

*A Report by a Panel of the*

**NATIONAL ACADEMY OF  
PUBLIC ADMINISTRATION**

*For the Department of the Interior on Behalf of  
Federal Environmental and Natural Resource Agencies*



# **A GREEN COMPASS:**

*Institutional Options for Developing a  
National System of Environmental Indicators*

2007



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**December 2007**

# **A GREEN COMPASS:**

*Institutional Options for Developing a  
National System of Environmental Indicators*

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The views expressed in this report are those of the Panel and do not necessarily reflect the views of the Academy as an institution.

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## FOREWORD

*“Think big, start small and ramp up fast.”* That’s how the National Academy Panel on Environmental Indicators summarized its recommendations to the five federal agencies that asked for advice about designing a national system of indicators.

In order to effectively allocate national, state and private resources to the most critical environmental problems and identify important trends, it is clear America needs a comprehensive nationwide system of environmental indicators. While a host of federal and state agencies collect a vast amount of environmental and natural resource data, our ability to produce actionable information is limited by the fact that the data currently collected is inconsistent, incomplete and, often, simply not adequate for decision-making.

Last year, top officials of five federal environmental and natural resource agencies asked the Academy to assist an interagency team in examining institutional changes needed to select and regularly produce a national set of environmental indicators that are reliable, relevant and trusted. Over the past year, the National Academy Panel provided guidance and advice to the federal team charged with designing and evaluating institutional options. In developing its recommendations, however, the Panel recognized that organizational restructuring is difficult during a period of political transition, and, more importantly, not required in order to take the critical next steps towards realizing the vision of the interagency team. This report, therefore, offers federal policymakers practical recommendations to advance collaboration at the Federal level, as well as to systematically engage the states and other key players in order to broaden support and build momentum for the creation of a national system of environmental indicators.

We extend our appreciation to the members of the Panel for their guidance and advice to the agencies involved, and to the members of the federal interagency team for their excellent work. We also thank the representatives of the many nongovernmental organizations who provided insights and assistance, as well as state program representatives who contributed their time, expertise and perspectives to this important effort.



Jennifer L. Dorn  
President and Chief Executive Officer



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## ACRONYMS

<b>Academy</b>	National Academy of Public Administration
<b>CEQ</b>	Council on Environmental Quality
<b>DOI</b>	Department of the Interior
<b>ECOS</b>	Environmental Council of the States
<b>EPA</b>	Environmental Protection Agency
<b>GEOSS</b>	Global Earth Observation System of Satellites
<b>KNII</b>	Key National Indicators Initiative
<b>NGOs</b>	Non-governmental organizations
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>OMB</b>	Office of Management and Budget
<b>OSTP</b>	Office of Science and Technology Policy
<b>PART</b>	Program Assessment Rating Tool
<b>SUSA</b>	State of the USA
<b>USDA</b>	U.S. Department of Agriculture



## EXECUTIVE SUMMARY

In order to help meet environmental challenges in the decades ahead, the nation needs a system to identify, produce, and track environmental indicators that are reliable, relevant, and trusted. Leaders of the five federal agencies responsible for environmental protection and natural resources asked the National Academy of Public Administration (National Academy) to help design the organizational and institutional arrangements for such a system. The Academy Panel appointed to provide this assistance worked closely with a federal interagency team to identify and evaluate institutional options.

The Panel believes this Administration has an important opportunity to advance development of a national system of environmental indicators through the remainder of its term. To capitalize on this opportunity, the Panel recommends following the mantra, “*Think big, start small and ramp up fast.*”

In the Panel’s view, *thinking big* requires leaders of the five federal environmental and natural resource agencies to:

- Formally acknowledge the need for a system of crosscutting environmental indicators as a strategic management tool and commit to its development. Currently collected environmental data may meet specific federal and state program needs, but they do not provide adequate understanding of environmental conditions and variations in those conditions over time and space. Significant progress has been made in recent years, but serious gaps remain in terms of important conditions, geographic differences and changes over time.
- Build understanding and support for crosscutting indicators by explaining how they will help the nation meet environmental challenges in the years ahead. For example, allocating resources wisely to mitigate the causes of climate change and adapt to its effects reinforces the need for a system that produces comprehensive, scientifically sound, reliable and trusted indicators
- Design the system to produce indicators that are results oriented, support priority setting, track trends over time, highlight geographical differences, point the way to effective action, and measure the effectiveness of preventive, protective and remedial actions. The system must produce indicators that measure changes in national condition, such as national averages and aggregates. At the same time, it also must include indicators for regional, state, sub-state and local levels based on data that are as consistent as practicable in order to enhance diagnostic value and meet users’ needs.
- Recognize the important role that states, localities and nongovernmental organizations (NGOs) play in collecting and using environmental data. States should be considered full partners in this effort, rather than simply stakeholders, because their active participation and support is essential to success. Similarly, actively engaging NGOs will maximize the relevance and utility of crosscutting environmental indicators.

