

Public Involvement Plan

DRAFT

September 2010

BIOMONITORING
CALIFORNIA



Foreword

The California Environmental Contaminant Biomonitoring Program, also known as Biomonitoring California (or “the Program”)¹, was established by legislation in 2006. The legislation directs the Program to “develop a strategy and plan ... to establish the framework for integrating public participation in this program.” This document presents the Program’s draft Public Involvement Plan (or “the Plan”) designed to address this need. Public review and comment on this document and additional input from the Scientific Guidance Panel (SGP or “the Panel”) will help the Program to refine the draft Plan and overall strategy for public involvement.

Below is a projected timeline for the development of the Plan. The dates for holding the public teleconferences and finalizing the plan are tentative.

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|----------------|---|
| September 2010 | Release draft Plan for review and comment by the public and SGP <ul style="list-style-type: none">➤ Mail to listserv and SGP➤ Post draft Plan on website |
| November 2010 | Present and discuss draft Plan at SGP meeting |
| Nov-Dec 2010 | Hold teleconference(s) and conduct online survey to facilitate public comment on draft Plan |
| March 2011 | Finalize Public Involvement Plan and post on website |

The Program plans to revisit the Public Involvement Plan periodically to address suggestions made by stakeholders, lessons learned from activities undertaken, and new Program developments. The current document and future updates can be found on the Biomonitoring California website (www.biomonitoring.ca.gov).

¹ Established by Senate Bill (SB) 1379 (Perata and Ortiz, Chapter 599, Statutes of 2006) and codified at Health and Safety Code section 105440 et seq. Biomonitoring California is a collaborative effort of the California Department of Public Health, the Office of Environmental Health Hazard Assessment and the Department of Toxic Substances Control.

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Introduction

Senate Bill 1379² established the California Environmental Contaminant Biomonitoring Program (also known as Biomonitoring California) to:

- Evaluate the presence of toxic chemicals in a representative sample of Californians;
- Define how the levels of these chemicals in Californians' bodies change over time; and
- Assess how well public health efforts and regulatory programs decrease Californians' exposures to specific chemical contaminants.

SB 1379 directs the Program to “develop a strategy and plan ... to establish the framework for integrating public participation in this program” and specifies requirements for several different aspects of the Program's public involvement efforts. For example, the Program is directed to provide informational materials that are culturally appropriate and translated as needed. See Appendix 1 for additional relevant sections of the legislation.

The Program considered the legislative requirements and our ongoing experience with public participation to formulate four goals for the Public Involvement Plan:

1. Build public awareness and understanding of the Program.
2. Provide opportunities for stakeholders to contribute to Program design, implementation, and evaluation.
3. Achieve high participation rates within the target population(s) to be biomonitored.
4. Communicate biomonitoring results in an understandable manner.

Objectives to help achieve these goals are described in this document. Specific activities that the Program is planning to carry out in the next few years are briefly outlined under each objective.

The Program's ability to implement these public involvement activities will depend on the resources available either through the state budgetary process or external funding. The Program will continue to seek additional resources and collaborations to support public involvement efforts.

² SB 1379 (Perata and Ortiz, Chapter 599, Statutes of 2006)

Framework for Public Involvement

The enabling legislation directs the Program to use environmental justice (EJ) principles as described in the California Environmental Protection Agency's (Cal/EPA's) Environmental Justice Strategy and Environmental Justice Action Plan³. The mission statement for Cal/EPA's EJ Strategy is shown below. Biomonitoring California is committed to carrying out our activities in ways that reflect EJ principles. Specific examples of how we will do this, such as developing culturally appropriate materials, are described in later sections of this document.

"To accord the highest respect and value to every individual and community, by developing and conducting our public health and environmental protection programs, policies, and activities in a manner that promotes equity and affords fair treatment, accessibility, and protection for all Californians, regardless of race, age, culture, income, or geographic location."

Environmental Justice Strategy Mission Statement – Quoted in SB 1379

Public engagement principles also guide the Program's public involvement efforts. One useful set is called the "Core Principles for Public Engagement," which are listed in the accompanying text box. These were developed in 2009 by the National Coalition for Dialogue and Deliberation, in collaboration with the International Association of Public Participation and others. A more complete description is provided in Appendix 2.

Core Principles for Public Engagement

1. Careful Planning and Preparation
2. Inclusion and Demographic Diversity
3. Collaboration and Shared Purpose
4. Openness and Learning
5. Transparency and Trust
6. Impact and Action
7. Sustained Engagement and Participatory Culture

Source: National Coalition for Dialogue & Deliberation and others (see Appendix 2).

³ These documents can be found on Cal/EPA's website: The Environmental Justice Strategy at <http://www.calepa.ca.gov/EnvJustice/Strategy/Development.htm> and the Environmental Justice Action Plan at <http://www.calepa.ca.gov/EnvJustice/ActionPlan/>.

The framework for integrating public participation into the Program is shown in Figure 1. The legislation provides the overall direction. The four goals of the Plan form the core of the framework, while the EJ and public engagement principles inform the approach taken in Program activities.

