ACECC Tokyo Declaration 2019

April 16, 2019

Signed by the following ACECC Members:

American Society of Civil Engineers (ASCE)
Chinese Institute of Civil and Hydraulic Engineering (CICHE)
Engineers Australia (EA)
Indonesian Society of Civil and Structural Engineers (HAKI)
Institution of Civil Engineers (ICE India)
Institution of Engineers, Bangladesh (IEB)
Institution of Engineers, Pakistan (IEP)
Japan Society of Civil Engineers (JSCE)
Korean Society of Civil Engineers (KSCE)
Mongolian Association of Civil Engineers (MACE)
Nepal Engineers' Association (NEA)
Philippine Institute of Civil Engineers (PICE)
Vietnam Federation of Civil Engineering Associations (VFCEA)

- Preamble -

The Asian Civil Engineering Coordinating Council, (ACECC) was established on September 27, 1999 in Tokyo, with five (5) civil engineering societies/institutes present, the American Society of Civil Engineers, (ASCE), the Chinese Institute of Civil and Hydraulic Engineering, (CICHE), the Japan Society of Civil Engineers, (JSCE), the Korean Society of Civil Engineers, (KSCE), and the Philippine Institute of Civil Engineers, (PICE), to promote the acquisition and transfer of civil engineering knowledge for advancing the design and construction practices that ultimately improve the quality of life of all citizens from these ACECC member countries.

In addition to the five members at the time ACECC was established, eight new members, the Vietnam Federation of Civil Engineering Associations, (VFCEA), the Engineers Australia, (EA), the Mongolian Association of Civil Engineers, (MACE), the Indonesian Society of Civil and Structural Engineers, (HAKI), the Institution of Civil Engineers, (ICE India), the Institution of Engineers, Bangladesh (IEB), the Institution of Engineers, Pakistan, (IEP), the Nepal Engineers' Association, (NEA), have joined, and the cooperation between ACECC members has strengthened. As the variety of challenges, technology levels and economic development faces each individual member country is different, so ACECC has developed its mutual understanding of these issues.

The development of Asia has been remarkable, and the total GDP of the 13 ACECC member countries has almost doubled over the 20 years since the establishment of ACECC. Furthermore, for emerging countries, GDP has increased more than fourfold over the last 20 years. The increase in national income per capita has also been remarkable, and people’s lives have improved dramatically.

Infrastructure facilities are indispensable for the improvement in people’s lives, and civil engineering technology and civil engineers who have been at the forefront of these developments have made great contributions to the construction of diverse infrastructure facilities such as roads, railroads, ports, airports, logistics and energy. The development of social infrastructure and advances in its related technologies have improved all aspects of logistics along with enhancing people-to-people networking and cultural exchanges and

reducing regional disparities. ACECC will continue to conduct activities to promote the sustainable development of infrastructure facilities in order to contribute to the improvement of the quality of people's lives.

Since the establishment of the ACECC, the world population has increased 25 % from 6 billion to 7.5 billion. Along with the improvement in the quality of life, efforts to deal with problems such as environmental, health, and urban problems such as traffic have become even more important and place additional concerns on rural and peri-urban areas of large cities. Furthermore, disparities among Asian countries and between cities and regions in one country need to be addressed. The details of the specific problem and progress level towards solutions are different in each country, especially within the Asian region. ACECC will contribute to the solutions recognizing the uniqueness and specificity of each country.

Over the 20 years, the ACECC member countries, have experienced an unprecedented number of natural disasters such as earthquakes, tsunami, floods, storm surges, volcanic eruptions, typhoons and torrential downpours. These include: the Gujarat Earthquake in 2001, the Sumatra Offshore Earthquake and Tsunami Disaster in 2004, Hurricane Katrina in 2005, the Pakistan Earthquake in 2005, Taiwan's Typhoon Morakot in 2009, the Great East Japan Earthquake in 2011, Typhoon Haiyan (Yolanda) in 2013, the Mount Ontake Eruption in 2014, the Nepal Earthquake in 2015, the Kumamoto Earthquake in 2016, the Kilauea Volcano Eruption in 2018, the Western Japan Torrential Rain in 2018, Typhoon Jebi in 2018, the Hokkaido Eastern Iburi Earthquake in 2018, the Indonesian island of Sulawesi Earthquake and Tsunami Disaster in 2018. Elsewhere in the world disasters have also occurred on an unprecedented scale - the China's Sichuan Earthquake in 2008 and the Haiti Earthquake in 2010. ACECC must develop responses to expected disasters in the Asian Region to mitigate the impact of these disasters as well as plan and design infrastructure resilient to disasters.

Coupled with the impact of climate change on a global level, the scale of natural disasters surpasses past experiences and it is becoming increasingly difficult to solve the problems arising from these disasters. Climate change has the potential to increase the severity of many natural disaster impacts. ACECC will always recognize and contribute to the solution of these problems regarding disaster countermeasures and disaster prevention and reduction as a common and urgent challenge within Asia as well as in countries beyond Asia.

