

2011-2012 Policies and Priorities

ASCE



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POLICY DEVELOPMENT PROCESS

In order to promote the goals of the ASCE, the Board of Direction has adopted official Policy Statements, Position Papers and Resolutions on major technical, professional and educational issues of interest to the civil engineering community and the Nation. Listed here are the complete texts of the Society's **171** current policy documents. These statements reflect the Board of Direction actions through **October 19, 2011**.

Policy documents must be written in one of three standard formats: a policy statement, a position paper or a resolution. Prior to developing a new proposal, members should examine existing policies to determine whether a new policy document is needed, whether it conflicts with existing documents, and whether it is an issue of broad concern to civil engineers. The purpose of the document and the intended length of its life will determine which of the three formats should be followed.

- A policy statement is a broad overview of policy on a topic of continuing concern to the civil engineering profession.
- A resolution is a short term or interim position of the Society. It is intended to respond to an immediate concern or a specific event for a time frame of not longer than one year.

PROCEDURES FOR POLICY DEVELOPMENT AND REVIEW

The Public Policy Committee (PPC) acts as the oversight body on the procedural aspects of the policy development process, and is responsible for coordinating proposed Policy Statements and Resolutions from the originators to the Board of Direction. The PPC must specifically:

- coordinate and expedite the preparation of proposed policies to be presented to the Board for adoption; and,
- consider proposed policies originated by the various segments of the Society, elicit by appropriate referrals the comments of correlative interests within the Society, review for clarity and conciseness, and compare with established policies to avoid inconsistency and redundancy; and
- regularly review the policies of the Society and stimulate reviews by other groups within the Society to insure that policies are current and meaningful.

Along with the ASCE Government Relations staff, PPC will make every effort to ensure that every appropriate component of the Society has an opportunity to comment on proposed policy documents. However, PPC must balance the desire to provide an opportunity for comment with the need for timely consideration of an issue.

The PPC has established policy committees which maintain policies in their assigned areas. The committees have professional expertise relative to public policy issues of national concern to the civil engineering profession. These committees are the: Energy, Environment and Water Policy Committee, Engineering Practice Policy Committee, Infrastructure & Research Policy Committee and Transportation Policy Committee

All policy committees are staffed by the Government Relations Department in the ASCE Washington Office. Each committee has been given the charge to:

- study needs, proposals and legislation related to national public policy in its area of concern; and,
- compile supporting data on policy positions utilizing divisions and committees of the Society as well as liaison with other organizations; and
- advise the Board on policies of the Society in its area of concern, and the issuance of any public statement on behalf of the Society.

In addition to national policy committee's individual members; Institutes; district councils; professional, educational, or technical divisions; directors and national officers can and should be participants in the policy development process. Individuals who are not members of national committees should direct such efforts through their sections or branches, which in turn should route them to an appropriate committee. Those members who serve in the national committee structure should initiate policy proposals through their appropriate entities. If a public policy resolution is sent directly to the Board of Direction from a Section and District/Regional Council, the proposal normally would be referred by the Board to a national policy committee and the PPC for development.

After approval by the originating group, the proposed policy document must be sent to the Washington Office staff for consideration by the PPC. PPC makes the determination whether a proposed Policy Statement or Resolution should be presented to the Board of Direction. Proposed policy documents are part of the Committee's reports to the Board of Direction contained in the agenda prepared for the meetings of the Board.

The Board of Direction can reject the policy proposal, remand the proposal to the originating entity for further work, approve the substance of the proposal as official policy while returning it to the PPC for further editorial review, or approve the proposal as presented. The Board of Direction has independent authority over the policy process and may rescind any existing Policy Statement or Resolution.

An important function of the PPC is the ongoing reassessment of existing Policy Statements and Resolutions on a 3 year and 1 year cycle respectively. The PPC routinely refers policy documents to the committee of origin for a review of the continued relevance of the subject and for a recommendation for possible rescission, revision, clarification, or incorporation into a new policy proposal.

Occasionally a pending issue of vital importance requires a response or public statement by the Society on short notice. The PPC can accelerate the review and approval process by submitting the approved policy statement to the Executive Committee of the Board which has authority to act when the full Board is not in session. Executive Committee actions must be ratified by the full Board at its next meeting.

For more information about ASCE's Policy Document and the Policy Development Program, contact Martin Hight, Senior Manager, Government Relations at mhight@asce.org

2011-2012 Federal Priorities Agenda - *Approved by the Board of Direction on October 18, 2011*

In an effort to narrow the focus and to better deploy our government relations resources, the Public Policy Committee has identified the following six priorities for the second session of the 112th Congress.

- Clean water, drinking water and wastewater issues
- Natural hazards mitigation & infrastructure security
- Qualifications based selection for engineering services
- Science, technology, engineering and math (STEM) education
- Sustainable development & sustainable energy use
- Transportation infrastructure

Priority issues are listed in alphabetic order. The fact that an issue is not included does not constrain ASCE action.

POLICY STATEMENTS

COASTAL ZONES AND WATERWAYS

Coastal and Offshore Development (PS 162) The American Society of Civil Engineers (ASCE) supports the responsible use and development of coastal resources, the exercise of sound conservation practices, and protection of the public health and environment consistent with sustainable development. ASCE recognizes the need for regulatory control of coastal regions. Protection of public health, safety, and welfare, and protection of the environment must be appropriately addressed for all coastal projects. ASCE supports streamlined regulatory procedures and creative partnering among federal, state, and local governments to adopt coastal development policies, and to approve coastal development that complies with these policies in a timely manner. (Adopted 10-19-10)

Coastal Data Collection Programs (PS 330) The American Society of Civil Engineers (ASCE) supports the basic coastal data collection programs of the National Oceanic and Atmospheric Agency (NOAA), the U.S. Army Corps of Engineers (USACE) and other government agencies as essential for planning storm-protection systems and coastal restoration. ASCE urges continued support for the climate change and estuarine science programs, including the status and trends program of NOAA, and the National Wetlands Inventory programs of NOAA, USACE, the Environmental Protection Agency (EPA), and the U.S. Fish and Wildlife Service (FWS). ASCE also supports the USACE Coastal Field Data Collection Programs, which provide critical understanding of waves and currents that are the driving forces of coastal erosion. These data are essential to monitor, model and forecast storm surge and other natural disaster events so that we may adequately assess the risk to our coastal communities. ASCE recommends that USACE and NOAA organize and operate basic coastal data collection programs in all coastal and Great Lakes states to ensure uniform quality and continuous collection of data and coordinate these with long-term hydrologic data collection programs for major watersheds. ASCE encourages state and local governments to initiate, support and participate in these programs. (Adopted 07-10-10)

Coordination of Beach Erosion Control with Channel Maintenance (PS 349) The American Society of Civil Engineers (ASCE) supports the onshore or near-shore placement of clean sand dredged from navigation

projects, tidal inlets and estuaries. Beach-quality sediment and sand dredged from navigation projects and inlets should be placed on beaches that most need nourishment to reduce the effects of erosion. ASCE encourages regional sediment management and coordination among planners of coastal navigation projects and beach erosion control projects to ensure that beach-quality sediment and sand dredged from inlets is not disposed of offshore, but is returned to the coastal system from which it originated. (Adopted 04-01-11)

Improvement and Maintenance of Ports, Harbors and Waterways (PS 218) The American Society of Civil Engineers (ASCE) supports a program to maintain and improve ports, harbors, and waterways as an essential and sustainable component of the economic and environmental well-being of the nation. Such a program includes:

- A dedicated source of funding for the maintenance and improvement of ports, harbors, and waterways; and
- Streamlining the environmental regulatory process for improving ports, harbors, and waterways. (Adopted 07-30-11)

Louisiana Coastal Wetlands (PS 498) The American Society of Civil Engineers (ASCE) supports efforts to reduce land loss in the Louisiana coastal wetlands through protection and restoration of the physical processes necessary to sustain these unique ecosystems. ASCE supports the ongoing effort to fund and implement the comprehensive Louisiana Coastal Area (LCA) Program, as appropriately modified by lessons learned from the 2005 hurricanes. Key components of the LCA Program should include the beneficial use of dredged material, regional sediment management, and a programmatic authorization of Federal Civil Works that allow work to continue on a long-term basis. ASCE endorses the principle that coastal and wetland restoration and hurricane protection must be part of an integrated regional watershed and coastal zone management effort, which considers the interrelationships of natural, social and economic systems and includes Federal, State, local and private initiatives in a collaborative way. (Adopted 07-25-09)

Off shoring Facilities Development (PS 533) The American Society of Civil Engineers (ASCE) supports the responsible use and development of offshore resources. ASCE recognizes the need for regulatory

control of offshore regions. Protection of public health, safety, and welfare and protection of the environment must be appropriately addressed for all offshore development. ASCE urges government at all levels to incorporate scientific risk management in all decision making processes that affect the public's safety, health, or welfare, and to exercise sound conservation practices and protection of the public health and environment consistent with sustainable offshore development. ASCE supports creative partnering among federal, state, and local governments to adopt offshore development policies, and to approve offshore development that complies with these policies in a timely manner. (Adopted 10-19-10)

Restoring and Maintaining America's Beaches (PS 507) The American Society of Civil Engineers (ASCE) supports the Federal Shore Protection Program, including the periodic beach nourishment and environmental restoration components of this program as part of Regional Sediment Management including a regional dredged material management plan. Many beaches are part of barrier islands that are, in turn, an important component of a natural storm protection system. The restoration and maintenance of these beaches and their associated barrier islands, which are critical to hurricane protection as well as to the maintenance of coastal wetlands, should be a priority for state and Federal funding as a matter of public health and safety. (Adopted 07-10-10)

Waste Assimilative Capacity of Ocean and Coastal Waters (PS 286) The American Society of Civil Engineers (ASCE) supports the implementation of waste reduction programs that can significantly decrease the quantity of deleterious wastes disposed in ocean and coastal waters. ASCE further urges the continued study of the environmental effects of disposing wastes into ocean and coastal waters. ASCE supports investigative programs that achieve a greater understanding of the transport and fate of wastes disposed of in ocean and coastal waters. (Adopted 07-10-10)

DAMS, FLOOD, CONTROL AND LEVEES

Dam Repair and Rehabilitation (PS 470) The American Society of Civil Engineers (ASCE) supports the enactment of federal and state legislation to provide a sustainable and dedicated funding source for repair and rehabilitation of dams in the United States. (Adopted 10-18-11)

Floodplain Management (PS 421) The American Society of Civil Engineers (ASCE) supports protection of natural floodplains and the concept of building disaster resistant communities consistent with sustainable development and holding paramount the public's safety, health, and welfare. ASCE urges governments at all levels to adopt proactive floodplain management policies, particularly in vulnerable coastal lowlands and river bottoms, and supports creative partnering between federal, state and local governments to adopt floodplain management policies and to fund the design and implementation of floodplain management policies and flood mitigation projects in a timely manner.

ASCE urges federal, state, and local governments to inform residents of communities in floodplains of the hazards associated with the development or major redevelopment of communities below sea level or in high-risk, flood-prone areas. Such development is inherently unsustainable and puts the public at significant risk of loss of life and property. The multiple-use of flood prone areas and flood mitigation facilities should be pursued, including river restoration, wetland restoration, aquifer recharge, improvements in habitat, ecosystems, and water quality, recreation and open space use, and incorporation of floodplains into comprehensive watershed management programs. (Adopted 07-10-10)

Levee Certification (PS 529) The American Society of Civil Engineers (ASCE) recommends that the Federal Emergency Management Agency (FEMA) amend its National Flood Insurance Program (NFIP) regulation at 44 C.F.R. 65.10 that requires a Professional Engineer's (P.E.) certification to require only that a P.E. make a "compliance determination" in the development of NFIP insurance rates.

ASCE encourages FEMA to adopt a hazard-ranking system for NFIP rating maps that is based on either the maximum flood that will likely be experienced in an area (the Probable Maximum Flood), or a locally established plan for development, land use, building codes, emergency preparedness (especially warning, evacuation, and risk communication), as well as an efficient and orderly system of indemnification for the inevitable losses when levees fail or are overtopped. (Adopted 07-30-11)

National Levee Safety Program (PS 511) The American Society of Civil Engineers (ASCE) supports the enactment of federal and state legislation and regulations to protect the health and welfare of citizens from the catastrophic effects of levee failures. Congress should enact legislation to establish a national levee safety program that is modeled on the

successful National Dam Safety Program. The federal government must accept the responsibility for the safety of all federally funded and regulated levees. Similarly, state governments must enact legislation authorizing an appropriate entity to undertake a program of levee safety for non-federal levees. The act should require the federal and state governments to conduct mandatory safety inspections for all levees and establish a national inventory of levees. The National Flood Insurance Program should map all areas potentially flooded by a levee breach and identify these as special flood areas to better communicate risks and encourage affected property owners to seek appropriate protection. (Adopted 07-30-11)

Responsibility for Dam Safety (PS 280) The American Society of Civil Engineers (ASCE) supports:

- Enactment of state and federal legislation to protect the health and welfare of citizens from the catastrophic impact of dam failures.
- Reauthorization of the Dam Safety Act of 2006 and full funding of the National Dam Safety Program through annual appropriations to provide leadership through technical assistance from federal agencies and funding to assist states to assure the safety and security of state-regulated dams.
- Adequate funding for federal agencies to operate, maintain and regulate dams under their jurisdiction and provide sufficient security.
- Enactment of state legislation to authorize an appropriate agency and commit sufficient resources to undertake a program of dam safety for non-federally owned dams that, at a minimum, meet the definition of a dam in the National Dam Safety Act of 1996. State legislation should follow the Federal Emergency Management Agency (FEMA) Model State Dam Safety Program.

(Adopted 10-18-11)

DISASTER MITIGATION AND RESPONSE

Cooperation with Government for Failure Investigation (PS 294) The American Society of Civil Engineers (ASCE) will cooperate with federal, state and local governments and non-profit organizations in investigations involving the civil engineering aspects of a failure. To protect all parties involved, ASCE should execute a formal written agreement concerning the investigative effort defining the scope of services and other elements of the engagement. (Adopted 07-10-10)

Earthquake Engineering Research Funding (PS 359)

The American Society of Civil Engineers (ASCE) supports activities and funding which:

- Increase basic research in earthquake engineering;
- Increase applied research, testing, seismic monitoring and accelerated technology transfer of research results;
- Adopt and enforce standards for seismic design and construction of new and existing public buildings;
- Adopt and enforce building codes and zoning provisions to incorporate improved seismic design and construction standards of new and existing buildings and lifelines by state and local governments and by industry;
- Improve collaborative earthquake preparedness, particularly for building safety, lifeline systems and emergency response;
- Increase public education about earthquakes and engineering concepts for hazard reduction;
- Provide for stronger leadership, and improved inter-agency coordination in the National Earthquake Hazards Reduction Program (NEHRP);
- Improve seismic mitigation techniques and lower mitigation costs; and
- Improve regional risk assessments, especially which involve multiple hazards, lifeline interdependencies, and ripple effects.

