As a result of this effort, Caltrans will be able to prevent delays to project delivery; anticipate if mitigation is needed and where an appropriate expenditure of mitigation funds would best serve the resources impacted; and demonstrate a process by which the mitigation strategy was determined.

Contact: Suzanne Melim, Chief, Office of Environmental Management, California Department of Transportation, District 3, 530-741-4484, Suzzane_melim@dot.ca.gov.

More information at: http://www.fs.fed.us/wildlifecrossings/case-histories/public-lands/Highway89StewardshipTeam.php.

Testing and Evaluating the Transferability of a Planning Tool Along Highway 101

The Challenge: With the opportunity to use numerous planning tools when conducting a transportation impact analysis, how can you select one tool that can be transferable to other projects?

The Solution: The University of California-Davis (UC Davis) in partnership with a multi-agency work group has developed a regional advance mitigation planning (RAMP) model to incorporate regional planning principals and natural resource considerations early in the transportation planning process. UC Davis participated as a SHRP2 Capacity pilot program to demonstrate the transferability of the methods for impact assessment to plan for future transportation regional mitigation needs on the Highway 101 Project. Using GIS, habitats, sensitive species, and specific land uses were quantified along the highway corridor. The level of impacts found, and the restricted availability of suitable mitigation lands for these impacts in an urban setting such as the Bay Area, suggests that a RAMP process for the mitigation needs identification would be beneficial for Highway 101 or other similar projects. This pilot offers a valuable case study for other transportation agencies seeking to coordinate mitigation solutions to avoid project delays and improve the quality of mitigation for multiple infrastructure projects.

Contact: James Thorne, PhD, Research Scientist, UC Davis, 530-752-0225, hthorne@ucdavis.edu. More information at: http://www.environment.fhwa.dot.gov/strmlng/newsletters/may11nl.asp.

Promoting Stewardship Principles to Gain Consensus on a Vision for Highway 37, California

The Challenge: Flooding risks on Highway 37 are of concern due to anticipated sea level rise, and increased traffic continues to impact all who use this roadway.

The Solution: The project involves a collaborative ecological stewardship approach, rather than the typical project-based permit-and-mitigate approach. Stakeholders are meeting with the project team to discuss the benefits from the transportation system, impacts to the environment, and impacts and benefits to surrounding communities. GIS modeling approaches and valuation of ecosystem services and transportation are being used to compare among different possible scenarios for the highway. The results of this study would convene transportation, natural resource protection agency, and community stakeholders to develop a vision and concepts for Highway 37. This is an innovative approach to corridor system planning, and could provide a best practice for future corridors.

Contact: Robert Bregoff, Associate Transportation Planner, Office of System and Regional Planning, Caltrans District 4, 510-286-5503, robert.bregoff@dot.ca.gov.

Contact: Fraser Shiling, Researcher, Department of Environmental Science and Policy, UC Davis, 530-752-0225, mshilling@ucdavis.edu. More information at: http://hwy37.ucdavis.edu/.

SHRP2 In Action: *Implementing Eco-Logical* to Improve Transportation and Environmental Outcomes

How we are helping you to Implement *Eco-Logical*?

The Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO) are jointly leading an effort to develop tools and resources for state DOTs and other agencies that are interested in *Implementing Eco-Logical* into their programs. This effort is being kicked off with a survey this winter to identify the needs of agencies interested in *Implementing Eco-Logical*. A webinar will also be held to supplement the survey. The survey and webinar provide a great opportunity for you and your staff to learn more about the upcoming opportunities in *Implementing Eco-Logical*. Your contributions will help to guide the development of the resources and tools planned in 2014 and 2015. This is planned to include a practitioner's handbook, starter kit, case studies, workshops, peer exchanges, and on-call technical assistance. Many of these items can be tailored to help you with your individual program goals.

