

**San Francisco Environmental Indicators Workshop**  
**Oakland City Hall, Oakland, CA**  
**January 26, 2005**

**Workshop Summary Report**

A workshop for the San Francisco National Estuary Program (SFEP) entitled *Environmental Indicators Workshop* was held at the Oakland City Hall on January 26, 2005. Battelle supported development of the meeting with the San Francisco Estuary Program (SFEP) and San Francisco Estuary Institute (SFEI). The participant invitation letter announcing the meeting as well as the meeting agenda are included in Appendix A. Environmental professionals from federal, state, and non-profit organizations attended the workshop. The list of participants is included as Appendix B. Dr. Michael Connor, San Francisco Estuary Institute (SFEI) and Dr. Carlton Hunt, Battelle, facilitated the meeting.

The primary focus of the workshop was to bring together individuals who are currently conducting monitoring, research and assessment programs in the Bay area and high-level managers that use monitoring information to make decisions to discuss the process of developing indicators for the SFEP monitoring program. Ms. Marcia Brockbank, Director of SFEP, opened the meeting with a brief introduction and statement of the objectives. Ms. Brockbank identified four main objectives for the workshop including:

- Developing a statement describing the collective vision for how indicators will be used in the Bay-Delta Region;
- Defining terms and providing background information to high-level managers;
- Developing a framework strategy agreement that clearly outlines how data generators and data users will work together; and,
- Identifying potential funding sources and commitments of staff time.

The workshop was funded by the U.S. Environmental Protection Agency (EPA) and SFEP with technical and logistical support from SFEI, The Bay Institute, and Battelle.

**Workshop Overview**

The workshop was held on Wednesday, January 26, 2005. During the morning session, background informational presentations were given by members of the SFEP, SFEI, State Water Resources Control Board (SWRCB), and Battelle. Copies of all of the PowerPoint presentations are included as Appendix C. All workshop materials were distributed to the participants prior to or during the meeting. These materials are provided in Appendix D. Workshop highlights, a description of key presentations, and a listing of the suggested next steps are detailed below in the subsequent sections of this meeting summary.

**Workshop Opening Remarks and Presentation**

Ms. Marcia Brockbank of the SFEP and Mr. Grant Davis of The Bay Institute opened the meeting with an introduction and informed the group of the efforts leading up to the indicators workshops. Ms. Brockbank continued by stating the necessity to build consensus on the importance of, and need for scientifically valid, leading environmental indicators. She stated that it will be critical to

develop a framework for interagency cooperation and collaboration on the development, refinement and use of environmental indicators, and the importance of attracting commitments of ongoing financial and programmatic support.

Dr. Michael Connor followed the opening remarks with an overview of the workshop. He stated that for the indicator regional development process to be a success, a vision for the process must be developed including feedback from the participants. He reiterated the goal of the workshop was to develop a consensus on the importance and need for indicators. He also re-stated the need for commitment from the participating agencies. Dr. Connor noted that the participants provided a cross-section of interested parties from both federal and state agencies, and that the group as a whole should be able to reach consensus of many key issues.

**Perspectives on Indicators, presentation given by Carlton Hunt, Battelle**  
**(Appendix C)**

Dr. Hunt followed with a discussion of the workshop charge. He focused on the reasons for coordination among monitoring programs and indicator development. He re-enforced the importance of indicators to track the status of an area and stated that they are a necessary part of any coordination effort. He also suggested the most important steps in the process are to develop an organizational framework and set of indicators. Currently there is no national legislative mandate to develop indicators, nor are there mandates to coordinate indicator development. However, many indicator initiatives are being conducted at national and regional scales. Dr. Hunt indicated the Gulf of Maine region was one model for a regional indicator development effort. A two-year process was followed to develop a coordinated monitoring framework and regional indicators although the program is not yet in the measurement mode. He suggested that the regional indicator process should start by identifying a set of general issues and then become more specific to focus on the regions needs.

Dr. Hunt also focused on the need for indicators as a means to communicate to the public, scientists, and managers the status of a given ecosystem. Furthermore, he stressed that indicators allow scientists and managers to focus monitoring programs on key parameters, confirm what is already known about a system, and to synthesize and integrate their efforts.

