



At the Intersection of Design and the Environment

The Center for Environmental Excellence by AASHTO offers diverse products and programs for technical assistance, training, information exchange, partnership-building opportunities, and quick access to environmental tools. The Center helps practitioners incorporate environmental compliance, sustainability, and stewardship into transportation planning, design, construction, maintenance, operations, project delivery and multimodal systems. Visit <http://environment.transportation.org>.

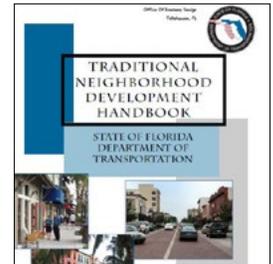
How do Design and Environmental Issues Intersect?

Design considerations in transportation are important to the natural and human environment, both in terms of the design of facilities themselves and land use design. Road design elements such as inclusion of bicycle lanes and sidewalks and roundabouts can improve traffic flow and reduce emissions. Design elements such as sustainable green infrastructure approaches play a key role in effectively

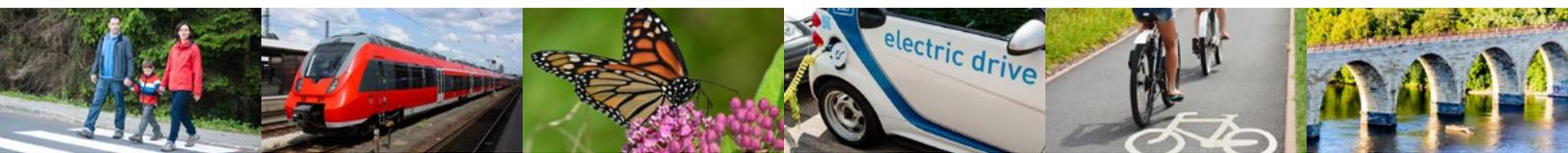
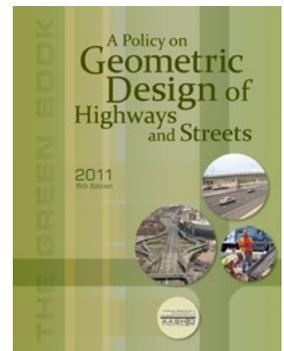


mitigating impacts to wetlands and managing stormwater runoff, whereas designs that incorporate wildlife crossing features can help ensure vital habitat connectivity. Land use design such as transit oriented development facilitate alternative travel modes that can reduce emissions and encourage healthy transportation options. Transportation agencies also are applying new design techniques to better ensure resilience of transportation infrastructure to extreme weather and climate impacts. **Chicago DOT's Blue Island Ave. project**, profiled on the Center's **Sustainability Topic**, illustrates a range of sustainable design elements. (Image Chicago DOT)

Sustainable Design Solutions: Many DOTs use a context sensitive approach to project design that is based on community values, environmental features, land use, transportation function and available budget. For example, Florida DOT's Traditional Neighborhood Development Handbook provides best practices for facilitating community design. In addition, Washington State DOT and several other states are implementing a new approach that ties project planning and design to core transportation needs. WSDOT's Practical Solutions approach is allowing the agency to move from standards-based to performance-based designs and is empowering engineers to make decisions that achieve sustainable solutions. Examples of these approaches are described on the Center's **Sustainability Topic** and **Context Sensitive Solutions topic**. (Image: Florida DOT)



Providing Flexibility in Design: AASHTO's Policy on Geometric Design of Highways and Streets, commonly referred to as the "Green Book," provides guidance to highway engineers and designers who strive to make unique design solutions that meet mobility needs while maintaining the integrity of the environment. AASHTO's bicycle and pedestrian design guides are the primary national resources for planning, designing, and operating bicycle and pedestrian facilities. The AASHTO guides provide flexibility for designs that best meet the needs of communities and the environment. The National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide and the Institute of Transportation Engineers (ITE) Designing Urban Walkable Thoroughfares guide provide examples of this flexibility in design. These and other resources are described in the Center's **Health and Human Environment topic** and **Context Sensitive Solutions topic**. (Image: AASHTO)





Resources for Design Practitioners

The Center web site at <http://environment.transportation.org> offers access to a range of products and services for practitioners. The following resources are relevant to Design Practitioners.

The Center website includes 21 separate environmental topics pertinent to transportation. Information can be sorted by discipline, mode, or state. **Topics of interest include:**

- Air Quality
- Context Sensitive Solutions
- Energy/Greenhouse Gas Emissions
- Environmental Justice
- Environmental Management Systems
- Geographic Information Systems
- Health & Human Environment
- Historic Preservation/Cultural Resources
- Indirect Effects/Cumulative Impacts
- Infrastructure Resilience
- Invasive Species/Vegetation Management
- MAP-21
- NEPA Process
- Noise
- Planning & Environment Linkages
- Project Delivery/Streamlining
- Section 4(f)/Section 6(f)
- Sustainability
- Waste Management/Recycling
- Water Quality/Wetlands
- Wildlife & Ecosystems

- **Practitioner's Handbooks:** These comprehensive resources provide practical advice on a range of environmental issues that arise during the design, planning, development, maintenance, and operation of transportation projects and programs.
- **Case Law Updates on the Environment (CLUE) database:** (CLUE) database: a storehouse providing summaries of pertinent environmental case law, including developments related to design, including recent Year-in-Review reports and webinar.
- **Transportation and Environmental Research Ideas (TERI) database:** a storehouse for tracking and sharing transportation and environment research ideas in over 20 topic areas.
- **Conference & Workshop Materials:** the Center hosts a number of conferences and workshops for technical assistance, training, information exchange, partnership-building opportunities. These include peer exchanges on topics including transportation and health, noise, and effects of extreme weather events on highway design.
- **Webcasts/Webinars:** The Webcasts/webinars provide training to advance the state-of-the practice on important topics and are archived on the Center web site, including a webinar on geometric design focused on understanding flexibility in the AASHTO Green Book.
- **Communities of Practice:** The Center facilitates an on-going dialogue with transportation practitioners in the topic areas of air quality, storm water management, and historic bridges.
- **Roadmap for Developing and Implementing Programmatic Agreements and the Programmatic Agreement Tracking Tool:** The Roadmap is a user-friendly web-based tool that guides practitioners through the process to develop and implement a programmatic agreement. The Tracking Tool provides a web-based template for state DOTs to track the benefits of programmatic agreements.

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How can we assist you? If you have a particular need for environmental information, technical assistance, partnership-building, or training, please contact us at environment@transportation.org.