SHRP2 SOLUTIONS
TOOLS FOR THE ROAD AHEAD

Michael Lamprecht , *Office of Project Development & Environmental Review*
FHWA
202-366-6454
michael.lamprecht@dot.gov

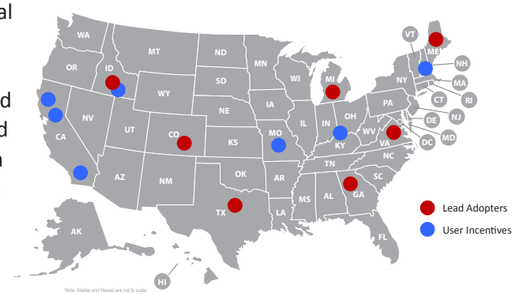
Kate Kurgan, *Senior Program Manager for Environment*
AASHTO
202-624-3635
kkurgan@aashto.org

The *Implementing Eco-Logical* Approach Can Maximize Environmental Outcomes and Streamline Delivery of Transportation Projects

Earlier consideration of ecological resources in the transportation planning process can help streamline environmental reviews and permitting while improving both the environmental and transportation outcomes of infrastructure projects. Through the second Strategic Highway Research Program (SHRP2), *Implementing Eco-Logical* contains a process and information on how to operationalize the Eco-Logical approach presented in the 2006 document: Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects. *Implementing Eco-Logical* offers a structured nine-step process, tools, and templates that can guide transportation agencies as they work to meet both ecosystem and transportation goals. The benefits of I*mplementing Eco-Logical* include providing the opportunity to avoid, minimize, and mitigate environmental impacts either before or during the planning stage, potentially reducing mitigation requirements and reducing delays during project-level environmental review and permitting.

What States are Currently Supported by the Eco-Logical Implementation Assistance Program?

The FHWA/AASHTO Implementation Assistance Program supports transportation agencies in deploying SHRP2 solutions. The Program offered incentives to State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) through an application process. The Program currently funds 14 Eco-Logical assistance projects—seven Lead Adopter Incentive recipients, which are designed to help offset costs associated with product implementation and risk mitigation and seven User Incentive recipients, which are designed to accomplish a variety of implementation activities, including conducting internal assessments, executing system process changes, and organizing peer exchange.



Improving the Health of the Western Lake Erie Coastal Zone

The Challenge: Western Lake Erie is experiencing environmental degradation with large dead zones and high levels of nutrients, despite numerous conservation efforts to reduce farm runoff and other pollutants. In addition, many of the associated coastal systems migratory stopover sites, and fish passages are impaired.

As a result, the Michigan Department of Transportation (MDOT) is being careful as it plans to reconstruct 20 miles of I-75, specifically along Michigan's portion of the Western Lake Erie Basin. This effort is also being proposed during a time when Michigan's economy is fiscally constrained and limited projects are proposed for design and construction.

The Solution: As a Lead Adopter for *Implementing Eco-Logical*, MDOT is partnering with a Technical Advisory Committee that includes MDOT, Southeast Michigan Council of Governments (SEMCOG), the Federal Highway Administration (FHWA), Federal Resource Agencies, State Resource Agencies, Nature Conservancy, Monroe County, and other stakeholders. Each partner has a specific role, from building data sets and performing field work to conducting conservation planning and outreach. This collaborative approach has helped MDOT gain consensus amongst stakeholders, and also to develop the necessary tools in a cost-effective manner primarily using existing data managed by other agencies. The nine-step processes included in *Implementing Eco-Logical* will enable the partners to develop conservation priorities not only for this project but for future activities in the watershed.

> *"All DOT's probably have corridors where they can foresee potential concerns with sensitive environmental features during project planning and development. Eco-Logical gives us a way to connect transportation with conservation planning so we can prepare for the future with the best understanding of how our projects affect the environment and how advanced outreach can minimize the risk of conflict and delay."*
>
> —Margaret Barondess
> Manager, Environmental Services Section, MDOT

Contact: Margaret Barondess, Manager, Environmental Section, Bureau of Development, Michigan Department of Transportation, 517-335-2621, barondessm@michigan.gov.

Colorado Department of Transportation (CDOT): An Eco-Logical Field Test along the I-70 Mountain Corridor

The Challenge: Each year hundreds of animals are hit trying to cross I-70 between Golden and Glenwood Springs, CO. These collisions harm wildlife populations and result in property damage, injuries, and in some instances fatalities. To improve wildlife connectivity and identify potential crossings opportunities, the Colorado Department of Transportation (CDOT) needed to complete an asset inventory and identify potential mitigation strategies.