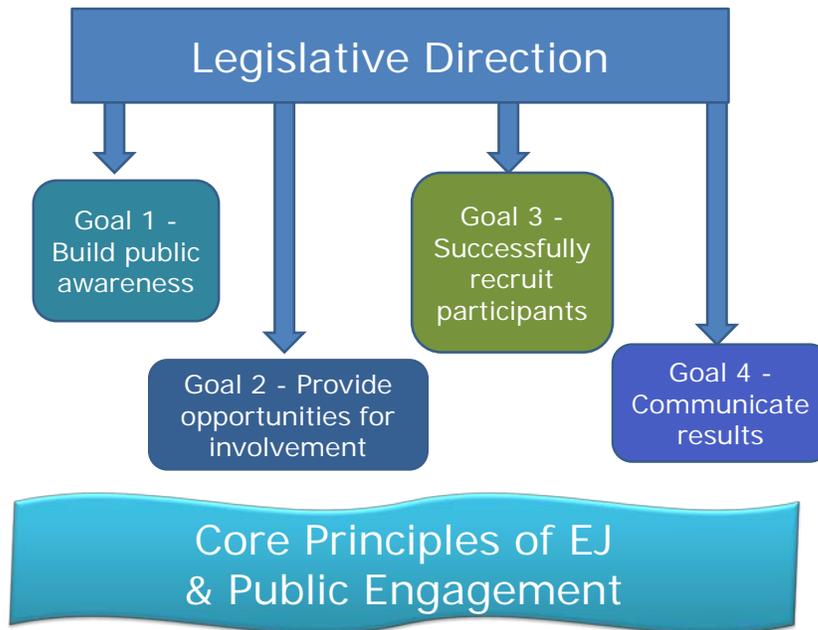


Figure 1 – Framework for Integrating Public Participation into Biomonitoring California

Our public involvement plan builds on activities carried out in the initial phase of the Program to engage our stakeholders. These activities are described in Appendix 3. By “stakeholders” we mean any person or group who has an interest in the program, including but not limited to:

- The general public;
- Community members or groups;
- Environmental justice groups;
- Governmental (e.g., city, county) representatives or groups;
- Health care providers;
- Health and environmental advocacy groups;
- Industry representatives or groups;
- Labor representatives or groups;
- Program participants;
- Scientific researchers; and
- Tribal groups.

A glossary of terms and abbreviations used in this document can be found in Appendix 4.

Public Involvement Plan

Four overarching goals define the structure of the Plan. These four goals are:

1. Build public awareness and understanding about the Program.
2. Provide opportunities for stakeholders to contribute to Program design, implementation, and evaluation.
3. Achieve high participation rates within the target population(s) to be biomonitored.
4. Communicate biomonitoring results in an understandable manner.

Program staff developed objectives as the avenues to achieve the goals. The discussion below lists these objectives and lays out specific activities that will be carried out as the first steps toward meeting them.

Goal 1. Build public awareness and understanding of the Program.

Summary of Goal 1

Program staff will develop materials and carry out activities to increase public awareness and understanding of the biomonitoring program, its findings, and related public health information. The primary ways the Program is currently addressing this goal include:

- Providing information on the Program website;
- Keeping stakeholders informed about Program activities via an email listserv;
- Making Panel meetings accessible to remote audiences via webcasting; and
- Responding to public inquiries and comments sent to the biomonitoring email address.

Continuing and expanding these efforts represent a top Program priority.

The Program will conduct additional stakeholder surveys to identify information needs and the best ways to provide that information. We will explore other methods for engaging in dialogue with stakeholders (for example, holding teleconferences on specific topics). We will also make efforts to increase the number and diversity of stakeholders engaged in Program activities.

During the early phases of the Program, efforts to build awareness have been focused on informing potential stakeholders about the Program's purpose and scope. As biological sample collection and analysis activities get underway, the Program's efforts will shift to educating the public about these new activities. When biomonitoring project results become available, the Program will undertake education and outreach efforts to make the findings understandable and accessible to all stakeholders.

Goal 1 Objectives

1.1 Identify information priorities and communication preferences

An important step to move public involvement efforts forward is to identify the types of information and communication methods that best meet the needs of Program stakeholders.

Program staff will design and carry out online surveys to assess stakeholders' needs. The surveys will be posted on the website and announced via the Program's listserv.

The surveys will include questions on:

- The types of information that are of most interest to stakeholders (e.g., background on chemicals being studied; how pilot projects are designed);
- The methods of interaction that stakeholders consider most effective and worthwhile (e.g., fact sheets, teleconferences, workshops); and
- How we can identify and contact additional potential stakeholders (see Objective 2.1 below).

Staff may also conduct interviews with a limited number of stakeholders for their input on specific issues.

1.2 Maintain and expand electronic communications

Biomonitoring California uses a range of electronic communication approaches: the Program website, listserv and email address, and webcasting. The Program's website is the main portal for stakeholders to get information about Program activities. The Panel meetings (held three times per year) currently serve as a primary method for providing information to stakeholders. The public is encouraged to attend these meetings. The Program makes meetings available via webcast as often as possible, as this allows more people to observe and participate. Several activities are carried out regularly to maintain the Program's electronic resources. These include updating the Program's website, maintaining and sending notes to the listserv, and reviewing and responding to requests for information and other inquiries sent to the Program's email address.

During public meetings and in written materials, staff encourage those potentially interested in the Program to join the listserv. Efforts to expand the number of listserv subscribers are described under Goal 2. The Program regularly informs potential stakeholders about the Program website by including the address in publications and documents.

