Greening America's Roadways

by David Wenzel, AICP

(NAPSA)—Picture this: You're driving along a road designed and built with the environment as a top priority. The street is lined with lush vegetation and native grasses. An underlayer of the road is made largely of recycled rubber tires and broken concrete. Your car is in a "green lane," reserved for fuel-efficient cars or vehicles with multiple passengers. The street itself is partially built with a self-healing epoxy that fills tiny cracks in the concrete as soon as they appear.

Wenzel

It's already happening. They're called green roads. Designed, built and maintained to protect and enhance the environment, they'll one day be as common as traffic lights.

Never has this been such an important issue. Global climate change, crumbling infrastructure and precarious financial conditions have created a perfect storm—and a golden opportunity—for the transportation sector. The means to green are plentiful:

• **Recycled material.** For economic and environmental reasons, materials such as powdered rubber tires, glass and broken concrete can be used as road surfaces and underlayers.

• **Habitat preservation.** Roadside plantings should be done whenever possible and measures should be taken to protect native plant and animal life. For example, one recent project directed drainage runoff from a bridge into a detention basin rather than the wetlands habitat of the Blanding's turtle.

• **Green drainage.** Another recent project converted drainage water to a positive purpose. Diverting it to "rain gardens" along a major boulevard enhanced the street's frontage through native perennial plantings fed by the drainage, which is ultimately filtered back as groundwater.

• **Permeable pavement.** As paving of roadways and parking areas increases, so does erosion and the hard costs associated with treating and handling related drainage. Pervious pavement allows post-construction storm water infiltration rates to remain the same as before construction began. Introducing permeable pavement allows storm water to help recharge the local aquifer and effectively cleans roadway pollutants and total suspended solids from runoff.

• **Plastic fibers.** In our fight against corrosion, we can construct concrete roads reinforced with plastic fibers. Though the technology is in its infancy, the fibers create a denser concrete that is difficult for water to permeate, thereby increasing sustainability.

• **Green lanes.** For numerous transportation clients, the HNTB Corporation has designed lanes dedicated to buses, ride-sharing commuters and energy-efficient vehicles. This encourages mass transit and, ideally, reduces carbon emissions and fuel consumption.

Other green initiatives include installing bioswales, or sloping vegetated channels, which improve the quality of roadway runoff by removing pollutants; replacing halogen bulbs in streetlights with LED assemblies, which are more energy efficient; and installing roadway sensors, which monitor the infrastructure's health and help evaluate concrete performance.

The time is now to build greener, smarter and better roads that serve not only our generation but generations to come. For more information on the greening of America's roads, visit the Green Highways Partnership at www.greenhighways.org.

• *Mr. Wenzel leads the sustainability initiative for the infrastructure practice of HNTB Corporation (www.hntb.com) and serves as the firm's national director of urban design and planning.*