Dr. Hunt continued by presenting a process for developing a coordinated indicator development effort. He conveyed that a coordinated effort provides scientists and managers with the ability to identify and address data gaps and offers an avenue to develop a systematic approach. A coordinated effort was also suggested as a way to satisfy a range of interests, answer many questions, and address the most important issues facing an ecosystem. The process calls for a champion who is willing to provide time and energy. Furthermore, it is crucial to include managers early in the development process rather than later. This allows managers an opportunity to develop interest and invest in the effort. In response to questions, he noted that persistence in informing the public as well as education in the school systems are two valuable ways to communicate the effort to the public.

**Proposal for Environmental Indicator Collaborative, A California Water Board**  
**Perspective, presentation given by John Norton, State Water Resources Control Board**  
**(Appendix C)**

Mr. John Norton presented a proposal for environmental indicator collaboration to the participants. He mentioned that he is often asked the question “How good is the water quality?”

Many in the workshop noted that this is a hard question to answer. Importantly, participants identified the need to communicate the answer to both environmental managers and the public clearly.

Mr. Norton also discussed why the Water Board needs to develop indicators. The Water Board felt it was necessary to manage for environmental results; therefore, focus questions needed to be identified that would directly measure results, and that indicators need to be developed to answer the questions. Mr. Norton stated that the Water Board is able to communicate to the public through an environmental report card that addresses several issues. One successful effort noted was the environmental report card produced by *Heal the Bay*, a Santa Monica-based environmental advocacy group, which presented indicators related to water contact recreation that the public could identify with on a personal level. Further noted in the presentation was the need for indicators to support three levels of a system and that all levels must weave together to be successful. The three levels were:

- Project - What is the water quality of the river?
- Watershed/region - How is the bay doing?
- Statewide - What is the state of the state's watersheds?

Mr. Norton then discussed how a collaborative effort would allow regional boards to follow the same process in monitoring and reporting data. He stated that there is a critical need for a state-level database of monitoring data for programs to share. Buy-in from scientists, local and state agencies, as well as other key stakeholders was also identified as key to the success of the partnership.

Mostly, Mr. Norton discussed the reasons why the Water Board would like to establish a partnership for the process of developing indicators. Their primary need for indicators is to develop assistance with State and regional boards in sharing data, efficiency in addressing goals, and establishing a common language adequate to communicate to managers. He conveyed that the goal of the collaborative is to establish one voice for progress. A stronger voice is needed to communicate meaningful indicators at the national level, such as the EPA. Moreover, he acknowledged that development of meaningful indicators is important in contrast to choosing indicators to satisfy requirements. There was an initial consensus from the group that a collaborative effort was needed. However, it was noted that more discussions were necessary to define the details of the effort and the partnership.

### **Implementing a Regional Monitoring and Indicators Initiative**

During lunch, a small work group formed to identify the focus of the afternoon session. Dr. Hunt presented the findings of the small work group to the workshop participants. He indicated that he was working under the assumption that the participants were in general agreement that the group must move forward on a collaborative effort. He also suggested that the effort may take a year or two to complete and would require commitments of staff by managers.

Several issues for moving forward with the indicator development process identified by the workgroup included:

- Developing a vision statement for the effort.
  - What are its attributes?
- Defining and developing a clear purpose statement.
  - What should it accomplish?
- Identifying who has ownership and who are the champions of the effort.

- Determining who should participate in the effort.
- Developing a survey of customers and products and what these need to accomplish.
- Developing a funding strategy.
- Identifying next steps.

The afternoon discussions focused on these issues and addressed the following questions:

- 1) Should we have a partnership?
- 2) Could an MOU such as the one proposed in the morning (and included in the agenda package) form the foundation?
- 3) Who would want to work on development of the partnership?

Each question was thoroughly discussed among the participants and agreements were produced. A summary of the answers to each question is provided below:

### **1) Should we have a partnership?**

#### ***Discussion:***

The Bay is a data-rich ecosystem. There are many critical gaps in measurement, and routine sampling is not currently conducted by many programs. One problem that was identified during the discussion is that meetings to develop measurement programs and indicators have been conducted every few years. Many felt that these resulted in lists of what to measure, but follow-up actions were few. This has led to cynicism with regard to these processes and led many to move forward independently to meet their mandates. The participants suggested two basic gaps that must be addressed for this collaborative effort to be useful:

- 1) A “hero” (someone who champions the effort) is needed, regardless of whether this takes on the form of an individual or group or many individual heroes working within their agency, for the environmental indicator development programs to be sustainable. Participants recognized that the Bay area lacks a hero today.
- 2) It is critical to make data useful. Scientific data are a product, and the customer or consumers of the data must be identified. The focus should be on identifying what products are most useful to the customer, how the product should be packaged, and how the customers will use the product on a daily basis.