Improving the website is a priority of the Program. An example of an initial effort in this area is the creation of a single place where all the reports, presentations and other documents related to information on selecting chemicals for the Program can be found. The Program also contracted with Health Research for Action (HRA) of the University of California, Berkeley to carry out a structured analysis of the website to improve the site's usability. Funds from the Centers for Disease Control and Prevention (CDC) supported this effort. HRA reviewed and made recommendations on website content, design, and structure related to readability and relevance for a general audience. HRA will assist the Program with implementing these recommendations to create a more user-friendly interface for the website.

1.3 Develop informational materials

Informational materials, such as fact sheets or progress reports, will be developed as resources allow. These materials will supplement existing information on the website. In developing new materials, staff will work to address Program stakeholders' concerns identified in the needs assessment (see Objective 1.1). Making sure the materials are easy to read and culturally appropriate for various audiences is important to the Program's success. Materials can be tailored to specific audiences using methods such as focus groups to gain insight into

the type of messages and images that are understood and accepted by different cultural groups.

For example, with CDC funding, the Program contracted with HRA to develop a basic Program brochure at a reading level appropriate for the general public. The brochure will be available in hard copy and online. English and Spanish versions have been developed; a Chinese version is under development. Translation of additional Program information into languages other than English is an activity the Program considers important for reaching more groups within California's diverse population.

Goal 2. Provide opportunities for stakeholders to contribute to Program design, implementation and evaluation.

Summary of Goal 2

SB 1379 directs the Program to provide opportunities for "public participation and community capacity building with meaningful stakeholder input." The legislation does not specify how this should be done beyond, at a minimum, "conducting stakeholder meetings and workshops to solicit relevant information, data, suggestions and feedback for the development and implementation of the Program."

The Program's approach to providing such opportunities has included conducting workshops, public meetings and electronic communications (see Appendix 3). For the future, several types of activities are envisioned. The Program will work to expand the listserv to include more stakeholders. In addition, the Program will take steps to identify areas where additional public involvement could provide the greatest benefit. One challenge will be finding effective and resource-wise methods for engaging stakeholders. The Program will explore ways to build community capacity on a small scale in pilot projects. To encourage stakeholders to provide feedback on the Program, an online comment form, accessible on the website, will be developed. Information provided by stakeholders will inform additional future efforts.

Goal 2 Objectives

2.1 Identify additional stakeholders

The Program would like to increase the number and diversity of Program stakeholders. For example, there are very few groups or individuals from Southern California who have subscribed to the Program listserv. As another example, the Program is working on effective methods for reporting results back to participants, which may be of interest to scientists involved in other types of health education or risk communication efforts. Scientists in fields relevant to various aspects of biomonitoring may not be aware of Program activities.

One effort already underway to expand and diversify Program stakeholders is by adding subscribers to the Program listserv. Program staff will continue to provide sign-up sheets for the listserv at Panel meetings and other events. Information about joining the listserv will also be shared during presentations made at conferences and other venues. As part of the surveys described under Objective 1.1, we will ask existing stakeholders to identify other individuals and groups with potentially overlapping interests and invite them to join the listserv. We will

also request suggestions for new approaches to reach those who may be interested in Program activities.

The effort to increase the number of Program stakeholders will also include outreach to additional groups and other email lists such as other listservs operated by State agencies, including the Cal/EPA EJ listserv.

As resources allow, other activities may be carried out. These include informing potential partners in academic institutions and health and environmental organizations about the Program and encouraging their involvement, and establishing a link to the Program website on websites of organizations with activities related to biomonitoring.

2.2 Find effective and resource-wise methods for engaging stakeholders

Many aspects of the Program could benefit from public involvement. Examples include:

- The design of pilot projects, such as selecting the chemicals to measure and the populations to biomonitor;
- Design of recruitment strategies for project participants; and
- The development of materials to communicate biomonitoring results to participants, communities, and the public at large.

We are continuing to work on identifying how, where and when we can most effectively involve the public in the Program. We will look for areas where providing input will be most helpful to the Program and worthwhile for those who take the time to get involved.

Current efforts to engage stakeholders are focused on Panel meetings (see Appendix 3) and pilot projects (see Goal 3). The public can comment at any time by submitting an email to biomonitoring@oehha.ca.gov. Program staff also meets with members of the public on specific topics, as resources allow. For example, Program staff met with an industry trade association to receive information on a chemical being considered as a potential designated chemical for biomonitoring. As another example, the leadership of a community group met with Program staff to offer suggestions and engage in dialogue about ways to reach out to particular audiences.

Efforts to expand stakeholder involvement beyond the existing venues of Panel meetings and email communication will be shaped by feedback received via stakeholder surveys (Objective 1.1). These surveys will include questions to gather ideas from existing and potential stakeholders as to the method(s) for interaction that they would consider worthwhile and in which they would want to participate (e.g., teleconferences; online surveys; in-person events), and the topics of most interest to them.

2.3 Build community capacity

The enabling legislation directs the Program to create opportunities for community capacity building as a method to enable “meaningful input” from the public. Creating opportunities for people from specific communities to gain knowledge, skills and experience relevant to biomonitoring is a challenge for the Program, given current resource constraints. In pilot projects, when possible, we will offer job opportunities as part of the effort (e.g., hiring and training local people to conduct interviews of project participants). The Program is committed to finding ways to build community capacity beyond these efforts as additional resources

become available. To prepare for this, we will use in-person interviews and online surveys to seek stakeholder input on how we can identify specific community needs and worthwhile ways to build capacity.

