WFEO Model Code of Practice for Sustainable Development and Environmental Stewardship

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Introduction

Engineers are not only concerned with developing projects that are sustainable, but also with a wide variety of environmental management responsibilities that impact society and the environment. It is generally accepted that over the long-term the health of our society and its economy are dependent on the health of the environment. Pursuit of the "public good" through sustainable development contributes to the long-term benefit of society, the economy and the environment. The issue of the "public good" figures prominently in the development of solutions and constraints by engineers.

Implicit in the concept of 'public' is the society and its economy, and the environment in which the society and economy resides. It is desirable to have some inclusion of the concepts of sustainable development and environmental stewardship within: the engineering Code of Ethics, the various guidelines used to support professional practice and, across the range of activities that constitute continuing professional development.

The **WFEO Model Code of Practice for Sustainable Development and Environmental Stewardship** links the Code of Ethics with professional practice. It defines and explains a set of ten principles that guide engineering practice in the wider context of sustainable development and environmental stewardship. It will support engineers in their professional practice, in their dealings with other practicing professionals and in support of their professional organizations. It includes an Interpretive Guide that provides amplification and commentary on each principle that will help engineers implement these principles into their everyday practice.

Sustainable Development and Environmental Stewardship Explained

Sustainable Development is a challenging concept. Many professional groups, including engineering organizations, have developed specific; though often discipline centric, definitions for their area of practice. Often they are problematic in that they do little to distinguish between what are our discretionary wants versus what are our essential needs.

The Brundtland Commission considered the issue of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given. It also considered the idea of 'limitations' imposed by the state of technology and social organization on the environment's ability to meet present and future needs. In 1987 it published what is perhaps the broadest, best known and most widely accepted definition of sustainable development:

> "Sustainable development is development that meets the social, economic, and environmental needs of the present without compromising the ability of future generations to meet their needs."

Environmental Stewardship is a more difficult concept to define. Few organizations have developed organizational centric definitions for environmental stewardship in their own area of interest. Stewardship means to take care of something even if it does not belong to you. It has often been addressed implicitly to meet a narrower objective such as protecting an endangered species or preserving a threatened ecosystem. The Model Code defines Environmental Stewardship as:

> 'Environmental Stewardship is the prudent use of the finite resources in nature to produce the greatest benefit while maintaining a healthy environment for the foreseeable future'.

The concept of 'maintaining a healthy environment' was considered in the development of the Model Code for the application of sustainable development by engineers.

The engineering profession plays a significant role in economic development and in protecting the environment. As such it is ideally situated to play a significant role in sustainable development and environmental stewardship. If engineers are to be relevant to current and future generations and provide guidance and leadership to society, then a more proactive approach to sustainability is required.

<u>The Model Code of Practice – The Ten Principles</u>

1. Maintain and continuously improve awareness and understanding of environmental stewardship, sustainability principles and issues related to your field of practice.
2. Use expertise of others in the areas where your own knowledge is not adequate to address environmental and sustainability issues.
3. Incorporate global, regional and local societal values applicable to your work, including local and community concerns, quality of life and other social concerns related to environmental impact along with traditional and cultural values.
4. Implement sustainability outcomes at the earliest possible stage employing applicable standards and criteria related to sustainability and the environment.
5. Assess the costs and benefits of environmental protection, eco-system components, and sustainability in evaluating the economic viability of the work, with proper consideration of climate change and extreme events.
6. Integrate environmental stewardship and sustainability planning into the life-cycle planning and management of activities that impact the environment, and implement efficient, sustainable solutions.
7. Seek innovations that achieve a balance between environmental, social and economic factors while contributing to healthy surroundings in both the built and natural environment.
8. Develop locally appropriate engagement processes for stakeholders, both external and internal, to solicit their input in an open and transparent manner, and respond to all concerns – economic, social and environmental in a timely fashion in ways that are consistent with the

scope of your assignment. Disclose information necessary to protect public safety to the appropriate authorities.

9. Ensure that projects comply with regulatory and legal requirements and endeavour to exceed or better them by the application of best available, economically viable technologies and procedures.
10. Where there are threats of serious or irreversible damage but a lack of scientific certainty, implement risk mitigation measures in time to minimize environmental degradation.

The Interpretive Guide

The Interpretive Guide serves as an accompanying document to the Model Code of Practice and provides further amplification and explanation to engineers and national engineering organizations to interpret and implement the ten principles at a practical level. It includes a comprehensive list of definitions of terms used in the document. Clear and concise definitions are an essential component to describe the professional practices of engineers.

It is most important to make engineers aware of this companion document to the Model Code. It will assist them to integrate the principles into their daily professional practice.

Concluding Remarks

All engineers need to consider the impact that their undertakings (i.e. systems and structures) will have on the environment and what effect the environment may have back on those undertakings. Engineers are faced with a dilemma however. They are usually neither the ultimate decision maker for a project nor do they necessarily reflect the perspective of the local community. Both these factors must be recognized and respected if the engineer is to influence the development and management process.

The Model Code of Practice and Interpretive guide are also relevant to natural science disciplines such as geoscience and planning. These disciplines are closely related to engineering and their areas of practice often overlap in work undertaken in development and environment contexts.

Engineering and related disciplines also utilize expertise from the social sciences such as economics, finance and law. Collectively these professions will be instrumental in realizing the promise of sustainable development and environmental stewardship.

Publication and Outreach

The English version was published October 2013 after unanimous approval at the WFE O General Assembly in September 2013. It has now been translated into Spanish, Arabic and Chinese through the efforts of WFEO national members. A French translation is in progress. It is now available in several different languages on the WFEO website (www.wfeo.org/sustainabledevelopment) .

A 30 to 45 minute presentation on the Code and the Interpretive Guide is available and includes speaker's notes. It can be delivered at professional development events e.g. seminars and workshops, speaking engagements and conferences. The presentation can be used for outreach and professional

development of engineers that are members or registered with national and international members. Proper acknowledgement of WFEO Committee on Engineering and the Environment (CEE) as the source of the presentation is pre-requisite to its use. The PowerPoint versions are available upon request to WFEO

WFEO and Engineers Canada are hosting webinars on an ongoing basis in 2015 to train engineers to become official presenters of the Model Code. The target audiences are fellow engineers as well as government organizations to increase their awareness and uptake of the principles. Two "train the presenter" webinars were delivered in the first quarter of 2015 – one to Central and South American countries and the second to African countries. Another webinar for Central and South America is set for early July and one for Middle East countries will be delivered at the end of July. Webinars for Europe, Asia and North America are in the planning stages for the third and fourth quarters of 2015.

Any national member may request a webinar for engineers in their country. Contact Engineers Canada (david.lapp@engineerscanada.ca) for further information and registration details.