Implementing Eco-Logical Program:
SHRP2 C06 Close-Out Report

This report summarizes progress the Federal Highway Administration (FHWA) and American Association of State Highway Officials (AASHTO) made under the Second Strategic Highway Research Program's (SHRP2) during FY 2013-2017 on:

Product: ***Implementing Eco-Logical** – Articulates a vision that endorses ecosystem-based avoidance, minimization, and mitigation through integrating data, plans, design, and reviews across agency and disciplinary boundaries in developing infrastructure projects – organized into 9 steps.*

Goal: ***Improve the state of the practice** – Increase awareness and understanding of Implementing Eco-Logical in all states and regions and at all levels of government, and to integrate its principles into routine transportation planning, and resource and regulatory agency business practices.*

Budget: ***$3.6 million** budget (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU funds) for fiscal years 2013-16.*

Changes in the State of the Practice since Implementation

SHRP2 played an important part in Eco-Logical's growing momentum by helping Eco-Logical move from concept to implementation. *Implementing Eco-Logical* contributes to accomplishing goals related to agency adoption, accelerated environmental reviews and project delivery, and policy support within transportation and resource agencies. The following measures demonstrate progress towards these goals:

- **The number of practitioners has increased as a result of SHRP2.** In 2014, 27 State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) were familiar with Eco-Logical and 14 agencies were actively implementing Eco-Logical (AASHTO 2014 survey). By 2016, at least 36 transportation agencies were actively implementing Eco-Logical.

- **The number and quality of available resources are increasing.** Six peer exchanges, four workshops, two executive trainings, three annual reports, and four Community of Practice webinars are among the resources made available to practitioners.

- **The value that practitioners obtain from implementing the approach is increasing.** Practitioners report improved partnerships, stakeholder engagement, leadership support, environmental outcomes, and project delivery resulting from Eco-Logical projects.

- **Legislation and national policy directives are encouraging the adoption of a collaborative landscape-scale approach for conservation, mitigation and infrastructure development.** From 2012 until present, at least seven new regulations, policies, Executive and agency actions have shown a major shift towards normalizing a landscape-scale approach. See the AASHTO Practitioner's Handbook for more information on Federal policy initiatives.

- **The eight Signatory Agencies (resource/regulatory agencies) reaffirmed their commitment to the Eco-Logical approach.** As part of this 10-year anniversary of establishing the Eco-Logical approach, they also agreed to actively continue the work they have fostered around this landscape-scale approach and work to collaborate and further advance this effort.

American Association of State Highway and Transportation Officials

AASHTO

U.S. Department of Transportation
Federal Highway Administration

Status of SHRP2 Implementation Plan Activities: Implementing Eco-Logical

This table reports on the performance for the Implementing Eco-Logical SHRP2 Solution. It identifies the SHRP2 Implementation strategies and goals, accomplishments from the SHRP2 funding investment, and the progress toward goal completion. The priority investment strategy was to provide seed money for projects, supported by technical assistance and marketing activities (e.g., workshops, peer exchanges, webinars), and monitor performance to build a business case.

Implementation Strategies	Investment & Progress	Strategy Description	Items Produced
Educate Agency Leadership	3% Invested 100% Complete	Educate agency leadership to gain support for implementation activities. Summarize current state of the practice and availability of resources to support implementation efforts.	• 59 champions nation-wide • 2 Executive Trainings held • Moving Ahead for Progress in the 21st Century (MAP-21) connections highlighted in peer exchanges and workshops • Practitioner's Handbook produced • Self-assessment completed
Develop Incentives & Support	85% Invested 95% Complete	Develop incentives or support for state and regional transportation agencies to adopt a Regional Ecosystem Framework (REF) or utilize Integrated Ecological Framework (IEF) elements into standard procedures.	• The Implementing Eco-Logical Implementation Assistance Program (IAP) provided approximately $1.925M in funding to 7 State DOTs and 6 MPOs for 14 projects • State DOT/MPO participation recognized at a peer exchange in October 2015 • Recognition letters issued to IAP recipients in 2016 • Two remaining IAP recipient projects expected to be completed in 2019
Provide Technical Assistance (TA)	7% Invested 100% Complete	Provide technical assistance to educate staff-level practitioners about techniques and tools for *Implementing Eco-Logical*, and provide opportunities for target audiences to learn from their peers.	• On-Call TA Team established and online TA request tool developed • TA requests from 9 MPOs, 10 State DOTs, 2 Non Governmental Organizations (NGOs), and 1 individual • 6 Peer Exchanges and 4 workshops held • Eco-Logical Starter Kit posted online • Information about Eco-Logical shared at conferences
Develop a Business Case	3% Invested 100% Complete	Develop a business case highlighting *Implementing Eco-Logical*'s time and cost savings to support use.	• 3 case studies developed (featuring Steps 1-4, 5-6, and 7-9) • Business case featuring Michigan DOT developed • Quarterly email updates distributed to champions
Develop New Tools & Technologies	1% Invested 100% Complete	Develop new tools and technologies that increase and/or enhance access to existing data and support interagency collaboration.	• Merged with starter kit/website efforts • 2 Community of Practice webinars held • Collaborated with other FHWA initiatives (e.g., Every Day Counts (EDC), Planning and Environment Linkages (PEL), PlanWorks) • Transferred technologies to other Federal agencies through the Council of Environmental Quality's Transportation Rapid Response Team
Develop Communications & Outreach Materials	1% Invested 100% Complete	Develop communications and outreach materials to increase awareness about *Implementing Eco-Logical* and facilitate information sharing among potential users.	• Communications/marketing plan developed • Informational video completed • Eco-Logical "pocket guide" developed

Examples of SHRP Implementing Eco-Logical in Practice

Eco-Logical has been successfully applied at a variety of scales and is gaining momentum among agencies. The following two examples highlight the improved environmental outcomes and expedited project delivery realized through implementing Eco-Logical.

