ENVIRONMENTAL PROTECTION

4.1 General Information

In line with the IOC's adoption of the environment as the third principle of Olympism, BASOC is making the unprecedented commitment to register and operate the 2012 Olympic Games to the International Organization of Standardization (ISO) 14001 Environmental Management Standard (EMS). This is the most reliable means to ensure that our Sustainable Development plan is fully achieved.

The BASOC Environmental Management System (EMS) will be an integral part of the overall management plan for the 2012 Olympic Games, with all aspects of the Olympic Games encompassed in this management system for environmental protection. The BASOC EMS will incorporate not only all requirements of the ISO 14001 Standard, but also the U.S. Green Building Council (USGBC) Platinum Level Guidelines and elements of Agenda 21 (the international model for Sustainable Development). BASOC will work with all suppliers and contractors to the Olympic Games to align with this strict set of ecological principles. Many Olympic sponsors and suppliers are already ISO 14001 certified, including AT&T, Avaya, Samsung and Panasonic. Xerox, IBM and General Motors are not only certified but have exemplary supplier management programs.

We have selected ISO 14001, Agenda 21 and the USGBC Platinum Level Guidelines as the foundation of the EMS for the 2012 Olympic Games because they are best-practices standards developed by consensus-based international and national expert bodies, which regularly refine and improve these instruments. The EMS will therefore benefit from the continuing evolution of these standards, and stay on the cutting edge of Sustainable Development.

4.1.1 *Supply charts and brief information explaining the public authorities' environmental and national resource management systems and their responsibility vis-à-vis the OCOG.*

Environmental Protection and Resource Management

The unique geography of the San Francisco Bay Area combined with the heightened awareness of its residents to the finite supply of natural resources gave rise to the first state environmental assessment statute in the country, the California Environmental Quality Act.

The number and variety of environmental interest groups born in the San Francisco Bay Area further attest to the acute sense of ecological awareness and sophistication in our region. Among these many groups, several, including the Sierra Club, Rainforest Action Network and the Earth Island Institute, have grown to national and international stature.

Another unique achievement in the San Francisco Bay Area is a paradigm shift in the way to measure the success of environmental regulation from a focus on enforcement actions to a focus on monitoring key environmental health indicators.

The Silicon Valley Environmental Indicators Project produced a report that inventoried our key environmental risks and put in place a plan to continually measure these "indicators" of environmental health. The report sets the basis for evaluating the success of environmental enforcement and voluntary initiatives based on the actual condition of the physical environment.

The report has also inspired the emerging Silicon Valley Environmental Management System (SVEMS), a framework that sets goals for improvement of all priority ecology conditions (including traffic flow, key indicator species health and quantity, risks to environmental media) in the San Francisco Bay Area.

The BASOC EMS will align with the regional SVEMS, the San Francisco Sustainable Development plan, and integrate with a statewide plan to use sustainable management systems to improve the way that all environmental protection efforts, including legal compliance, are developed and enforced.

Against this backdrop, myriad environmental regulations and statutes exist to guide industrial activities in protecting the environment. These statutes, however, only reach approximately 30% of the environmental risk created by modern-day industrial activities. For this reason, BASOC will implement a world-class EMS of its own to identify and manage – as closely as is feasible – 100% of the environmental risks and impacts associated with preparing for and presenting the 2012 Olympic Games.

Responsibility for environmental protection and natural resource management is shared among federal, state and local government agencies. (See agency description in the Appendix.):

Table 4.1.1 Relevant Federal, State and Local Authorities in Northern California

SUBJECT OF RESPONSIBILITY	FEDERAL	STATE	REGIONAL/LOCAL
Environmental Protection	U.S. EPA (in California, Region IX)	Cal/EPA DTSC IWMB CARB SWRCB Dept. of Pesticide Regulation Office of Environmental Health Hazard Assessment	CUPAs City/County Environmental Health Departments BAAQMD POTWs RWQCB
Natural Resource Management	U.S. Dept. of Interior U.S. Fish & Wildlife Service Bureau of Reclamation National Park Service Bureau of Land Management	California Resources Agency Dept. of Conservation Dept. of Fish & Game Dept. of Forestry & Fire Protection Dept. of Parks & Recreation Dept. of Water Resources	Bay Area Conservation & Development Commission City Planning Offices & Departments Architectural Review Boards

4.1.2 *Supply a brief survey, including maps and charts of the local environmental situation, with a view to environmental health, protected areas, cultural monuments and potential natural hazards.*

The signature geologic feature of the San Francisco Bay Area is the San Francisco Bay and the mountain ranges encircling it. The cold waters of the northern Pacific Ocean bound it on the west. To the east lies the warm expanse of the 400 mile-long Central Valley containing the Sacramento and San Joaquin Rivers, fed by runoff from the Sierra Nevada Mountains (the highest mountains in continental North America). Their junction with the San Francisco Bay forms the largest river delta system west of the Rocky Mountains. The interplay of these natural features drives our weather and has created a number of unique habitats, including the Coastal Redwood Forests (the tallest trees in the world), salt marshes, and riverine and delta habitats.