***Starting small*** requires taking incremental steps now in the right direction. To accomplish this, these federal leaders should:

- Design the system to develop “crosscutting indicators” that serve high-level policy, planning and management activities in the public and private sectors, rather than attempting to develop “headline indicators” that serve as a focal point of public discussion. Crosscutting indicators that have wide interest will gravitate naturally to become headline indicators. In other cases, headline indicators may come from state, NGO or private sector-led processes.
- Rely on the deputy directors of federal environmental and natural resource agencies to serve as a *de facto* leadership council that sets priorities for near-term action, directs an interagency team of career staff, and holds the agencies accountable. This approach may evolve into more formal structures as experience and further analysis clarify the advantages and disadvantages of alternative institutional arrangements.
- Undertake an intensive pilot to select crosscutting indicators for an issue that is nationally significant, high profile, multi-agency in scope, and of immediate interest to state and local governments and the private sector. The Panel suggests water quantity as an illustrative example. Such a pilot offers the opportunity to demonstrate the value of crosscutting indicators to Congress, the states and the private sector; test creative ways of working with states and NGOs; build mechanisms for federal agencies to work together; and clarify audience and users.

***Ramping up fast*** will require these same federal leaders to build momentum that will carry through the transition to the next administration. The Panel recommends that the deputy directors of federal environmental and natural resource agencies serve as an *ad hoc* leadership council and take the following steps:

- Provide strong support to senior career staff so they can play leading roles in advancing progress. Each major federal agency should assign and make a multi-year commitment of at least one senior career staff to serve on the interagency team.
- Develop an action plan for the next 18-36 months that sets priorities, allocates responsibilities and provides a timeline that bridges the transition to the next Administration.
- Use the Fiscal Year 2009 budget process to provide essential resources and dedicated staff for Fiscal Years 2008 and 2009. This is a critical step to building a foundation for future progress.
- More clearly identify crosscutting indicators’ users and audiences and their needs.

Taken together, these recommendations will provide the long-term vision, near-term game plan, initial resources, and necessary leadership to begin building a system of indicators on the nation's environment.

These recommendations respond to the final white paper developed by the federal interagency team and are based on the Panel's work with the team and discussions with representatives of NGOs and state environmental and natural resource programs over the past year. The Panel commends the federal team's hard work, insight and important contributions, all of which have laid a solid foundation for a national system of environmental indicators.



# CHAPTER 1

## PROJECT OVERVIEW

### BACKGROUND

For several years, the following federal entities with responsibility for the environment and natural resources have been exploring how to develop a system to select and produce indicators on the nation's environment to measure important conditions and track trends over time:

- Department of the Interior (DOI)
- Council on Environmental Quality (CEQ)
- Environmental Protection Agency (EPA)
- National Oceanic and Atmospheric Administration (NOAA)
- Department of Agriculture (USDA)

In August 2006, the heads or deputy directors of these agencies asked an interagency team of career staff to develop a white paper to identify and assess institutional options for a national system of environmental indicators. At the same time, these agency leaders decided to request the National Academy of Public Administration (Academy) to convene a Panel to review the federal team's work and offer guidance and advice.

In September 2006, the U.S. Department of the Interior (DOI), on behalf of the other four agencies, contracted with the Academy for assistance in assessing institutional options for developing and reporting national environmental indicators. The Academy convened a seven-member expert Panel in December 2006 to carry out the contract's two primary assignments:

1. Provide guidance and advice to a federal interagency team charged with developing a "white paper" to identify and evaluate institutional options.
2. Assess the strengths and weaknesses of the institutional options laid out in the white paper and provide recommendations to federal policymakers.

Appendix A provides biographical sketches of the seven Panel members and the Academy's project staff. Appendix B provides a list of the members of the federal interagency team.

The Panel and the federal team worked closely in an interactive and iterative process to identify key issues, and design and evaluate alternative institutional arrangements. Appendix C highlights key steps in the project process.

Over a ten-month period, the Panel held six face-to-face meetings. The Panel invited representatives of nongovernmental organizations (NGOs) with a strong interest in environmental indicators to participate in most of these sessions and devoted one meeting to seeking the views of state programs. Appendix D provides a list of representatives of NGOs

who participated in most of the Panel meetings. Appendix E lists key project documents that have been assembled in a separate electronic file to supplement the final report.

## **DIVISION OF ROLES AND RESPONSIBILITIES**

The Academy Panel's role in this effort differed from most projects undertaken for federal agencies. Typically, the Panel directs the work of Academy staff that performs the research and analysis that support the Panel's findings and recommendations. This project's design called for the interagency team to conduct the research and primary analysis, Academy staff to play a limited coordinating and analytic role, and the Panel to offer guidance and feedback to the federal interagency team over the course of the project and make recommendations to federal policymakers at the conclusion.

In order to assess how this division of roles and responsibilities served the project, several factors that made the project complex and challenging need to be taken into account, including the following:

- The deputy directors' original charge to the interagency federal team did not include specific goals or clear boundaries. In order to define and evaluate institutional options, the team first had to make working assumptions about the indicator system's purpose, scope, operational requirements, and relationship to nonfederal entities. These decisions involved a number of legal, policy, philosophical and political questions, which are not usually left to career staff, such as what role, if any, states and NGOs should play in decisions about the indicator system's design.
- The five federal agencies involved have different views about the ambitiousness of the changes needed in environmental data and statistical systems and different levels of interest in institutional changes to create a national system of environmental indicators. These differences contributed to difficulties the interagency team faced in including specific organizational options in the interim white paper, which was originally expected to serve as the starting point for the Panel process.
- For several federal staff, service on the interagency team was a collateral duty, which competed with their regular responsibilities, limiting the time they could make available to the project. Also, two of the five agencies' representatives on the interagency team changed over the course of the project.
- Members of the federal interagency team faced the inevitable tension between their parent agencies' existing mission and current priorities, and applying their individual knowledge, experience and judgment to design an indicator system to serve the nation's long-term interests.
- Considering the scope and complexities of the project, the timeline was very tight.