Interstate 70 | Colorado DOT

The Solution: The Colorado Department of Transportation brought together stakeholders to create a Regional Ecosystem Framework for the 144-mile I-70 Mountain Corridor, developing a Geographic Information System (GIS) database that incorporates wildlife habitat and crossing data into one system. CDOT credits the *Eco-Logical* approach with enhancing a strong level of trust between all project partners and stakeholders.

Contact: Peter Kozinski, Central Program Engineer, CDOT Region 1, 303-512-5991, peter.kozinski@state.co.us.
More information at: http://i-70wildlifewatch.org/.

Maryland Water Resources Registry

The Challenge: Maryland State Highway Administration was experiencing difficulty in reaching consensus on an alternative analysis amongst the resource and regulatory agencies on a bypass project as it worked to address more stringent Total Maximum Daily Loads (TMDLs) requirements on both new projects and retrofits.

Maryland Water Resources Registry | www.watershedresourcesregistry.com

The Solution: In 2007, through Green Highway Partnership initiatives, the Maryland State Highway Administration (SHA) collaborated with the Federal Highway Administration, U.S. Environmental Protection Agency, Region 3, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Charles and Prince George's counties, and the Maryland Departments of Environment, Natural Resources, and Environmental Services to develop the Watershed Resources Registry (WRR). The objective of the WRR is to map natural resource areas that are a priority for preservation and to identify sites best-suited for ecosystem preservation and restoration. The mapping of the WRR is a GIS web-based tool and available for public use. The WRR has improved the transparency of regulatory agency priorities, and provides a basis for a consistent path forward for project sponsors. Its use has saved both time and costs to SHA on their projects. In addition, other agencies and entities have used WRR as part of their project development process.

> *"Eco-Logical has transformed the transportation planning process from the single-focus, stove-pipe approach to a holistic ecosystem approach. We are now better able to plan and design projects in a more efficient, collaborative manner with improved transportation and environmental outcomes."*
>
> —Sandy Hertz,
> Deputy Director, Office of Environmental Design, Maryland SHA

Contact: Sandy Hertz, Deputy Director, Office of Environmental Design, Maryland State Highway Administration, 410-545-8609, shertz@sha.state.md.us.
More information at: www.watershedresourcesregistry.com.

North Central Texas Council of Governments (NCTCOG) Connecting People, Places and Programs in North Central Texas

The Challenge: The North Central Texas Council of Governments (NCTCOG) serves a 16-county region, centered on the two urban centers of Dallas and Fort Worth. With this many participants, building a Regional Ecosystem Framework (REF) to establish shared regional environmental and transportation priorities presented significant challenges.

Interstate Highway 820 crossing Lake Worth near Fort Worth, TX | North Central Texas Council of Governments (NCTCOG)

The Solution: Using a subwatershed approach, NCTCOG developed the REF to help implement an ecosystem approach to guide future infrastructure investments. The REF identified critical areas and resources to help determine potential impacts of transportation plans and projects. The REF will enable the organization to identify and integrate management plans and document agreements among the many agencies developing infrastructure projects in the region.

> *"Utilizing the Eco-Logical approach allows for more effective communication between transportation and resource agencies, resulting in streamlined project delivery as well as advancing new initiatives such as our Shared-Value Mitigation initiative."*
>
> —Michael Morris, P.E.,
> Director of Transportation North Central Texas Council of Governments

Contact: Tamara Cook, Principal Transportation Planner, North Central Texas Council of Governments, 817-608-2395, tcook@nctcog.org.

Contact: Dan Lamers, P.E., Senior Program Manager, North Central Texas Council of Governments, 817-695-9263, dlamers@nctcog.org.

Generating Success for Wildlife Beyond the Right of Way: Planning for Cost Effective Mitigation along California's Highway 89

The Challenge: Highway 89 bisects an important portion of the Loyalton-Truckee deer herd, as well as important habitat for forest carnivores, amphibians, and other wildlife on the Tahoe National Forest. A plan to evaluate appropriate mitigation measures related to wildlife mortality and habitat fragmentation is needed for this corridor.

The Solution: Caltrans' participation in the SHRP2 Program as an *Eco-Logical* User Incentive Recipient is supporting the development of the Highway 89 Stewardship Team, which was established to reduce animal-vehicle collisions and preserve wildlife movement corridors through education, research, and direct mitigation.