4.1.2 Environment

An anchor of the Pacific Flyway, these coves, saltwater marshes, rivers, freshwater marshes and coastal environments are unique habitats for sensitive species. Some of these species include the salt marsh harvest mouse, the clapper rail, the mission blue butterfly, the red-legged frog, the tiger salamander, the burrowing owl and the San Francisco garter snake.

Environmental Health

Generally, the San Francisco Bay Area's environmental health is among the best in the nation. The region's air quality has undergone the most dramatic improvement of any metropolitan area in the past ten years. In 1999, the San Francisco Bay Area exceeded national standards for ozone emissions for minimal portions of only nine days. For all analytes other than particulate matter (where regulatory rigor is growing and standards are becoming more stringent), the San Francisco Bay Area had zero non-attainment days in 1999. Regarding particulate matter, a wintertime problem, the San Francisco Bay Area was out of compliance on 12 days in 1999. New regulations are being put in place to address this problem.

Drinking water quality in the region is excellent. Compliance with drinking water standards has been greater than 99% since 1994.

Protected Areas

The San Francisco Bay Area has one of the highest percentages of protected lands in the United States, and active conservation efforts continue to set new land aside. The combination of national parks, seashores, marine sanctuaries, wildlife sanctuaries, monuments, state parks, regional open space preserves and county parks protect the most sensitive sites in the area. Hundreds of thousands of acres are protected as state and national forests and by the Bureau of Land Management. Muir Woods National Monument (553 acres), Pigeon Point Lighthouse, the Monterey Bay National Marine Sanctuary (3,392,000 acres) and the San Francisco Bay National Wildlife Refuge Complex (36,000 acres) are samples of what is to be found in the region.

National Parks

There are four major national parks within a three-hour drive of the San Francisco Bay Area. The Golden Gate National Recreation Area (GGNRA) is the largest urban national park in the world (74,000 acres of land and water). Point Reyes National Seashore (71,068 acres) contains unique elements of biological and historical interest, ocean cliffs, grasslands and forested ridges. Together with the GGNRA, Point Reyes NS was designated as a UNESCO Biosphere Reserve in 1988. Yosemite National Park (761,266 acres) encompasses a spectacular tract of mountain-and-valley scenery in the Sierra Nevada Mountains. Yosemite is also a designated UNESCO World Heritage Site. Redwood National and State Parks (110,232 acres) protect 45% of all remaining old-growth coastal redwoods, the world's tallest trees. These parks have been designated a UNESCO World Heritage Site and form part of the California Coast Ranges UNESCO International Biosphere Reserve. (See detailed description in the Appendix.)

UNESCO International Biosphere Preserves

In addition to the GGNRA/Point Reyes NS and California Coast Ranges, Northern California is the site of three additional International Biosphere Reserves:

Stanislaus-Tuolumne (607 hectares), Sequoia-Kings Canyon (349,543 hectares); and San Joaquin (1,832 hectares).

State Park System

The State Park System in California incorporates more than 200 parks, beaches, historic sites and recreation areas. Over 60 of these are located in the San Francisco Bay Area, including Angel Island State Park, Alcatraz Island State Park, China Camp State Park, Big Basin Redwoods State Park and Henry W. Coe State Park (the largest state park in Northern California).

Cultural Monuments

The San Francisco Bay Area is rich in its cache of cultural monuments. There are 31,060 California State Historical Landmarks and 690 Registered National Historical Landmarks, as well as 12,225 archaeological sites. The sites reflect the breadth of California history from Native American settlers, Spanish explorers, Gold Rush 49ers and maritime culture to literature, technology and aerospace.

Natural Hazards

The San Francisco Bay Area is a moderate climate zone. The only noteworthy natural hazard here is that the California coast overlies an active Holocene fault zone. However, there is minimal chance of disruption of the 2012 Olympic Games resulting from this condition, given the statistically small chance of a significant earthquake occurring in any given year.

The successful experience of the state in addressing these risks has led to the highest earthquake safety standards in the world. Thus, the San Francisco Bay Area's infrastructure is designed and engineered to effectively resist earthquake damage, and all venues and facilities housing members of the Olympic Family and spectators or hosting events during the 2012 Olympic Games have, or will have if not yet built, state-of-the-art earthquake-resistant structural systems. Every site will be inspected before the Olympic Games begin to ensure the safety of all involved.