2.4 Provide opportunities for stakeholders to offer feedback

The Program's website is the primary method for conveying information to the public about the Program. An online comment form, accessible on the website, will be developed to allow website visitors to offer ongoing feedback and suggestions on the website as well as other program activities and materials.

In the future, as resources allow, the Program will identify people who are part of a particular community, population of interest, or stakeholder organization to provide input on specific aspects of a project. Focus groups provide one way to learn about people's views on important aspects of a project. For example, mothers may be invited to participate in a focus group on how best to communicate results on chemicals measured in young children. As a second example, firefighters may be asked to provide feedback on specific questions about their job duties. The Program may also convene stakeholder workgroups. A workgroup would typically be charged with reviewing a specific issue, hold multiple meetings over a period of time, and include individuals who represent a wide range of interests. An example of a workgroup's task might be to help develop options for future pilot projects.

Goal 3. Achieve high participation rates within the target population(s) to be biomonitored.

Summary of Goal 3

Biomonitoring California was envisioned in the enabling legislation (SB 1379) to include a statewide survey, in which the Program would measure levels of environmental chemicals in a representative sample of California residents. Implementation of the statewide survey has been delayed due to fiscal constraints. Biomonitoring California has obtained external funding from the federal government and foundations to support targeted biomonitoring projects that are limited in scope. These pilot projects enable the Program to test its protocols and procedures and will inform future larger studies that are representative of California's diverse population.

Raising public awareness and understanding of the Program is a critical first step in achieving high participation rates among the population to be recruited for a biomonitoring project and involves a multifaceted approach. A community that is aware of and understands the Program and its activities is more likely to support its goals, participate in partnerships, and have higher participation rates in biomonitoring projects.

Goal 3 Objectives

3.1 Develop a recruitment strategy

The participant recruitment strategy for the Program's biomonitoring projects will vary depending on the target population and whether or not the project is location-based. At the beginning of a project in any community, the Program will work to identify and gain the support

of key stakeholders, to the extent that time and resources allow. The Program will build awareness and understanding of its projects by identifying and forming partnerships with individuals or organizations trusted by the community. Trusted individuals may include community leaders, health care providers, and others working on behalf of community well-being. Community organizations may include local health departments, clinics, labor unions, environmental groups, local business associations, schools, local media organizations, and others as appropriate. The Program will seek these organizations' perspectives on how best to approach potential participants.

Conferring with these key stakeholders early in the planning phases will help the Program to develop effective recruitment strategies. The Program may enlist the help of community partners for recruitment or other project activities and provide training as needed. When feasible, the Program can build community capacity through training community partners to assist in project activities (e.g., focus groups, recruitment, interviews, etc.).

The type of project model will influence the recruitment strategy that is developed. For example, if recruitment takes place through an existing health clinic, the strategy may involve training clinic staff to assist with identifying potential project participants.

3.2 Prepare suitable program materials to be used by field staff

The Program will develop a range of materials to inform, recruit, and retain participants, such as outreach and educational materials, informed consent forms, questionnaires, and results communication pieces. Some of the important elements to be considered in developing these materials include purpose, format, length, literacy level, cultural relevance, language, and graphics. All materials must be reviewed and approved by the designated Institutional Review Board (IRB). The IRB review helps ensure that participants are well informed about the project and are treated ethically, and that the confidentiality of their personal information is protected.

The Program will work to develop project materials that are suitable for the specific study population. The development process will take into account educational and literacy levels of the participants, cultural relevance, and translation needs. Materials will initially be developed by a designated Program working group, drawing on staff expertise, previous materials used in similar studies, and input from community partners. As resources allow, Program staff may also obtain review of the draft materials by health literacy experts.

Materials will be field-tested for readability, reader comprehension, and usability. Representatives of the working group will meet with either some of the project participants or a population that closely resembles the participants (i.e., similar socioeconomic status, literacy and educational levels, language, occupation etc.) to review draft materials. These meetings will generally take the form of focus groups and/or one-on-one interviews with individuals. Individuals will be asked to evaluate whether the materials are understandable, attractive, and user-friendly. Individuals taking part in this review will also provide feedback on the length and format of the materials, and whether translated materials are understandable in the individual's primary language.

Results from the field-testing activities will be brought back to the working group planning the project and developing the materials. The feedback will be used to help the Program refine the materials to be responsive to the needs of those who may participate in the project. The process of materials review and revision may be repeated to address issues raised by scientists and reviewers representing the community. The desired endpoint is that the final

materials will be scientifically valid as well as relevant to and understandable by project participants.

3.3 Create and maintain points of contact that allow Program participants easy access to relevant information

Contact information (i.e., email address, phone number) for Program staff will be provided to participants on consent forms and other Program materials. Arrangements will be available for non-English speakers to speak with a person with appropriate language skills.

Program materials relevant to participants will also be available on the website. Program staff will explore the feasibility of developing a secure website for participants to access their results and other confidential data. Implementation of the secure website will depend on the availability of adequate resources.

Participants will also be able to contact Program staff through local community organizations collaborating with the Program to carry out the study. For example, in some studies participants will be able to contact the Program through a local clinic participating in a Biomonitoring California project.

