https://www.environment.fhwa.dot.gov/Pubs_resources_tools/publications/SIS.aspx

The Eco-Logical Approach Helps Accelerate Project Delivery & Improve Environmental Outcomes

What Is Eco-Logical?

Eco-Logical is a landscape-scale approach for planning and developing infrastructure projects that brings together infrastructure, resource, and regulatory agencies, along with others, to form strong partnerships. The Eco-Logical approach organizes current methods for addressing natural resource identification, avoidance, minimization, and mitigation into a nine-step process. This process starts with transportation planning and concludes with establishing programmatic approaches to recurring natural resource issues that are implemented at the project level.

To learn more about the development of Eco-Logical and how agencies have implemented the approach, visit FHWA's Environmental Review Toolkit and see past issues of *Successes in Stewardship:*

- December 2015
- October 2013

The Eco-Logical approach is a way to accelerate project delivery while advancing environmental conservation and protection for generations to come. Recent actions by the Federal Highway Administration (FHWA) and other agencies have expanded the state of the practice and Eco-Logical is becoming business-as-usual for many agencies across the country:

- **New national policies encourage a landscape-scale approach for planning and project development**. New regulations, policies, and Executive and agency actions have been implemented to support the Eco-Logical approach, including *Executive Order 13807: Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects*, and the *One Federal Decision Memorandum of Understanding*.

- **Signatory agencies reaffirmed commitment to Eco-Logical**. All eight signatory agencies (composed of Federal resource and regulatory agencies) convened on the 10th anniversary of publishing *Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects* to renew their commitment to the Eco-Logical approach.

- **Agencies are demonstrating cost and time savings**. FHWA developed a business case related to the Michigan Department of Transportation's (MDOT) Eco-Logical implementation showing nearly $1 million in cost savings and a 2-year reduction in permitting timeframes for phase one of the I-75 Project.

- **More transportation agencies are adopting Eco-Logical**. There are 36 agencies actively implementing Eco-Logical with 14 projects funded nationwide through the Second Strategic Highway Research Program's (SHRP2) *Implementing Eco-Logical* product.

This issue of *Successes in Stewardship* briefly discusses:

- Examples of Eco-Logical in practice and its benefits.
- The increasing community of agencies using Eco-Logical.
- The future of Eco-Logical based on practitioners' input.
- How Eco-Logical complements other strategies to accelerate project delivery.

Eco-Logical in Practice

At the heart of the Eco-Logical approach is an Integrated Ecological Framework (IEF) that helps practitioners identify ecological priorities on a variable scale (by region, county, corridor, or project level) and make timely decisions about highway enhancements, resulting in mutually beneficial solutions for transportation and the environment. The framework provides clear, practical steps to enhance integration and to support a landscape-scale approach to environmental stewardship. Eco-Logical is gaining momentum among agencies and has been successfully applied at the multistate corridor and urban neighborhood scales. Eco-Logical has also proven useful when economic development is a project purpose. At least four IEFs have focused on freight-oriented development and business recruitment. The two examples below highlight the benefits that can be realized through implementing Eco-Logical.

I-75 Reconstruction Project (Michigan)

The FHWA, MDOT, and eight resource and regulatory agencies applied the Eco-Logical approach to their I-75 Reconstruction Project (see text box for additional information on the project). With **a $250,000 investment over a 5-year period**, MDOT and its partners developed the *I-75 Corridor Conservation Action Plan in Monroe County*. As a mitigation plan, it describes existing environmental conditions, goals, and agreed-upon strategies for implementation that MDOT can pursue through the reconstruction process to enhance strategic environmental outcomes for the region. In addition, MDOT and its partners accomplished the following in phase one of the project:

- **$1 million** in estimated savings.
- **2-year reduction in permitting timeframes**.
- **Strengthened partnerships and coordination** with resource and regulatory agencies.
- **Enhanced outcomes** for wetlands and threatened and endangered species.

To learn more, read FHWA's case study on the I-75 corridor reconstruction.