4.2 ***Supply an official guarantee from the competent authorities stating that all work necessary for organization of the Olympic Games will comply with local, regional, national regulations and acts and international agreements and protocols regarding planning, construction and the protection of the environment.*** (**Theme 19** – *Guarantees.*)

Letters of guarantees from BASOC, the City and County of San Francisco, the City of Oakland and the City of San Jose can be found in **Theme 19** – *Guarantees*.

4.3 ***Have environmental impact assessments been carried out by competent authorities for all sites and facilities? Please produce a list of all studies made and the date of such studies.***

For sites and facilities built post-1970, Environmental Impact Reports exist and are summarized in the Appendix. Regulations did not require environmental assessments for facilities constructed prior to 1970. And facilities that will be constructed or will undergo any significant permanent modifications (including any short-term uses or modifications that potentially have any long-term impact) will undergo assessments carried out in full compliance with current laws and regulations. In addition, all new facilities funded by

BASOC will be constructed based on the principles of Sustainable Development and Green Design (see Section 4.4).

4.4 ***Supply an environmental action plan for the Games with objectives, goals and priorities, including a brief overview of planned environmental management system.***

The EMS *is* the environmental action plan for the 2012 Olympic Games. It is a high-performance model, based on ISO 14001, but upgraded to include the U.S. Green Building Council (USGBC) Platinum Level Guidelines, elements of Agenda 21 and other sustainability principles. The commitment to organize and operate the planning and presentation of the 2012 Olympic Games under an ISO 14001-certified EMS is one of the key environmental pilot/demonstration projects.

As a part of the compliance element of ISO 14001 certification, BASOC commits, where feasible, to meeting or exceeding compliance with the Kyoto Treaty on Climate Change Gases, the Montreal Protocol on Ozone Depleting Substances and the Basel Convention on Shipment of Hazardous Wastes.

ISO 14001 was drafted by the International Organization for Standardization (ISO), a Geneva-based body composed of representatives from national governments, public interest groups and the business sector. ISO develops industrial standards on a variety of subjects. ISO 14001 is the leading international Environmental Management System standard.

The USGBC is composed of practitioners from the architectural, construction, design-build and building materials sectors. The USGBC Platinum Level Guidelines are consensus standards for environmentally conscious building design, construction and demolition. These are the strictest applicable standards.

Agenda 21 emerged from the 1992 Rio Earth Summit convened by the United Nations Commission on Environment and Development. The Agenda lays out detailed action plans for Sustainable Development for business, government, labor and Non-Governmental Organizations (NGOs). Whereas ISO 14001 and the USGBC guidelines focus on environmental protection, Agenda 21 adds principles of social responsibility. It is the integration of these three instruments that distinguishes a comprehensive EMS from a simple environmental action plan.

The EMS will guide the business plan for the 2012 Olympic Games. This system will achieve cost reduction and sustainability by:

- Creating a basis for anticipation and elimination of environmental risks;
- Prioritizing environmental risks and cost controls attendant to planning and executing the Olympic Games;
- Delivering solutions to minimize environmental risks and financial costs;
- Engaging everyone involved in the Olympic Games in shared resource conservation and ecological protection goals; and
- Verifying and reporting the environmental success and cost reductions resulting from the implementation of the EMS.

The EMS will lead to resource protection and efficiency, and excellence in design and use of facilities and venues. It will make the Olympic Games' events, venues, housing facilities, transport mechanisms and related activities showcases of environmental excellence.

The BASOC EMS will also contribute a legacy effect of best practices and new tools to future Olympic Games organizers and leave behind an energized, more environmentally conscious San Francisco Bay Area community.

BASOC EMS

The BASOC EMS consists of several core elements, including:

1. An EMS Framework
2. Sustainability Objectives & Goals
3. Supplier/Vendor/Sponsor Partnership Program
4. Green Design Initiative
5. Public and Olympic Games Education and Legacy Program

1. The BASOC EMS Framework

- Assemble a core team and define the roles and responsibilities of all relevant parties
- Assemble an advisory group of stakeholders from industry, government, NGOs and community groups to provide guidance throughout each stage of implementation
- Develop a Sustainability Policy Statement for the 2012 Olympic Games
- Identify risks, impacts and opportunities in the following program areas:

PROGRAM AREAS	PROGRAM AREAS
Greenhouse gases	Water conservation
Ozone-depleting substances	Biodiversity and cultural heritage preservation
Waste minimization	Air, water and soil quality
Materials consumption	Restoration
Energy conservation	

- Prioritize the environmental program areas identified above
- Develop objectives, goals and key milestones toward achieving the goals to address the identified high-priority issues, along with assigned responsibilities for these goals and timescales for achievement of milestones and goals
- Develop and implement a program of periodic self-assessment for compliance with the policy statement and progress toward achievement of established goals
- Annual sustainability review by core team and high-level OCOG, USOC and IOC members to review progress and the need for changes to the policy, goals, milestones and programs based on changing conditions and the overarching commitment to continuous improvement of sustainability initiatives
- Registration of the EMS to ISO 14001 by an accredited registrar within two years of being awarded the Olympic Games
- Annual third-party audits of the EMS for continuing conformity to ISO 14001
- Publish an annual report on the EMS and Sustainability Performance; post on the 2012 Olympic Games Web site data resulting from self-assessments and third-party audits
- Implement the Ecology Council as discussed below

The Ecology Council

The executive management team of the OCOG will generate the business plan for the 2012 Olympic Games based on this EMS. The Chief Environmental Officer (CEnO) will be a member of the executive team. To help ensure that appropriate decisions regarding environmental issues will be taken in the context of the EMS, an Ecology Council (EC) will be formed, chaired by the CEO and CEnO.