It was suggested that the ultimate customer should be the public. It was noted that the public does not relate very well directly to water quality issues, since their main interest is in human use activities such as recreation (e.g., beaches, hiking, fishing, and biking). Therefore, indicators must be identifiable and quantifiable to the public for recreational and beneficial uses of the Bay area. Some suggested indicator topics for the Bay Area should include land use, social, and economic issues. One ultimate indicator that was discussed was the Bay fisheries and whether they can be sustained or improved, or if fish are safe to consume. The end result was an understanding that indicators must not only link to ecosystem health or water quality, but predominantly to public health, recreation, and other human-centered issues that people currently relate more to.

Several participants felt that the focus was much too aqua-centric, and the indicator focus must go beyond water quality and incorporate all aspects of the ecosystem. Others suggested that managers are most interested in water quality and require day-to-day feedback. It was recommended that water quality status could be detailed in a technical report developed solely for

managers instead of incorporating water quality issues into the package for the public. One issue noted was that public opinion does not always drive public policy.

The discussion continued by identifying which area(s) should be included in the collaborative effort. The participants generally felt that the partnership must designate an established geophysical area and suggested several: Region 2 & 5, nine Bay area counties, or the SFEP Outline based on 12 counties.

A clear sentiment expressed during the discussions was that a regional indicator effort must have the capacity to support most current environmental programs. Discussion also centered around the topic of support and commitment by the people living in the Bay Area for data collection efforts to inform environmental stewardship and the need for both “bottom up” and “top down” efforts. It was also noted that individual efforts are making progress towards indicator development and these efforts appeal to managers and provide a mechanism for continued support. Furthermore, this type of effort can be productive for a regional indicator effort. However, since many environmental programs must justify their efforts, this can be difficult. The need for a clear starting point, such as identifying large-scale indicators that can be scaled and modified to evaluate Bay area indicators, was acknowledged. It was also recognized that assessing performance measures for monitoring programs and recognizing the diversity of customers is important.

One issue discussed that appears to be a hindrance to developing a partnership is an expectation that the group would have to provide more funds contributed to these programs presently. After some discussion, it was acknowledged that the value added from a partnership is the enhanced use of information, and that more funds are not necessarily required to make indicator development and refinement sustainable.

***Agreements:***

The workshop participants identified several actions that the partnership must address during the indicator development process. These included development of a vision statement and purpose, active participation in developing the program by participants (including specific assignments to members), the identification of customers and products, and defining an implementation process and funding strategy. It was also noted that this process requires substantial effort and commitment to be successful. The workshop participants agreed that a partnership must have a hero/champion whose role is to frame and lead what the overall effort is considering and identifying sources of support.

Several agreements were reached by the group:

- The group reached a tentative consensus on the geophysical scale of the region of interest - the 12 counties at the bottom of the Estuary watershed. Inclusion of the 12 counties was felt to allow development of a diverse group of indicators with a small set of general indicators that could apply to all areas.
- The process is in its initial phase, and it is too early to discuss measurements and metrics.
- Participants committed to helping the process move forward, but felt it was too early to commit financial resources.
- The vision for the group should be how to communicate the effort to the public and define what issues are important to the public.
- The group also realized the importance of drawing on work that has already been done instead of starting at the beginning.

- It was agreed that the formation of a Steering Committee would be useful and would require feedback to the rest of the group.

## **2) Could an MOU such as this one form the foundation?**

### ***Discussion:***

A draft MOU was presented to the workshop participants for discussion purposes only. The MOU was to provide the participants with guidance in the future collaborative efforts of indicator development for the San Francisco Estuary. Many points were made during the discussion:

- The partnerships should be defined with MOUs. It was also suggested that there should be multiple MOUs and partnerships established to be effective in the effort.
- There was a discussion focused on how to formulate a partnership. Consider visualizing an equilateral triangle with the sides titled beneficial uses, individual partners, and other partners. These three focus points could be the driver behind the partnership.
- A lot of effort is needed and required to form a consensus on a regional effort. It was suggested that agencies and groups move at different paces and the steps forward cannot be forced. Most anticipated a long process to identify issues, develop questions, and draft indicators. With focused leadership, it was felt the above process could take up to eight months. To minimize the time involved in the process, the group felt that developing a vision was a good place to start the process; they also did not wish to reinvent the wheel.