I-75 Reconstruction Project Snapshot

- 20-miles of reconstruction along the State's busiest freight corridor.
- 20 year, five-phase construction period (began in 2015).
- $500 million estimated total project costs.
- 7 natural resource conservation targets:
  - Coastal tributaries
  - Inland wetlands
  - Coastal wetlands
  - Aerial migrants
  - Globally rare natural communities
  - Migratory fish
  - Herpetofauna connectivity

Atlantic Salmon Programmatic Consultation (Maine)

The FHWA, Maine Department of Transportation (MaineDOT), the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and the Maine Turnpike Authority developed a programmatic consultation for the federally listed endangered Atlantic salmon that includes its critical habitat. The multi-pronged effort focused on reducing the impacts of transportation projects on Atlantic salmon and decreasing the amount of time needed for environmental reviews for State transportation projects classified as Categorical Exclusions under the National Environmental Policy Act (NEPA).

Prior to the programmatic consultation, there was a severe backlog of transportation projects in Maine awaiting Section 7 consultation under the Endangered Species Act (ESA). With a **$256,000 investment over a 5-year period**, the group achieved the following outcomes:

- **76%** increase in project approvals.
- **$230,000** estimated savings on consultation costs.
- **Increased trust** between the transportation resource and regulatory agencies.
- **Development of an In-Lieu Fee (ILF) Program** initiated by MaineDOT and USACE that will allow public agencies, non-profit organizations, and private individuals to apply to use funds for restoration, enhancement, and preservation projects.

MaineDOT, FHWA, and USFWS staff surveying a project (image courtesy of MaineDOT).

Details regarding development of the programmatic agreement and consultation process are available in a 2017 Eco-Logical Case Study and the Year One Project Snapshot.

Why More Transportation Agencies Are Using Eco-Logical

Since 2014, both the number of practitioners using Eco-Logical and the number and quality of resources available increased. Between 2014 and 2016, the number of transportation agencies using Eco-Logical increased from 14 to 36. Eco-Logical's widespread use among States is primarily due to the following trends:

- **The SHRP2 *Implementing Eco-Logical* product,** which provided practitioners with assistance and useful strategies to put the Eco-Logical approach to work in their States. Launched in 2013, *Implementing Eco-Logical* provided agency leadership education, $1.9 million in user incentive funding, and technical assistance, among other strategies, to help agencies adopt the new approach. The suite of strategies are aimed at increasing awareness and understanding of Eco-Logical, and at helping transportation planning, resource, and regulatory agencies integrate its principles into routine business practices.