The Ecology Council will draw from industry, the community, other public representatives (whether in the form of NGOs or individuals) and others to review and advise the OCOG on Olympic Games planning decisions made that have real or potential environmental impacts. The Ecology Council will hold its own meetings with the larger community and coordinate its input and relay its concerns to the OCOG. In short, the Ecology Council will be the steward of integrated ecology.

2. Sustainability Objectives & Goals

The EMS will develop a complete catalogue of the environmental risks and impacts associated with the event. This list will then be prioritized, taking into account the environmental principles articulated for the event (the EMS Policy Statement), the views of interested parties (other stakeholders including community members, sports organization representatives and regulatory agencies), and the regulatory and legal requirements associated with the 2012 Olympic Games.

One important attribute of the EMS will be to continuously sophisticate and advance the OCOG's use of these best-known methods and specific measures to control or minimize environmental risk. Some of these commitments will be upgraded as the 2012 Olympic Games approach, using the continuous improvement process fundamental to the BASOC EMS.

To the full extent feasible, BASOC intends to implement the sustainability objectives and goals set forth in Table 4.4, through its application of the EMS to the 2012 Olympic Games.

Table 4.4 Sustainability Objectives & Goals

PROGRAM AREA REPRESENTATIVE ACTIVITIES UNDERTAKEN TO ACHIEVE SUSTAINABILITY GOALS AND OBJECTIVES
Air, Water & Soil Quality
■ Minimize emissions to air associated with traffic and transportation by measures specified in Transportation plan (see Section 4.8)
■ Establish stringent air emissions standards for construction activities
■ Use ozone treatment systems or other existing best practice for water (drinking and swimming pools) to minimize chlorine use
■ Develop and implement stormwater pollution control and countermeasure plan for all major event facilities and Olympic housing (e.g., the Olympic Village) to monitor and minimize impact of non-point source stormwater runoff
■ Properly manage and dispose of all contaminated soil discovered during development of Olympic facilities
■ Ban use of HFCs in refrigeration/cooling equipment systems in all facilities (permanent and temporary) developed by the OCOG. Promote elimination of HFCs and HCFCs in preexisting structures and among sponsors
■ Minimize greenhouse gas emissions from fossil fuel-based power generation via measures specified in Energy Conservation program (see below)
■ Minimize greenhouse gas emissions associated with distribution and shipping of supplies, materials and equipment by maximizing local sourcing and environmentally sound transport
■ Work toward the elimination of Halon, HCFC or other ODS-containing fire extinguishers in Olympic facilities and venues by 2012