The greatest advantage of this project's division of roles and responsibilities was the frequency and thoroughness of the Panel's interaction with members of the federal team. The interactive process provided frequent opportunities for both the Panel and the federal team to test ideas, gain



a deeper understanding of issues and concerns that others perceived important, and provide informal and early feedback. As a result, this iterative and interactive process advanced thinking fairly rapidly over the course of the project.

In the Panel's view, the primary disadvantage of this model was the lack of clarity over roles. In its role of oversight and guidance, the Panel critiqued the federal team's work products, posed questions, and suggested subsequent tasks. In some cases, the federal team responded directly to the Panel's suggestions. In other cases, the federal team decided instead to reexamine underlying issues and pose questions of its own to the Panel. The Panel responded to those questions from the federal team it felt were within its realm.

The Panel found the project both challenging and gratifying and wants to commend the members of the federal interagency team for their knowledge, insight and hard work. Over the past year, the members of the interagency team have significantly advanced the concept and provided a solid foundation for a system of indicators on the nation's environment.

Under the original project concept, the Panel was intended to interact with top officials of the five federal agencies, particularly towards the conclusion of the project. Aside from participation by top officials of CEQ and DOI at its first meeting, the Panel interacted exclusively with the career staff on the interagency team. In retrospect, given the number and gravity of policy-level issues involved in designing a national system of environmental indicators, some process for the Panel and federal team to check in with the leaders of all five federal agencies in the middle of the project might have clarified agreement on key issues and parameters, thereby accelerating the process of designing and evaluating institutional options.



## CHAPTER 2

### FINDINGS AND RECOMMENDATIONS

#### NEED FOR A NATIONAL SYSTEM OF ENVIRONMENTAL INDICATORS

The Panel strongly supports the goal of developing a system to select and produce scientifically sound, reliable and trusted indicators on the nation's environment. Currently collected environmental data may meet specific federal and state program needs, but they do not provide adequate understanding of environmental conditions and variations in those conditions over time and space. Significant progress has been made in recent years, but serious gaps remain in terms of important conditions, geographic differences and changes over time.

The benefits that environmental indicators could provide only can be realized if the system is designed to meet users' current and changing needs. Environmental indicators devoid of context have little meaning, and they will prove neither widely useful nor sustainable. Scientists, researchers and agency program managers have specific interests in environmental indicators, but the litmus test for every other audience and potential user is, "Why should anyone care?" Answering this question requires clarity about which kinds of indicators will be developed, who will use them and for what purposes.

As the September 14, 2007 white paper notes, indicators are needed to deal with current problems and to recognize, prevent and adapt to emerging problems, such as climate change, in the decades ahead:

Broad and pervasive changes in the environment will result in demands for reallocations of resources and changed activities across all sectors, not just within one or two sectors or areas of management. Such decisions will benefit substantially from the availability of consistent, high quality national indicators that address the full range of environmental and natural resource conditions that are relevant to our quality of life...and based upon timely and consistent factual information that covers the nation as a whole.

#### INITIAL FOCUS ON CROSSCUTTING INDICATORS

Discussion among members of the Panel and the federal interagency team led to grouping environmental indicators in three tiers, a classification that gives useful context to system design. The Panel offers the following terms to facilitate discussion by federal policymakers:

- *Program-specific indicators* measure phenomena needed to design, manage and assess the performance of specific federal and state programs.

- *Crosscutting indicators* measure phenomena related to priority issues that encompass the mission of multiple federal programs and agencies and other levels of government and serve the high-level policy, planning and management activities that address them.
- *Headline indicators* measure phenomena that are highly accessible and visible in the public domain and form the parameters of common public knowledge and discussion.

The Panel fully appreciates the ultimate value of and need for headline indicators. A relatively small set of highly accessible indicators that are scientifically sound, broadly relevant and widely trusted will provide a common frame of reference to help the American public understand and discuss important environmental issues. However, the Panel strongly recommends that federal agencies initially focus on creating an indicator system to select and produce crosscutting indicators. Crosscutting indicators are the next logical step forward, lend themselves to federal agencies' strengths, and pose a lower risk of producing lengthy debate than headline indicators. Those crosscutting indicators that prove accessible and of wide interest will gravitate naturally to become headline indicators. In some cases, headline indicators may come from state indicators that have gained broad currency or from NGO or private sector-led processes.