Goal 4. Communicate biomonitoring results in an understandable manner.

Summary of Goal 4

A distinctive feature of Biomonitoring California is the legislative requirement that biomonitoring results be returned to study participants who request them. Because the health implications of these results may be scientifically uncertain, finding the best way to communicate these results is especially challenging. The Program is exploring what methods would work best for this purpose. The Program intends to communicate results following best practices tailored to the specific needs of the participant population and relevant stakeholders. The best practices framework will be continuously updated as new information is learned from the efforts of the Program, other state and federal biomonitoring initiatives, and the published literature. The Program will also be developing methods for communicating the results of our projects more widely, to all Program stakeholders, including the general public.

The Program initiated a discussion of topics related to Goal 4 at the Panel meeting held on July 29, 2008. The meeting transcript and slide presentations are available at the biomonitoring website (<http://www.oehha.ca.gov/multimedia/biomon/cecbp071409.html>). The Panel made several suggestions related to communicating the Program's results, which are briefly summarized below.

- Begin dialogue with community groups and collaborators early in the development of a community-based study.
- Consider using reporting methods that are less resource-intensive, such as web-based approaches, when one-on-one reporting methods are not practical. This would be an important consideration in a state-wide survey.
- Use biomonitoring reference levels (described in Appendix 3) when available, as a comparison for individual and group results.

- Involve health care providers in biomonitoring studies. Local health officers may be able to identify appropriate health care providers or other relevant resources in the community.

Factors that will guide how project-specific results are communicated include, for example:

- The overarching goals of the project;
- The chemicals sampled and the analytical methods used;
- Availability of biomonitoring reference levels;
- The population that is being sampled and its particular needs;
- Whether sources of measured chemicals can be identified;
- Whether we can identify ways for individuals to reduce exposures of potential concern or if public health action is needed; and
- Availability of resources for traditional health education activities, such as needs assessments, focus groups and development of informational materials (e.g., fact sheets)

At the beginning of a biomonitoring project, the Program will develop a plan for how best to communicate the project's results. This early planning will help ensure that the information provided to the participants, the community, and the general public will be useful.

Goal 4 Objectives

4.1 Develop and test methods for communicating results to participants

The Program is conducting a number of pilot biomonitoring projects (described below). As part of these studies, we are testing specific approaches to conveying individual results and assessing the effectiveness of these approaches. This will include carrying out the direction from the enabling legislation to consult with an individual and recommend appropriate follow-up steps when "either physiological or chemical data obtained from a participant indicate a significant known health risk." The Program will seek the assistance of health care providers and other technical experts in communicating biomonitoring results and providing needed follow-up or referral. Findings from the pilot efforts will contribute towards developing the best practices framework for results communication.

As part of these pilot studies, we will explore:

- Why participants want to be involved in biomonitoring studies;
- What participants want to know about environmental chemical contaminants;
- How much and what type(s) of written information are appropriate for participants;
- Which visual tools best aid in the understanding of personal results;
- What types of information health care providers consider important in discussing environmental chemical contaminants with patients;
- What challenges health care providers face in providing this information; and
- Recommendations from health care providers on effective ways to inform participants about their chemical levels.

The pilot efforts include:

- **Chlorpyrifos Project in Tulare County**

The Program is collaborating with the California Environmental Health Tracking Program (CEHTP) to learn about for the best methods to effectively communicate the results of biomonitoring chlorpyrifos, a pesticide, to participants. Materials and methods are being developed and evaluated in a participatory fashion in consultation with community members, project participants, and the Tulare County Health and Human Services, including through focus groups and interviews.

- **Perchlorate Exposure Project in Imperial County**

In another collaboration with the CEHTP and other organizations, the Program is assisting with evaluating methods and materials used to communicate perchlorate biomonitoring results to community members. Perchlorate is a chemical that occurs both naturally and through manufacturing. CEHTP staff used multiple approaches to inform and develop the results communication strategy for this project, including focus groups with participants before and after biomonitoring, as well as interviews with the health care providers. The purpose of the evaluation is to assess the effectiveness of the participant engagement process, and the results communication materials and process. The evaluation also includes an assessment of the benefits and challenges of engaging in a biomonitoring project from the perspectives of the participants, local health care providers, and other community and nongovernmental organization collaborators.

- **Maternal and Infant Environmental Exposure Project (MIEEP), also known as Chemicals in Our Bodies Project**

The Program is conducting a pilot biomonitoring project of up to 100 pregnant women in San Francisco in collaboration with staff at the Program for Reproductive Health and the Environment at the University of California, San Francisco and the School of Public Health at the University of California, Berkeley. The project includes collecting and analyzing maternal urine and blood samples and umbilical cord blood samples for about 100 environmental chemicals. Information on the use of consumer and personal care products, diet, occupation, and other possible sources of chemical exposures will be collected through questionnaires. Medical information will also be collected through the questionnaire and from medical records. Methods and materials to report biomonitoring results back to participants are being developed based on an approach previously used and validated by other researchers. These will undergo three to four rounds of usability testing and be modified to meet the needs of this project. Both English- and Spanish-speaking participants (15 – 20 individuals) will be recruited to help develop and test the report-back materials. This testing will include an interview conducted with these participants in the clinic. In addition, after individual results are returned, an interview will be conducted with each project participant in her own home to evaluate the report-back process.