### ***Agreements:***

The group was cautious of signing an MOU without a clear vision and direction established for the partnership. It was generally felt that the purpose statement in the MOU does not address the larger issues, such as land use. Due to these concerns a formal agreement was not reached by the group.

## **3) Who would want to work on development of the partnership?**

### ***Discussion:***

The workshop participants were reminded that commitment of time and expertise is critical to the success of the indicator development process. The group acknowledged essential steps that are vital to the process including identifying the appropriate geographic scale, customers, products, and use of products, administering assignments, and developing a funding strategy. Furthermore, the group indicated that folks must play the hero internally in their agencies if the effort is to continue and to identify others who would take part in the process. The importance of selling the effort to the Bay area community to establish a buy-in was recognized. The importance of a vision that the public can identify with, such as the coexistence of urban areas and wildlife with a connection to the landscape, was also recognized.

Participants conveyed that a mechanism to commit money and time is needed to aid in the indicator development process. Each month, SFEP could hold a meeting in which participants of the workshop are committed to attend. It was suggested that the monthly SFEP meeting could be used as a mechanism to support the indicator partnership. One thought was to modify the agenda for the October 2005 State of the Estuary Conference to include a topic discussion about indicator development. This action could create one track for all agencies to work together with one goal. Participants inquired as to whether the existing group that was pulled together by SFEP could be the leader for the process, and they obtained a sense that the current consortium would do its best to continue in its leadership role. Access to high-level managers was also noted as necessary. It

was indicated that other types of monitoring, such as monitoring conducted by citizen groups, should also be included in the process.

An inquiry was made about the length of the process to develop and implement a coordinated indicator program. A time frame of two years for the process was suggested. The group expressed concern regarding the length of the process and the time frame it will take to obtain the end result.

In response to questions about existing monitoring activities that could feed indicator development, the participants were asked to brainstorm on current efforts in the Bay area. The list developed at the workshop included:

- Regional Monitoring Program - funded to monitor water quality in the Bay and develop an annual pulse report.
- USGS - developed maps identifying ecosystem parameters that cause changes in San Francisco Bay.
- Bureau of Reclamation - monitor for protection of salmon and salinity with CVP (central valley project) waterboard.
- CA Dept. of Fish and Wildlife - report abundance of many species.
- Bay-Delta ecosystem restoration effort - developed list of indicators and worked with science group to develop performance measures (completed in 2002), but still need conceptual models to support indicators.
- Santa Clara County - monitoring permit conditions, but have not been good at using data effectively to inform stewardship or influence policy decisions. The group is in a stage to get data into indicators, indicator development, identify data gaps, and generate more useful information. Also collaborated with watershed management initiative for wastewater and water discharge indicators.
- It was stated that the Heinz Center is developing a new indicator report. It started with the state of the nation's ecosystem and scientific understanding rather than public interest. Indicators that deal with human use were included. Costs of monitoring programs are shared between the public and agencies.
- EPIC: Environment Protection Indicators for California – A 2002 report was developed and an updated version of report using new data is being posted. EPIC is an agency-directed, yet broad-based effort with a high-level directive, however it is currently unfunded.
- SWRCB - conducts monitoring under sections 303(d) and 305(b) of the Clean Water Act.

***Agreements:***

During the discussion the participants were pushed to develop consensus on next steps for starting the process of indicator development. All agreed that the effort is worthwhile and agreed to support the next steps. The next steps were defined as:

- Develop a 1-page text for the SFEP meeting on February 4<sup>th</sup> to present to participants and solicit more support. A workgroup, made up of Anitra Pawley (The Bay Institute), Andrew Gunther (Center for Ecosystem Management and Restoration), and Rainer Hoenicke (SFEI), was established that would complete this assignment.
- Participants agreed that a state-wide effort was needed. The goal is to develop a state-wide effort to look at various monitoring programs and then determine whether those programs can be modified to address indicators. While evaluating the monitoring programs, another goal will be to identify whether any of the managers or stakeholders of the programs could fund and/or participate in the indicator development effort. Mr. John Norton (SWRCB) and Ms. Cathy Bleier (CA Resource Agency) agreed to lead this effort.