continued on next page

Table 4.4 Sustainability Objectives & Goals *continued from previous page*

PROGRAM AREA REPRESENTATIVE ACTIVITIES UNDERTAKEN TO ACHIEVE SUSTAINABILITY GOALS AND OBJECTIVES
Waste Minimization and Raw Materials & Resource Efficiency *continued*
■ Adopt Pollution Prevention Hierarchy (which will define the order of priority for materials efficiency and reuse of non-consumable products and infrastructure) in Olympics EMS Policy Statement: 1. Source Reduction, 2. Reuse, 3. Recycling, 4. Responsible management and disposal of remaining waste streams that cannot be handled by top three priorities
■ Specify to suppliers and vendors the need to mark and label equipment, supplies and other non-consumable commodities for ease of identification for reuse, recycling and reclamation, and to ensure maximum responsibility in disposition of materials that cannot otherwise be designed for reuse or recycling
■ Through supplier/vendor partnership programs, deliver procurement preference program given to materials, supplies, products and packaging that are: 1. Reusable (highest preference), 2. Biodegradable/compostable, 3. Recyclable
■ Preferences for suppliers/vendors who will take back products, materials, supplies and packaging for reuse or recycling
■ Procurement screening criteria to ensure minimization of materials consumption in products, supplies, equipment and materials purchased
■ Minimization/elimination of packaging
■ Include information regarding proper waste management in education programs for all stakeholder/participant groups
■ Green-design program to minimize materials needed for construction and development, and to ensure that materials used are the most sustainable options available (i.e., lowest off-gasing, natural fibers, sustainable harvested timber products, minimization/prohibition of products containing hazardous substances)
■ Prohibit new use of PVC piping, plumbing, cabling, seating and interiors at all Olympic facilities, housing and offices, and promote upgrading where feasible
■ Use of 100% recycled water for all landscaping, irrigation and toilet water
■ Maximize use of recycled/reclaimed water for all facilities (venues, the Olympic Village, offices)
■ Establish mandatory water efficiency standards for all appliances, fixtures and equipment (e.g., low-flow toilets, efficient shower heads and sink faucets, washing machines) in facilities and venues developed by OCOG
■ Use of composting toilets at event venues, temporary facilities and all other facilities possible
■ Treat sewage waste and compost solid sewage waste
Energy Conservation
■ Maximize use of renewable power for all Olympic facilities, housing and events, including offices
■ Energy procurement preference program (wind, solar, biomass, geothermal, small hydro) provided adequate reliability and safety can be satisfied using these innovative technologies
■ Establish energy-efficiency performance levels (where practicable, at higher levels than currently applicable standards) for all appliances, fixtures and equipment
■ Donate or sell at discounted rate all solar-power panels and collectors not used for Olympic purposes after Olympic Games
■ Preference for renewably powered water-heating systems
Biodiversity & Cultural Heritage Preservation
■ Prohibit development on green fields for Olympic facilities by using/modifying existing developments and facilities
■ Provide organic food track at all venues/facilities
■ Conduct thorough environmental impact assessments for all Olympic facility developments
■ Offset any unavoidable impacts to biodiversity through Restoration program (see below)
■ Use only Forestry Stewardship Council-approved timber products
■ Prohibition against Olympic development in any areas found to contain significant artifacts of cultural heritage
■ Include information regarding cultural heritage of the San Francisco Bay Area in education programs
■ Provide cultural heritage exhibition at major-event venues (e.g., indigenous peoples and traditions, gold-rush era, historic landmarks, etc.)
■ Provide San Francisco Bay Area biodiversity exhibition at major-event venues (e.g., native flora and fauna, endangered and threatened species)
■ Tree planting and investment in carbon sinks to offset 150% equivalent of actual emissions (in CO_2 equivalents) incurred throughout preparation for Olympic Games and actual events, including transportation increases
■ Purchase of open space for conservation purposes to offset green fields developed for Olympic Games

Each of these activities will represent demonstration projects for best-known methods of sustainable development and will be highlighted in an Environmental Stewardship Exhibit.

3. Supplier/Vendor/Sponsor Partnership Initiative

Maximum impact of the 2012 Olympic Games will result from propagating the EMS as broadly as possible. One of the greatest opportunities for the OCOG in this regard will be to deploy the EMS and the environmental priorities it specifies to all vendors, suppliers and sponsors selected by the OCOG for the 2012 Olympic Games.

To accomplish this, the following activities will be undertaken where feasible:

- Develop Sustainability Screening criteria for all suppliers and vendors
- Either develop Procurement Preference program for all suppliers and vendors (based on level of economic engagement and significance of the environmental impacts associated with their operations and goods and services sold to the OCOG), including a requirement that vendors and suppliers to the Olympic Games have registered, or develop a defined plan for registering their businesses to ISO 14001
- Develop Sustainability Requirements for all suppliers, vendors and sponsors that shall be included within contractual agreements
- Inform all suppliers, vendors and sponsors of the EMS and the objectives and goals of the Vendor Sustainability Partnership requirements
- Include supplier/vendor/sponsor performance within the scope of the annual sustainability self-assessments

For all other vendors, suppliers and sponsors, we will encourage and guide them to align their practices with the EMS.

4. Green Design Initiative

The use of environmentally friendly technology as part of our "Green Design Initiative" is one of the environmental projects/pilots. All facilities modified or renovated for the 2012 Olympic Games will be subject to, or encouraged to adopt, the same strict environmental performance goals established by the EMS for presentation of the 2012 Olympic Games. This will also apply to those few new facilities (e.g., the Olympic Village) required to present these Olympic Games. To achieve this goal, the following green design activities will be carried out in the design, renovation or construction of these facilities where feasible:

Develop Green Design and Building criteria applicable to all OCOG-funded Olympic Games facilities, offices and housing based on U.S. Green Building Council's LEED Platinum criteria:

EXAMPLES OF CRITERIA/REQUIREMENTS	EXAMPLES OF CRITERIA/REQUIREMENTS
In-fill development	Solar heating
High-density Olympic Village	Recycled content building materials
Energy-efficiency standards	Renewable power source (solar, etc.)
FSC-approved wood only	Housing near transit hubs and shopping