Indicators that provide a single measure of national condition, such as an average or aggregate, are valuable and necessary for certain kinds of national decision making, but not sufficient for the range of needs identified. To satisfy the needs and interests of various potential users and to enhance diagnostic value, indicators must be produced for regional, state, sub-state and local levels based on data that are as consistent as practicable. For most people, the significance of trends in the quality of the nation's rivers pales in comparison to such questions as, "Is my river improving?" and "What strategies have proven successful in cleaning up other rivers that may help us improve our water quality?" Any indicator system must be designed to provide both a useful picture of differences and changes across the nation and a good understanding of variations in environmental conditions to learn from and share successful approaches as well as identify conditions that might be considered problematic.

To meet the needs of potential users, crosscutting indicators must be results oriented, support priority setting, track trends over time, highlight geographical differences, point the way to effective action and measure the effectiveness of preventive, protective and remedial actions. Keeping these attributes in mind will help to clarify the indicator system's potential users and key audiences.

A system of indicators on the nation's environment cannot succeed without the states' and localities active participation and support. States play an important role in collecting and using environmental data and in defining and using indicators for policy, planning, and management as well as public engagement. At the same time, they are leery about indicators that are selected without their participation, especially when they consider externally developed indicators to have questionable relevance or merit. For a national system to succeed, federal agencies must include states as full partners, not merely stakeholders.

Over the past few years, NGOs have played a major role in bringing leaders from different sectors together to explore common ground and set priorities related to environmental indicators. In the future, NGOs can make continuing contributions by helping to define crosscutting indicators, “nominating” headline indicators, helping state and local agencies collect and analyze data consistently, consolidating data for easy access, and participating in the dissemination of data and indicators. Federal agencies need to engage NGOs fully in developing a system for crosscutting environmental indicators.

There is a clear need for crosscutting environmental indicators that highlight differences in time and space. Nonetheless, a number of factors work to discourage their development:

- Congressional committees authorize and fund programs with a careful eye to the boundaries of their jurisdiction and view executive agencies through that prism.
- Well-managed agencies focus on mission accomplishment while crosscutting indicators, by definition, span program boundaries and frequently transcend agency missions.
- The Program Assessment Rating Tool (PART), the U.S. Office of Management and Budget’s (OMB) mechanism for implementing the Government Performance and Results Act of 1993, tends to focus on individual programs, not crosscutting goals. When OMB does examine agencies’ shared goals, agencies fear that OMB seeks that information to reduce funding levels.
- Current funding limitations, which make it difficult for federal and state agencies to meet existing environmental monitoring and reporting requirements, present hard choices about what to do first and what to forego when developing crosscutting indicators.

Policymakers must grasp the magnitude of these challenges prior to charting future courses of action.

## **ASSESSMENT OF INSTITUTIONAL ARRANGEMENTS**

The Panel fully supports the white paper’s conclusion that institutional and organizational changes must be made to implement and sustain a system of environmental indicators over time. This section highlights important lessons learned and insights gained to augment the white paper and provide a foundation for further analysis.

### **Legal Authority**

In the near term, the Panel believes that federal agencies can make significant progress in developing a system of environmental indicators using existing authority. Although not essential, an Executive Order would signal the President’s support and serve to clarify the roles and responsibilities of individual federal agencies and the charge to the interagency career team.

In the long term, the Panel recognizes the value of congressional approval and support to ensure the ultimate success of an initiative of this scope and importance. Among other things, effective long-term implementation of crosscutting indicators likely will require modifying existing data

collection and monitoring activities. In the Panel's view, statutory authorization should be seen as a positive contributor to achieving the long-term goal of an effective indicator system, not as an impediment slowing immediate forward movement.

### **Composition of the Leadership Body**

Five conceptual alternatives have been identified for the composition of the leadership body:

1. a public-private partnership, composed of a mix of federal officials and non-federal representatives from the public and private sectors
2. an intergovernmental leadership council composed of federal and state government representatives
3. a federal leadership council composed of federal policymakers at the political appointee level
4. a body composed of political appointees and career federal managers, such as the Forum on Child and Family Statistics
5. a body comprised of career federal managers

As explained in the preceding section, the Panel recommends that deputy directors of the five key federal agencies act as a *de facto* leadership council in the near term, similar to the third alternative above. The strong political leadership that they can provide is critical to building momentum over the next year. This approach likely will evolve over time to a permanent body that includes broader membership. To help guide this evolution, the Panel offers the following assessments of the alternative membership models.

- Although the public-private partnership model could beneficially engage representatives from a broad range of sectors, the authority to make decisions about key indicators that ultimately influence the allocation of federal resources and priorities is most appropriately housed within government, with appropriate checks, balances and mechanisms to secure outside advice and input regarding the design, operation and evolution of the indicator system.
- The benefits that accrue from meaningfully engaging states call for further evaluation of an intergovernmental leadership council. Successful intergovernmental efforts in this realm, such as the Wildfire Leadership Council and the Environmental Information Exchange Network, have won praise from federal agencies and states alike. The Panel notes numerous alternatives to the white paper's proposal to divide power in the leadership council equally between federal agencies and states, with equal membership and federal and state co-chairs. Concerns about the legality and appropriateness of ceding authority for decisions affecting the allocation of federal funds to non-federal employees could be addressed through variations, such as the following:
  - Have a single federal chair and limit the number of state representatives to a minority.
  - Give states equal membership on the Leadership Council but without voting rights.

