisory Committee Review of the Economics Research Strategy (2003-4) • EPEC Report on Ecological Condition (2002) • <i>Ad Hoc</i> Committee on Valuing the Protection of Ecological Systems and Services (2003-4) 	<p><i>De Novo</i> Review Panels conduct peer review of major Agency scientific and technical work products¹:</p> <p>Prior Examples:</p> <ul style="list-style-type: none"> • Supplemental Guidance for Assessing Cancer Susceptibility (2003) • Trichloroethylene (TCE) Health Risk Assessment (2002) • Costs and Benefits of UST/RCRA Programs (2002) • Indoor Air Pollutant Ranking Methodology (2002) <p><small>¹Peer reviews by the SAB of Agency scientific and technical work products — particularly those that are expected to have direct impacts on EPA major policies and risk management decisions — are generally performed by <i>De Novo</i> Review Panels. In addition, Standing and <i>Ad Hoc</i> Committees also perform review functions, <i>e.g.</i>, for research/science strategies or plans.</small></p>