



# ENHANCING THE ENVIRONMENT—Part 1

by M. Myint Lwin, Federal Highway Administration

The Federal Highway Administration (FHWA) is committed to preserving and enhancing the environment through research and stewardship. In recent years, FHWA and its partners have made substantial contributions to the environment and to the communities, through planning and programs that support sustainability, wetland banking, habitat restoration, historic preservation, air quality improvements, bicycle and pedestrian facilities, context-sensitive solutions, wildlife crossings, and public and tribal government involvement.

In this and the next issue of *ASPIRE*,™ we will explore opportunities for research, development, deployment, and education for enhancing the natural and built environment. This article describes the accomplishments following the passage of the National Environmental Policy Act (NEPA).



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## National Environmental Policy Act

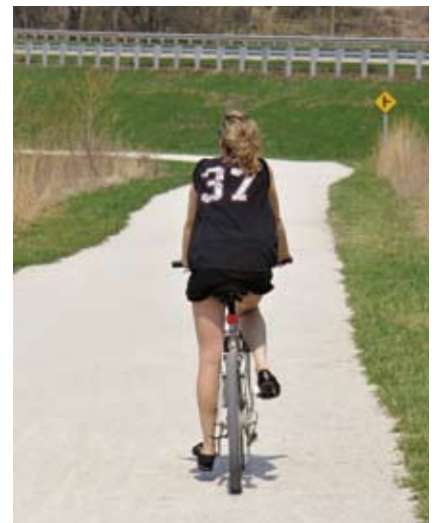
In 1969, Congress passed the NEPA to establish a national policy for the environment, including the establishment of a Council on Environmental Quality.

The purposes of NEPA were to

- Declare a national policy that will encourage productive and enjoyable harmony between people and the environment;
- Promote efforts which will prevent or eliminate damage to the environment and biosphere, and stimulate the health and welfare of people;
- Enrich the understanding of the ecological systems and natural resources important to the nation; and
- Establish a Council on Environmental Quality.

More specifically, Congress tasked the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate federal plans, functions, programs, and resources so that the nation may

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assure safe, healthful, productive, and aesthetically and culturally pleasing surroundings for all Americans;
- Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;



- Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Congress also directed the President to assemble a Council on Environmental Quality in his Cabinet and to prepare an annual Environmental Quality Report to Congress.

Signing the NEPA on New Year's Day of 1970, President Nixon remarked that he had become further convinced that the 1970s absolutely must be the years when America pays its debt to the past by reclaiming the purity of its air, its waters, and our living environment. Following the NEPA, the President introduced initiatives to improve water treatment facilities, establish national air quality standards and stringent guidelines



to lower motor vehicle emissions, and launch federally funded research to reduce automobile pollution. The President also ordered the clean-up of federal facilities that had fouled air and water, sought legislation to end the dumping of wastes into the Great Lakes, forwarded to Congress a plan to tighten safeguards on the seaborne transportation of oil, and approved a National Contingency Plan for the treatment of petroleum spills.



## U.S. Environmental Protection Agency

Having successfully introduced the environmental initiatives, President Nixon decided to establish an autonomous regulatory body to oversee the enforcement of environmental policy.

The President declared to the House and Senate his intention to establish the U.S. Environmental Protection Agency (EPA) with the following missions:

- Establishment and enforcement of environmental protection standards consistent with national environmental goals.

- Conduct research on the adverse effects of pollution and on methods and equipment for controlling it; the gathering of information on pollution; and the use of this information in strengthening environmental protection programs and recommending policy changes.
- Assist others, through grants, technical assistance, and other means, in arresting pollution of the environment.
- Assist the Council on Environmental Quality in developing and recommending to the President new policies for the protection of the environment.

In July of 1970, the White House and Congress worked together to establish the EPA in response to the growing public demand for cleaner water, air, and land. Having cleared all the statute hurdles, the U.S. Environmental Protection Agency opened its doors in Washington, D.C., on December 2, 1970. EPA was established to consolidate in one agency a variety of federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. EPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends.

For more than 35 years, the EPA has been working for a cleaner, healthier environment. Remarkable progress has been made in protecting human health and safeguarding the natural environment. There is a long list of accomplishments including the following:

- Clean Air Act to set national air quality, auto emission, and anti-pollution standards.
- Agreement between the United States and Canada to clean up the Great Lakes, which

contain 95% of America's fresh water and supply drinking water for 25 million people.

- Clean Water Act, limiting raw sewage and other pollutants flowing into rivers, lakes, and streams.
- Phase out of leaded gasoline.
- Fuel economy standards and tail-pipe emission standards for cars, resulting in the introduction of catalytic converters.
- Resource Conservation and Recovery Act, regulating hazardous waste from its production to its disposal.
- Superfund to clean up hazardous waste sites. Polluters are made responsible for cleaning up the most hazardous sites.
- Ban on ocean dumping of sewage sludge and industrial waste.
- Pollution Prevention Act, emphasizing the importance of preventing—not just correcting—environmental damage.
- The National Environmental Education Act, signifying the importance of educating the public to ensure scientifically sound, balanced, and responsible decisions about the environment.
- Clean Water Action Plan to continue making America's waterways safe for fishing and swimming.
- New emission standards for cars, sport-utility vehicles, minivans, and trucks.
- Regulations requiring more than 90% cleaner, heavy-duty, highway diesel engines, and fuel.
- Cleaner fuels and engines for off-road diesel machinery such as farm or construction equipment.

A lot has been accomplished. A lot more is yet to be accomplished. Federal, state, tribal and local governments, industry, academia, and corporations must continue to work together in research, development, deployment, and education to achieve the environmental protection and enhancement goals set out in 1970 when the EPA was formed. In the next issue of *ASPIRE*, I will discuss the impact of Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users (SAFETEA-LU).



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## Expanded Shale, Clay, and Slate Institute

The Expanded Shale, Clay & Slate Institute (ESCSI) is the international trade association for manufacturers of expanded shale, clay, and slate (ESCS) aggregates produced using a rotary kiln. The institute is proud to sponsor *ASPIRE*<sup>TM</sup> magazine.

Sustainable concrete bridges must be durable bridges. Durable concrete must have both low permeability and few or no cracks. Lightweight aggregate concrete has been shown to have enhanced properties in both of these issues. The enhanced performance of lightweight concrete has been attributed to a number of factors including:

- Internal curing provided by premoistened lightweight aggregate;
- Elastic matching of the lightweight aggregate and hardened paste;
- Excellent bond between the lightweight aggregate and paste; and
- Lower modulus of elasticity and higher strain capacity.

The enhanced durability of lightweight concrete, combined with the obvious benefits of reduced density, results in structures that will last longer. Such structures conserve valuable natural resources as well as scarce funds for bridge construction and rehabilitation.

For more information on lightweight concrete, including references discussing the factors mentioned above, please visit [www.escsi.org](http://www.escsi.org). The members of ESCSI look forward to assisting owners, designers, and concrete producers in using lightweight concrete for bridges.



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