- Allow state representatives to chair committees working on the development and nomination of individual indicators, subject to the approval of the federal members with voting power.
- Making the leadership body's membership a mix of political appointees and career federal staff, akin to the Forum on Child and Family Statistics, would likely bolster the credibility of decisions. Procedures would need to be developed to determine the category of representation for different agencies and ensure equal power of members in voting. The Panel attributes the success of the Forum on Child and Family Statistics largely to the common vision and shared desire that motivated agencies to come together, a dynamic that needs strengthening across relevant agencies for an environmental indicator system.
- A leadership body composed entirely of top career officials would offer an efficient mechanism for coordinating implementation. Yet the gravity and sensitivity of the choices involved in launching an environmental indicator system, coupled with the need for a strong stimulus to move beyond the status quo, would seem to call for more direct involvement by political appointees as a means to ensure the Administration's investment in the system.

### **Where to Anchor the Leadership Body**

Four options have been identified for anchoring the Leadership Council or other primary entity: the U.S. Office of Management and Budget (OMB), Council on Environmental Quality (CEQ), Office of Science and Technology Policy (OSTP) or another federal agency. As the white paper discusses, the central challenge is vesting the entity with sufficient clout to ensure effective coordination by multiple agencies while providing checks and balances to protect against the reality or appearance of political manipulation.

- The advantage of making OMB the locus for anchoring the indicator system is its unmatched clout. The disadvantage is the perception of some federal agencies and some states that OMB's primary focus is on cutting federal spending and reducing the information collection burden.
- The role initially envisioned for CEQ by the National Environmental Policy Act seems to make it a logical locus. However, CEQ has not fulfilled that vision in any Administration and its historic role as the President's policy advisor carries strong political associations that would require insulation or checks and balances to protect the indicator system's credibility. In addition, the political priorities of CEQ's leadership on behalf of the President, especially at the beginning of a new Administration, might work to eclipse attention to the design of an environmental indicator system.
- Although time did not permit its full consideration, OSTP might deserve further consideration. For example, its Committee on Environment and Natural Resources has experience in coordinating interagency efforts. However, OSTP lacks the political imperative of CEQ and its mission is focused primarily on science and technology.

- Designating a lead federal agency to anchor the central body simplifies accountability. However, other agencies may resent their “junior status” and might be less inclined to fully commit to the indicator system

### **Alternative Arrangements for Chair, Executive Director and Staff**

The white paper lays out variations for the chair, executive director, and staff for the leadership body and the executive management team. Aside from noting the potential pitfalls in dividing authority between two co-chairs, the Panel believes that any of the arrangements can operate effectively under the right circumstances and with the right people. The key challenges are strong and sustained leadership and an effective transition strategy, including consultation with Congress.

### **Mechanisms for External Input and Engagement**

The white paper proposes a formal advisory committee as the primary mechanism for including NGOs and private sector entities whose involvement and support are important to the indicator system’s success. Federal agencies have extensive experience with the strengths and limitations of federal advisory committees. As the white paper points out, there are many less formal yet effective ways to engage and secure the input of outside experts and stakeholders, including aggressively scheduled open meetings and parallel state efforts, as done by the *Healthy People* effort.

In designing mechanisms to engage non-federal interests, federal agencies need to clarify whether the information being sought is primarily technical in nature or related more to the positions and interests of stakeholders, and whether the primary objective is to reach consensus among this outside group or fully understand their different points of view.

In any event, the Panel emphasizes the ultimate success of a system of indicators on the nation’s environment depends on federal agencies actively and extensively engaging state and local officials, NGOs, corporations, researchers, communities, and foundations. To establish an effective system of crosscutting indicators, federal agencies must make external engagement a core, not peripheral, strategy.

## **RECOMMENDATIONS**

The Panel believes this Administration has an important opportunity to advance development of crosscutting indicators through the remainder of its term. To take advantage of this opportunity, the Panel recommends that federal agencies follow the mantra, “***Think big, start small and ramp up fast.***”

The Panel agrees with the white paper’s conclusion that new institutional arrangements are needed to coordinate efforts to select environmental indicators; harmonize data collection; produce statistics and indicators that are consistent over time, across places and at an appropriate scale; and make environmental statistics and indicators easily accessible. That said, the Panel



believes that advancing progress on an environmental indicator system in the near term does not require immediate organizational and structural changes. This judgment is based on two factors:

1. The white paper's analysis of the strengths, weaknesses and tradeoffs of institutional options and sub-options has not progressed sufficiently to provide a foundation for well-informed decisions about permanent organizational changes.
2. Institutional arrangements and organizational changes made in the next few months may not bear fruit in time to win sustained support by the next Administration.

Even more important is the need for sustained top policy and political leadership to move the interagency environmental indicator effort forward, set a challenging but realistic timetable for implementation, energize a cadre of senior career staff from multiple agencies, and commit the resources needed in Fiscal Years 2008 and 2009 to build momentum.