- **Firefighter Occupational Exposures (FOX) Project**

The FOX Project is a collaboration between the Program, the University of California, Irvine and the Orange County Fire Authority. The goal of this pilot project is to measure chemicals in the blood and urine of up to 100 Orange County firefighters, as well as in dust from selected Orange County firehouses. Information will also be collected on possible occupational chemical exposure sources by evaluating work history, firehouse characteristics and personal protective equipment use. Program staff will utilize ongoing results communication research, as well as focus group testing with firefighters to determine the best methods to return biomonitoring results, including the format and content of the results and informational materials, to project participants as well as other Orange County firefighters. Report-back of individual results will include comparisons with the FOX study group, other firefighter study cohorts, if available, and relevant U.S. population groups. Information on the chemicals and metals measured will also be provided. The overall findings from the FOX project will also be provided to the joint labor-management Orange County Fire Authority Oversight Committee.

The results communication activities related to the pilot projects listed above are still in progress. We will incorporate the findings, lessons learned, and useful principles into the results communication framework to guide the Program's future efforts.

4.2 Develop a best practices framework for communicating results with participants

The Program will use results communication findings from the Program's pilot projects to develop, update and refine the Program's results communication "best practices" framework. We will document lessons learned regarding successful strategies for communicating results to participants. Using an iterative process, Program staff will incorporate the relevant information from evaluation efforts and reflections on our experience into the results communication framework. We will also use Information from staff research into methods and practices used by others (see Objective 4.3) to refine our approach. Future projects will continue to develop and refine the best practices framework.

4.3 Research methods, practices and frameworks for communicating results to participants and the general public

Program staff will conduct a comprehensive review of the literature on communicating biomonitoring and other scientific results to identify best practices, strategies, and frameworks. Useful models will be abstracted and assessed for relevance to the Program. The literature review will be updated regularly, as resources and staff time permit.

Several other state and federal biomonitoring programs have developed their own approaches and strategies for communicating biomonitoring results. Program staff will interview individuals from these other biomonitoring programs to assess their efforts and their results communication approaches, strategies, and lessons learned. Program staff will also conduct interviews with individuals from nongovernmental organizations that have carried out biomonitoring efforts, to learn from their experiences and the approaches they have used. Gathering this information will enable Program staff to learn about novel practices and successes in communicating the results of biomonitoring projects and studies.

4.4 Share biomonitoring results with Program stakeholders

The Program will share the results of its biomonitoring projects with the public and the broader scientific community. The Program will also work with media organizations to convey an understandable message to the public. When relevant, these efforts will be carried out in collaboration with other organizations as appropriate and as resources allow.

Other methods the Program will use to share information about activities related to a given project or specific findings include:

- Making presentations to the SGP;
- Posting updates on the Program's website;
- Presenting Program findings to professional audiences and at scientific conferences; and
- Submitting articles for publication in scientific journals and public literature.

4.5 Evaluate the effectiveness of activities designed to communicate results

Program staff with a wide range of expertise, including health education, epidemiology, toxicology, exposure assessment, and laboratory sciences, will be engaged in the process of evaluating the impact and effectiveness of our efforts to communicate biomonitoring results. For example, after results are returned to individuals, we may assess the extent to which participants understood their results and how learning about chemicals measured in their bodies affected them (e.g., whether it created anxiety). After making results available to the public, the Program will check with various stakeholders (e.g., via the listserv) to find out how the information was used and what we might do differently in the future (e.g., improvements needed to any graphics). We will compile all the relevant information to update and modify the results communication framework as appropriate.

Concluding Remarks

The purpose of the Plan is to set a course for the Program as we work to broaden and deepen our public engagement efforts. These efforts have four goals: to build awareness of the Program, provide opportunities for stakeholder involvement, achieve high participation rates in biomonitoring projects, and effectively communicate results. The Plan sets out a modest and practical approach for accomplishing these goals using basic tools. Some of the proposed activities will require more resources than are currently available. Program staff will continue to seek resources to expand public involvement activities.

Using the approach laid out in the Plan, we can gradually build the profile of the Program and expand its reach into California's public health infrastructure, so that the findings of biomonitoring projects will inform both individual and regulatory actions to reduce chemical exposures. As the Program evolves, we will adjust and expand our public involvement efforts as we identify new needs. We will look to our stakeholders to help guide us as we move forward.

Appendix 1 – Sections of Enabling Legislation Related to Public Involvement Activities

Excerpts of Senate Bill 1379, Perata and Ortiz, Chapter 599, Statutes of 2006, codified at Health and Safety Code sections 105440 et seq.

105443. (a) All participants shall be evaluated for the presence of designated chemicals as a component of the biomonitoring process. Participants shall be provided with information and fact sheets about the program's activities and its findings. Individual participants may request and shall receive their complete results. Any results provided to participants shall be subject to the Institutional Review Board protocols and guidelines. When either physiological or chemical data obtained from a participant indicate a significant known health risk, program staff experienced in communicating biomonitoring results shall consult with the individual and recommend followup steps, as appropriate. Program administrators shall receive training in administering the program in an ethical, culturally sensitive, participatory, and community-based manner.

(b) Individuals selected to participate in the biomonitoring program shall reflect the age, economic, racial, and ethnic composition of the state. Other selection criteria may be applied, as appropriate, for studies of specific populations.