5. Public and Olympic Games Education and Legacy Program

The EMS takes seriously the Olympic Games' commitment to leave an improved community in its wake. To this end, BASOC will develop a legacy program to share with both the local community and the world at large the lessons and benefits derived from its

strong commitment to cost-effective environmental protection. Meeting this obligation will be accomplished, in part, via the following education and legacy activities:

- Assemble an Education and Legacy Committee
- Develop a Sustainability Education program, tailored to stakeholder groups:

STAKEHOLDER GROUPS	STAKEHOLDER GROUPS
Community	Athletes
Public agencies	Officials
Suppliers/Vendors/Sponsors	Media
Contractors/Subcontractors	Spectators
Environmental/Other NGOs	

- Give workshops and presentations for K-12 schools, universities, industry associations, community groups, governmental agencies and municipalities
- Work with Olympic Games marketing and advertising to include sustainability as a theme of the 2012 Olympic Games and to increase public awareness
- Work with Supplier/Vendor program members to stimulate markets for renewables, recyclables, organic foods, compostable products, etc.

4.5 ***State whether an environmental awareness program has been created by the Bid City Committee, and likewise, indicate plans for the OCOG.***

There are four broad target groups for our environmental awareness program: the general public, elementary through high school-aged students and their teachers, undergraduate/graduate students, and suppliers/vendors to the OCOG.

For students and the public, we will focus on the fact that the San Francisco Bay Area is one of the most culturally and ethnically diverse communities in the world. The intersection of this cultural diversity with the hosting of the 2012 Olympic Games presents a unique opportunity to draw on and foster links among these diverse communities and their countries of cultural origin. We will use these links to provide education to students and the public about common environmental challenges and opportunities they share.

Public

We will make extensive use of Web sites and displays at all venues, along with advertising, public service announcements and joint promotions with sponsors to highlight key environmental issues in the San Francisco Bay Area and to illustrate the environmental commitments and achievements of the 2012 Olympic Games. This will include Sustainable Development, responsible product use and ecologically sound high-density in-fill. In addition, we will examine the historic and cultural role of sports in each of the countries participating in the 2012 Olympics Games and how this has affected the evolution of the modern Olympic Games.

Elementary and Secondary School Education

We will develop a series of nationally specific Web sites linking children in American classrooms to children in the classrooms of each nation participating in the 2012 Olympic Games. These Web sites will be designed to provide opportunities for American children of a particular cultural heritage to develop familiarity with, and follow the progress of, athletes from their ancestral country as they train and compete for their specific national

team. Conversely, the Web sites will provide opportunities for children in each participating country to follow the progress of U.S. athletes of their same cultural heritage as they train and compete for the U.S. team. The sites will also include general cultural information about each specific country and about descendants of that country who have come to United States. This type of exchange will foster a broader recognition, appreciation and support in the United States for foreign athletes when they come to the 2012 Olympic Games and, conversely, a following for U.S. athletes of different cultural heritages in their country of cultural origin.

This program will be used as a backbone to provide cross-cultural environmental education illustrated by challenges met and solutions implemented in presenting the 2012 Olympic Games. The development of this network of Web sites and "local classrooms" around the world (all helping to provide local content and allowing student-to-student and teacher-to-teacher interactions) will be a legacy that can be passed on to each successive host country.

Locally, we will develop new programs and coordinate with existing programs of the California Department of Education, Office of Environmental Education. These include the State Education and Environmental Roundtable (SEER – a cooperative endeavor of education agencies from 12 states working to improve student learning by integrating the environment into K-12 curricula and school reform efforts), the California Regional Environmental Education Community Network (CREEC) and the Environmentality Challenge. The three overarching goals of these programs and, in part, of BASOC's Environmental Awareness Program are to develop respect for the environment and mankind's impact on it, to develop knowledge and understanding of the underlying biology and science, and to create hands-on project experience.

University/Graduate Students

For university and graduate-level students in such areas as business administration, engineering, design and law, or whose educational program goals relate specifically to environmental science or management, we will develop an educational track that will incorporate EMS planning and sustainable development into their curricula. Furthermore, the BASOC EMS audit function will rely on recruiting and training new EMS auditors among university undergraduate and graduate school populations.

Two graduate seminars have been established at UC Berkeley to look at the environmental impacts of transportation associated with the 2012 Olympic Games. This is discussed in greater detail in Section 4.8.

Suppliers/Vendors

As part of the EMS, suppliers and vendors will be provided with specific technical training to support environmental protection and performance plans within their businesses and for the goods and services they will provide to the 2012 Olympic Games. It will also prepare them for implementing and registering formal EMS plans of their own, aligning with ISO 14001. This training will rely on a series of workshops in conjunction with defined timelines for implementing EMS subactivities, allowing the suppliers and vendors to learn and implement EMS plans in step-by-step fashion, and, in turn, educate their own suppliers. This expanding network of ISO 14001-trained organizations will be one of the key environmental legacies of the BASOC bid.