(Adopted 07-25-09)

Earthquake Hazards Mitigation (PS 390) The

American Society of Civil Engineers (ASCE) supports research, practices and policies that identify earthquake hazards and mitigate earthquake risks, including:

- Continuance and expansion of the National Earthquake Hazards Reduction Program (NEHRP) and similar initiatives.
- The use of state-of-the-art performance standards for existing critical, essential, educational and disaster-recovery facilities, such as hospitals, schools and emergency shelters.
- Targeting buildings that are likely to collapse in major earthquakes for mandatory retrofit, reduced occupancy, reconstruction or demolition.
- Improvements of collaborative community preparedness and their related civil infrastructure with vulnerable regions so that they are economically resilient to earthquake hazards.
- Development of nationally accepted consensus-based standards for evaluation and retrofit of existing buildings;
- Development of national seismic standards for new and existing lifelines.
- Improvement of seismic mitigation applications focusing on low cost techniques; and

- Improvement of large risk mitigation programs at organizations, including at state Departments of Transportation, and at utilities.

(Adopted 07-25-09)

Emergency Preparedness and Response (PS 499)

The American Society of Civil Engineers (ASCE) supports planning, education and training initiatives that increase the ability and readiness of civil engineers to quickly and effectively respond to both man-made and natural disasters that impact the physical infrastructure (e.g., the nation's built environment, including water, energy, utilities, transportation and building systems). The existing California system of recruiting and training design professionals as "disaster service workers" with appropriate liability protection (under the state's Office of Emergency Services) is an example of an effective model which should be expanded to other states.

(Adopted 07-25-09)

Emergency Responder Legislation (PS 536) The American Society of Civil Engineers (ASCE) supports federal and state emergency responder legislation to prevent lawsuits against engineering firms for on-site conditions that are entirely outside their assigned responsibility or control and recognizes the intense and time-driven decision-making process required during the emergency response period. (Adopted 07-30-11)

Media Interaction Following Catastrophic Failures or Natural Disasters (PS 300) To ensure that information disseminated following natural disasters or catastrophic failures involving civil engineering works is as accurate and complete as possible, the American Society of Civil Engineers (ASCE) will cooperate with established news media, defined as: newspapers, radio and TV stations, magazines, on-line publications or media sites, and media intended for trade press audiences. Guidelines that will be followed in response to natural disasters and failures are as follows:

- ASCE's paramount interest is that the media and the public receive timely and factual information and assistance.
- All ASCE contacts with the media must follow the established ASCE Protocol for Media Outreach.
- Individuals may respond, in their field of expertise, to an inquiry but statements must be identified as individual comment.

(Adopted 10-19-10)

Mitigating the Impacts of Natural and Man-Made Disasters (PS 389) The American Society of Civil Engineers (ASCE) supports sustained efforts to improve professional practices in planning, design, construction, operation, maintenance and reuse/decommissioning that mitigate the effects of natural and man-made hazards. ASCE is committed to developing standards and participating in other national and international activities that encourage mitigation of the effects of hazards and improvement of warning systems against impending hazards. ASCE will collaborate and cooperate with government, citizen, and private agency initiatives and activities for hazard mitigation, preparedness, and disaster recovery. ASCE supports efforts to ensure that sufficient federal, state, and local funding is available for research, development of standards, enforcement, preparedness planning for response and recovery, and for disaster mitigation funds that are non-taxable. (Adopted 05-13-11)

Wind Hazards Mitigation (PS 475) The American Society of Civil Engineers (ASCE) and the Structural Engineering Institute of ASCE support the creation of a unified national program to effectively reduce the avoidable economic and community losses experienced each year as a result of wind storms. Such a plan was authorized by Congress in 2004 in Public Law 108-360, but there has been no specific appropriation. The coordinated national plan should include:

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- Creation of a public-private partnership to develop the national plan;
- Construction of affordable family and mass shelters to provide protection and peace of mind;
- Improved emergency management planning;
- Development of cost-effective retrofit schemes with existing construction to reduce business interruption and economic losses;
- Development of improved severe weather warnings for longer lead-time, fewer false alarms and more accurate prediction of affected areas;
- Implementation of innovative codes and standards that provide for wind-resistant construction and programs for assuring increased compliance;
- Implementation of research and development to encourage new materials and innovation for robust construction;
- Public education on wind hazards; and
- Systematic measurement and analysis of high-wind speeds near the ground.

(Adopted 07-25-09)

Wind Storm Impact Research Funding (PS 530) The American Society of Civil Engineers (ASCE) supports full funding for the National Wind Storm Impact Reduction Program. The funding is required for research, development and transfer of new technology that will reduce losses experienced each year as a result of wind storms.

The funding should be targeted to achieve the following goals:

- Reduce economic losses from windstorms and increase the economic viability of communities.
- Develop affordable designs to provide enhanced windstorm protection.
- Improve emergency management planning.
- Develop cost-effective retrofit schemes with existing construction to improve individual and community resilience.
- Develop improved severe weather warnings with longer lead-time, fewer false alarms, and more accurate prediction of affected areas.
- Implement innovative codes and standards that provide for wind-resistant construction and programs for assuring increased compliance.
- Develop new materials and innovative design concepts and emergency response approaches to minimize electrical power loss as a result of windstorms.
- Conduct public education on wind hazards and methods for hazard reduction.
- Collect and archive wind and national infrastructure data.
- Train the next generation of technical experts and enhance the knowledge of design and construction professionals.
- Improve regional risk assessments, especially involving multiple hazards, lifeline interdependencies, and ripple effects.

(Adopted 07-25-09)

DIVERSITY

Achieving Diversity and Equity (PS 417) The American Society of Civil Engineers (ASCE) supports and encourages the equitable opportunity for participation of all people within the civil engineering profession without regard to race, ethnicity, religion, age, gender, sexual orientation, nationality, or physical challenges. The Society will promulgate and implement programs designed to enhance opportunities to participate in the profession. (Adopted 10-19-10)

EDUCATION

Academic Prerequisites for Licensure and Professional Practice (PS 465) The American Society of Civil Engineers (ASCE) supports the attainment of a Body of Knowledge (BOK) for entry into the practice of civil engineering at the professional level. This would be accomplished through the adoption of appropriate engineering education and experience requirements as a prerequisite for licensure.

ASCE encourages institutions of higher education, governments, employers, civil engineers, and other appropriate organizations to endorse, support, promote, and implement the attainment of the Body of Knowledge for individual civil engineers. The Body of Knowledge includes (1) the fundamentals of math, science, and engineering science, (2) technical breadth, (3) breadth in the humanities and social sciences, (4) professional practice breadth, and (5) technical depth or specialization. Fulfillment of the Body of Knowledge requires additional education beyond the bachelor's degree for the practice of civil engineering at the professional level. The implementation of this effort should occur through establishing appropriate curricula in the formal education process, appropriate experience guidelines in the workplace, and related education and experience standards in the law and rules of each of the engineering licensing jurisdictions.

Admission to the practice of civil engineering at the professional level means professional engineering licensure requiring attainment of a Body of Knowledge through appropriate engineering education, experience and examinations. Fulfillment of this Body of Knowledge will typically include a combination of:

- a baccalaureate degree in civil engineering,
- a master's degree, or no less than 30 coordinated graduate or upper level undergraduate technical and/or professional practice credits or the equivalent agency/organization/professional society courses which have been reviewed and approved as providing equal academic quality and rigor with at least 50 percent being engineering in nature, and

- appropriate experience based upon broad technical and professional practice guidelines which provide sufficient flexibility for a wide range of roles in engineering practice. (Adopted 04-24-07)

Civil Engineering Education (PS 140) The American Society of Civil Engineers (ASCE) will participate in and influence the formal education of the civil engineering community, which is a shared responsibility of educators and practitioners. (Adopted 10-26-09)

History and Heritage (PS 463) The American Society of Civil Engineers (ASCE) supports programs that promote the knowledge of the history and heritage of civil engineering as an integral component of education and professional practice.

ASCE believes that methods to foster a greater understanding and appreciation of the history and heritage of civil engineering while enhancing the image of civil engineering include:

- Encouraging civil engineers to be knowledgeable about the heritage of their profession, and where possible share this knowledge with engineering students, as well as other students, colleagues and the general public;
- Focusing action at the national, state and local levels through support of history and heritage programs in ASCE and other professional organizations;
- Encouraging civil engineering faculties to incorporate a history and heritage component into existing courses; and
- Encouraging civil engineering programs to include historical perspectives in their Program Outcomes. (Adopted 04-24-07)

Science, Technology, Engineering, and Mathematics (STEM) Education (PS 377) The American Society of Civil Engineers (ASCE) supports programs that foster an appreciation and understanding of science, technology, engineering and mathematics (STEM) at all educational levels. It is essential to:

- Provide all students, regardless of their career intentions, with an understanding of STEM concepts adequate to enable their participation in our increasingly technological society;
- Prepare students who intend to pursue STEM careers with the necessary knowledge and skills in these subjects; and
- Encourage students to pursue careers in STEM disciplines and more specifically in civil engineering. (Adopted 10-26-09)

ENERGY

The Advanced Hydro Turbine (PS 442) The American Society of Civil Engineers (ASCE) supports continued industry and federal funding for research and development of Advanced Hydro Turbine Systems. (Adopted 07-10-10)

Electricity Generation And Transmission Infrastructure (PS 484) The American Society of Civil Engineers (ASCE) supports the maintenance, expansion, and the continual evaluation and improvement of power

generation and transmission infrastructure based upon reasonable projections of increased demand, and the need to maintain the nation's energy security. Specifically, ASCE supports:

- The national reliability plan of the North American Electric Reliability Council. The plan includes the design and construction of adequate transmission infrastructure to provide reserve margins and operating capacity, including the siting of new transmission lines to bring renewable electricity from remotely located renewable energy sources to areas of greatest need;
- Incentives to promote energy conservation, the development and installation of highly efficient fossil and nuclear generation and renewable technologies;
- A long-term generation research and development plan to extend current energy supplies through efficient use and exploration of new and potential energy sources;
- Research and development for DC transmission and high voltage superconducting materials; and,
- Ongoing need for R&D in areas related to improving and enhancing the nation's transmission and generation infrastructure. (Adopted 07-10-10)

Energy Policy (PS 489) The American Society of Civil Engineers (ASCE) supports a national energy policy that anticipates future energy needs and promotes the development of clean and renewable energy supplies while increasing the efficiency of energy use. The policy should:

- Promote strong and continuing U.S. funding and commitment to clean energy research;
- Validate and implement clean and efficient energy sources to meet the nation's energy demands by relying on effective use of natural resources;
- Reduce the environmental impacts associated with continued use of traditional energy sources;
- Expand upon domestic development for renewables;
- Provide tax incentives and other inducements to establish a market for cleaner energy production;
- Encourage energy conservation in design, construction, and operation practices; and
- Support the maintenance and development of infrastructure for energy operation and transmission. (Adopted 07-10-10)

Hydropower (PS 379) The American Society of Civil Engineers (ASCE) supports the continued use, expansion and development of hydroelectric power and pumped storage hydro. The development and use of hydropower must be done in a manner that

minimizes potential environmental impacts, maximizes safety, and balances the use of resources. ASCE supports streamlined licensing regulations for incremental and new small hydropower projects, as well as improvements to balanced considerations in existing hydropower relicensing regulation and implementation.

Similarly, ASCE supports the examination for development of pumped storage capacity for the improved integration of renewable generation with conventional electricity sources and increased reliability of the national electrical transmission grid. (Adopted 07-10-10)

Nuclear Power (PS 490) The American Society of Civil Engineers (ASCE) supports a safe, economic increase in the nuclear energy supply of the United States consisting of new nuclear power plants and capacity upgrades to existing plants. This increase should be part of a balanced national energy portfolio in which nuclear power maintains or increases its share of the national electric supply if justified economically and environmentally. (Adopted 07-10-10)

ENGINEERING PRACTICE

Aesthetics (PS 117) The American Society of Civil Engineers (ASCE) supports aesthetic quality in engineering design. As aesthetics are integral to good engineering design and sustainability, the cost of aesthetic quality should also be integral to design and construction budgeting. Aesthetic quality should be an element of the planning, design, construction, operations, renovation, rehabilitation, reconstruction, and security enhancement of the built environment. (Adopted 04-01-11)

Combating Corruption (PS 510) ASCE supports a zero tolerance policy toward bribery, fraud, and corruption in engineering and construction. ASCE further actively supports the global effort to stem corruption in the procurement and execution of engineering services and construction projects. ASCE openly seeks cooperation with others in a domestic and international effort to empower individual engineers in the fight against corruption through education, awareness, and the adoption and enforcement of the Principles and Guidelines for Professional Conduct. (Adopted 05-02-08)

Defining Civil Engineering Team (PS 535) The American Society of Civil Engineers (ASCE) recognizes the Civil Engineering Professional, the Civil Engineering Technologist, and the Civil Engineering

Technician as important members of the civil engineering project team. ASCE defines each as follows:

- **Civil Engineering Professional (CE Professional)** – A person who holds a professional engineering license. A person initially obtains status as a CE Professional by professional engineering (PE) licensure obtained through the completion of requisite formal education, experience, examination, and other requirements as specified by an appropriate Board of Licensure. A person working as a CE Professional is qualified to be professionally responsible for engineering work through the exercise of direct control and personal supervision of engineering activities and can comprehend and apply an advanced knowledge of widely applied engineering principles in the solution of complex problems.
- **Civil Engineering Technologist (CE Technologist)** – A person who exerts a high level of judgment in the performance of engineering work, while working under the direct control and personal supervision of a CE Professional. A person initially obtains status as a CE Technologist through the completion of requisite formal education and experience and may include examination and other requirements as specified by a credentialing body. A person working as a CE Technologist can comprehend and apply knowledge of engineering principles in the solution of broadly defined problems.
- **Civil Engineering Technician (CE Technician)** – A person typically performing task-oriented scientific or engineering related activities and exercising technical judgments commensurate with those specific tasks. A person working as a CE Technician works under the direct control and personal supervision of a CE Professional or direction of a CE Technologist. A person initially obtains status as a CE Technician through the completion of requisite formal education, experience, examination(s), and/or other requirements as specified by an appropriate credentialing body. A person working as a CE Technician is expected to comprehend and apply knowledge of engineering principles toward the solution of well-defined problems. (Adopted 07-30-11)

Engineering Surveying Definition (PS 333) The American Society of Civil Engineers (ASCE) defines engineering surveying as those activities involved in the planning and execution of surveys for the location, design, construction, operation, and maintenance of civil and other engineered projects. Such activities include:

- The preparation of survey and related mapping specifications;
- Execution of photogrammetric and field surveys for the collection of required data, including topographic, LiDar (Light Detection And Ranging), and hydrographic data;
- Calculation, reduction and plotting of survey data for use in engineering design including use for geographic information systems (GIS);
- Design and provision of horizontal and vertical control survey networks;
- Provision of line and grade and other layout work for construction and mining activities;
- Execution and certification of quality control spatial measurements during construction;
- Monitoring of ground and structural stability, including alignment observations, settlement levels, and related reports and certifications;
- Measurement of material and other quantities for inventory, economic assessment and cost accounting purposes;
- Execution of as-built surveys and preparation of related maps, plans, and profiles upon completion of construction; and
- Analysis of errors and tolerances associated with the measurement, field layout and mapping or other plots of survey measurement required in support of engineering projects.

Engineering surveying may be regarded as a specialty within the broader professional practice of engineering and, with the exception of boundary, right-of-way, or other cadastral surveying, includes all surveying and mapping activities required to support the sound conception, planning, design, construction, maintenance, and operation of engineered projects. Engineering surveying does not include surveys for the retracement of existing land ownership boundaries or the creation of new boundaries.