(c) Informational materials and outreach activities directed to program participants and communities shall, to the extent possible, be culturally appropriate and translated as needed. Educational materials shall be adapted to the biological specimens being used.

105444. (a) The program shall develop guidelines and model protocols that address the science and practice of biomonitoring to implement this chapter, including, but not limited to, study design, subject recruitment, and data collection and management, and that accomplish all of the following:

- (1) Ensure confidentiality and informed consent.
- (2) Communicate findings to participants, communities, and the general public.
- (3) Emphasize all aspects of the program in a culturally sensitive manner.
- (4) Serve as a guide for other biomonitoring programs supported by state funds.

105451. (a) As appropriate, the program shall utilize the principles of the agency's Environmental Justice Strategy and Environmental Justice Action Plan developed pursuant to Sections 71110 to 71113, inclusive, of the Public Resources Code, so that the activities of the panel and the implementation of the program provide opportunities for public participation and community capacity building with meaningful stakeholder input. This strategy and plan shall accord the highest respect and value to every individual and community by developing and

conducting public health and environmental protection programs, policies, and activities in a manner that promotes equity and affords fair treatment, accessibility, and protection for all Californians, regardless of race, age, culture, income, or geographic location.

(b) (1) To carry out this section, the program shall develop a strategy and plan that are to be followed in the implementation of the program. This strategy and plan shall be used to establish the framework for integrating public participation in this program. The department may utilize models used by boards, departments, and offices at the agency for community outreach pursuant to this section.

(2) Public participation shall include, but need not be limited to, conducting stakeholder meetings and workshops to solicit relevant information, data, suggestions, and feedback for the development and implementation of the program.

105459. (a) By January 1, 2010, and every two years thereafter, the department, in collaboration with the agency, the office, and DTSC, shall submit a report to the Legislature containing the findings of the program, and shall include in the report additional activities and recommendations for improving the program based upon activities and findings to date.

Copies of the report shall be made available via appropriate media to the public within 30 calendar days following its submission to the Legislature.

(b) The department shall provide the public access to information which they are required to release pursuant to the California Public Records Act (Chapter 3.5 (commencing with Section 6250) of Division 7 of Title 1 of the Government Code).

(c) The department and the office shall disseminate biomonitoring findings to the general public via appropriate media, including governmental and other Web sites in a manner that is understandable to the average person.

(d) Any health and environmental exposure data made available to the general public shall be provided in a summary format to protect the confidentiality of program participants. The data shall be made available, after appropriate quality assurance and quality control, by July 1, 2010, and at least every two years thereafter.

Appendix 2 – Core Principles for Public Engagement

The Public Engagement Principles Project was launched in mid-February 2009 with the goal of creating clarity about the fundamental components of quality public engagement. The Core Principles listed below were developed collaboratively by members and leaders of the National Coalition for Dialogue & Deliberation (NCDD), the International Association of Public Participation (IAP2), the Co-Intelligence Institute, and others. The NCDD began in 2002 and currently includes more than 1,200 organizations and professionals from across the U.S. and other countries (www.ncdd.org). The NCDD “actively promotes learning and collaboration among practitioners, public leaders, scholars and organizations involved in dialogue, deliberation, and other innovative group processes that help people tackle complex issues.”

To access the Principles online, visit www.ncdd.org.

The Core Principles for Public Engagement

These seven recommendations reflect the *common* beliefs and understandings of those working in the fields of public engagement, conflict resolution, and collaboration. In practice, people apply these and additional principles in many different ways.

1. Careful Planning and Preparation

Through adequate and inclusive planning, ensure that the design, organization, and convening of the process serve both a clearly defined purpose and the needs of the participants.

2. Inclusion and Demographic Diversity

Equitably incorporate diverse people, voices, ideas, and information to lay the groundwork for quality outcomes and democratic legitimacy.

3. Collaboration and Shared Purpose

Support and encourage participants, government and community institutions, and others to work together to advance the common good.

4. Openness and Learning

Help all involved listen to each other, explore new ideas unconstrained by predetermined outcomes, learn and apply information in ways that generate new options, and rigorously evaluate public engagement activities for effectiveness.

5. Transparency and Trust

Be clear and open about the process, and provide a public record of the organizers, sponsors, outcomes, and range of views and ideas expressed.

6. Impact and Action

Ensure each participatory effort has real potential to make a difference, and that participants are aware of that potential.

7. Sustained Engagement and Participatory Culture

Promote a culture of participation with programs and institutions that support ongoing quality public engagement.

Appendix 3 – Activities Carried out in the Initial Phase of the Program

Biomonitoring California has involved the public in the Program from its inception by:

- Developing electronic communication avenues (website, listserv, email address);
- Maintaining ongoing communication with a broad array of different stakeholders;
- Encouraging public participation in Panel meetings; and
- Carrying out a major public awareness campaign.

These early and ongoing efforts are discussed below as a backdrop to the activities planned for the future.

Website

New materials are regularly added to the website. These materials include meeting agendas, background documents, and presentations. While most of the website content is in English, some basic program information, such as “Frequently Asked Questions,” is available in Spanish as well.