For the broader private sector community, we will link the BASOC EMS Education program with existing corporate EMS education programs already in place throughout the San Francisco Bay Area. Furthermore, the BASOC EMS audit function will also recruit EMS auditors among existing private EMS operations, enhancing the communication of best-auditing practices and improving the efficiency of the BASOC EMS.

4.6 ***State the efforts to protect and enhance significant features of the natural environment and cultural heritage during preparations for the Olympic Games.***

Protection of natural environmental and cultural heritage features will be achieved through strict compliance and enforcement of all existing state, national and regional laws and regulations. In addition, the level of environmental commitments contained in our EMS will result in levels of protection greater than those mandated by existing regulations.

Numerous regionwide programs, funded, implemented and coordinated by multiple local and regional organizations, are achieving acquisition and restoration of salt- and freshwater marsh habitat and hill and mountain open space. For any impact(s) to green space resulting from BASOC's construction and development for the 2012 Olympic Games, BASOC commits to mitigation consistent with BASOC's Sustainability Objectives and goals.

BASOC also commits to an assessment of the net contribution of greenhouse gases from the presentation of the 2012 Olympic Games and to a tree-planting program that will, at a minimum, represent an offsetting carbon sink.

BASOC will work closely with the State Historic Preservation Office (SHPO) to ensure the protection and integrity of historical sites in proximity to 2012 Olympic Games venues. This effort will include a survey of prehistoric Native American cultural resources and historic sites proximate to the venues.

4.7 ***State which environmental organizations have been consulted.***
Indicate their size, character and representativeness.
Indicate their opinions and attitudes toward the bid.

The following have been contacted and will provide reactions to the bid document once it is released by the USOC.

Table 4.7 Environmental Organizations

ORGANIZATION	FOCUS	# MEMBERS	OPINION
Rocky Mountain Institute	use of natural capital	non-member group	advised on design supportive
Sierra Club (San Francisco and Loma Prieta Chapters)	broad-based, lobbying, preservation	66,000	will review upon release
Transportation/Land Use Coalition	transportation/land use	60+	member groups will review
Audubon (Bay Area Chapters)	habitat protection	17,000	will review
Earth Island Institute	conservation, protection, restoration	30 projects worldwide 9,000 members	will review
Water Keepers Northern California	Clean Water Act monitoring/enforcement	3,000	supportive/will review
Green Belt Alliance	open-space protection/land use	4,000	will review
Silicon Valley Environmental Indicators Project		broad-based constituency	will review

4.8 ***State the efforts to be undertaken regarding transportation and how environmental impact arising from air pollution, noise and, if applicable, from infrastructure programs such as road expansion, will be minimized.***

All transport options, including use of existing mass-transit infrastructure, development of necessary new infrastructure and other transit options, will be undertaken in strict compliance with the many environmental legal requirements applicable to such activities. The San Francisco Bay Area transit systems, including all mass-transit authorities and the Joint Powers Agency, which operates Caltrain, are subject to myriad highly protective environmental legal obligations. These will form the minimum requirements for all new BASOC transport initiatives. Where feasible, these initiatives will be designed and implemented to be more environmentally responsible than required by law.

In this vein, we are strongly committed to minimize environmental impact associated with traffic and transportation for the 2012 Olympic Games. We will accomplish this by establishing stringent air emissions standards for construction and development activities, as well as by minimizing CO emissions associated with transportation to and from events by maximizing use of mass transit in the following ways:

- Provide transit on all mass-transit systems as part of event admission tickets;
- Support environmental upgrades to mass-transit improvements;
- No spectator parking at venues;
- Utilize electric/alternative fuel shuttles from public transit hubs (train stations, bus stops, BART stations, airports) to events;
- Utilize electric/fuel cell/alternative fuel VIP shuttles wherever feasible;
- All buses and vehicles for the Olympic Family will be Very Low Emission (VLE) at a minimum, with 100% Zero Emission Vehicles (ZEV) as the goal;
- Support bicycle transport and secured bicycle parking lots;
- Create ride sharing and car-share programs with a fleet of VLE or ZEV vehicles; and
- Explore Web-based sign-in system for transportation.

Another environmental pilot program we will examine is the development of a Web-based communications system that would create a “smart” transportation grid. Event tickets would possess a unique identifier (e.g., bar code, chip), allowing the holder to swipe or key into the Web. The system will then know their location, destination and timing. This will allow for greatly improved load management and for the prepositioning of feeder transportation systems to bring people to main mass-transit lines in a timely fashion.

Road expansion will be targeted to minimize adverse environmental impacts and to have a maximum beneficial impact on relieving traffic congestion around the San Francisco Bay Area. To this end, the focus will be on creating HOV lanes to ring the region, and to reserve these for use of the athletes, Olympic Family and HOVs during the Olympic Games.