(Adopted 07-10-10)

Professional Ethics and Conflict of Interest (PS 502)

The American Society of Civil Engineers (ASCE) believes that:

- The engineer's judgment and adherence to the ASCE Code of Ethics must be above reproach and beyond the influence of competing interests. Even the appearance of a conflict of interest is to be avoided.
- The ability to exercise the independent judgment required of engineers to protect the public health, safety, welfare and environment should not be compromised in any way by the rules of any organization to which the engineer belongs.

- Laws, regulations, conditions of employment and collective bargaining agreements must permit engineers to maintain their independence and avoid potential conflicts of interest to protect the public health, safety, welfare, and environment.
- Engineers should not be subject to disciplinary or demeaning actions for holding the public interest above all others.

(Adopted 07-25-09)

Risk Management (PS 437) The American Society of Civil Engineers (ASCE) urges government agencies and private entities at all levels to incorporate scientific risk management in all decision-making processes that affect the public's safety, health, or welfare.

Engineers and decision makers should establish the quantifiable risk to the public's safety, health, and welfare as well as the economic value of costs and benefits when making decisions on: infrastructure development and improvement; capital funding; land use; disaster resiliency; emergency preparedness; the development of environmental standards, and all other areas of civil engineering practice.

Government agencies should clearly communicate their risk assessments and comparative risk analyses to the public, and, in a collaborative process, decide how much risk is acceptable to our communities in planning for land use; establishing water quality and other environmental standards; and particularly for developing infrastructure for flood and storm protection, and for resistance to other natural hazards. ASCE recommends that government agencies and private entities:

- Develop and implement up-to-date risk management guidelines;
- Identify and implement strategies to reduce risk to public safety from natural and man-made hazards;
- Establish core risk assessment research programs to ensure that risk management is based on adequate scientific data and appropriate processes; and
- Encourage and facilitate public participation in formulating risk assessment guidelines.

(Adopted 07-10-10)

Use of the Term "Engineer" (PS 433) The American Society of Civil Engineers (ASCE) believes that the following standards are the only basis on which any title or designation should include the term "engineer":

- Graduation from an accredited engineering program with a degree in engineering;

- Licensure as a professional engineer or engineer-in-training under a state engineering registration law; or
- An official ruling designating an individual or a group in an engineering capacity as meeting the definition of "Professional Engineer" (P.E.) under the Taft-Hartley Act or the Fair Labor Standards Act.

Only persons in one of these categories should be designated by the title "engineer" or "professional engineer." This policy shall not be construed to prohibit using the word "engineering" as a modifier in titles such as "engineering assistant," "engineering aide" and "engineering technologist" where the title clearly implies that the duties of the position are not those of professional engineer.

ASCE further encourages licensed professionals to always use their P.E. title on all professional correspondence and communication where permissible and appropriate. (Adopted 07-10-10)

ENVIRONMENTAL ISSUES

Acid Rain (PS 285) The American Society of Civil Engineers (ASCE) supports continued control and reduction of the emission of sulfur dioxide and nitrogen oxides, the pollutants shown to contribute significantly to acid rain and other forms of acid precipitation. ASCE also supports further research into the causes, consequences, and mitigation of adverse effects of acid rain. (Adopted 04-01-11)

Comprehensive Pollution Management (PS 362) The American Society of Civil Engineers (ASCE) recommends that national, state, and local policies and plans for pollution control be developed and implemented from a comprehensive, multimedia and holistic (e.g. air, soil, water, and biotic) perspective consistent with the principles of sustainable development in the environment. (Adopted 07-10-10)

Consultation on Environmental Regulations (PS 403) The American Society of Civil Engineers (ASCE) recommends that regulatory agencies seek consultation from outside independent experts knowledgeable in the technical fields affected by the proposed regulation. (Adopted 07-10-10)

Endangered Species Act Reauthorization (PS 438) The American Society of Civil Engineers (ASCE) recommends that Congress amend the Endangered Species Act (ESA) to:

- Require that science and engineering apply to the process of identifying and listing critical habitat.
- Require that critical habitat decisions be based on improved collection and field testing of data and undergo peer review.
- Allow all interested parties to consult with the U.S. Department of the Interior to determine whether a proposed federal action will jeopardize a species.
- Require that social and economic impacts of critical habitat designations be considered
- Maintain the use of incentives for conservation of species, including "no surprises" assurances and provisions for multi-species conservation plans as required under current federal regulations.
- Require that mitigation through Habitat Conservation Plans be reasonable and prudent, fully funded, and related to the nature and extent of the impact.
- Require the Department of the Interior to update the scientific basis of listing and recovery plans regularly to ensure that the newest, most pertinent science underpins listing.
- Require the Department of the Interior to implement measures to delist species and applicable habitats in a reasonable time when new data and pertinent science demonstrate that recovery has been successful. (Adopted 07-30-11)

Impact of Global Climate Change (PS 360) The American Society of Civil Engineers (ASCE) supports government policies that encourage anticipation of and preparation for possible impacts of climate change on the built environment. (Adopted 07-10-10)

Greenhouse Gases (PS 488) The American Society of Civil Engineers (ASCE) supports the following public and private sector strategies and efforts to achieve significant reductions in greenhouse gas emissions:

- Establishing a comprehensive, long-term infrastructure development and maintenance plan at federal, state and local levels. This plan must support sustainable development through a substantial reduction of greenhouse gas emissions and timely adaptation to the effects of climate change, while maintaining and/or enhancing environmental quality.
- Establishing clear and reasonable targets and time frames for the reduction of greenhouse gas emissions.
- Improving the energy efficiency of, and the reduction of greenhouse gas emissions from, infrastructure systems over their entire life cycles by making cost-effective use of existing technologies. These improvements should cover all sectors, and include both stationary and mobile sources.

- Encouraging the use of non-greenhouse gas emitting energy-generating sources such as nuclear, hydropower, wind and solar.
- Researching and implementing new technologies and materials to further improve energy efficiency and reduce greenhouse gas emissions.
- Incorporating additional incentives for the short term development and implementation of high efficiency and low or zero greenhouse gas emitting technologies and cost-effective carbon capture and storage.
- Stimulating private investment in greenhouse gas reducing technologies by establishing a market value for greenhouse gas emissions over the long term.
- Authorizing the allocation, under existing federal infrastructure programs, of revenue from greenhouse gas emissions credits for infrastructure projects that will reduce greenhouse gas emissions. Examples of such projects include new public transportation systems; projects to reduce major chokepoints that cause transportation congestion; and improved intercity rail transportation.
- Including credit for early action to reduce greenhouse gas emissions.
- Encouraging actions by other countries to reduce their greenhouse gas emissions.
- Exploring the utilization of forests and the ocean as carbon sinks or other mitigation technologies.
(Adopted 01-25-09)

Gulf of Mexico Hypoxia Program (PS 482) ASCE supports efforts to reduce the incidence and extent of hypoxia in the northern Gulf of Mexico. ASCE urges continued support for the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 (P.L. 105-383), and supports the timely development of an action plan to reduce, mitigate, monitor and control the hypoxia. (Adopted 04-23-09)

National Wetlands Policy (PS 378) The American Society of Civil Engineers (ASCE) believes Congress must amend the Clean Water Act to clarify jurisdiction over wetlands, establish clearly where states must assume responsibility, and provide appropriate federal oversight. ASCE recommends legislation that would:

- Maintain federal jurisdiction over all interstate and navigable waters, their tributaries, and all adjacent wetlands under the pre-2001 U. S. Army Corps of Engineers' (USACE) regulatory program under the Commerce Clause in the U.S. Constitution using an unambiguous test for *significant nexus* to navigable-in-fact waters;

- Clarify state jurisdiction under section 404 of the Clean Water Act over isolated, non-navigable intrastate waters and their adjacent wetlands, including vernal pools, playas, and prairie potholes, considering recent Supreme Court decisions and other jurisdiction based on environmental and wildlife considerations under regulations promulgated by the Department of the Interior or the Environmental Protection Agency (EPA); and
- Amend the Clean Water Act to clarify purely environmental federal jurisdiction over intermittent and ephemeral streams and their adjacent wetlands under section 404 to the USACE, in coordination with the EPA.

(Adopted 07-10-10)

Transportation and General Conformity Under the Clean Air Act (PS 327) The American Society of Civil Engineers (ASCE) supports an integrated and proactive approach to maintaining and improving the nation's air quality. Clean Air Act regulations should be revised to maximize the flexibility in transportation planning to meet community needs without compromising improvements in air quality or interfering with the attainment and maintenance of the national ambient air quality standards. (Adopted 07-30-11)

Voluntary Environmental Auditing for Regulatory Compliance (PS 356) The American Society of Civil Engineers (ASCE) supports the use of voluntary environmental audits as a management tool for producing effective regulatory compliance and responsible environmental management. ASCE believes that voluntary environmental auditing should be encouraged by government agencies and private organizations through the dissemination of information and assistance, including standards developed by international standards organizations (ISO) and other governmental agencies. ASCE also believes when owners demonstrate commitment to achieving compliance, regulators should have authority to waive fines which would have been applicable had violations been uncovered by procedures other than voluntary auditing. Although regulators should have the authority to waive fines, ASCE believes there should be no reluctance to take action where public health and the environment are significantly impacted, or potentially impacted, by situations evident from the audit.
(Adopted 07-10-10)

Recycling Electronic Waste (PS 527) American Society of Civil Engineers (ASCE) supports federal and state policies that comprehensively promote

effective and efficient collection and proper recycling of waste electronics in well-engineered facilities on a national basis. Legislation should be consistent with the principles of product stewardship and should target all electronic wastes for recycling and reuse in an environmentally safe and economic manner. (Adopted 04-01-11)

GOVERNMENT

Engineering Management Positions (PS 416) The American Society of Civil Engineers (ASCE) encourages the selection and appointment of qualified professional engineers to government positions requiring professional engineering knowledge for operational or management decisions. Such positions include those involving oversight of design and construction of public works projects, e.g., directors of public works/utilities, leaders and managers of civil engineering related government entities, and other positions involving similar responsibilities for the safety, health and welfare of the public. (Adopted 07-10-10)

Post Public Sector Activities (PS 393) The American Society of Civil Engineers (ASCE) supports reasonable policies, regulations, and statutes for managing and controlling potential conflicts of interest that could result from activities undertaken by certain employees, including engineers, after leaving public sector employment at all levels of government. (Adopted 07-30-11)

Professional Grade Salary Structure for Government Engineers and Scientists (PS 346) The American Society of Civil Engineers (ASCE) supports the concept of professional grade salary structures for licensed professional engineers employed by all government jurisdictions. In order to encourage well-qualified licensed professional engineers to enter and remain in technically demanding government positions, ASCE believes that dual career ladders should be established such that position status and total compensation levels for licensed professional engineers are at least equal to those structured for technical and non-technical administrators and are comparable with positions in the private sector. Advancement in professional grade positions should be managed by professional peers and be based primarily on performance and responsibility. (Adopted 07-10-10)

Recruitment and Retention of Qualified Engineers for Government Service (PS 386) The American Society

of Civil Engineers (ASCE) supports the establishment of personnel policies and career packages which will attract, develop, and retain engineers who can perform at a high level of service in the public interest. These policies and packages should include: competitive total compensation (wages and benefits); career advancement based on merit; professional development through involvement in technical and professional societies; support for career advancement; and, a positive and challenging work environment. (Adopted 07-10-10)

HAZARDOUS WASTE

Hazardous Waste Reduction and Management (PS 331) The American Society of Civil Engineers (ASCE) supports and encourages:

- Safe and environmentally sound reduction in the volume of hazardous waste produced in the United States through better utilization of natural resources, the development and implementation of alternative manufacturing procedures and processes, recovery and the reuse of hazardous wastes as resource materials;
- Development and implementation of legislation, including economic incentive programs, which consider environmental costs and encourage hazardous waste reduction “at the source” i.e., point of generation and/or design of reuse programs;
- Federal and state programs which foster cooperation in the exchange of information on the recovery and use of hazardous wastes as resource materials; and
- Implementation of federal and state regulations and international treaties to ensure hazardous wastes are properly identified, categorized, packaged and transported to authorized waste disposal sites adequately designed for containment and prevention of degradation to air, land, surface water and groundwater resources.

(Adopted 07-10-10)

High-Level Nuclear Waste Management (PS 491) The American Society of Civil Engineers (ASCE) supports permanent geologic disposal as an effective means of safely isolating high-level nuclear wastes and spent nuclear fuel (collectively “HLW”) for the protection of human health and the environment. ASCE believes that the nation urgently needs a valid disposal solution for HLW from federal facilities, including those supporting the nuclear weapons program, and from commercial facilities, including nuclear power reactors. Congress must enact legislation to solve the

growing problem of HLW storage. A well-engineered repository program encompassing HLW interim-storage practices, transportation, and safe, long-term disposal in repositories must be established to address the on-site accumulation of spent nuclear fuel from power plants. ASCE also supports closure of the fuel cycle and reduction in spent nuclear fuel waste, such as through reprocessing, for the long-term good of the nation and the preservation of uranium resources. (Adopted 04-01-11)

Radioactive Waste Management (PS 262) The American Society of Civil Engineers (ASCE) supports and encourages protection of public health and the environment by the proper and timely treatment and disposal of radioactive wastes. ASCE encourages the early involvement of the public and regulatory agencies in the siting and development of reliable new disposal facilities for low-level and intermediate classes of radioactive waste. Disposal methods used should not place an undue burden on future generations. ASCE also supports the engineered rehabilitation of existing storage and disposal facilities so they continue to safely meet the needs of government and industry and avoid adversely affecting the environment. ASCE encourages public agencies to promote research and development of alternate uses of radioactive wastes, including recycling and innovative methods of radioactive waste minimization and disposal. High-level radioactive waste and spent fuel management is addressed in ASCE Policy Statement 491. (Adopted 04-01-11)

Revitalization of Brownfields (PS 485) The American Society of Civil Engineers (ASCE) supports continued federal financial aid to the redevelopment of brownfields sites and urges Congress to reauthorize the Brownfields Revitalization and Environmental Restoration Act of 2002.

Congress also should repeal the Environmental Protection Agency (EPA) regulation of November 1, 2005 (70 Fed. Reg. 66,070), that allows persons with less than a baccalaureate degree to perform “all appropriate inquiries” at brownfields sites under section 107 of CERCLA in order to establish a defense to liability under the Act for prospective purchasers. (Adopted 07-10-10)

Superfund Reauthorization (PS 305) The American Society of Civil Engineers (ASCE) supports reauthorization of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

ASCE supports the following to enhance actions conducted under CERCLA:

- Increased funding to support all stages of site cleanup for both non-Federal Superfund sites and Federal Superfund sites;
- Defined, clear, and appropriate hierarchy of federal and state responsibilities;
- Use of professionals with appropriate levels of education, experience, and certification to perform site investigation and cleanup work;
- Protect engineers and contractors from liability for site cleanup work conducted in accordance with the standards of care and professional practice at the time the work was performed;
- Use of innovative technology and presumptive remedies;
- Establish cleanup criteria that take into account future uses of sites; and
- Establish a dedicated federal funding source, such as reinstatement of the expired Superfund taxes, to adequately investigate and cleanup sites where responsible parties cannot be identified.