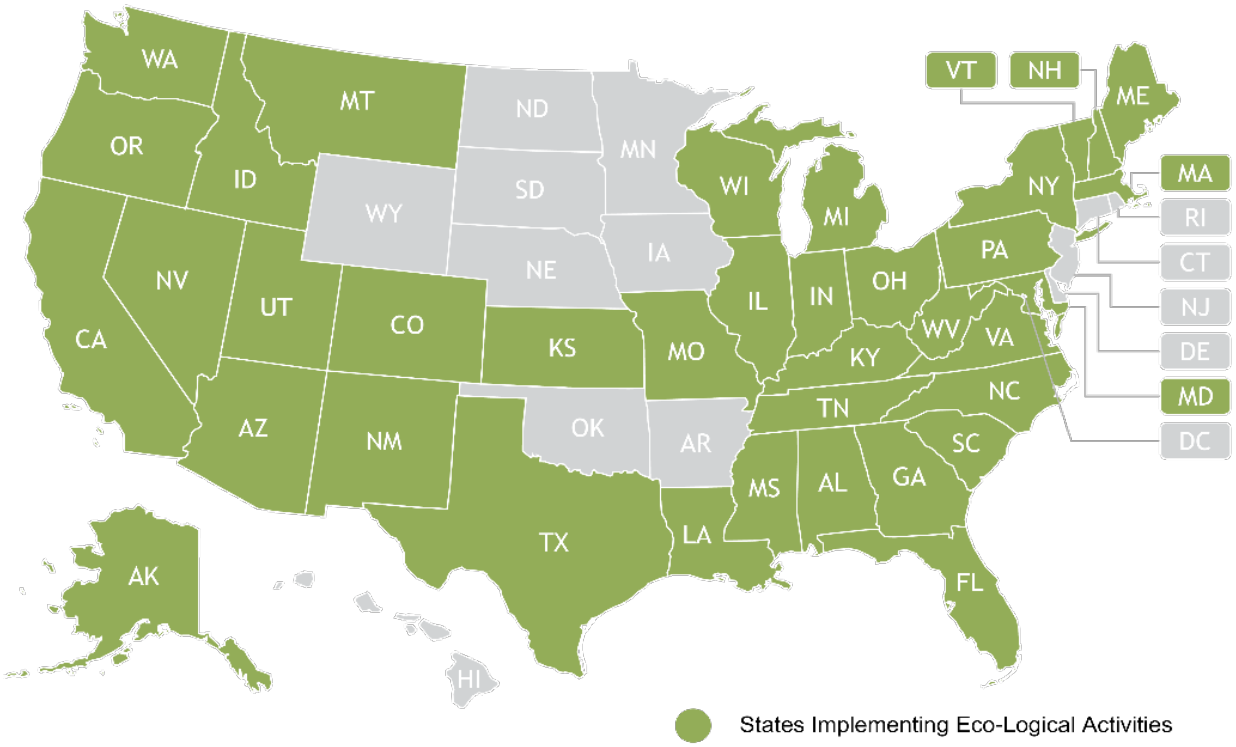
- **Practitioners' willingness to support the Eco-Logical approach nationwide** within their own agencies and to partner with agencies and other professionals to help them apply this approach. Specifically, *Implementing Eco-Logical* identified 56 "Eco-Logical Champions" from Federal, State, Tribal, regional, and non-profit agencies and organizations, as well as academia. The Champions work to help increase understanding of Eco-Logical among agencies and motivate greater participation.

- **The increasing number and quality of resources available**, including peer exchanges, webinars, and publications. Some of the SHRP2 *Implementing Eco-Logical* activities included six peer exchanges, four workshops, two executive trainings, and four Community of Practice webinars, in addition to three annual reports.

Recent Event

FHWA held a wildlife connectivity workshop for the I-40 corridor in October 2018 in North Carolina. Topics of interest included:

- Cross-jurisdictional data collection and reporting
- Mitigation for wildlife mortality



Use of Eco-Logical is becoming widespread among States (image courtesy of FHWA).

Eco-Logical Complements Other Initiatives to Accelerate Project Delivery

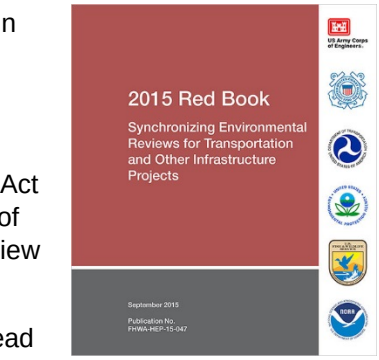
Eco-Logical is one of several approaches available to practitioners looking to accelerate project delivery and streamline the transportation project development process. Targeted transportation planning activities, such as those described in Eco-Logical, can create schedule and cost savings in subsequent phases of the project development process—environmental, design, or construction—that result in beneficial outcomes for the natural environment. Three additional resources and approaches, Planning and Environmental Linkages (PEL), PlanWorks, and the Red Book, can be used on their own or to complement Eco-Logical.

- **PEL** considers environmental, community, and economic goals identified early in the transportation planning process, and uses the information, analysis, and products developed during planning to inform the environmental review process. This could include Eco-Logical products (e.g. partnerships, agreements, and programmatic mitigation plans).