The United Nations adopted 17 "Sustainable Development Goals (SDGs)" in 2015. ACECC acknowledges that civil engineering is directly or indirectly involved in these 17 goals and makes a commitment to the realization of the SDGs with a broad cross-sectoral perspective and a wide range of experts.

Civil engineering technology builds civilizations, helping to make people's dreams come true and enriching their lives and society as a whole. Recognizing that our present standard of living is based on civil engineering and civil engineering technology that has developed over time, ACECC will increase its efforts to properly disseminate the role and the importance of civil engineering to society to support the continuing development of civil engineering. ACECC will continue to encourage young civil engineers to take pride in civil engineering, sharing their ideas for the future of the civil engineering profession and encourage more youth to become civil engineers.

In consensus, ACECC considers the **"ACECC Tokyo Declaration 2019"** consisting of the 16 initiatives shown below to define the basic activities and policy of the future, through various activities, such as the Civil Engineering Conference in the Asian Region (CECAR), the ACECC Technical Committees and others. The ACECC objectives of sharing knowledge and utilizing knowledge management will be realized. ACECC will widely disseminate the results obtained to society and contribute to the realization of a safe, secure and sustainable society.

ACECC TOKYO DECLARATION 2019

➢ ***Initiatives to address the challenges facing Asia***

1) **Initiatives related to disaster preparedness, countermeasures, prevention and mitigation**

Within the Asian region, we face an array of natural disasters. Efforts to deal with natural disasters are an important issue that ACECC needs to address. In line with the "The Sendai Framework for Disaster Risk Reduction 2015-2030" adopted by the United Nations in 2015, it is important to formulate disaster preparedness plans, invest in disaster prevention, and consider disaster mitigation at the planning stage of structures. ACECC will mobilize technology, information and knowledge possessed by each member country, sharing this knowledge thereby contributing to the mitigation of damage caused by natural disasters and ensuring resilience against future events, through activities centered on the ACECC Technical Committees. Best practices in disaster mitigation shall also be disseminated with an objective of enabling the other stakeholders to benefit from them. Furthermore, in the event of a large-scale natural disaster, we, ACCEC, will establish a rapid cooperation system to provide technical assistance to the country where the disaster occurred.

2) **Initiatives related to urban, population growth and traffic problems**

In Asia, where economic development is significant, infrastructure development is often not sustainable and fails to keep up with rapid urbanization. As a result of rapid urbanization with expanding urban areas, traffic problems and the like are widespread. In addition, infrastructure development for an aging society is an urgent issue for some countries. Affordable, environmentally viable and culturally acceptable mobility options will be identified for upscaling and replication in Asian contexts. Through activities centered on the Technical Committees, ACECC will encourage not only those countries that have these problems, but also the countries that have already developed and entered the maturity stage to share their experience, information and technology throughout the ACECC organization and work on problem solving reciprocally.

3) **Initiatives related to environmental problems**

Infrastructure development occasionally conflicts with protection and conservation of the natural environment. In addition to working to promote restoration of already deteriorating environments from air pollution, water pollution, and soil contamination, we must also promote the establishment of technologies and systems to mitigate these problems. Solving environmental problems on a global scale, such as global warming and the destruction of ecosystems, are urgent challenges. Social and physical changes such as mass population dislocations from rural to urban shall be examined for their environmental impacts on settlements. ACECC will work on information sharing and potential solutions for these issues through activities centered on the Technical Committees.

4) **Initiatives related to human health**

Disasters, urban crowding and sprawl, and environmental pollution negatively affect human health. On the other hand, infrastructure for water and sanitation, waste management, and air pollution control is necessary to protect human health, support human wellbeing, and minimize negative environmental impacts. ACECC will work on information sharing and potential solutions for these issues through activities centered on the Technical Committees.

5) **Initiatives related to Climate Change Issues**

Climate change is an established reality and Asian countries have suffered tremendously

from climate change impacts during the recent past. Unpredictability in weather patterns across the globe is occurring due to a variety of human and natural interventions. The impacts on the infrastructure, habitat and resources in the different Asian regions are enormous. Droughts, famines, loss of habitable human settlements and many similar impacts are common evidence of this. There is a strong need for research, knowledge generation and consequent implementation into engineering practices to address the widespread problems being caused by climate change. ACECC will undertake appropriate responses to these and related factors through its relevant Technical Committees.

6) **Initiatives related to water problems**

Access to safe and affordable water at all times is a critical element in maintain or improving the quality of people's lives and protecting human health. Ensuring that water resources are properly managed in a sustainable manner that considers environmental and ecological conservation is fundamental to this outcome. Furthermore, problems related to water resource utilization in rivers that flow through or border multiple countries, including flood control, contamination and water use need to be solved not only by countries in the watersheds but also with the assistance of engineers around the worldwide through mutual cooperation. Issues of waste water management and recycling also need to be included. ACECC will work on potential solutions for these water issues through activities centered on the Technical Committees and its cooperative partnerships.