ASCE further supports amendments to CERCLA and the Clean Water Act to provide “good Samaritan” liability protection for persons, agencies or organizations who clean up abandoned mine sites and are not otherwise legally responsible for pollutants found in or near inactive or abandoned mine sites. (Adopted on 05-13-11)

INFRASTRUCTURE

Endorsement of Infrastructure Projects (PS 404) The American Society of Civil Engineers (ASCE) at a Society level may endorse or oppose specific infrastructure projects only when the proposed project has national or global implications. This includes, projects pertaining to water resources, transportation, and energy, or projects with far-reaching economic, social or environmental impacts. This does not prohibit ASCE Regions, Sections, or Branches from independent action at a local level. (Adopted 07-30-11)

Federal Capital Budgeting (PS 453) The American Society of Civil Engineers (ASCE) supports the establishment of a federal multi-year capital budget for public works infrastructure construction and major rehabilitation, similar to those used by state and local governments. The capital budget must be separated from non-capital federal expenditures. (Adopted 04-23-09)

Growth and Development (PS 131) The American Society of Civil Engineers (ASCE) supports growth and development which incorporates appropriate

urban scale and form, diversity of land use and good engineering design to achieve a balance between the interests of the individual, the community and the natural and built environments. Community planning should balance community concerns, private initiatives and local, state, and regional planning objectives. Full provision of public and private infrastructure should be concurrent with the growth it supports and should be managed at the lowest appropriate level of government. (Adopted 04-23-09)

Infrastructure Investment Policy (PS 299) The American Society of Civil Engineers (ASCE) supports actions by federal, state and local governments to meet America's infrastructure needs as cost effectively as possible. These actions should support sound project and program management, including new service and delivery models, innovative financing, appropriate research and technology transfer, and conform to the principles of sustainability. Emphasis should also be placed on projects that support the public health, safety, and welfare. (Adopted 10-19-10)

Infrastructure Security and Survivability Research (PS 493) The American Society of Civil Engineers (ASCE) supports additional basic and applied research efforts and the development of national standards in support of design and construction initiatives that will increase the reliability, safety, security, and survivability of the nation's vast infrastructure (e.g., water, energy, utilities, buildings and transportation) against natural and man-made disasters. This includes research, development, and standards that identify and address vulnerabilities in the infrastructure, and promote implementation of innovation leading to safety, security, sustainability, resilience and survivability. (Adopted 07-30-11)

Investing in America's Schools (PS 452) The American Society of Civil Engineers (ASCE) supports increased public school construction and maintenance and believes that regular construction, modernization, structural upgrades to meet natural hazards, and maintenance programs are needed to support a safe and sound future for America's growing school age population.

This emphasis must include a priority on life safety, including building collapse from seismic, wind, snow, and tsunami loads. It also should be supplemented by research and development for construction methods and design to meet the rapidly changing teaching environment of the 21st century including information technology, energy efficiency, sustainability and remote teaching and activities. The nation's

engineering community needs to be included as an active partner.

Governments are encouraged to explore alternative financing including lease financing, where the facility is privately owned, and public-private partnerships which can provide a combination of financing/ownership/use arrangements to facilitate construction. ASCE also supports federal programs to reduce school bond interest rates. (Adopted 07-25-09)

Life-Cycle Cost Analysis (PS 451) The American Society of Civil Engineers (ASCE) encourages the use of Life-Cycle Cost Analysis (LCCA) principles in the design process to evaluate the total cost of projects. The analysis should include planning, design, construction, operation, maintenance, regulatory, environmental, safety and other costs reasonably anticipated during the life of the project, whether borne by the project owner or those otherwise affected. (Adopted 07-25-09)

National Infrastructure Bank (PS 532) The American Society of Civil Engineers (ASCE) supports the creation and operation of a National Infrastructure Bank. Such a Bank would leverage public funds with private dollars to invest in infrastructure - transportation, environment, energy, and telecommunications projects of significance - that could play a significant role in improving the nation's infrastructure.

The National Infrastructure Bank:

- Should be capitalized initially by general fund appropriations and should be self-sustaining after the initial start-up period;
- Should develop financing packages for selected projects which could include direct subsidies, direct loan guarantees, long-term tax-credit general purpose bonds, and long-term tax-credit infrastructure project specific bonds; and
- Should not replace existing infrastructure funding and financing mechanisms, but act as a supplement to leverage federal, state, local, and private infrastructure financing.

(Adopted 07-10-10)

National Parks Infrastructure (PS 503) The American Society of Civil Engineers (ASCE) supports immediate and sustained federal action to reinvest in the deteriorating infrastructure of America's National Parks, Monuments, Battlefields, and other preserves. This action should consider both protection of our national heritage and enhancement of the experience of Park visitors. ASCE supports efforts such as the National Park Centennial Initiative to make the

National Park Service (NPS) financially sound in time for its 100th anniversary. (Adopted 07-25-09)

Physical Infrastructure Security (PS 500) The American Society of Civil Engineers (ASCE) supports protection of the built environment through research, planning, design, construction and operation and maintenance initiatives that increase the reliability and resilience of the nation's physical infrastructure against man-made and natural hazards. Development of consistent, national standards that address interdependencies and establish minimum performance goals is imperative. Furthermore, an all-hazard risk assessment that addresses recovery and return to service should be routinely included in the planning/design process at the national, state, and local levels. Understanding the impact of the loss of infrastructure, along with the duration and cost of restoring its function, is an important element to adding disaster resilience to the nation's infrastructure. The opportunity to increase the nation's disaster resilience must be a top priority. (Adopted 07-25-09)

Reconstruction of Greater New Orleans Area (R 514) The American Society of Civil Engineers (ASCE) supports the sustainable reconstruction of New Orleans and Gulf Coast areas that were devastated by recent hurricanes. In order to achieve this, ASCE supports the following activities:

- Protection and restoration of coastal wetlands, which provide a first line of defense against storm surge flooding;
- Redesign and reconstruction of hurricane protection systems for New Orleans and other Southern Louisiana communities at a level appropriate for protection of the population, critical infrastructure and the environment; and
- Reconstruction that incorporates appropriate urban design, application of technology, land use, zoning, flood plain management and utilization of natural systems to recreate communities that are resilient, sustainable, more livable and less vulnerable to hurricanes and coastal flooding.

(Adopted 07-10-10)

Regulatory Process for Infrastructure Development (PS 427) The American Society of Civil Engineers (ASCE) urges the creation of strategies to expedite the regulatory process for infrastructure projects at federal, state and local levels. The goal is to allow critical infrastructure projects to proceed in a timely manner.

ASCE also recommends the following strategies to streamline the regulatory process for infrastructure development:

- Mandate concurrent reviews;
 - A single administrative processing/permitting agency to shorten and improve the approval process; and
 - Time limits for approvals of infrastructure projects.
- (Adopted 07-10-10)

The Role of the Civil Engineer in Sustainable Development (PS 418) The American Society of Civil Engineers (ASCE) defines sustainability as a set of economic, environmental and social conditions in which all of society has the capacity and opportunity to maintain and improve its quality of life indefinitely, without degrading the quantity, quality or the availability of natural resources and ecosystems. Moreover, sustainable development is the process of converting natural resources into products and services that are more profitable, productive, and useful, while maintaining or enhancing the quantity, quality, availability and productivity of the remaining natural resource base and the ecological systems on which they depend.

The civil engineering profession recognizes the reality of limited natural resources, the desire for sustainable practices (including life-cycle analysis and sustainable design techniques), and the need for social equity in the consumption of resources. To achieve these objectives, ASCE supports the following implementation strategies:

- Promote broad understanding of economic, environmental, political, social, and technical issues and processes as related to sustainable development;
- Advance the skills, knowledge and information necessary for a sustainable future; including habitats, natural systems, system flows, and the effects of all phases of the life cycle of projects on the ecosystem;
- Advocate economic approaches that recognize natural resources and our environment as capital assets;
- Promote multidisciplinary, whole system, integrated and multi-objective goals in all phases of project planning, design, construction, operations, and decommissioning;
- Promote reduction of vulnerability to natural, accidental, and willful hazards to be part of sustainable development; and
- Promote performance based standards and guidelines as bases for voluntary actions and for regulations in sustainable development for new and existing infrastructure.

(Adopted 07-10-10)

Public Private Partnerships (PS 526) The American Society of Civil Engineers (ASCE) recognizes Public Private Partnerships (PPPs) as one of many methods of financing infrastructure improvements. ASCE supports the use of PPPs only when the public interest is protected and the following criteria are met:

- Any public revenue derived from PPPs must be dedicated exclusively to comparable infrastructure facilities in the state or locality where the project is based.
- PPP contracts must include performance criteria that address long-term viability, life cycle costs, and residual value.
- Transparency must be a key element in all aspects of contract development, including all terms and conditions in the contract. There should be public participation and compliance with all applicable planning and design standards, and environmental requirements.
- The selection of professional engineers as prime consultants and subconsultants should be based solely on the qualifications of the engineering firm.

ASCE supports the development of criteria by governing agencies to protect the public interest. Examples of criteria include input from affected individuals and communities, effectiveness, accountability, transparency, equity, public access, consumer rights, safety and security, sustainability, long-term ownership, and reasonable rate of return. (Adopted 05-02-08)

High Performance Buildings (PS 528) The American Society of Civil Engineers (ASCE) supports efforts by the federal government to promote and expand the development of technologies for high-performance buildings that provide environmental, economic, and societal well-being, now and for the future, and contribute to community resilience. (Adopted 07-30-11)

Unified Definitions for Critical Infrastructure Resilience (PS 518) The American Society of Civil Engineers (ASCE) supports a unified set of definitions for the concepts of critical infrastructure, hazards, multihazards, and resilience as follows:

- Critical infrastructure includes systems, facilities, and assets so vital that their destruction or incapacitation would have a debilitating impact on national security, the economy or public health, safety, and welfare. Critical infrastructure may cross

political boundaries and may be built (such as structural, energy, water, transportation, and communication systems), natural (such as surface or ground water resources), or virtual (such as cyber, electronic data, and information systems).

- All-hazards include events and conditions such as infrastructure deterioration, natural disasters, accidents, and malevolent acts that have the potential to cause injury, illness, death, damage or disruption of services.
- Multihazards denote the relevant environmental or manmade conditions that are used for engineering analysis and design. A sound multihazard approach to engineering practice will provide infrastructure resilience to all-hazards risks.
- Resilience refers to the capability to mitigate against significant all-hazards risks and incidents and to expeditiously recover and reconstitute critical services with minimum damage to public safety and health, the economy, and national security.

(Adopted 10-26-09)

INTERNATIONAL

Capacity Building (PS 506) The American Society of Civil Engineers (ASCE), in cooperation with the United States government, other interested government and non-government organizations, and ASCE's international partners, will champion the building and development of vibrant indigenous engineering capabilities (i.e. capacity building) in developing countries. ASCE will actively collaborate with the American Association of Engineering Societies, World Federation of Engineering Organizations, Pan American Association of Engineers, the United Nations Education, Scientific and Cultural Organization, and others in this effort. (Adopted 05-02-08)

Millennium Development Goals (PS 517) The American Society of Civil Engineers (ASCE) supports the internationally agreed development goals contained in the Millennium Declaration as they apply to improving the quality of people's lives around the world through science and engineering. ASCE works in collaboration with other domestic and international organizations to engage engineers in addressing the needs of the poor through capacity building and the development of sustainable and appropriate solutions to poverty. In particular, organizations and engineers should be encouraged to consider the appropriate sources of investment and donations, provide guidance on infrastructure investment, and consideration of the varying abilities of persons to pay for (and/or develop capacity for) services and

infrastructure through rate structures. (Adopted 10-19-10)

Relationships with International Engineering Organizations (PS 146) The American Society of Civil Engineers (ASCE) encourages the development and growth of civil engineering societies in all countries to help communicate, share, and grow the accumulated knowledge and experience of engineering professionals.

Where an engineering society representing the civil engineering profession exists in another country, ASCE will promote and develop an Agreement of Cooperation with that society if mutually beneficial. Such agreements will ensure mutual self-interest and embody terms that encourage exchange of knowledge through publications, electronic media, personal visits, and other means as appropriate, and that promote reciprocal memberships.

ASCE will seek to expand and evolve the agreements, when mutually beneficial, into substantive partnerships by adding value through new and existing products and services, by developing an international civil engineering body of knowledge (BoK), and by enhancing professional practice.

Under such agreements, ASCE will extend hospitality, courtesies and guest privileges to members of cooperating societies who attend ASCE functions in the United States and abroad. (Adopted 05-02-08)

LEGAL REFORM

Alternative Dispute Resolution (PS 256) The American Society of Civil Engineers (ASCE) supports dispute avoidance and alternative dispute resolution techniques such as those contained in the Engineers Joint Contract Documents Committee's (EJCDC) documents to bring disputes related to engineering and construction to a fair, timely and cost-effective conclusion without litigation. (Adopted 07-25-09)

Indemnification for Pro Bono Service (PS 443) The American Society of Civil Engineers (ASCE) endorses legislation to protect professional engineers from professional liability claims when providing pro bono services to charitable causes and those in emergency situations. (Adopted 07-25-09)

Prevention of Frivolous Lawsuits (PS 364) The American Society of Civil Engineers (ASCE) supports the prevention of frivolous lawsuits involving civil engineers as beneficial to the public health, safety, and welfare. ASCE encourages and supports efforts at the state level to adopt legislation to reduce the

filing of frivolous lawsuits. The approaches to discouraging frivolous litigation include:

- Pre-litigation screening such as California's "Certificate of Merit" (CPP 411.35) Law;
 - Expanding the right to initiate counter suits for damages to reputation or other impacts of frivolous lawsuits;
 - Alternative Dispute Resolution;
 - Statutes and court rules awarding defense costs, including attorney fees, to successful defendants of litigation; and,
 - Basing the attorney's compensation on a fixed fee versus percentage of award.
- (Adopted 05-13-11)

Professional Liability/Tort Reform (PS 318) The American Society of Civil Engineers (ASCE) endorses comprehensive tort reform that includes these elements:

- Limits on non-economic damages;
 - Limits on joint and several liability;
 - Limits on attorneys' contingency fees;
 - Limits on application of the collateral source rule;
 - Periodic payments for large awards;
 - Use of alternative dispute resolution techniques;
 - Reasonable access to insurance industry data;
 - Reasonable statutes of limitations or repose;
 - Use of Certificate of Merit procedures to discourage frivolous suits; and
 - Provide immunity to engineering professionals on construction projects under worker compensation statutes.
- (Adopted 07-10-10)

Sole Source Workers Compensation Statutes (PS 508) The American Society of Civil Engineers (ASCE) believes Sole Source Workers Compensation Statutes are appropriate because they protect engineers, who are not negligent, on engineered construction projects from litigation. (Adopted 07-30-11)

LICENSURE

Continuing Professional Development for Licensure (PS 425) The American Society of Civil Engineers (ASCE) supports documented continuing professional development, including ethics training, as a condition for maintaining status as a licensed Professional Engineer. ASCE also supports uniformity of continuing professional development requirements among licensing jurisdictions. (Adopted 07-10-10)

Licensure Examinations (PS 432) The American Society of Civil Engineers (ASCE) supports licensing examinations that recognize the civil engineering Body of Knowledge by providing the candidates with the opportunity to demonstrate their competency covering a reasonable range of problems from several different discipline subsets. (Adopted on 07-30-11)

Licensure and Advanced Credentialing within the Civil Engineering Profession (PS 524) The American Society of Civil Engineers (ASCE) supports licensure as a Professional Engineer (PE) that recognizes the traditional breadth of the civil engineering practice. ASCE also supports post-PE credentialing that attests to a Professional Engineer's expertise in a civil engineering specialty area. Obtaining a PE license or post-PE credential shall require the engineer to demonstrate attainment of an appropriate body of knowledge. (Adopted 07-30-11)

Licensure of Professional Engineers (PS 130) The American Society of Civil Engineers (ASCE) endorses, supports, and promotes the licensure of Professional Engineers with necessary standards for education, experience, examination, and continuing professional development. ASCE also supports the establishment of rules of professional conduct for engineers consistent with the Society's Code of Ethics to guide licensees in their practice. (Adopted 07-30-11)

Professional Licensure Mobility Agreement (PS 464) The American Society of Civil Engineers (ASCE) supports expedited comity for the transfer of professional licensure among licensing jurisdictions. (Adopted 07-10-10)

The Purpose of the Fundamentals of Engineering Examination (PS 369) The American Society of Civil Engineers (ASCE) asserts that the purpose of the Fundamentals of Engineering (FE) Examination is to measure the preparedness of an individual for progress through the engineering licensure process and should not be modified to serve other purposes. (Adopted 10-19-10)

Licensure Requirements for Government Engineers (PS 385) The American Society of Civil Engineers (ASCE) urges government agencies at the local, state and federal levels to require licensure of its civil engineers who have responsible charge for preparing, supervising and/or approving public projects and programs, in accordance with the legal professional requirements of the jurisdiction within which the project is to be constructed or regulated.