Given these dynamics, the Panel recommends that the deputy directors of the five federal environmental and natural resource agencies act as a *de facto* national leadership council, setting priorities for immediate action and meeting quarterly to track progress and hold agencies accountable. **Specifically, the Panel recommends that the deputy directors:**

- **Provide strong support to senior career staff to play leading roles in advancing progress.** Over the past year, the white paper process was hampered by the fact that many staff served on the interagency team as a collateral duty. The Panel recommends that the deputy directors ensure that each major federal agency involved makes a multi-year commitment of senior career staff to this priority initiative. Depending on the relevance of each agency's mission, staffing commitments may be as high as a dozen people but should not be less than one full-time employee. The deputy directors should designate a team leader to coordinate the interagency team's efforts and consider using the Intergovernmental Personnel Act to augment federal staff with the "best and brightest" staff from state, local, and tribal agencies.
- **Develop an action plan for the next 18-36 months.** This action plan should set priorities for next steps, provide direction for the interagency team, and allocate responsibility among federal agencies. The action plan should include a timeline that extends into Fiscal Year 2009 to bridge the transition to the next Administration.
- **Undertake an intensive pilot to develop crosscutting indicators for an environmental issue that is nationally significant, high profile, multi agency in scope, and of immediate interest to state and local governments and the private sector.** The Panel suggests water quantity as a candidate issue that seems to meet the criteria. Such a pilot offers the opportunity to demonstrate the value of crosscutting indicators to Congress, states and the private sector; test creative ways of working with states and NGOs; build mechanisms for federal agencies to coordinate; and clarify audience and users.
- **Use the Fiscal Year 2009 budget process to provide essential resources for Fiscal Years 2008 and 2009.** The deputy directors should highlight this initiative in the President's Fiscal Year 2009 budget and identify dedicated staff and funding for its implementation for both years. Developing cost estimates is beyond the Panel's scope,

though it urges agency leaders to understand that effectively engaging state and local governments and the private sector in the pilot requires resources to convene the participants and cover their travel costs. Resources for the pilot and other activities might seem sufficiently modest to fund costs out of each agency's base, yet formally dedicating resources to this interagency effort would signal its importance and avoid the tensions inherent with initiatives that are implemented "out of hide." Further, requesting funds in Fiscal Year 2009 will help build a foundation for continued progress in the next Administration to sustain momentum.

- **Better identify the needs of key users and audiences for crosscutting indicators.** The white paper offers a good starting point for building a compelling case for crosscutting indicators, but additional work is needed to clarify key users and audiences, understand their needs, identify channels of communication and develop messages that resonate widely. Key audiences and users include federal and state policymakers and senior managers, state and local elected officials, Congress, private companies, investors, community groups and foundations. Reaching these audiences requires a new term that speaks more invitingly than the acronym "SINE." An example of a framework that might resonate with many audiences is *Healthy People, Healthy Animals, Healthy Places*. To be compelling, the case for crosscutting indicators also must offer specific examples of the limitations of existing data, statistics and indicators, and highlight their relevance and utility in addressing problems of wide concern. Once articulated and packaged, a persuasive case must be delivered to key audiences at every opportunity by both political and career staff from federal agencies as well as state, NGO and private sector representatives.
- **Build understanding and support for a system of environmental indicators.** The Panel recommends that the deputy directors explicitly acknowledge the need for a system of environmental indicators as a strategic management tool and explain how these indicators will help the nation meet environmental challenges in the years ahead. The Fiscal Year 2009 budget process provides a ready vehicle to reach the Congress.

Taken together, these steps will provide the long-term vision, near-term game plan, initial resources and leadership to begin building a system of indicators on the nation's environment and stand the best chance of carrying momentum through the upcoming transition.

The Panel notes that issuing an Executive Order to formalize the deputy directors' leadership council and the interagency team of career officials would clearly signal the President's support. However, none of the steps we recommend should be delayed pending issuance of an Executive Order.

## PANEL AND STAFF

## PANEL

**Hermann Habermann, *Chair\****—Former Deputy Director and Chief Operating Officer, U.S. Census Bureau. Former Director, Statistics Division, United Nations. Former positions with U.S. Office of Management and Budget: Deputy Associate Director for Veterans Affairs and Personnel Management; Deputy Assistant Director for Management. Former Director of Computer Sciences and Telecommunications, U.S. Forest Service.

**A. James Barnes\***—Professor and former Dean, School of Public and Environmental Affairs, Adjunct Professor of Law, Indiana University. Former positions with U.S. Environmental Protection Agency: Deputy Administrator; General Counsel; Special Assistant to Administrator/Chief of Staff. Former General Counsel, U.S. Department of Agriculture; Partner, Beveridge & Diamond; Campaign Manager, Governor William G. Milliken (Michigan); Assistant to Deputy Attorney General and Special Assistant/Trial Attorney, U.S. Department of Justice.

**Sandra Batie**—Elton R. Smith Professor in Food and Agricultural Policy, Department of Agricultural Economics, Michigan State University. Vice Chair, Board of Directors, Winrock International; Past President, American Agricultural Economics Association and Southern Agricultural Economics Association; Member, Food and Agricultural Committee, National Planning Association.