Maintaining ongoing communication with stakeholders

As of August 2010, the biomonitoring listserv had approximately 650 active subscribers. Email messages are sent to these subscribers whenever new content is added to the website, or as events (e.g., Panel meetings) are scheduled. The Program’s email address is always available for anyone interested in contacting the Program (biomonitoring@oehha.ca.gov).

To broaden opportunities for stakeholders throughout California to participate in the Program’s development and implementation, Panel meetings have been made available as live video or audio webcasts when possible. All but two of the SGP meetings held so far have been webcast. Links to archived versions of the video webcasts are posted on the Program’s website, for those meetings for which they are available.

Panel meetings

Because the Program’s SGP meets three times per year, these meetings present a regular opportunity for people who are interested in the Program to stay involved. To publicize these Panel meetings, announcements are sent to the listserv and information is posted on the Program’s website. Sign-up sheets at the meetings are used to follow up with attendees who express an interest in being added to the Program’s listserv.

At the SGP meetings, time is allotted for public comment after each major topic area. Some commenters have given brief presentations on specific topics to the Panel. Individuals watching the meetings via webcast can provide comments via email, which are read into the record by the Panel chair. Meeting transcripts are available on the Program’s website.

Public awareness campaign

The Program has undertaken one major public participation campaign. This effort was designed to raise public awareness about biomonitoring in general and Biomonitoring California in particular, and to gather ideas and suggestions from the public with regard to the selection of chemicals to be included in the Program. This effort included three main elements, all taking place during the months of March and April 2008:

- 1) Public workshops held in three different locations around the State (Los Angeles, Oakland, Fresno)
- 2) Public teleconferences (three)
- 3) An online survey (approximately 300 respondents)

A report on these activities is available online⁴. The Program gained valuable information from these efforts, including specific suggestions on chemical selection from those who participated as well as experience in the relative effectiveness and costs of the different methods we used for engaging the public.

⁴ The report on the 2008 efforts can be found at <http://oehha.ca.gov/multimedia/biomon/pdf/PublicParticipationreport021909.pdf>

Appendix 4 – Glossary of Terms and Abbreviations Used in this Document

Biomonitoring reference level – Comparison value intended to aid understanding of biomonitoring results. Biomonitoring reference levels could include, for example:

- Health-based levels (e.g., concentrations in blood or urine) derived in a risk assessment;
- Existing guidance values (e.g., reference doses) converted to levels in blood or urine;
- Clinical action levels or medical management guidelines;
- Levels derived for occupational exposure surveillance and intervention (e.g., biological exposure indices); and
- Average or upper bound (e.g., 95th percentile) levels measured in similar cohorts or national or international representative samples.

Building community capacity – Creating opportunities within the Program for people in a specific location or group to gain knowledge, skills and experience (e.g., learning to conduct interviews of project participants).

Cal/EPA – California Environmental Protection Agency

CECBP – California Environmental Contaminant Biomonitoring Program, also known as Biomonitoring California

CDC – Centers for Disease Control and Prevention

CDPH – California Department of Public Health

Community – The legislation defines the term “community” to include location-based populations, as well as populations that share characteristics of interest and may share common chemical exposures. A location-based community includes people living in a particular city, county or other specific geographic area. A community that is not location-based could include people who have similar occupations or comparable consumption habits, lifestyle, or product use. Other examples of communities that are not location-based include subpopulations that share ethnicity, age, or gender, or those experiencing a common health outcome.

DTSC – Department of Toxic Substances Control

EJ – Environmental Justice

Focus group – A small number of people (generally from 5 to 15) brought together with a moderator to offer their opinions on important aspects of a project. The focus group may include project participants, a population similar to the project participants, and/or experts in a particular subject area. A moderator meets in person with the group to discuss specific questions about the project.

IRB – Institutional Review Board

NHANES – National Health and Nutrition Examination Survey

OEHHA – Office of Environmental Health Hazard Assessment

Panel – The Scientific Guidance Panel for Biomonitoring California. More details on the Panel can be found here: <http://www.oehha.ca.gov/multimedia/biomon/sgpbios.html>.

Program – Biomonitoring California, also known as the California Environmental Contaminant Biomonitoring Program (CECBP). Biomonitoring California is a collaborative effort of the California Department of Public Health, the Office of Environmental Health Hazard Assessment and the Department of Toxic Substances Control.

Program participant – Individual who has been enrolled by the Program in a biomonitoring project.

Results – Levels of chemicals measured in samples of human blood, urine, or other biological specimens. Results will be presented publicly only in summary format to protect the confidentiality of participants. Results for a Program participant will be returned to that individual upon his or her request.

SB – Senate Bill

SGP – Scientific Guidance Panel

Stakeholder(s) – Any person or group who has an interest in the Program, including but not limited to:

- The general public;
- Community members or groups;
- Environmental justice groups;
- Governmental (e.g., city, county) representatives or groups;
- Health care providers;
- Health and environmental advocacy groups;
- Industry representatives or groups;
- Labor representatives or groups;
- Program participants;
- Scientific researchers; and
- Tribal groups.

Target population – The larger group of people from which a study population is drawn. The study population is intended to represent those in this larger group. The target population may be defined geographically (e.g., residents of a town, county, state) or based on other characteristics such as life stage (e.g., pregnant women), disease state (e.g., children with asthma), occupation (e.g., firefighters), or activity leading to a shared chemical exposure (e.g., use of a specific consumer product).

UCB – University of California at Berkeley