Government agencies are encouraged to pay licensure fees of their engineering employees. Should multi-state registration be required, licensure costs should be paid for by the employer. (Adopted 07-10-10)

State Licensure Boards for Professional Engineers (PS 450) The American Society of Civil Engineers (ASCE) believes that the licensure of Professional Engineers should be the responsibility of state boards of licensure that meet the following criteria:

- The majority of each state licensure board consists of licensed professional engineers that recognize the breath of engineering practice;
 - At least one public member serving on each state licensure board;
 - At least one engineering educator serving on each state licensure board; and
 - A balanced representation of public sector and private sector engineers.
- (Adopted 07-30-11)

PROCUREMENT / CONTRACT ISSUES

Design Build Procurement (PS 400) The American Society of Civil Engineers (ASCE) strongly supports the use of Qualifications-Based Selection (QBS) criteria when using the two-phase competitive source-selection process required by the Federal Acquisition Reform Act of 1996 (Pub. L.104-106) for design-build contracts awarded by government agencies. The Act clearly contemplates retaining the essential QBS concepts embodied in the Brooks Act and requires that the contracting agency ("owner") devote sufficient architectural and engineering (A/E) services to prepare the design-build solicitation (which must identify the disciplines needed in the design-build team), and to represent the owner's interests throughout the project duration. The contract between the owner and the design-build team must establish a means for direct communications between the owner and the designer, as well as communication with other team members. The owner may, and on complex projects must, provide predetermined reimbursement to the firms selected to submit complete design-build proposals. (Adopted 07-07-10)

Design Competition (PS 439) The American Society of Civil Engineers (ASCE) endorses selection of consultants for engineering projects based on design competition as one method of qualifications-based selection (QBS), provided that each competing firm is compensated for reasonable competition costs; the makeup of the selection panel includes engineers who

are competent in the technical aspects of the project; and, selection is based on design quality, not design fee. (Adopted 07-30-11)

Engineering Services for Government Agencies (PS 138) The American Society of Civil Engineers (ASCE) believes it is proper and desirable that civil engineers employed both in the public and private sectors are allowed to perform engineering functions and tasks for government agencies. It is in the best public interest for federal, state and local government agencies performing engineering to maintain expertise within their organizations by employing civil engineers and providing for their professional development. It is also in the best public interest for publicly supported institutions and agencies not to compete with engineers in private practice. Public sector engineering projects that can be accomplished more efficiently by private engineering firms should be contracted out with proper oversight by the public agency. The resulting ratio of in-house to contracted engineering services should be based upon the agency's on-going project and policy requirements rather than rigid rules or percentages fixed by legislation or regulation. (Adopted 07-10-10)

Government Fee Withholding (PS 520) The American Society of Civil Engineers (ASCE) supports the immediate repeal of Section 511 of the "Tax Increase Prevention and Reconciliation Act of 2005" (P.L. 109-222) which mandates a 3% withholding on payments to companies for any contract with a government entity. (Adopted 07-25-09)

Offshoring of Engineering Services (PS 509) The American Society of Civil Engineers (ASCE) believes that off-shoring of engineering services should be accomplished in a manner that protects the public health, safety, and welfare. ASCE believes that engineering services must address the following criteria:

- Engineering quality control;
- Licensing laws related to responsible charge;
- Principles and/or requirements of Qualifications-Based Selection using full disclosure of staffing and location;
- Appropriate homeland security requirements; and,
- Fair trade practices.

(Adopted 07-30-11)

Qualifications Based Selection of Professional Engineers (PS 304) The American Society of Civil Engineers (ASCE) believes that the selection of Professional Engineers as prime consultants and subcontractors should be based on the qualifications

of the engineering firm. Qualifications including education, training, experience, past-performance, capabilities, personnel and workloads should be evaluated when selecting an engineering firm. Cost of engineering services, while important and meriting careful negotiations, is related to work to be performed which often is not clearly defined at the time the engineer is selected. Therefore, selecting consultants based on cost is not recommended. Accordingly, ASCE supports qualifications-based selection (QBS) procedures such as those specified by the Brooks Architect-Engineers Act of 1972, 40 U.S.C. 1101 *et seq.*, more than 40-mini Brooks Acts, and the American Bar Association's Model Procurement Code for State and Local Governments for the engagement of engineering services. ASCE recommends that the application of these procedures to the development of a scope of work and the selection, procurement and administration of contracts for engineering services be the responsibility of technically qualified staff of the project owner. (Adopted 07-10-10)

Use of Electronic Signatures (PS 492) The American Society of Civil Engineers (ASCE) supports the use of electronic signatures of licensed Professional Engineers or surveyors for sealing drawings where state law permits provided adequate security measures are in place to protect the integrity of both the documents and the signature. (Adopted 07-30-11)

Use of Warranty and Guarantee Clauses in Contracts for Engineering Services (PS 388) The American Society of Civil Engineers (ASCE) opposes the inclusion of warranty, guarantee or similar clauses in contracts for professional engineering services. (Adopted 07-10-10)

Withheld Payments Under Fixed-Price Architect-Engineer Contracts (PS 531) The American Society of Civil Engineers (ASCE) supports the repeal of the federal regulation that requires federal contracting officers to withhold payment of a portion of the total design fee for fixed-price architectural and engineering contracts. The regulation (48 C.F.R. 52.232-10) commands every federal contracting officer to retain 10 percent of the A/E design fee until the contractor demonstrates to the agency that the work is substantially complete and that the amount retained is in excess of the amount adequate for the protection of the Government. (Adopted 07-25-09)

PUBLIC INVOLVEMENT

Appointment of Engineers to Policy Positions in Government (PS 101) The American Society of Civil Engineers (ASCE) strongly supports the appointment of civil engineers to policy level positions in government agencies. (Adopted 07-25-09)

Public Involvement in the Decision Making Process (PS 139) The American Society of Civil Engineers (ASCE) actively participates in and strongly supports the involvement of civil engineers, as well as individual citizens and coalitions, in the legislative and regulatory decision-making processes at the local, state and national levels. (Adopted 07-10-10)

The Role of Non-Profit Educational Organizations in the Public Sector (PS 460) Non-profit educational organizations operated under Section 501(c)(3) of the Internal Revenue Code must be free to perform their educational function in the public sector without unreasonable government restrictions or the loss of opportunities for federal assistance for their activities. (Adopted 07-25-09)

QUALITY / STANDARDS

International Codes and Standards (PS 365) The American Society of Civil Engineers (ASCE) encourages broader participation by the United States (U.S.) in the development of international codes and standards and the adoption of relevant provisions in the domestic codes and standards while supporting, maintaining, and strengthening the existing domestic standards development system.

ASCE supports the development and harmonization of international codes and standards. ASCE advocates the revision of International Standards Organization (ISO) standards if and where the American National Standards Institute (ANSI)/ U.S. standards provide better health, safety, and welfare provisions and revision or development of new ANSI/U.S. standards appropriate for domestic use where ISO standards provide better health, safety, and welfare provisions. (Adopted 05-02-08)

Quality Management Systems Standards (PS 431) The American Society of Civil Engineers (ASCE) supports the development and application of quality management system standards, including international standards such as the ISO-9000 and the American Society for Quality Control (ASQC) Q90 series, to professional engineering services and the application of those standards to the constructed project. Such standards shall be consistent with civil engineering standards of practice and the principles of sustainable development.

ASCE supports certification and registration procedures which establish that appropriate quality management processes are in place within an organization.

ASCE will actively cooperate with other organizations seeking to develop and provide guidance for implementation of international quality management system standards.

ASCE supports worldwide recognition of registration status under ISO-9000 and mutual recognition agreements between qualified accrediting organizations. (Adopted 07-10-10)

Model Building Codes (PS 525) The American Society of Civil Engineers (ASCE) supports the development, adoption, and enforcement of national model building codes as a key method of creating disaster resilience in communities to protect and improve public health, safety, and economic vitality. Specific attention should be given to the following:

- Support the adoption of a national model building code;
- Promote national incentive programs encouraging state and local agencies to adopt building codes;
- Improve implementation of current building codes and increase resources for enforcement;
- Advance and participate in the creation or improvement of model building codes; and
- Support funding for research that is necessary for the development of model building codes.

(Adopted 07-30-11)

RESEARCH

Aviation Infrastructure Research (PS 471) ASCE supports the continued funding of the Airport Cooperative Research Program for research necessary to improve aviation civil infrastructure systems. ASCE urges that Congress permit Airport Improvement Program (AIP) or Capital Improvement funds to be used for research and development. (Adopted 07-25-09)

Building and Fire Research at the National Institute of Standards and Technology (PS 319) The American Society of Civil Engineers (ASCE) supports the services provided by the Building and Fire Research Laboratory (BFRL) at the National Institute of Standards and Technology (NIST) and the research, development, and technology transfer they conduct. ASCE supports continued and expanded funding to ensure that the BFRL can carry out its mission of promoting U.S. innovation and competitiveness by anticipating and meeting the needs of the U.S. building and fire safety industries for measurement

science, standards, and technology. ASCE supports new funding initiatives at BFRL to expand the research effort by BFRL and university labs into other man-made and natural hazards including earthquake, wind, fire, and flooding, their effects on structures and building equipment, and the mitigation of their impacts. (Adopted 07-30-11)

Incentives for Implementing Construction Innovation (PS 456) The American Society of Civil Engineers (ASCE) believes that federal, state, and local governments should establish and maintain incentives to foster the use of innovative procurement and construction practices, technologies, and materials in publicly supported construction and infrastructure renewal activities, including the development of guidelines and standards. (Adopted 05-02-08)

Infrastructure Research and Innovations (PS 313) The American Society of Civil Engineers (ASCE) supports infrastructure research and development to enhance economic vitality while assuring public safety, quality of life, sustainability, and disaster resilience. Appropriate methods to implement infrastructure research, innovation and security include supporting:

- Legislation and policies that encourage development of innovative technology and processes;
- Through appropriate incentives, research to accelerate the development of existing technology and develop new technology in the fields of design, materials, construction, maintenance, rehabilitation, and operation of the infrastructure with understanding of the need for sustainability and disaster resilience;
- Appropriate funding for infrastructure research at the federal level in conjunction with state/local agencies, universities and private enterprise;
- Efforts to identify and disseminate information on federal, state, and local governments, academia and private sector infrastructure research and development activities;
- Efforts to implement innovative infrastructure technology;
- National attention on infrastructure needs through cooperative efforts;
- Opportunities for academia and practicing engineers to conduct research and development activities;
- Research on infrastructure as a system such as network modeling involving co-located infrastructure, interdependencies of life lines, and cascading effects of compromised infrastructure on society; and
- Supporting efforts that develop and implement new strategies and technologies to mitigate the impact of

disasters on the nation’s infrastructure in a consistent manner. (Adopted 07-10-10)

National Science Foundation (PS 336) The American Society of Civil Engineers (ASCE) supports the science and engineering mission of the National Science Foundation (NSF) and promotes programs and funding initiatives that support the research and education needs of the civil engineering profession. Specific attention should be given to the following:

- Periodically highlighting the research and education needs of the profession, with specific emphasis on civil infrastructure, by communicating directly with government leadership;
- Identifying, encouraging, and promoting individual members to participate in NSF advisory committees, review panels, rotating leadership positions, and the National Science Board;
- Establishing appropriate mechanisms to provide support for NSF, its Engineering Directorate, and for other civil engineering research and education programs in NSF before Congress and the Federal Administration;
- Encouraging an increase in funding for NSF with a specific focus on increasing funding to engineering research needs, particularly with respect to civil infrastructure and natural hazards mitigation;
- Advocate for creation of a stand-alone engineering organization within NSF focused on civil infrastructure-related research; and
- Support basic research and education in science and engineering. (Adopted 07-30-11)

Research and Development Tax Credits (PS 455) The American Society of Civil Engineers (ASCE) supports a permanent research and development (R&D) investment tax credit for corporations. The tax credit should be applied to total R&D spending. To be most effective, tax policy should:

- Motivate industry to adopt a longer-term view of return on investment in engineering R&D and encourage the reinvestment of profits;
- Encourage risk taking in the use of new technology on developing projects and the commercialization of processes;
- Encourage the improvement of structural design standards related to mitigating the effects of man-made and natural hazards;
- Apply equally to both large and small corporations;

- Encourage collaborative research, which leverages federal R&D funds through government-university-industry partnerships; and,
 - Encourage investment in new and upgraded research facilities through more favorable depreciation rules and equipment credits.
- (Adopted 07-30-11)

Research in Civil Engineering (PS 187) The American Society of Civil Engineers (ASCE) supports basic and applied research and development (R&D) along with demonstration and commercialization programs in civil engineering as its research objectives. Such research programs should be structured to meet national needs for:

- Enhancing environmental quality;
- Revitalizing the nation's public works infrastructure to protect citizens, improve durability, improve function and reliability and reduce maintenance costs;
- Increasing the application of emerging technologies, materials and processes to improve security, durability, disaster resilience, and performance of engineered systems;
- Advancing the competitiveness and business performance of the practice of civil engineering and the industries supported by civil engineering services to improve the nation's competitiveness;
- Supporting the goals of sustainable development to promote green technologies which help reduce energy consumption, and limit the impact on global climate; and
- Enhancing the security, safety and robustness of critical infrastructure to protect the safety and economic vitality of the nation against natural and man-made hazards.

(Adopted 07-25-09)

The Role of the Federal Government in Civil Engineering Research and Development (PS 444)

The American Society of Civil Engineers (ASCE) supports a focused federal civil engineering research and development (R&D) program consistent with national goals. Programs should promote new U.S. capabilities, improve efficiencies and advance the practice of civil engineering to improve the quality of life.

ASCE encourages coordinated and integrated basic and applied civil engineering research that leverages federal R&D funds through government-university-industry partnerships. Programs fostering basic research should focus on maintaining a steady flow of talent and technology to U.S. industry and agencies.