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**Ronald C. Moe\***—Former Specialist in American Government, Congressional Research Service, Library of Congress; Senior Policy Advisor, Cost of Living Council; Senior Policy

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**STAFF**

**J. William Gadsby\***—*Vice President for Academy Studies*. Former Director, Management Studies Program, National Academy of Public Administration. Former positions with U.S. General Accounting Office: Senior Executive Service; Director, Government Business Operations Issues; Director, Federal Management Issues; Director, Intergovernmental and Management Issues. Former Assistant Director, Financial Management Branch, U.S. Office of Management and Budget.

**Don Ryan**—*Project Director*. Academy projects include review of the National Park Service's National Historic Preservation program and evaluation of the Environmental Protection Agency's CARE program. Former positions: founder and executive director, Alliance for Healthy Homes, a national public interest policy and advocacy organization; Professional Staff, U.S. House of Representatives Committee on Appropriations; Program Analyst, U.S. Department of Transportation, Office of the Secretary, Budget and Program Evaluation; Program Analyst, U.S. Coast Guard; Commissioned Officer, U.S. Coast Guard Reserve.

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**Mary M. Appah**—*Research Associate and Staff Liaison to the Standing Panel on Social Equity in Governance*. National Academy of Public Administration. Former Associate Staff Analyst, NYC Department of Housing Preservation and Development. National Urban Fellow 2004, NYC Department of Youth and Community Development, City University of New York, Bernard M. Baruch College, School of Public Affairs. Former Program Associate, State Department International Visitors Program, Meridian International Center.

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## APPENDIX A

**Louis Jim**—*Research Associate*. Former legislative staff, Office of Representative Jim Turner, U.S. House of Representatives. Former internships: Capitol Solutions Government Relations Consultants, LLC; Select Committee on Homeland Security, U.S. House of Representatives; Democratic Congressional Campaign Committee; British Labour Party. Bachelor of Arts, Political Science, Master of Public Administration, American University.

**Martha S. Ditmeyer**—*Senior Administrative Specialist*. Staff for a wide range of Academy studies. Former staff positions at the Massachusetts Institute of Technology, Cambridge, MA and the Communication Satellite Corporation, Washington D. C. and Geneva, Switzerland.



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## KEY STEPS IN THE PROJECT PROCESS

This appendix highlights key steps in this project process, which extended from January 2007 to December 2007. Appendix E provides a listing of key project documents that have been assembled in a separate electronic file to supplement the final report.

### Interim White Paper

On February 9, 2007, the coordinator of the federal team forwarded to the Academy the interim white paper, titled “Designing Institutional Options for a System of Indicators on the Nation’s Environment (Draft Revision 02.09.07).” Although the interim white paper stopped short of proposing specific institutional options, it served as the foundation and starting point for the Panel process. The interim white paper is included as electronic file A.

### February 16, 2007 Panel Meeting

On February 16, 2007, the Panel held its first meeting, which was attended by members of the federal interagency team and representatives of NGOs interested in environmental indicators. In addition, James Connaughton, Chairman of the Council on Environmental Quality, and Lynn Scarlett, Deputy Secretary of the Department of the Interior, attended the Panel meeting and emphasized the importance of the project and shared their expectations with the Panel. On February 21, the Panel provided its feedback in a memorandum to the federal team (electronic file B), which called for development of case studies to summarize and draw lessons from a number of recent indicator efforts.

### Case Studies

Electronic file C includes copies of the following ten case studies of recent indicator systems and models of interagency coordination, which were developed as background for the Panel’s second meeting.

- EPA’s Report on the Environment
- Forum on Child and Family Statistics
- Global Earth Observation System of Satellites (GEOSS)
- Healthy Forests/Wildfire Leadership Council
- Healthy People 2010
- USDA’s Environmental Benefits Index
- The Heinz Center “The State of the Nation’s Ecosystems”
- Key National Indicators Initiative (KNII), now known as State of the USA (SUSA)
- NatureServe
- National Center for Education Statistics

Federal staff developed the first six case studies listed. The remaining four case studies were developed by The Heinz Center, KNII/SUSA, NatureServe, and Academy staff (National Center for Education Statistics).

In addition to these case studies, the Panel and the federal team identified a number of other promising models for environmental indicators and interagency and intergovernmental coordination over the course of the project, including: the Environmental Information Exchange, the Federal Geographic Data Committee, the National Invasive Species Council and the Rangeland Roundtable.

### **March 16, 2007 Panel Meeting**

On March 16, 2007, the Panel held its second meeting, which was attended by members of the federal team and representatives of interested NGOs. In the morning session, the Panel and other participants discussed and drew lessons from the case studies. During the afternoon session, the Panel, federal staff, and NGO representatives brainstormed a number of alternative institutional options at a conceptual level. In a memorandum dated March 27, 2007, the Panel provided feedback from the March 16 meeting to the federal team (electronic file D). This memorandum requested that federal staff develop 2-3 page descriptions of seven institutional options for consideration at the Panel's May meeting, offered a template to provide a consistent format, and invited the agencies to propose additional options. The Panel committed to working with Academy staff to evaluate and refine the evaluation criteria proposed by the interim white paper for discussion at the May meeting.

### **Descriptions of Initial Institutional Options**

Electronic file E provides descriptions of eight initial institutional options, which were developed by federal staff and NGO representatives. Rather than contributing to describing the institutional options suggested by the Panel or proposing some other option, EPA submitted three principles to guide system design (electronic file F).

