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INVESTING IN TRANSPORTATION AND PRESERVING FRAGILE ENVIRONMENTS

MARTIN WACHS AND JAIMEE LEDERMAN

In the early 1970s, the California Department of Transportation (Caltrans) owned large tracts of environmentally sensitive land near Beach Lake in the Sacramento River Valley. The land, acquired in anticipation of future projects but deemed no longer necessary, was to be declared surplus property and sold according to department protocol. One enterprising staff member, however, was thinking differently. He urged Caltrans to hold on to the land and use it for environmental mitigation credit to offset damage from future transportation projects in other areas. In an unusual move, the agency adopted his creative proposal, and the experiment paid off handsomely. In the following decades, the land fulfilled mitigation requirements for 49 separate projects in 14 counties with documented cost savings to Caltrans of over \$25 million.

This striking example of advanced mitigation—preserving land in anticipation of future environmental mitigation—demonstrates the value of planning at the regional level. In addition to cost savings, the natural environment is also better preserved when thousands of acres of sensitive habitat are conserved together rather than in small parcels. Species can then migrate and complex ecologies can function at a regional scale. Habitat Conservation Plans (HCPs), which are required to comply with the US Endangered Species Act (ESA), are among the most promising paths for achieving regional advanced mitigation in cases where development threatens endangered species habitats. HCPs encourage responsible agencies to balance development against potential harm to endangered species by detailing avoidance, minimization, and mitigation actions. We examine HCPs and show their utility as environmental planning mechanisms that enable the efficient delivery of transportation projects while preserving fragile natural environments.

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The National Environmental Policy Act, California Environmental Quality Act, and dozens of other federal and state laws address endangered species, clean water, air pollution, and noise. These laws impose stringent review requirements on all new transportation projects to guard against environmental damages. While not intended to completely prohibit projects that harm the environment, these laws and regulations require that public agencies 1) analyze and document the environmental damage done by their facilities, 2) take every available action to avoid, minimize, and mitigate that damage, and 3) provide the public with opportunities to review and comment on the plans before permits are issued. Laws and regulations also empower interest groups and individuals to sue government agencies when they believe protective measures have been overlooked or violated.

Most transportation policymakers understand that past construction practices have damaged air, water, and land, and now recognize the importance of environmental protection. Still, incorporating environmental protection into transportation planning has become increasingly expensive. Highway and rail projects often take several decades to complete because their environmental reviews, mitigation measures, and resulting lawsuits extend project timelines and incur high costs.

These planning challenges led to a focus on streamlining the environmental approval process, with advanced mitigation at the regional or landscape level to protect large tracts of land rather than isolated parcels. Mitigation at an individual project scale is both biologically and administratively inefficient. Highway projects that impinge on a few acres of wetland, rail lines that disturb endangered species habitats, and bridges that upset fish spawning grounds now include environmental mitigation by replacing habitat, creating new breeding grounds, or restoring wetland. Increasingly, transportation agencies are urged to work alongside land management and resources agencies and private land owners to preserve thousand- or even million-acre tracts of land or water in advance of construction. Such preservation proactively offsets damage from multiple future projects.

Agencies are recognizing the value of advanced regional mitigation, but high initial costs, limited funding, complex environmental laws, and legal restrictions placed on transportation agencies all conspire to make this good idea very difficult to implement. ➤

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HABITAT CONSERVATION PLANS

To understand the complexities of advanced mitigation at a regional scale, we studied Habitat Conservation Plans (HCPs) prepared to comply with the requirements of the 1973 Federal Endangered Species Act (ESA). Under the ESA, Congress declared endangered species to have intrinsic value. The Act protects them from harm caused by “economic growth and development untempered by adequate concern and conservation,” and safeguards the “ecosystems upon which they depend.” The Act prohibits “taking” any endangered species, meaning no harm should be caused to any individual endangered species or its habitat. While this protection would effectively prohibit any otherwise lawful development in endangered species habitats, Congress relaxed the regulation in a 1982 provision. The new provision, listed under Section 10 of the Act, allows the “taking” of a listed species if it is incidental to an otherwise lawful activity, such as the construction of a transportation facility. Those building in endangered species habitats must apply for an Incidental Take Permit (ITP) from the US Fish and Wildlife Service (FWS). To receive an ITP, applicants must create a multi-decade HCP that binds them to planned conservation and mitigation strategies.

Thousands of HCPs have resulted in “take permits” that allow planned projects to proceed in compliance with the law. We concentrated on the largest advanced regional or landscape-level HCPs that included mitigation of the impacts of planned transportation projects. We believe many of the lessons learned from HCPs can be applied to other forms of regional advanced mitigation. We studied more than thirty HCPs, each covering more than ten thousand acres. Most of our cases are located in California but also include others in Nevada, Texas, and Wisconsin. We attended conferences and courses, read FWS training manuals and planning documents prepared by dozens of applicant agencies—not all of them successful—and conducted over sixty interviews of federal, state, and local officials.

Each HCP includes a list of projects that require mitigation, the biological impacts of these activities, and a plan to mitigate harm. The HCPs address development and its mitigation over periods of 30 years or more. They usually describe consultations among landowners, public agencies, interest groups, and FWS staff. All include narratives that describe the HCPs as products of partnerships that, in most instances, were forged between groups that had previously opposed one another, sometimes in highly acrimonious disputes. Plan development and approval took years of negotiation and required the involvement of specialized consultants. Many HCP successes were attributed to heroic efforts by a few dedicated public officials who persevered through complicated and unpleasant negotiations.

CHALLENGES OF FUNDING AND FINANCE

Long range conservation plans can yield significant financial and time savings for transportation agencies because they enable infrastructure to be built earlier, at lower cost, and with fewer legal challenges than when each road, bridge, or rail line faces its mitigation obligations in piecemeal fashion. Unsurprisingly, however, we found that raising the considerable sums needed to develop and implement HCPs is difficult.