- **PlanWorks** is a web resource that supports collaborative decisionmaking in transportation planning and project development. It educates users on the scope of the project development process and the major decisions within the process, and offers information to help improve project delivery. It provides detailed information on how and when to engage partners and stakeholders in decisions made during long-range planning, programming, corridor planning, environmental review, and permitting. Both Eco-Logical and PEL are embedded in PlanWorks.

- **The Red Book**, also known as *Synchronizing Environmental Reviews for Transportation and Other Infrastructure Projects*, functions as a how-to guide for synchronizing NEPA and other reviews, such as Section 404 of the Clean Water Act and Section 7 of the ESA. A key element of the synchronized process is the use of early and open communication and coordination before and during the NEPA review process, which can be achieved through the Eco-Logical approach.

Eco-Logical, when used on its own or with other transportation planning resources, can lead to improved environmental outcomes and minimize the time and costs associated with planning and regulatory decisionmaking. For more information on how to use these complementary approaches, visit FHWA's Environmental Review Toolkit.



PEL, PlanWorks, and the Red Book complement the Eco-Logical approach (images courtesy of FHWA).

Eco-Logical's Future

FHWA has drafted a framework for an action plan based on the discussions at the "Implementing Eco-Logical Accomplishments and Future Application" peer exchange in January 2018. This framework focuses on four areas critical to fostering new ways to maintain the momentum, increase awareness, and encourage adoption of Eco-Logical.

FHWA has identified four elements to increase awareness and encourage adoption of Eco-Logical into the future.

These four areas are based on recommendations from Federal, State, and regional Eco-Logical practitioners provided at the January 2018 peer exchange. Participants also reviewed the program's accomplishments to-date and outlined a vision for Eco-Logical's future.

Participants identified these areas as critical to fostering new ways to raise awareness of Eco-Logical. Potential action items considered to address the four critical areas are:

- Utilize existing training arms to promote Eco-Logical.
- Focus on building new Champions through mentoring, training, and recognition.
- Partner with academia to develop cross-education curricula with Eco-Logical principles.
- Develop tools for project and performance monitoring and reporting.
- Create an Eco-Logical training module for dissemination.

Eco-Logical Accelerates Project Delivery and Improves Environmental Outcomes

Eco-Logical is a landscape scale approach to environmental decisionmaking in transportation planning and project development. The approach has directly benefited environmental resources, accelerated transportation project delivery, and reduced costs for agencies all across the country.

The number of Eco-Logical practitioners is growing. Increasing numbers of transportation, resource, and regulatory agencies are starting to reap the benefits—saving time and money, strengthening relationships designed to build policy support within agencies, and fostering partnerships between stakeholders.

The success of accelerating project delivery and improving environmental outcomes is dependent on the relationship between transportation agencies and resource and regulatory agencies. Eco-Logical provides a proven process, endorsed by eight resource and regulatory agencies, that helps to accelerate environmental review and permitting, collaborate and establish joint environmental priorities on a landscape scale during the transportation planning phase of project development, and establish programmatic agreements to address recurring natural resource issues.

Contact Information

David Williams
Environmental Protection Specialist
Federal Highway Administration
Environmental Program & Policy Development Team
202-366-4074
David.Williams@dot.gov

Kevin Moody
Infrastructure Ecology Team Leader
FHWA Office of Technical Services
Resource Center Environment, Air Quality, and Realty Team
404-780-3921
Kevin.Moody@dot.gov

Look What's New!

- *A Business Case for Applying the Eco-Logical Approach: Michigan I-75 Corridor* was published in spring 2018. Click **here** for more information.
- An update on year-one implementation of Maine DOT's 2017 Atlantic Salmon Programmatic Consultation and its ILF Program is now available **here**.
- FHWA's Eco-Logical Resource Library has recently been updated. View the library **here**.

Successes in Stewardship is a Federal Highway Administration newsletter highlighting current environmental streamlining and stewardship practices from around the country. Click here to subscribe, or call (617) 494-2013 for more information.