Programs focusing on higher risk research with the potential for high payoff should meet national needs and improve the quality of life by:

- Enhancing public health and safety;
- Enhancing environmental quality;
- Supporting the goals of sustainable development;
- Developing and improving test methods and standards for evaluating materials, products, and systems;
- Improving public works infrastructure;
- Improving global competitiveness in U.S. civil engineering products and processes; and
- Enhancing national security.

(Adopted 07-25-09)

SAFETY

Construction Site Safety (PS 350) The American Society of Civil Engineers (ASCE) believes improving construction site safety requires attention and commitment from all parties involved. This is accomplished by the following:

- Safety issues are addressed for each project on a project specific basis.
- Owners have responsibility for:
- Assigning overall project safety responsibility and authority to a specific organization or individual, (or specifically retaining that responsibility);
- Designating an individual or organization to develop a coordinated project safety plan and monitor safety performance during construction;
- Designating responsibility for the final approval of shop drawings and details through contract documents; and
- Including prior safety performance as a criterion for contractor selection.
- Design engineers have responsibility for:
 - Recognizing that safety and constructability are important considerations when preparing construction plans and specifications; and
 - Providing through the specifications that the design or details of critical elements of temporary construction, erection and lifting schemes, complicated form work and scaffolding be prepared by a professional engineer.
- Contractors have responsibility for:
 - Control of the worksite;
 - Developing and implementing a coordinated project specific safety plan, as per American National Standards Institute (ANSI) A10.33 and ANSI A10.38; and
 - Maintaining the safety of their employees and of all other persons in the work area or on the worksite.

- A Construction Manager who functions as an owner’s agent should assume the same safety responsibilities as an owner. A Construction Manager who has an “at risk” contract with the Owner should assume the same responsibilities as a contractor.
- The safety responsibilities of design-builders are the same as those of design engineers and contractors.
- Educators are encouraged to:
 - Incorporate project site safety and constructability concepts in design and construction curricula;
 - Emphasize engineer’s role in providing a safe and healthy environment to personnel engaged in project activities through proper planning and design; and
 - Conduct basic and applied research to advance the knowledge and practice of safe design and construction;
- All employers with employees on the construction site should provide appropriate safety training for their employees on specific hazards they may encounter, and inform employees concerning hazardous materials under the right to know provisions of the law.
- All on site workers, after proper training, should assume personal responsibility and accountability for their actions, including knowing and observing safety rules and safe work procedure; wearing and using the required clothing, equipment and protective devices and being free from drugs and alcohol.
- Design or details of critical elements, such as temporary construction, erection and lifting schemes, form work, scaffolding, and the use of lifting equipment and its supports should be approved by a professional engineer.
- The construction industry should develop innovative methods, techniques, and equipment, and assist in the formulation of legislation and in the development of ongoing safety training and education.
- The Occupational Safety and Health Administration (OSHA) should continue to identify safety and health hazards and establish technical rules and standards in conjunction with the construction industry, while emphasizing voluntary participation, education and training.

(Adopted 11-04-08)

Crane Safety on Construction Sites (PS 424) The American Society of Civil Engineers (ASCE), recognizing that crane and rigging operations on construction sites require special consideration in order to protect against deaths and injuries, believes that improvements in the site operation of cranes can and should be made. ASCE supports efforts in the

construction industry to promote and specify safety improvements which:

- Require compliance with applicable regulations, codes and standards.
- Protect the public during crane and hoisting operations.
- Encourage owners to participate actively in project safety including the assignment of responsibility to develop a coordinated project safety plan that addresses crane, hoisting, and rigging safety, and includes electrical power line hazards.
- Require the architect/engineer (A/E), as action agent for the contract documents, to include requirements that the contractor prepare a site safety plan that includes provisions for crane and hoisting safety.
- Assign to a prime contractor/construction manager/general contractor (PC/CM/GC) the primary authority and responsibility to coordinate construction site safety, including the management of crane and hoisting operations.
- Require the PC/CM/GC to develop a site specific crane and rigging safety to plan which includes both production and critical lifts and train management staff and job site personnel in crane and rigging safety procedures, specifically addressing electrical power line hazards on or adjacent to the site.
- Encourage manufacturers to standardize load chart formats and equipment control configurations, with all manuals written in the language and vernacular of the end user in addition to SI units and containing detailed explanatory graphics. Documentation should also state limitations of equipment for wind and on water operation.
- Support existing programs that promote the certification of crane operators and support the establishment of a rigger, signalperson, and crane inspector certification program. The programs should:
 - Be recognized by the Occupational Safety and Health Administration (OSHA);
 - Provide uniform, national standards;
 - Be industrial relations neutral;
 - Provide local testing on demand; and
 - Require periodic, equipment-specific retesting.
- Support a program that promotes the continuing education of OSHA inspectors in crane and hoisting operations.
- Encourage insurance companies to promote to their customers, contractors, and crane and hoisting specialty contractors, the implementation of site-specific crane safety plans and hoisting and lift planning.
- Encourage the development and implementation of technology to improve hoisting and lifting operations.

- Encourage colleges and universities to offer courses within their civil engineering, construction, and continuing education programs that address the safe operation of cranes, hoisting, and proper rigging procedures.
- Require a Professional Engineer to review critical lifts as defined by the crane, hoisting, and rigging safety plan whenever there is risk to the general public and/or jobsite personnel.

(Adopted 11-04-08)

Peer Review (PS 351) The American Society of Civil Engineers (ASCE) promotes and supports the use of independent and external peer reviews for projects:

- Where performance is critical to the public health, safety, welfare, and the protection of the environment;
- Where reliability of performance under emergency conditions is critical;
- Using innovative materials, techniques, or design methods;
- Lacking redundancy in the design; or
- That have unique construction sequencing or a short/overlapping design-construction schedule.

Peer reviews can be initiated by the owner/client, the design organization, or regulatory agencies. Reviews address a defined scope as set forth by the initiating party. Peer reviews should occur throughout the design process. Peer reviews are performed by independent and external teams not associated with the original design team. (Adopted 07-10-10)

Inspection of Existing Facilities (PS 283) The American Society of Civil Engineers (ASCE) supports requiring all buildings and structures be maintained in a safe and functional condition through monitoring, inspections, maintenance programs and/or rehabilitation projects, supervised by a qualified individual. In the interest of public safety, building, structure and utility system owners, whether public or private, should develop monitoring, inspection, maintenance and rehabilitation plans appropriate to their particular facilities, uses, and occupancies. (Adopted 07-10-10)

Post Construction Drawings of Civil Engineering Works (PS 290) The American Society of Civil Engineers (ASCE) believes that post-construction drawings showing the location and layout of civil engineering projects should be performed by licensed surveyors and/or licensed Professional Engineers. (Adopted 07-30-11)

SPACE

Access to Space (PS 512) The American Society of Civil Engineers (ASCE) supports a national policy which encourages the exploration and the economic development of near-Earth space for the benefit of all humankind. ASCE further supports programs and policies to make access to near-Earth space and to nearby bodies more economical more reliable, and more widely available.

ASCE further supports action to reduce the launch cost required to achieve Low-Earth Orbit (LEO) for both crewed and cargo-only flights by at least an order of magnitude (e.g. a factor of ten) as soon as possible. (Adopted 07-25-09)

Critical Remote Sensing Information (PS 472) The American Society of Civil Engineers (ASCE) supports strong national and international remote sensing, programs, both public and private, for obtaining and disseminating from space-based and airborne sources, information critical for development and renewal of physical infrastructure. The information includes understanding and measuring of Earth's processes, such as weather and earthquake forecasting, climate and environmental monitoring, and data for accurate geographical positioning systems (i.e. GPS). This information is especially critical in the monitoring and evaluation of climate, disaster response and recovery, and to providing policymakers with accurate information for making essential decisions in both the public and private sectors. (Adopted 07-10-10)

Engineering and Construction in Space (PS 384) The American Society of Civil Engineers (ASCE) supports the active participation of civil engineers in the design and construction of extraterrestrial facilities. In order to achieve this, ASCE supports the following activities:

- Research and development programs directed at the technologies for engineering, constructing, operating and maintaining extraterrestrial facilities;
- Research and development directed at in-situ resource utilization, for example the extraction of water, oxygen or minerals;
- Studies involving civil engineers in the sustainable development of extraterrestrial environments;
- Research and development programs directed at new materials, systems and equipment including robotics, to be used for construction and operation of space facilities; and
- Data acquisition programs that will provide necessary engineering data about extraterrestrial environments, which augment available scientific

data, but will be used for engineering and construction of facilities.
(Adopted 07-10-10)

National Space Education (PS 392) The American Society of Civil Engineers (ASCE) supports programs that educate:

- Civil engineers on their opportunities in the space program;
- Civil engineers on the potential terrestrial uses of space-related technologies;
- Civil engineers on the potential benefits of the economic development and settlement of space by both the public and the private sectors;
- Civil engineers on the applications of remote sensing;
- The space industry on the important contributions of civil engineers; and
- The general public on the role of civil engineers in the space program.

(Adopted 07-10-10)

National Space Policy (PS 358) The American Society of Civil Engineers (ASCE) supports a strong national and international space program with the goal of developing extraterrestrial resources for the benefit of humanity. ASCE further supports the development of these resources in a manner consistent with the principles of sustainable development. ASCE supports programs to achieve the following goals:

- Understanding and measurement of Earth's processes (such as weather and earthquake forecasting, environmental monitoring and the technical use of GPS [Global Positioning System]);
- Exploration and settlement of space with an eye toward developing new resources, technology and knowledge;
- Promotion of the commercial uses of space; and
- Education of the general public on the benefits of space exploration and technology, and also the benefits expected to result from the settlement and economic development of space.

(Adopted 07-10-10)

SOLID WASTE

Municipal Solid Waste Management (PS 516) ASCE supports federal and state legislation that would promote, enhance, or facilitate development of resource recovery facilities, including those for recycling, composting, and energy recovery, as well as technologies for reduction of waste generation. In particular, ASCE supports the United States Environmental Protection Agency's (USEPA)

Resource Recovery Challenge (RRC) strategic plan, with goals of achieving the national recycling rate of 35 percent for municipal solid waste (MSW), beneficial use of secondary materials, priority and toxic chemical reduction, and green initiatives for electronics.
(Adopted 04-23-09)

Interstate Transport of Municipal Solid Waste (PS 523)

The American Society of Civil Engineers (ASCE) opposes federal legislation that would ban the interstate movement of municipal solid waste (MSW) to regional solid waste facilities designed in accordance with state and federal regulations, recognizing that such transport may be appropriate and beneficial in regional solid waste planning efforts. ASCE supports measures aimed at reducing waste generation and increasing resource recovery through recycling, composting, and waste-to-energy projects. In recognition of the long-term planning and investment required for development of regional MSW facilities, ASCE supports federal legislation that would provide impetus for early and continued coordination among entities who participate in the management of MSW involving interstate transport. Additionally, ASCE believes facilities associated with rail transport of MSW should be designed, permitted, constructed and operated in accordance with local, state and federal standards for solid waste facilities, and that such standards should not be preempted.
(Adopted 07-10-10)

TAX ISSUES

Taxation of Employee Paid Educational Assistance (PS 314) The American Society of Civil Engineers (ASCE) believes reasonable educational assistance paid for by an employer should not be considered as additional employee income. ASCE supports exclusion of employer paid educational assistance for undergraduate, graduate and continuing education from the employee's gross income for tax purposes.
(Adopted 07-10-10)

Unrelated Business Income Tax (PS 325) The American Society of Civil Engineers (ASCE) supports preservation of the existing unrelated business income tax (UBIT) statute, as well as increased Internal Revenue Service (IRS) enforcement of the current UBIT rules. (Adopted 07-25-09)

TRANSPORTATION ISSUES

Aviation Transportation Program (PS 445) The American Society of Civil Engineers (ASCE) supports the permanent extension and increase of user fees to

adequately fund the Airport Improvement Program (AIP) through the Airport and Airway Trust Fund. Furthermore, ASCE recommends that all monies collected from these user fees should be deposited in the Airport and Airway Trust Fund (Trust Fund), and that the Airport and Airway Trust Fund be removed from the unified federal budget. ASCE supports timely multi-year reauthorization of AIP to ensure predictability and stability in airport improvement funding.

Trust Fund balances should not exceed necessary funds to meet obligations plus an appropriate reserve. The current budget protections, such as firewalls, that make it difficult for Congress to appropriate less than the amount authorized for the Airport Improvement Program should be preserved in the reauthorization of the Federal Aviation Administration (FAA) programs to maximize investment in the nation's aviation infrastructure.

AIP funding and Passenger Facilities Charges (PFC) are the primary sources for funding airport capacity improvement projects. Congress needs to provide continued but separate funding for security operations that are not reliant on AIP and PFC funds. The Airport and Airway Trust Fund should not be used to pay for security costs but specifically used for air traffic and airport maintenance and improvement. (Adopted 07-25-09)

Bridge Safety (PS 208) For the continued safety of the nation's bridges, the American Society of Civil Engineers (ASCE) advocates that a bridge safety program for both public and private bridges be established, fully funded and consistently operated to upgrade or replace deficient bridges and to properly maintain all others. This program should preserve full functionality of all bridges to support the operation of safe, reliable and efficient transportation systems, and to allow these systems to be utilized to their full capacity. Such programs as a minimum should include:

- Regular programs of inspection and evaluation that incorporate state-of-the-art investigative and analytical techniques, especially of older bridges which were not designed and constructed to current design loading and geometric standards;
- Posting of weight and speed limits on deficient structures;
- Implementing and adequately funding regular system-wide maintenance programs that are the most cost-effective means of ensuring the safety and adequacy of existing bridges;
- Establishing a comprehensive program for prioritizing and adequately funding the replacement of functionally obsolete and structurally deficient bridges; and

- Set a national goal that fewer than 15% of the nation's bridges be classified as structurally deficient or functionally obsolete by 2013. (Adopted 01-25-09)

High-Speed and Intercity Passenger Rail (PS 402)

The American Society of Civil Engineers (ASCE) supports the planning, development, and operation of a national network of high-speed and intercity passenger rail (HSIPR) systems including advanced technology high speed ground transportation (HSGT) systems in the United States. Investment in HSIPR should be prioritized based upon travel time savings, reduced energy consumption, and environmental benefit, and be balanced between incremental improvements to existing rail systems and the development of advanced HSGT. (Adopted 04-24-07)

Complete Streets (PS 537) The American Society of Civil Engineers (ASCE) supports Complete Streets policies that require that the safety, interests, and convenience of all users – drivers, bicyclists, transit users and pedestrians of all ages and abilities – be considered in the design, construction, operations, and management of transportation projects. ASCE believes that America's transportation system should be designed, built, operated, and managed for safe travel by everyone. (Adopted 07-30-11)

Highway Safety (PS 367) The American Society of Civil Engineers (ASCE) advocates a significant, sustained effort to reduce traffic crashes and related deaths and injuries through improvements in all aspects of highway system performance.

