

Caltrans' Office of Professional Development
Planning Horizons
August 28, 2008

This was the first Planning Horizons to be broadcast via webinar, allowing Districts, etc. to view the presentations in real-time.



First speaker: Dr. Fraser Shilling, UC-Davis Road Ecology Center,
<http://roadecology.ucdavis.edu/>, fmshillig@ucdavis.edu

Dr. Shilling focused on two main parts of road ecology: natural system connectivity and the road-effect zone. Natural system connectivity deals with how wildlife movements are inhibited by the transportation system. The road-effect zone is the area on the landscape that is affected by roads. Transportation corridors are predictable barriers to wildlife movement. Animals move through areas where they are able to, creating wildlife corridors. It is a big challenge to figure out how to build roadways so as not to impede wildlife corridors. The first step in overcoming this obstacle is to map wildlife movements and traffic modeling to find intersecting problem areas. The road-effect zone is a 3-D geographic domain including the landscape affected by roadways and their use. The roads' impacts on plants, air quality, human community fragmentation, noise, wildlife, streams, etc. all combine to make up the road-effect zone. Both natural system connectivity and the road-effect zone can be looked at in many different scales including individual level, project level, regional level, state level, etc. Wildlife corridor models work well in urban areas where the paths available to the animals are more limited. In rural areas it is more difficult to determine their corridors because they have more potential paths to choose from. The integrated modeling of traffic and wildlife movements is an emerging solution. Dr. Shilling also mentioned developing a Road Ecology Score Card as a tool to assist in road ecology planning.



Second speaker: Roy Taian Li, Visiting Scholar at the UC Davis Road Ecology Center,
Transportation and the Environment in China, A View from Lanzhou Province
Ministry of Highways, www.roadecology.com, royal322003@gmail.com

Roy began the presentation with slides entitled "China Basics". These included information about the size, topography, and population of China. He continued with many slides on the three main stages of roads in China's history. "Ancient roads" was the first category and included roads built through 1911AD. This group contains the wagon and cart trails, the famed Silk Road (300BC), as well as those built during the Tang (618AD) and Qing (1636-1911AD) Dynasties. The second stage can be called "modern roads" which were built between 1912-1949AD. Most of the roads built during this time were for military purposes. Unfortunately, many were destroyed after China's civil war. The third and current stage he classified as "contemporary roads". This period includes roads built since 1949AD. During this era China created its first Five-Year Plan.

Since the 1980s China's road infrastructure has grown exponentially. China instituted a National Expressway System Master Plan outlining 85,000 km of expressways (more than the U.S.). The focus of the plan is for roads to radiate out from the capital of Beijing. Prior to 1988 there were no expressways in China. By the end of 2007, the country had built 53,600 km of expressways. China's road network objectives include directly linking all province capitals; connecting major ports, airports, and international trading points; connecting large and medium cities; and connecting the smaller cities to the network. Their goal is for cities in densely populated eastern China to be no further than 30 minutes from the nearest expressway, for cities in the middle section of the country to be within one hour of an expressway, and for the more rural section of western China to be two hours from an expressway.

China has an administrative and technical standards basis for their road classification system. Each system contains five classes, with township roads making up 53% of China's roadways. China uses many different funding mechanisms for road construction. Some of these include the national budget, vehicle purchase fee, domestic loans, foreign loans, local funds, and enterprise/private investments.

In China, the concept of road ecology is an emerging idea. Although they have landscaping and beautification programs, but currently lack much of the technical support needed and have no special division in transportation agencies devoted to road ecology. Their environmental management is poor and their monitoring is based on traditional environmental indicators only. Rarely is consideration given to large scale ecosystems. Many areas in China are fragmented by the road network and therefore few animals inhabit these regions. Studies are underway to determine what types of plants, etc. will grow in these areas.



Third speaker: Amy Pettler, Senior Environmental Planner, Biology & Technical Assistance Office, Division of Environmental Analysis, Caltrans HQ, <http://www.dot.ca.gov/hq/env/aboutus/index.htm#bio>, amy_pettler@dot.ca.gov

Amy spoke about the links between environmental issues and transportation planning. In order to support road ecology we need to have input on a policy level, develop guidance and standardize reporting methods, and technical support to/from biological staff. Some of the major integration points between the work environmental analysis and transportation planning do include the California Transportation Plan, Regional Transportation Plans, project level analysis, and in maintenance and operations. There are many different levels of regional planning scales that we need to keep in mind. A few of these are the bio-region, watershed, county/counties, HCP/NCCP/MSHCP, route planning, and management and programmatic agreements. In trying to achieve the goals of road ecology we need to seek out long term management solutions and not just focus on the current situation. Adaptive management and monitoring are key to the success of road ecology ideals. Land use, transportation planning, and conservation all need to be integrated early in the process. It is important to consider the ecological environment at the local, regional, and state levels. Amy offered ideas on how to improve upon our current processes. She urged us to all plan for the long term, but remain flexible in order to adapt to changing situations. Another suggestion she

mentioned is for us to partner and coordinate our efforts. Strides in road ecology efforts can not be made without these important interactions. In closing, she invited us to come and meet the biologists in environmental analysis. Communicating with and learning from each other is an important first step in integrating environmental and transportation planning.

Related Book (our speaker Roy has translated this book into Chinese):



Road Ecology: Science And Solutions

By Richard T. T. Forman, Daniel Sperling, John A. Bissonette, Kevin Heanue

<http://books.google.com/books?id=HMKuZ2ScnbkC>

Related Websites:

<http://roadecology.ucdavis.edu/>

www.roadecology.com (I could not get the link to work though, but Roy mentioned it)

<http://www.dot.ca.gov/hq/env/aboutus/index.htm#bio>



My Thoughts:

I enjoyed the presentations and thought they were very worthwhile. It is always interesting to see how other states/countries/cities are approaching a subject. We can learn a great deal from one another. Also, being aware of what other agencies are researching and how we integrate it into our own processes is important. I am not sure what we in goods movement can do differently in the road ecology framework, but will definitely be giving it thought.

Mary Ann Elekes