- Conduct a working session to present a regional framework for a collaborative indicator effort.
- Develop a progress report within six months. This should be presented during or shortly after State of the Estuary Conference.

## **Summary of Workshop Discussion**

In general, the workshop participants felt the most successful approach to developing indicators for the Bay is to be holistic with a champion to coordinate the process. It is also recognized that agencies must reach out to users through as many avenues as possible, such as web surveys and education materials. Furthermore, it appears that there is no recent inventory of monitoring programs in the region of interest and this is vital to the success of the indicator development process. Interest was expressed by several participants for the inclusion of social and political scientists as well as environmental scientists in the process. Some key points made during the discussions are:

- Develop a robust set of indicators that will feed a vision. Tell a compelling story of how the Bay is an integral part of the overall ecosystem, one that will intrigue the public and gain support. One possible vision statement drafted by a participant stated that “Address the question through quantitative measures, which would be developed using indicators: Is the bay and delta area getting better or worse?.”
- Indicators should be developed that use and support long-term data sets and identify gaps.
- Concerns were expressed over how to obtain money if work has not been completed and vice versa. Also discussed was an uneasiness of how to get the process going and how to keep the momentum up. The solution was to involve more partners and stakeholder groups to gain support.
- Increase the level of investment or the way that money is being spent to answer one question or vision. Many participants felt that it was critical to focus on the vision rather than requirements or regulations to be successful in the process.
- Form a workgroup to develop a vision and then collect feedback from larger group. The next step would be to present the vision to high-level managers for buy-in and commitment on a broad conceptual approach. In the near future, participants should conduct another workshop to identify and implement the next steps to move forward.
- It was recognized that the top-down/bottom-up approach must work both ways (top-down is money). Identify who is up the chain to sell the effort to.

There is a general sense that the indicator collaborative is needed and the vision needs to be defined to keep momentum going. To further the momentum, SFEP will follow up with the participants through emails and in-person meetings to collect feedback. Furthermore, the workshop effort will assist SFEP with meeting their directive from the EPA to develop a suite of indicators. It was noted that the San Francisco estuary is a large one and SFEP needs support from others to be successful in developing indicators. The collaborative effort from the workshop would indicate agreement and provide ownership to those involved.

## **Next Steps**

The workshop closed with a brief summary of the next steps suggested during the discussion among the participants. These include:

- 1) Complete the workshop summary;

- 2) Establish a straw vision for SFEP meeting February 4<sup>th</sup>. This is to be completed by the workgroup consisting of Anitra Pawley (The Bay Institute), Andrew Gunther (Center for Ecosystem Management and Restoration), and Rainer Hoenicke (SFEI);
- 3) Develop a strategic plan by May 2005;
- 4) Develop a progress report within six months. This should be presented during or shortly after the State of the Estuary Conference.
- 5) Meet next year for a working session to present information for a regional framework with an integrated indicator development approach. Additionally, meet with the extended working group to provide feedback to the Steering Committee within a 10-11 month timeframe,
- 6) Develop a state-wide effort to evaluate whether the various monitoring programs can be modified to address indicators; identify whether any of the managers or stakeholders of the programs could fund and/or participate in the indicator development effort. Mr. John Norton (SWRCB) and Ms. Cathy Bleier (CA Resource Agency)), will lead this effort.
- 7) Provide northeast website for reference (<http://www.gulfofmaine.org/nciw/>), and
- 8) Obtain commitments of resources.

### **Workshop Closing**

Dr. Michael Connor and Ms. Marcia Brockbank closed the meeting, stating that they felt the workshop had achieved and even exceeded some of the goals that SFEP and SFEI had hoped to accomplish. The success of the group can be seen in their agreement and willingness to establish a partnership on indicator development process and begin to move forward. As indicated in the list of next steps, there is additional work to do and workshop participants are asked to continue assisting in the process.

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## **Appendix A**

### **Participant Invitation Letter and Agenda**

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## **Appendix B**

### **List of Attendees**

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## **Appendix C**

**Presentation by Dr. Carlton Hunt, Battelle  
And  
Presentation by Dr. John Norton, SWRCB**

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## **Appendix D**

### **Workshop Materials**

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