ASCE supports a program where significant enhancements in highway safety and the resulting reduction of highway crashes can be achieved by:

- Establishing a national highway safety goal;
- Fully implementing State Highway Safety Plans required to be developed under SAFETEA-LU;
- Establishing and maintaining complete, current and accurate traffic crash data systems;
- Inspecting and auditing existing roadway systems to identify roadway hazards and safety improvement opportunities, and implementing highway and other engineering-related improvements proven effective in reducing the potential for, and severity of, traffic crashes;
- Enhancing the organizational prominence of highway safety within federal, state, and local transportation agencies to provide a more effective voice in agency administration, leadership development, and program direction;
- Improving work zone safety and mobility;

- Continuing to improve understanding of motor vehicle performance characteristics, as well as the interaction between vehicle standards and highway system design on highway safety and to improve the overall effectiveness of existing motor vehicle standards;
- Encouraging universities to continue to include highway safety issues in educational programs for engineering and other highway professionals;
- Incorporating new technology, better management practices, and a better understanding of the effect of human factors into all levels of transportation systems;
- Supporting additional funding for highway safety research and for the education of highway safety professionals;
- Expanding the development and application of Intelligent Transportation Systems (ITS) programs to enhance highway traffic safety;
- Increasing law enforcement to address driver behavior and other factors contributing to crashes;
- Improving and expanding public education programs to increase driver awareness of attitudes and behavior that affect highway safety;
- Providing flexibility in federal aid funding programs for high priority highway safety improvement programs, and to continue targeting national safety problems through categorical funding; and
- Addressing the issue of distracted driving through public education and legislation.

(Adopted 07-10-10)

Incorporating Bicycle Facilities into Transportation Planning and Design (PS 436) The American Society of Civil Engineers (ASCE) supports the routine consideration of bicycle facilities in the planning, design, construction, and maintenance of roadways and multi-modal transportation systems as an integral element in the design of a sustainable community infrastructure. (Adopted 07-30-11)

Innovative Financing for Transportation Projects (PS 496) The American Society of Civil Engineers (ASCE) supports innovative financing programs for transportation projects and advocates making programs available to all states. Additionally, the federal government should make every effort to develop new programs and/or additional flexibility in innovative procurement approaches.

ASCE supports the following changes to enhance the existing programs that seek to leverage existing revenue streams:

Transportation Infrastructure Finance and Innovation Act (TIFIA):

- The TIFIA process for review, approval and negotiation is regarded as burdensome, and should be streamlined; and
- TIFIA loans should be "fully subordinated." Current TIFIA legislation is written to subordinate TIFIA loans to other creditors. However, in the event of liquidation/default, the TIFIA loan advances to parity status with other creditors. This is known as the "springing lien" provision. It is thought by some that this has limited the availability of other credit. The issue is controversial, with pros and cons on both sides, but reform should be seriously considered.

State Infrastructure Banks (SIBs):

- SAFETEA-LU established a new State Infrastructure Bank (SIB) program under which all states and the five territories were authorized to enter into cooperative agreements with the Secretary of Transportation to establish infrastructure revolving funds eligible to be capitalized with Federal transportation funds authorized for fiscal years 2005-2009; and
- The SIB program should remain with current needs outpacing available resources; ASCE recommends the creation of a National Infrastructure Bank.

National Infrastructure Bank (NIB)

- ASCE supports the establishment of a National Infrastructure Bank with an initial focus on transportation-related investments and flexibility to expand to other sectors over time; and
- Creating a National Infrastructure Bank will provide another finance tool that can be used to support projects of regional and national significance.

Grant Anticipation Revenue Vehicles (GARVEEs):

- Increase the flexibility of GARVEE bond repayment methods. For example, utilize the total apportionment amount as a source of repayment (i.e., all funding categories), so that no particular funding category is overburdened.

(Adopted 07-10-10)

Intelligent Transportation Systems (PS 454) The American Society of Civil Engineers (ASCE) supports the use of Intelligent Transportation Systems (ITS) as a cost effective means of increasing the efficiency of our transportation systems. ITS is a critical tool in efforts to manage the crisis of congestion in our urban areas and reduce the number of crashes and fatalities on our roadways each year. Working together, the public and private sectors should provide the leadership and commitment to continue the deployment of ITS for consumers of passenger and freight transportation across the nation, and the federal government should continue its leadership through technical, policy, and financial support.

ASCE strongly endorses federal leadership in the research and development and the practical and timely deployment of ITS nationwide to increase the efficient utilization of our transportation systems and enhance safety and security through the application of technology advancements. (Adopted 07-30-11)

Integrated Truck and Highway Design (PS 276) The American Society of Civil Engineers (ASCE) supports a program where:

- Truck vehicle characteristics and highway design is coordinated through joint research activities, such as in the National Cooperative Highway Research Program. ASCE urges Congress, the Federal Highway Administration, the Federal Motor Carrier Safety Administration, state transportation agencies, and the trucking industry to form these strong cooperative relationships.
- New and reconstructed roadways are structurally, geometrically, and environmentally designed to support modern truck sizes and weights, and to ensure the safe operation of the system.
- Intelligent Transportation Systems are integrated, to the extent possible, into truck and roadway systems to ensure safe, efficient, reliable and secure trucking operations and movement of freight, to assist in monitoring trucking activity, and to enforce driver and vehicle regulations.
- Truck designers consider the effects of vehicle configuration and suspension systems on pavement and bridge performance and the effects of these factors on the safe operation of the vehicle in mixed traffic.
- Industry and government ensure that trucks operating on highways meet legal size and weight limitations and are safely maintained and operated, and that driver regulations are strictly adhered to.
- When federal and state governments adopt changes in truck size and weight, and sufficient funding is provided to accommodate necessary infrastructure improvements.

(Adopted 07-25-09)

Intermodal Transportation Systems (PS 149) The American Society of Civil Engineers (ASCE) supports developing a national intermodal transportation program that moves people and freight in a safe, secure, economically-efficient, sustainable, and environmentally-sound manner. An infrastructure with these qualities allows the United States to compete in the increasingly global economy. ASCE also supports public-private partnerships, which are essential to furthering the intermodal goals of the nation. (Adopted 07-30-11)

Operation and Maintenance of Transportation Systems (PS 495) The American Society of Civil Engineers (ASCE) supports a strong federal role in the development of the nation's transportation system.

ASCE endorses federal leadership for increasing the focus on transportation operations and management to enhance the performance of the system and preserve our investments.

Federal surface transportation legislation should provide support for the following areas:

- Homeland security initiatives. Transportation operations and homeland security can benefit from joint planning and sharing of resources such as communications infrastructure and traffic control operations. Transit security and preparedness, international border security, asset security and tracking, vulnerability assessment, and creation of system resiliency are important priorities for both transportation operation and homeland security.
- Support for state and local agencies. Beyond establishing transportation operations and management as a national priority, the Federal role should be to support and assist state and local entities in accomplishing related goals. This includes support of research and development, provision of tools, promotion of best practices, and enhancement of education and training at all levels.
- Provision of flexible funding. Flexibility in funding could greatly enhance the opportunity of meeting operations and maintenance needs. Expanding funding eligibility for operations and maintenance programs, enabling direct funding to local and regional operating agencies, and simplifying and clarifying federal funding processes are important initiatives that should be considered.
- Encouragement of public-private partnerships. The private sector has much to offer in the areas of operations, management and technical skills. Partnership with the public sector can better serve the transportation needs of the country.
- Support specific programs. The following programs are also of significance and require special attention.
 - Incident management programs; Intelligent Transportation System programs; Support for regional cooperation and partnerships; and, Congestion Mitigation programs.

(Adopted 07-30-11)

Public Transportation (PS 494) The American Society of Civil Engineers (ASCE) supports the funding, planning, design, construction, operation, and long-term maintenance of safe, efficient, and cost-effective public transportation systems as key components of a

comprehensive, multi-modal approach to meeting our nation's transportation needs. (Adopted 07-30-11)

Rail Infrastructure Development (PS 521) The American Society of Civil Engineers (ASCE) supports a strong rail transportation system within this country. A federal rail trust fund to fund rail improvements, utilizing a match formula to encourage state participation should be established. Revenues for this trust fund could come from sources such as a tonnage fee, mileage fee, ticket tax, and/or general treasury funds. ASCE also encourages the use of innovative financing methods like revenue bonds and tax exempt financing at the state and local levels, public-private partnerships, and state infrastructure banks. However, it is important that fees do not exacerbate the problems rail is trying to solve and divert use away from rail rather than to rail. (Adopted 07-25-09)

Rehabilitation of Historic Bridges (PS 504) The American Society of Civil Engineers (ASCE) supports the development of a Historic Bridge Management Plan for each state. The goal of these Historic Bridge Management Plans is to develop historic bridge inventories, identify those bridges where rehabilitation/preservation are appropriate and feasible, and develop specific treatments for those bridges. ASCE also supports the maintenance, repair and rehabilitation of historic bridges, preferably, for continued vehicular use, and when that is not possible, for use for some alternative transportation means such as a pedestrian or bicycle bridge. (Adopted 07-25-09)

Surface Transportation Research Funding (PS 497) ASCE supports the following general principles in the reauthorization of research and technology programs in the nation's surface transportation legislation:

- Improvements resulting from research and technology (R&T) are critical to achieving national transportation goals in safety, quality of life, economic health, environmental impacts, sustainability, and security.
- Funding for R&T activities should be increased to levels that will continue to provide high returns on research investment.
- Research programs should be conducted according to the highest scientific and engineering standards, from priority-setting to award of contracts and grants to review and evaluation of research results for implementation.
- Research programs should be carried out with appropriate involvement from stakeholders in the public, private, and academic sectors.

- Technology transfer activities are critical to successful implementation of research results and should be supported with R&T funds.
 - Public-private partnerships should be fostered by identifying appropriate roles for each partner and providing incentives for private investment.
- Within the context of the general principles set out above, ASCE supports the following actions regarding specific surface transportation R&T programs.
- The research and technology portion of the State Planning and Research (SPR) program should be maintained to help support state-specific activities while continuing to encourage the states to pool these resources to address matters of mutual interest.
 - University research should continue to be supported through the University Transportation Centers (UTC) program using a competitive selection process that guarantees quality participants and fairness in the allocation of funds.
 - The Federal Highway Administration's (FHWA) program should be strengthened by giving it sufficient funding and flexibility to implement the recommendations of Transportation Research Board (TRB) Special Report 261 The Federal Role In Highway Research and Technology: to focus on fundamental, long-term research; to perform research on emerging national issues and on areas not addressed by others; to engage stakeholders more consistently in their program; and to employ open competition, merit review, and systematic evaluation of outcomes.
 - The recommendations of TRB Special Report 295 The Federal Investment in Highway Research 2006-2009, Strengths and Weaknesses should be implemented.
 - The Strategic Highway Research Program (SHRP II) should be continued beyond the life of SAFETEA-LU, ensuring that critical research will be continued in key areas of surface transportation.
 - Total Research and Technology funding for activities corresponding to Title V in SAFETEA-LU should be at least \$750 million per year.
 - The Federal Transit Administration's (FTA) research program should be free of earmarks and allocations and given flexibility to work with its stakeholders to develop and pursue national transit research priorities. The Transit Cooperative Research Program should be funded at a minimum of \$20 million per year.
 - The Research and Innovative Technology Administration (RITA) should have a well-defined scope and responsibility and appropriate funding, in addition to currently authorized research funding, so

that it may supplement and support the R&T programs of the modal administrations. (Adopted 07-25-09)

Transportation Funding (PS 382) The American Society of Civil Engineers (ASCE) recommends that adequate funding for operating, maintaining, and improving the nation’s transportation system be provided by a comprehensive program with dedicated elements at the federal, state, and local levels, including:

- User fees such as motor fuel sales tax, vehicle miles traveled (VMT) tax, and passenger facility charges (PFC);
 - Indexing user fees to the Consumer Price Index (CPI);
 - General treasury funds; state and local sales, income, payroll, and/or property taxes; impact fees and other development-related fees; transportation maintenance and improvement districts; vehicle registration fees; and toll revenues; and
 - Public-private partnerships, state infrastructure banks, bonding and other innovative financing mechanisms used as appropriate to leverage available transportation funding, but not in excess of or as a means to supplant adequate user fees or other funding.
- ASCE further recommends that these funds be managed through dedicated trust funds with budgetary firewalls to eliminate the diversion of transportation revenues for non-transportation purposes.

(Adopted 07-25-09)

Transportation Trust Funds (PS 434) The American Society of Civil Engineers (ASCE) supports the concept of transportation trust funds. Furthermore, ASCE insists these funds be used only for their intended purposes by removing them from the unified federal budget or by other legislative means. (Adopted 07-25-09)

WASTEWATER

Clean Water Act Reauthorization (PS 420) The American Society of Civil Engineers (ASCE) supports a Clean Water Act that protects our nation’s waters and the beneficial use of those waters. ASCE encourages Congress to reauthorize the Clean Water Act. The Clean Water Act should aggressively address non-point source pollution from watersheds and also point source pollution from sanitary sewer overflows, combined sewer overflows, and storm sewer discharges. The reauthorized Clean Water Act should:

- Include regulatory guidelines to ensure a sustainable, comprehensive, multimedia, and holistic approach to the protection of the nation’s waters;
- Provide funding for training of treatment plant operators;
- Set national standards for certification of treatment plant operators;
- Establish source water protection programs;
- Establish standards for the use of recycled water;
- Support research to identify alternate matrix to assessing water body health;
- Include provisions to encourage pollution prevention;
- Integrate watershed management;
- Protect fish and wildlife habitat;
- Safeguard the quality of coastal waters and estuaries;
- Provide meaningful information to the public about water quality in their communities; and
- Authorize regulations that are effective in protecting the beneficial uses of the nation’s water and flexible enough to allow innovative practices and means to achieve these goals.

ASCE supports the use of the Total Maximum Daily Load (TMDL) regulation for improved water quality. ASCE also supports full funding of implementation of the Clean Water Act. (Adopted 07-10-10)

Control of Combined Sewer Discharge (PS 395) The American Society of Civil Engineers (ASCE) supports the Environmental Protection Agency’s national policy statement for combined sewer overflows (CSOs) which represents the consensus of states, environmental groups, municipalities and other interested parties. ASCE supports increased funding, the required level of control, the guidance for developing control options and strategies, the need for consideration of cost versus performance, and the flexibility afforded to the states to adapt local and regional water quality standards to reflect site specific conditions. (Adopted 04-23-09)

Municipal Wastewater Biosolids (PS 429) The American Society of Civil Engineers (ASCE) supports beneficial use of municipal wastewater and encourages wastewater management practices that promote generation of biosolids of acceptable quality and minimize energy consumption. ASCE supports biosolids-quality standards that protect public health and the environment. ASCE also supports alternative quality criteria that define maximum contaminant levels that allow safe application, distribution and marketing of biosolids-products. ASCE also supports use of management processes that effectively capture

and use the energy content of municipal wastewater biosolids while minimizing greenhouse gas emissions. (Adopted 04-27-06)

Non-Point Source Water Quality (PS 461) The American Society of Civil Engineers (ASCE) supports efforts to mitigate pollution from non-point source runoff into rivers, lakes, wetlands, riparian habitats, coastal and ocean environments, and ground water basins. The development, for all sectors of society, of educational programs which influence the quality of waters is encouraged. Furthermore, ASCE supports programs or methods to identify best management practices (BMPs) to control non-point source pollution and to implement them at the federal, state, and local levels. ASCE also supports the establishment of water-quality standards for surface and ground water. ASCE supports the improvement of water quality through the use of the most recent models for the development of a federal Total Maximum Daily Load (TMDL) regulation. For impacted ground water basins, ASCE supports the implementation of ground water basin remediation plans to restore the water quality of the basin. (Adopted 04-23-09)

Roadway Runoff Water Quality Management (PS 466) The American Society of Civil Engineers (ASCE) supports regulation of roadway stormwater runoff water-quality for protection of public health and the environment.