Maine Department of Transportation
Atlantic Salmon Programmatic Consultation
Timeline: 5 years (2013–2017)
Budget: $256,000

Overview:

The FHWA, Maine Department of Transportation (MaineDOT), U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and Maine Turnpike Authority developed a programmatic consultation for the federally endangered Atlantic salmon that includes its critical habitat.

The multi-pronged effort focused on:

• Reducing 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.

Prior to the programmatic consultation, only 20% of transportation projects were on schedule in Maine awaiting Section 7 consultation under the Endangered Species Act.

Key Results:

• **76%** increase in project approvals.

• **$230,000** estimated savings on consultation costs.

• **Increased trust** between resource and regulatory agencies.

• **Restoration of high-value habitat access** for Atlantic salmon.

• **Development of an In-Lieu Fee (ILF) Program** initiated by MaineDOT and USACE that will allow public agencies, non-profits, and private individuals to apply to use funds for restoration, enhancement, and preservation projects.

Staff from MaineDOT, FHWA Headquarters, Maine Division Office, and USFWS survey the project (Photo by MaineDOT)

Atlantic salmon juvenile in Maine cobble stream bed (Photo by USFWS)

Michigan Department of Transportation
I-75 Corridor Action Plan
Timeline: 5 years (2013–2017) (Phase I)
Budget: $250,000

Overview:

The FHWA, Michigan Department of Transportation (MDOT), and eight resource and regulatory agencies applied the Eco-Logical approach to their I-75 Reconstruction 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. Further, MDOT and its partners accomplished the following in phase one of the project:

Key Results:

• **$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 by completing the following: needs assessment; site identification mitigation plan development; site selection and procurement; and development of a mitigation performance plan.

Transplanting Sullivant's Milkweed to Sterling State Park, Summer 2014 (Photo by Southeast Michigan Council of Governments)

Key Results & Findings

SHRP2 was a major contributor to advancing the state of the practice of Eco-Logical. The keys to Eco-Logical's recent success was the IAP in combination with technical assistance and marketing activities (e.g., workshops, peer exchanges, webinars), and improved performance measurement that helped to build a business case. Eco-Logical has been proven to enable agencies to improve relationships and environmental outcomes, and accelerate project delivery through an integrated and interdisciplinary planning and project development process that includes data- and resource-sharing.

Participants at the Implementing Eco-Logical IAP Peer Exchange, October 2015 (Photo by FHWA)

Lessons Learned

FHWA needs better connections to the MPO associations, similar to that held with AASHTO. Practitioners have demonstrated the need for tailored data sets and tools specific to one's region or State. "Champions" and supportive leadership remain integral to long-term success of Eco-Logical within transportation agencies, and can serve to ensure continuity of Eco-Logical following staff turnover. Formalized agreements between transportation and regulatory and resource agency partners also help with institutionalizing Eco-Logical, and can protect investments of time and resources. However, States and MPOs have faced challenges working with partners with differing missions. Finally, while many agencies would like to see more quantified benefits from use of the approach, this data remains difficult to measure and compare across agencies due to the need to measure across long timeframes and structural factors that are not comparable between agencies.

The Future of Implementing Eco-Logical

As it transitions from being part of SHRP2, Implementing Eco-Logical will continue to be managed by FHWA Office of Project Development and Environmental Review. Based on practitioner recommendations, the program will focus on:

- Developing a strategy that focuses on expediting project delivery and supports agency requirement initiatives, such as *One Federal Decision*, while applying an interagency landscape-scale approach to project development and decisionmaking.

- Engaging agency leadership to educate and promote Eco-Logical, including making a business case and demonstrating quantifiable benefits.

- Developing and implementing an Eco-Logical training module, and distributing Eco-Logical outreach materials to educate new agency practitioners.

- Providing technical assistance to practitioners about the application of techniques and tools such as Geographic Information Systems (GIS).

- Integrating of Eco-Logical into complementary programs, training, and outreach (e.g., PEL, EDC).

- Coordinating with other U.S. DOT modes and external partners to adopt the Eco-Logical Approach.
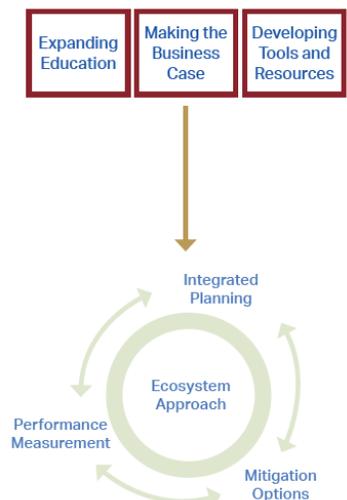
For More Information

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Resources

- Implementing Eco-Logical 2015/2016 Annual Report
- Eco-Logical Reaffirmation Video
- Implementing Eco-Logical Website