7) **Activities to build, maintain and develop high-quality sustainable and resilient infrastructure facilities**

In order to build a more sustainable society, we need to significantly enhance the performance and value of infrastructure projects. To reach this goal, ACECC will encourage its members to influence major policy changes and infrastructure funding levels, while challenging civil engineers to focus on innovation, rethink overall life cycle costs, ensure community participation and support, and drive the necessary change from planning and design, through construction, operations and maintenance, closure and post-closure. Through activities centered on the Technical Committees, ACECC will focus on ensuring the quality sustainability and resilience of infrastructure.

➢ ***Human resource development for civil engineering and technology transfer***

8) **Diversity in the civil engineering profession**

ACECC members will support and encourage equal opportunities for all people to participate in the civil engineering profession without regard to gender, race, national origin, ethnicity, religion, age, sexual orientation, disability, or family, marital, or economic status. ACECC will encourage its members to disseminate and implement programs to advance the profession by promoting an inclusive climate in the profession. Furthermore, ACECC members will promote the participation of young people, women and underrepresented minorities in ACECC events and strengthen their networks. In addition to promoting the work of senior engineers, a technology-friendly working environment will be promoted to reduce the burden on the elderly.

9) **Education and human resource development and compliance with ethical standards**

We will strengthen formal education in all its forms and continue to offer Continuing Education for both new graduates and experienced civil engineers to support their career advancement as they gain professional and technical expertise. Complying with ethical standards, combating corruption, and applying leadership skills are important ways the

ACECC community will help improve the welfare and quality of life for people around the globe. ACECC members will host seminars and workshops on diverse topics in which a wide range of engineers can participate. Strategic training input will also be acquired from allied disciplines and professional specializations.

10) **Technology development, its transfer, and standardization**

Technological advancement varies from country to country, and expectations for ACECC activities are different. Civil engineers must respect these differences, share civil engineering technology and standards, and match the level of technology with the needs and abilities of the user, while developing new techniques. For that purpose, ACECC will continue activities centered on the Technical Committees, by holding seminars and promoting information sharing, standardization of design standards, and developing new methodologies.

➢ ***Collaboration with other fields and related organizations***

11) **Collaboration with international organizations**

ACECC, as an association of learned societies collaborating within the Asian region, will strengthen cooperation with other similar international organizations with the global civil engineering profession in mind. To that end, ACECC will participate in major conferences hosted by international organizations and encourage their participation in ACECC sponsored events.

12) **Integration of interdisciplinary collaboration and knowledge**

Breakthroughs in ICT and AI technologies have greatly influenced construction, academic fields involving civil engineering are becoming more diverse, and collaboration with experts in ICT and AI is indispensable. For that purpose, civil engineers will gain extensive knowledge without restricting their areas of activity, collaborate with experts from different fields, comprehending new techniques, and thereby improve the quality of life for the general public.

➢ ***Dissemination of the role and contribution of civil engineering to society***

13) **Activities to disseminate the role and contribution of civil engineering to society**

The role of civil engineering and civil engineers in improving the quality of life for human beings is immeasurable. However, society does not always recognize these contributions of engineers. Ensuring accountability to citizens as well as civil engineers, ACECC will work to increase recognition of civil engineers through enhancement of the ACECC Newsletter and the expansion of its distribution destination, websites and other means, to enhance the overall visibility of the civil engineering community. Furthermore, ACECC will widely disseminate the results produced by the Technical Committee activities beyond its membership. When appropriate, dissemination will be through regional and local languages to widen the scope of knowledge delivery and sharing.

➢ ***Operation of ACECC***

14) **Participation in ACECC activities by decision-makers of industry, government and academia**

Problems involving civil engineering cannot be solved by academics or practitioners' alone but must involve collaboration across industry-government-academia including practicing

engineers and government policy-makers. For that purpose, we will carefully arrange activities such that engineers from industry, government and academia can participate in all ACECC activities and policy decisions without bias. Participation by leaders from industry, government and academia in the Civil Engineering Conference in the Asia Region (CECAR) held on a triennial basis, will be encouraged in order to advance mutual discussions and contribute to the development of civil engineering as well as improvement of the quality of people's lives.

15) **Enhancement of the efficiency of ACECC activities**

As the number of ACECC member countries increases, we need to enhance the efficiency of processes from planning to implementation of activities, and work on improving the efficiency of the ACECC organization and its activities, so that a wide variety of these can be performed in parallel. Furthermore, we will also work with the recognition of the generational changes going on in the working environment, to ensure that the objectives and philosophy of ACECC are properly conveyed to future generations.

16) **Fulfillment and follow-up of ACECC Tokyo Declaration 2019**

Each ACECC member society/institution will energetically work under the leadership of their presidents, to promote each initiative in the Tokyo Declaration by its own country's activities. Each society/institution will report on the progress they have made on an agreed to regular basis.

ACECC Tokyo Declaration 2019

For a Better Quality of Life

Signed on April 16, 2019 in TOKYO By:

American Society of Civil Engineers (ASCE)

Robin A. Kemper, PE, Pres. 2019

Japan Society of Civil Engineers (JSCE)

Chinese Institute of Civil and Hydraulic Engineering (CICHE)

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