

**American Council of Engineering Companies (ACEC) California
Policy Platform
Sustainable Design - Revision 1**

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Issue

- As a society, we are facing risks and challenges that did not exist a few decades ago: increased demand on limited resources, globalization of markets, and issues such as water availability, carbon cap and trade, and climate change.
- Climate change, which is being exacerbated by greenhouse gas emissions from fossil fuels, is resulting in increasing temperatures, changing precipitation patterns, and rising sea levels, which will have detrimental effects on coastal infrastructure, worsen seawater intrusion into groundwater basins, and dramatically alter the critical Sacramento-San Joaquin Delta in California. These changes are impacting the function and reliability of existing infrastructure and are invalidating the traditional methods for establishing design assumptions for project analysis.
- In response to reduced surface water supply, regulated river flows for environmental purposes, and increased demands from agricultural customers, groundwater pumping has increased dramatically resulting in severe lowering of groundwater levels, subsidence, seawater intrusion in delta areas, and permanently diminished groundwater storage capacity.
- Decades of neglect has created a backlog of billions of dollars of improvements to repair and replace aged infrastructure.
- Population growth is continuing to tax the limited capacity of our existing infrastructure, which is currently in need of major rehabilitation to meet current demands and major expansion to meet future demands.
- The increased demand for personal mobility puts further burden on our transportation infrastructure and fuels the need for innovation as we attempt to increase capacity through limited and fixed transportation corridors, especially in urban areas.

Sustainability can be defined as the balance between the built and natural environments, where social, economic, and environmental considerations intersect and interact. Sustainable design and construction practices consider and balance, to the extent possible, community concerns, land use, water resources, energy, materials, and climate change. Sustainable design is an iterative process that evaluates not only how the new infrastructure will affect the environment around it, but also how the infrastructure will respond to changing environments. Sustainable design is a philosophy that shapes a designer's approach to problem solving.

New approaches to design and construction of land development and infrastructure projects are needed to address the impacts of climate change and maintain or improve standards of living for a growing population without depleting limited natural resources. Future development and infrastructure improvement projects created using sustainable design concepts are a win-win-win, in that they balance environmental, economic, and social considerations, while ensuring that future generations will be able to meet their needs.

Our forefathers were tasked with creating civil infrastructure to meet the requirements of their time. Today's civil engineers must not only transform our failing infrastructure but deliver new capacity using sustainable systems that not only meet the needs of today, but are adaptable to the changing requirements of tomorrow. Preparing designs that meet the current and future needs of both society and the environment and deal with the effects of climate change will require transformational approaches to how civil engineering is performed.

Policy

ACEC California believes sustainable development and operating principles are essential parts of a thriving society. While ACEC California can focus on promoting sustainable solutions at local and state levels (and ACEC at the National level), these efforts should also continue to be made in the context of national policies and global considerations. ACEC California supports:

- Education of our profession, the public, and our legislature on the value of sustainable design concepts to improve the resiliency of our infrastructure and its positive impacts on society and the environment;
- Use of sustainable design and operating principles in the development of projects and programs;
- Projects, programs, and legislation that adequately address the triple bottom line of economic, social, and environmental benefits;

- Projects, programs, and legislation aimed at improving resiliency of critical infrastructure to various risks, including catastrophic natural events and manmade threats;
- Application of the principles promoted by the Envision Rating System for Sustainable Infrastructure;
- Application of the principles promoted by the Leadership in Energy and Environmental Design (LEED) certification process;
- Policies that provide for reasonable incremental change to requirements for sustainable design to limit undue economic impacts; and
- Updates to standards and practices in design and construction to promote sustainability and resiliency to climate change and long term threats.

Rationale

Achieving a sustainable condition that balances our present needs with those of future generations is critical to avoid potentially catastrophic consequences.

- Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.
- Implementing sustainable projects can improve standards of living, protect and/or restore the environment, and stimulate the economy.
- Sustainable solutions help improve the resiliency of our valuable infrastructure from both natural and manmade threats.
- Adopting a philosophy of sustainable design should result in the best projects being funded, designed, and constructed.
- Sustainable design will add value to the services provided by design professionals.