For example, Butte County, California, estimates a \$1.1 million annual planning cost for its still-in-development HCP. Similarly, Yolo County, California, estimates that the total cost of its HCP plan development will be \$2.4 million over a three-year planning period. These are significant expenditures for local agencies, funds that could otherwise be used to repair roads or purchase buses. Once planning is complete and the HCP is approved, even greater costs of land acquisition, operations, and maintenance must be borne for decades as the plans are implemented. The estimated budgets for land acquisition of three of the largest area-wide HCPs

include \$526 million for Coachella Valley, \$297 million for East Contra Costa, and \$160 million for San Joaquin. These costs are borne over the life of their respective permits, typically 30 years or longer. Santa Clara estimates that land acquisition will represent 72 percent of all capital costs associated with its HCP, or approximately \$238 million. The Western Riverside HCP authority expects land acquisition costs to total \$812 million over 75 years. In all these cases, the environmental impact mitigation costs are comparable to the costs to build a road, an overpass, or a transit station.

HCP agencies receive planning assistance through grants from the Fish and Wildlife Service, but Congress has steadily reduced funding for these grants despite the increasing number of applicants. Several other federal and state programs fund the acquisition of environmentally sensitive land, but well-intentioned restrictions limit their availability to transportation agencies. Because resource agencies believe that transportation agencies should bear the full cost of mitigating damage done by transportation projects, funding from federal and state resource agencies can be used to acquire sensitive land *only* when it is *not* used to mitigate the impacts of transportation projects.

Some local jurisdictions devote general revenues to the financing of HCPs. Another important source of local funding is impact fees levied on residential, commercial, and industrial projects. The fees are collected when building permits are issued for new development. The Riverside County HCP authority, for example, obtains about two-thirds of its revenue from fees on new development. Many areas, like Clark County, Nevada, charge impact fees on all new development even if it does not impinge upon sensitive habitats. But impact fees suffer from a systematic shortcoming. When the economy is expanding and new development is booming, revenues from impact fees rise, but so do prices that must be paid to acquire land needed to implement the HCPs. During recessions, when development slows, land prices drop and HCP agencies can buy land at lower costs, but the impact fee revenue also drops. Few sources provide bridge funding that would allow HCPs to borrow money for land purchases during economic downturns when prices are low, and repay with interest when the economy improves and revenues from development fees rise. ➤



Advanced regional mitigation can effectively reduce the time and cost of complex transportation investment projects while protecting the environment more than traditional project-level or piecemeal mitigations.

INNOVATIONS IN HCP FUNDING

Because of steadily decreasing federal and state funding, transportation projects are increasingly financed by Local Option Sales Taxes (LOSTs), typically created by referenda at the county level. About half of the counties in California, home to over 80 percent of the state's population, have enacted LOSTs to finance voter-approved projects, an impressive feat considering approval of such measures requires a super-majority of two-thirds of those voting. Recognizing the long-term cost savings HCPs produce, a few counties have recently passed sales tax measures that include funding for land acquisition by HCPs. And, while environmental interest groups had traditionally opposed ballot measures to finance transportation infrastructure, their support has been instrumental in achieving voter approval for HCP funding. Orange County's Measure M2 allowed the county to acquire rapidly developing land to mitigate future construction of roads named in the measure. San Diego County's TRANSNET sales tax, which will provide over \$14 billion for transportation improvement projects, incorporates \$650 million in mitigation measures, including HCP land acquisition. Environmental advocacy groups also supported including HCP land acquisition within the TRANSNET sales tax. This support represents a notable reversal since environmentalists had traditionally opposed tax measures to fund transportation projects they believed harmed the natural environment.

LOOKING TOWARD THE FUTURE

The benefits of advanced mitigation are gradually being recognized. Funding, for HCPs, however, must be pieced together from disparate sources. Local governments are the primary funders of HCPs, with state and federal agencies contributing when expenditures are consistent with program rules. Consolidating funding from state and federal programs to enable advanced mitigation planning would benefit HCPs and transportation agencies. The creation of state- and federal-level conservation clearinghouses might provide one avenue to available grant money, facilitating larger-scale conservation projects while reducing administrative costs to the local applicants. One example of this method is the Conserve Florida Water Clearinghouse, a collaboration of the Florida Department of Environmental Protection and Regional Water Management Districts, supported by state legislation to unify water conservation efforts. These programs streamline access to multiple grant programs into a single application.

Establishing low-interest, revolving-loan funds dedicated to species conservation would also increase transportation agencies' access to streamlined funding for HCPs. This could be done under the auspices of State Infrastructure Banks or through financing by the federal Transportation Infrastructure Finance and Innovation Act (TIFIA). HCPs can also access wetlands conservation loans from a fund established under the Clean Water Act, and have pursued similar loans through federal infrastructure loan programs. But establishing a revolving-loan fund dedicated to species protection, perhaps under the ESA, would provide greater access to low-interest loans for HCPs pursuing efficient, lower-cost land acquisition strategies. This bridge funding would be especially valuable when development slows, impact fee revenues decline, and land prices drop.

Our case studies of HCPs show that advanced regional mitigation can effectively reduce the time and cost of complex transportation investment projects while protecting the environment more than traditional project-level or piecemeal mitigations. Advanced regional mitigation is a strategy that could also be employed for mitigation required by federal and state environmental programs besides the ESA. Money spent early in the planning process has proven to be well spent because it produces long-term benefits. Today, there is both a need for and an opportunity to facilitate regional approaches to advanced mitigation by describing them more explicitly in the federal, state, and local instruments by which transportation and environmental conservation programs are funded. ♦

FURTHER READING

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