### **Panel Suggestions on Criteria for Evaluating Institutional Options**

By memorandum dated April 23, 2007, the Panel provided to the federal team its suggestions for simplifying and reorganizing the interim white paper's proposed criteria for evaluating institutional options (electronic file G).

### **May 3, 2007 Panel Meeting**

Because the Panel felt strongly that states need to be actively involved in developing a national system of environmental indicators, it devoted its afternoon meeting on May 3, 2007 to meeting with and hearing from representatives of ten different state environmental and natural resource programs. State representatives emphasized that federal agencies should treat states as full partners in developing a national system of indicators, rather than as "stakeholders." Appendix H includes the May 9, 2007 letter from Steve Brown, Executive Director of The Environmental Council of the States (ECOS), which provided feedback on the specific options discussed at the May 3 Panel meeting as well as the larger role that states desire in developing a national system of environmental indicators.

### **May 4, 2007 Panel Meeting**

On May 4, 2007, the Panel met with the members of the federal team and interested NGO representatives to discuss the institutional options that had been described and next steps. By memorandum of May 17, 2007 (electronic file I), the Panel provided its feedback to the federal team on the May 3 & 4 meetings. To prepare for the next Panel meeting in June, the Panel requested that federal staff 1) consolidate the evaluation criteria, and 2) describe the most promising institutional options with a consistent level of detail, generally parallel structure, and even-handed treatment.

### **June 11, 2007 Panel Meeting**

In early June, the federal team suspended work on fleshing out institutional options to grapple with numerous underlying questions. Electronic file J provides the questions the federal team posed to the Panel on June 7, which relate to the purpose of the indicator system; the types of indicators to be produced, such as “headline” versus “crosscutting” indicators; audience and demand; the most effective role for states, localities and NGOs; and staging considerations. On June 11, 2007, the Panel met in executive session to consider the federal team’s questions and to discuss what guidance to offer. Electronic file K provides the Panel’s July 6, 2007 feedback and suggestions to guide the federal team’s development and evaluation of institutional options and revisions to the final white paper.

### **Final White Paper**

Over the course of the summer of 2007, federal staff considered various modifications to the institutional options previously identified. Electronic file L includes descriptions of the additional options developed. On September 14, 2007, DOI forwarded the final white paper to the Panel (electronic file M). The final white paper presents a “basic option,” identifies several variations that address concerns raised through the interagency review process, and provides limited analysis of the advantages and disadvantages of alternative arrangements.

### **September 24, 2007 Panel Meeting**

On September 24, 2007, the Panel held its final meeting to discuss with the federal team and NGO and state representatives the white paper’s basic option and variations. Additional issues that were not addressed by the final white paper but had been raised through the Panel process were also discussed and examined for relevance.

### **Advance Copy of Panel Report and Recommendations**

In response to federal agencies’ request to expedite delivery of its recommendations in time for consideration in the Fiscal Year 2009 budget process, the Panel submitted an “Advance Copy” of its final report and recommendations on October 23, 2007 (electronic file N). In addition to responding to the final white paper, the Panel’s recommendations draw on its work with the federal team, NGOs, and state representatives over the course of the project.

**Final Panel Report**

This final report fulfills the Academy's responsibilities under its contract to the Department of the Interior. This report includes the substantive findings and recommendations provided in the Advance Copy and describes key steps in the Panel process and its interactive work with the federal team.

**REPRESENTATIVES OF NONGOVERNMENTAL ORGANIZATIONS  
WHO PARTICIPATED**

**The Heinz Center**

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Marty Spitzer, Senior Fellow

**National Council for Science and the Environment**

Peter Saundry, Executive Director

Kelly McManus, Program Assistant

**NatureServe**

Bruce Stein, Vice President and Chief Scientist

**State of the USA**

Chris Hoenig, President and Chief Executive Officer



**LISTING OF ELECTRONIC BACKGROUND MATERIALS**

- A Interim White Paper 2/10/07
- B Feedback from the 2/16/07 Panel Meeting
- C Case Studies
  - 1. EPA’s Report on the Environment
  - 2. Forum on Child and Family Statistics
  - 3. Global Earth Observation System of Systems (GEOSS)
  - 4. Healthy Forests/Wildfire Leadership Council
  - 5. Healthy People 2010
  - 6. USDA’s Environmental Benefits Index
  - 7. The Heinz Center
  - 8. Key National Indicators Initiative (KNII), now known as State of the USA (SUSA)
  - 9. NatureServe
  - 10. National Center for Education Statistics
- D Feedback from the 3/16/07 Panel Meeting
- E Description of Initial Options
- F Principles Recommended by EPA
- G Panel Suggestions on Criteria for Evaluating Institutional Options
- H Steve Brown 5/9/07 letter providing ECOS feedback to Panel
- I Feedback from the 5/3/07 and 5/4/07 Panel Meetings
- J Federal Team’s 6/7/07 Questions to the Panel
- K Feedback and Guidance from the 6/11/07 Panel meeting
- L Description of Additional Options
- M Final White Paper 9/14/07
- N Advance Copy of *a Green Compass* 10/23/07







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