BASOC, in conjunction with the University of California Institute of Transportation Studies at Berkeley, has established two graduate-level semester-long seminars for spring and fall 2001, to assess environmental impact associated with the preparation for, and

presentation of, the 2012 Olympic Games. These studios will involve 15 to 20 students in the fields of transportation, urban planning and engineering led by professors from the Department of City and Regional Planning and the Department of Civil and Environmental Engineering.

4.9 ***State the plans for solid waste handling, sewage treatment and energy management, and how you expect this will influence the city and region in the future.***

This element of Theme 4 is addressed in detail in the EMS Plan (Section 4.4). All solid waste, sewage treatment and energy management decisions associated with the 2012 Olympic Games will be based on best practices executed within the EMS. The Pollution Prevention hierarchy, calling for source reduction, reuse, recycling, secondary use and responsible stewardship of remaining wastes will be the template for waste management.

BASOC commits to diverting from land disposal a minimum of 95% of solid waste generated at all phases of planning, production and postproduction of the 2012 Olympic Games. This includes construction waste, interim and development-generated solid waste, Olympic Games-phase waste generation (such as merchandising materials, packaging and food-service wastes), and demobilization and site clearance waste.

We will implement a comprehensive, user-friendly color-coded recycling system at all Olympic venues, including the Olympic Village. Compostable and postconsumer materials will be used in all feasible applications, including food service, packaging, utensils and other commodities.

Energy conservation and green-energy generation are discussed in detail in the EMS. However, maximum use of green-energy technology (passive and active solar, wind power, cogeneration and other sources) will be employed throughout the Olympic Games. The Olympic Village is designed to demonstrate that cost-effective, high-density in-fill can be accomplished with minimal impact on city and regional infrastructure. It is designed to be independent from the external wastewater and sewage treatment systems. All sewage and wastewater will be treated on site and recycled. In addition, with considerable internal energy generation capacity, the goal is to be a net contributor to the regional power grid on an annualized basis. Success of these efforts will be a key legacy of the 2012 Olympic Games, as it directly relates to other significant community risks in the San Francisco Bay Area, including traffic flow, air quality, water use, energy generation and use, and housing capacity and affordability.

Water Supply and Wastewater Treatment for the Olympic Village

Efficient water use is increasingly critical as population grows. The goal for the Olympic Village is to be a net zero consumer of water on an annualized basis. Among the leading-edge environmental technologies we will use to pursue this target are:

- Source reduction, utilizing low-flow and smart systems and fixtures, closed-loop landscape irrigation systems, integrated with the stormwater discharge and retention systems.
- Utilization of discreet plumbing systems to separate black water (kitchen and toilet), gray water (sinks, showers, baths and laundries) and drinking water systems

- Decentralized wastewater treatment and reuse systems capable of handling needs of a given section of the project or a given element, such as a major building
- Utilization of efficient centralized treatment and recycling for all sewage (black water) of the project
- Restoration and maintenance of the natural regional hydrologic features intrinsic to the site

Currently, a deep-shaft wastewater treatment facility is being investigated. This advanced technology is one of the most space- and energy-efficient methods of centralized wastewater and solid waste treatment currently available. This system pumps sewage and air into a 350-foot-deep by 30-inch-wide shaft where the high temperature and pressure force the atmospheric oxygen and nitrogen into solution. This accelerates the breakdown reaction, and as the treated water returns to the surface, bubbles bind to the particulates, facilitating removal in a flotation tank. The water is then polished and disinfected with ozone and ultraviolet light.

As with many of the environmental components of the BASOC bid, the application of this technology will leave a substantial legacy, resulting in much broader uptake and use of the technology throughout the San Francisco Bay Area and beyond.

4.10 ***Indicate special features which are not covered by this questionnaire, and which the Bid City committee would like to add.***

Organic Food Track

Core values of the Olympic movement include fitness and well-being. The food one consumes is an integral aspect of maintaining personal fitness. In many nations participating in the Olympic Games today, especially among member states of the European Union, there is growing concern and resistance to use of genetically modified organisms (GMOs) in food and an increased interest in, and preference for, organic foods. These developments are backed by considerable passion and by regulations within the E.U. banning GMOs in food.

Interest in organic food is also growing in the United States, and concern about genetically modified food may well intensify during the next decade.

In recognition of these facts, BASOC makes the unprecedented commitment to provide, at all venues and facilities for the 2012 Olympic Games, an organic-food option and a line of organic food and drink for the attending public and for those athletes who so desire it.

Northern California has one of the highest, if not the highest, concentrations of organic growers and producers in the nation and is well suited to provide this alternative. Integrating the organic foods supplier network to the logistics and retail infrastructure, along with linking the network to the numerous venues to be able to accommodate this high volume of organic foods, will leave a lasting legacy of future food choice to sports patrons and athletes, as well as the citizens of the San Francisco Bay Area.