ASCE supports elimination of point-source discharge requirements for roadway stormwater runoff based on the adoption of guidelines for stormwater-quality in a strengthened Nonpoint-source Management Program. These nonpoint-source regulations must focus on receiving waters and their watersheds, define pollutants in stormwater runoff in terms of significant impairment to the beneficial uses of receiving water, and incorporate the control of pollution from stormwater runoff to the maximum extent practicable (MEP) as defined through a community planning process, using best management practices (BMPs). (Adopted 07-10-10)

Water Reuse (PS 332) The American Society of Civil Engineers (ASCE) supports and encourages wastewater reclamation and reuse. Through the cost-effective reclamation and reuse of water the total water resources available can be utilized more effectively to meet growing water needs by incorporating the principles of sustainable development. ASCE recommends the following:

- The use of non-potable water should be encouraged when it can be provided at a reasonable cost and the public health is protected.

- The safe use of reclaimed water should be maximized as part of any plan to develop new water supplies for non-potable uses where technically and economically feasible to do so.

- Incentives, such as federal and state grants and/or loans, should be made available to local utilities for reclamation planning studies, pilot programs, and research and development.

- Requirements set by regulatory agencies for water reuse projects should have a balanced and sound scientific, environmental, engineering and financial basis.

(Adopted 07-15-07)

Greywater Reuse (PS 534) The American Society of Civil Engineers (ASCE) supports and encourages greywater reclamation and reuse. Greywater refers to the reuse of water drained from baths, showers, and sinks (household wastewater excluding toilet and urinal wastes) for irrigation and other water conservation applications. Through the cost-effective reclamation and reuse of greywater, the total water resources available can be utilized more effectively to meet growing water needs by incorporating the principles of sustainable development. ASCE recommends the following:

- The use of non-potable greywater should be encouraged when it can be provided at a reasonable cost and the public health and environment are protected.
- The safe use of greywater should be maximized as part of any plan for wise water resource management for non-potable uses where technically and economically feasible to do so.
- Incentives, such as federal and state grants and/or loans, should be made available to local utilities for greywater use planning studies, pilot programs, and research and development.
- Requirements set by regulatory agencies for water reuse projects should have a balanced and sound scientific, environmental, engineering and financial basis.

- Requirements set by regulatory agencies for water reuse projects should have a balanced and sound scientific, environmental, engineering and financial basis.

(Adopted 10-19-10)

WATER RESOURCES MANAGEMENT

Atmospheric Water Resources Management (PS 275) The American Society of Civil Engineers (ASCE) supports and encourages the protection and prudent development of atmospheric water (also known as "weather modification" or "cloud seeding") for beneficial uses. Sustained support for atmospheric water data collection, research and operational

programs, and the careful evaluations of such efforts including the assessment of extra-area and long-term environmental effects, is essential for prudent development. ASCE recommends that the results and findings of all atmospheric water-management programs and projects be freely disseminated to the professional community, appropriate water managers and to the public. (Adopted 04-23-09)

Beneficial Use of Dredged Material (PS 513) The American Society of Civil Engineers (ASCE) supports the beneficial use of dredged material. It recommends the following as policy guidance for the beneficial use of dredged material in the United States:

- All dredged sediment should be used beneficially unless it is clearly impractical to do so.
- The federal government should revise its methodology for economic analysis of dredging costs, where applicable, to reflect both gaining the benefits of using dredged material for coastal protection, environmental stewardship and other beneficial uses as well as to avoid disposal costs.
- Government and private entities that develop and execute projects requiring dredging should be stewards for the beneficial use of dredged material.
- Dredged material should be managed as a resource using life-cycle dredged material management plans that consider regional sediment management needs; dredging frequencies, locations, and quantities; as well as landscape use and change.
- Contaminated sediments, considering the contaminant and degree of contamination, should be evaluated for selected beneficial uses.
- ASCE, in collaboration with its Institutes and sister organizations, should enact a system of technological exchange to ensure that best practices and lessons learned in the beneficial use of dredged material can be leveraged in future dredging activities.

(Adopted 04-11-11)

Cooperation on Water Resource Projects (PS 312)

The American Society of Civil Engineers (ASCE) urges federal, state, and local governments, and private enterprises to cooperate in planning, designing, constructing, financing, maintaining, and operating sustainable water resource projects. All entities should cooperate on legislative and regulatory affairs involving interstate and intrastate watersheds. (Adopted 07-10-10)

Cost Sharing in Water Resources Infrastructure Program (PS 302) The American Society of Civil Engineers (ASCE) believes that cost sharing is a necessity among federal, state, and local entities

involved in the design, construction, operation, and maintenance of multi-jurisdictional water resources infrastructure projects. Political and agency leadership must be aggressive and innovative in developing sustainable cost sharing approaches for water resources infrastructure projects and programs. Recognizing the importance of performing regional and watershed planning to maintain and enhance the integrity of flood-protection systems, navigation, and the environment across multiple jurisdictional boundaries; planning is an inherently federal function that should be predominantly funded by the federal government.

Cost sharing provisions must consider:

- Keeping paramount the public's health and safety.
- The water demands for domestic, industrial, agricultural, navigational, and environmental purposes.
- Flood-damage reduction and the enhancement of water quality.
- Nonstructural solutions, including changed building elevations and land-use requirements at the local or regional level.
- The conservation, storage, distribution, and use of available water supplies.
- The societal benefits gained from maintaining and enhancing natural and environmental functions.
- The benefits of inter-system connection that improve reliability and resilience in times of drought and other emergencies.
- The life-cycle costs of operating and maintaining the project.

(Adopted 04-01-11)

Desalination (PS 407) The American Society of Civil Engineers (ASCE) recognizes that desalination of saline or brackish waters can be an alternative source for potable water. Economic feasibility for desalination projects should be consistent with other water supply projects. The public, legislators and regulators should be educated on desalination processes and benefits. Research on improvements in desalination technology as well as techniques for the environmentally safe disposal of by-products should be continued. (Adopted 07-10-10)

Disinfection of Drinking Water (PS 462) Disinfection of drinking-water must be carried out for the protection of public health. The American Society of Civil Engineers (ASCE) supports research into improvements in disinfection technology to increase efficiency and minimize harmful byproducts. (Adopted 07-10-10)

Emergency and Risk Management by Water Providers (PS 348) The American Society of Civil Engineers (ASCE) supports the development of emergency plans by water providers to prevent or minimize the disruption of service during emergencies. Such emergency planning must address resilience, mitigation, and emergency response measures to minimize the risk of water supply disruption due to any cause, whether naturally occurring or man-made. Such emergency plans should:

- Be developed in conjunction with neighboring water utilities in order to ensure mutual aid when needed;
 - Include routine reviews and updates as required; and
 - Incorporate resilience and sustainability in design of new, modified, and replacement water systems.
- (Adopted 07-30-11)

Evaluation of Federal Water Resources Projects (PS 515) The American Society of Civil Engineers (ASCE) urges the federal government to complete its revision of the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies of 1983 (Principles and Guidelines or P&G), the central planning document employed by the U.S. Army Corps of Engineers (USACE) for justifying major civil works projects. ASCE strongly recommends that the federal government pursue an interagency, multidisciplinary, collaborative effort to revise the current P&G to incorporate risk assessment for public health and safety, improved quantification of environmental benefits and a watershed or systems approach. (Adopted 07-10-10)

Groundwater Management (PS 243) The American Society of Civil Engineers (ASCE) supports and encourages a nationally coordinated effort to improve management of the nation's groundwater resources. ASCE encourages efforts to ensure adequate supplies and safeguard public health by:

- Coordination of federal, state and local programs for:
 - collection and dissemination of field data;
 - research on groundwater flows; and
 - technical assistance in groundwater management.
- Administration of regional and state water rights and establishment and enforcement of regulations for:
 - judicious use and management of groundwater resources;
 - protection of groundwaters from degradation;
 - remediation of areas of known groundwater contamination; and

- Management of groundwater resources by federal, state, tribal, and regional agencies where appropriate. (Adopted 07-10-10)

Hydrologic Data Collection (PS 447) The American Society of Civil Engineers (ASCE) urges the federal government to continue and expand a long-term hydrologic data collection program for major watersheds and their associated coastal areas, with funding on a continuing basis sufficient to allow prediction of storm surges, major flood events, and sediment transport as well as to allow effective management of changes to established hydrogeomorphological processes, that is, the interaction of water and soil through river systems. (Adopted 07-10-10)

Implementation of Safe Drinking Water Regulations (PS 361) The American Society of Civil Engineers (ASCE) recommends that Congress amend the Safe Drinking Water Act to require states to modify their contaminant-monitoring programs at least once every three years to ensure that all potential contaminants are evaluated periodically commensurate with their risk to human health. Regulations promulgated under the 1996 amendments to the Act need to balance the concern for drinking water quality with risk-based contaminant limitations that include adverse health effects, frequency of occurrence, and treatment technologies to avoid undue financial burdens on consumers.

Adequately funded state and federal programs to develop and enforce the EPA regulations under the Act are necessary. We encourage Congress, through the EPA, to support the state programs by providing federal funding and program planning assistance with sufficient flexibility to accommodate state and local issues. ASCE encourages the professional education, research and development necessary to formulate new methods of water quality analysis, water treatment, and related technologies. (Adopted 10-18-11)

Peer Review of Water Resources Projects (R 519) The American Society of Civil Engineers (ASCE) believes that independent peer reviews should be conducted on every water project built by the U.S. Army Corps of Engineers (USACE) in which performance is critical to the public health, safety and welfare; the reliability of performance under emergency conditions is critical; innovative materials or techniques are used; for projects lacking redundancy in the design; or for projects that have

unique construction sequencing or a short or overlapping design and construction schedule. (Adopted 07-10-10)

Planning and Management for Droughts (PS 408) The American Society of Civil Engineers (ASCE) supports the development of regional drought preparedness and response plans by water providers in cooperation with local, state, and federal agencies. Plans should be based on sound engineering principles and assessments and on a locally developed balance between economic investment and risk assessment. While the fundamental responsibility for development and implementation of such plans rests with the water supply agencies and their sponsoring government entities, all interested parties should be involved and all primary and secondary impacts identified. Planning, implementation, and management efforts should include initiatives that will reduce the vulnerability from future droughts. Where possible, such plans should include public information and education campaigns, ongoing water conservation programs, water use restrictions, water transfers, conjunctive use, water-banking, and local sharing of supplies and facilities. Federal and state governments should provide encouragement and support, both technical and financial, to water providers in the development of drought preparedness and response plans. (Adopted 04-01-11)

Regional Sediment Management (PS 522) The American Society of Civil Engineers (ASCE) supports regional sediment management for watershed and coastal zones to ensure ecosystem preservation and sustainable development. Regional sediment management is critical to restoring hydrogeomorphic processes within a watershed, which in turn is important to ecosystem vitality, balance and diversity, particularly in threatened ecosystems such as the Mississippi Delta or the South Florida wetlands. ASCE recommends:

- Government and private entities that develop or execute projects and activities affecting water resources or hydrogeomorphic processes, and related regulatory entities, promote a culture of stewardship and partnering to manage sediments effectively;
- Sediment should be managed as a resource by developing regional sediment inventories and sediment budgets that consider inputs, movements, uses, and outputs throughout the system;
- Governments and stakeholders at all levels should collaborate to establish property rights for sediment, and an appropriate legal mechanism to allocate and transfer sediment resources for different uses, and

to resolve conflicts among multiple competing demands for the same sediment source; and

- Proponents of projects and activities that affect sediment resources must work collaboratively with regional stakeholders to mitigate adverse impacts to hydrogeomorphic processes and affected sediment regimes.

(Adopted 07-10-10)

Storm Water Management (PS 441) The American Society of Civil Engineers (ASCE) supports regional sediment management for watershed and coastal zones to ensure ecosystem preservation and sustainable development. Regional sediment management is critical to restoring hydrogeomorphic processes within a watershed, which in turn is important to ecosystem vitality, balance and diversity, particularly in threatened ecosystems such as the Mississippi Delta or the South Florida wetlands. ASCE recommends:

- Government and private entities that develop or execute projects and activities affecting water resources or hydrogeomorphic processes, and related regulatory entities, promote a culture of stewardship and partnering to manage sediments effectively;
- Sediment should be managed as a resource by developing regional sediment inventories and sediment budgets that consider inputs, movements, uses, and outputs throughout the system;
- Governments and stakeholders at all levels should collaborate to establish property rights for sediment, and an appropriate legal mechanism to allocate and transfer sediment resources for different uses, and to resolve conflicts among multiple competing demands for the same sediment source; and
- Proponents of projects and activities that affect sediment resources must work collaboratively with regional stakeholders to mitigate adverse impacts to hydrogeomorphic processes and affected sediment regimes.

(Adopted 07-10-10)

Water Conservation (PS 337) The American Society of Civil Engineers (ASCE) supports conservation as an essential aspect of water resources management. Water conservation, a part of demand management, is the prudent and efficient use of available sources of supply. There should always be a balance between demand management and the development of new water sources.

ASCE encourages suppliers, regulators, legislators and consumers to support laws, regulations, policies and programs for water conservation that achieve:

- Pricing that better reflects the economic and other values of the resource;
 - Reduced waste through accurate accounting of water volume from points of withdrawal to points of sale through metering, leakage control, and other measures;
 - Water conservation education;
 - Research on efficient water use practices;
 - Demand management consistent with the climatology of the region and the availability and ease of development of new sources of water; and
 - Drought preparedness.
- (Adopted 07-10-10)

Waste-, Storm-, and Drinking-Water Infrastructure Funding (PS 480) The American Society of Civil Engineers (ASCE) recommends that funding for water infrastructure system improvements and associated operations should be provided by a comprehensive program. ASCE supports the creation of a Water Infrastructure Trust Fund to finance the national shortfall in funding of infrastructure systems under the Clean Water Act and the Safe Drinking Water Act, including stormwater management and other projects designed to improve the nation's water quality. ASCE further supports a variety of financial mechanisms for the trust fund, such as appropriations from general treasury funds; issuance of revenue bonds and tax exempt financing at state and local levels; public-private partnerships; state infrastructure banks; user

fees on certain consumer products; and other innovative financing mechanisms, including broad-based environmental restoration taxes to address problems associated with water pollution, wastewater management and treatment, and stormwater management. ASCE supports reauthorization of the Clean Water Act to increase and expand the federally funded State Revolving Loan Fund (SRF) program. (Adopted 07-25-09)

Watershed Management (PS 422) The American Society of Civil Engineers (ASCE) supports basin-wide water resources management. ASCE encourages government institutions to plan and regulate water on a watershed basis, and supports integrating programs and goals across political boundaries. ASCE believes that effective watershed management is facilitated when the government, the public and the private sector work collaboratively on this issue. Federal legislation defining the goals and standards for watershed managers should permit flexibility and accommodate regional needs. (Adopted 04-23-09)

Weather Surveillance Technology (PS 409) The American Society of Civil Engineers (ASCE) supports the deployment of the latest generation of weather surveillance technology. ASCE supports programs that use and interpret weather surveillance information. (Adopted 04-01-11)

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