Building Highways and Preserving the Environment

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Transportation agencies have been trying for generations to improve mobility while harming the environment as little as possible. But the goals of enhancing mobility and preserving species and natural lands unavoidably conflict.

Cars, trucks, trains, and buses kill countless animals by colliding with them, but those conflicts are a small part of the story. A bigger issue is that transportation projects directly harm endangered species by damaging their habitats, and then indirectly harm them further by inducing urban growth, which also damages habitats. The huge scale of harbors and airports, and the linear nature of highways and rail lines, means that building them will fragment multiple habitats, and hinder seasonal migration and reproduction. Water pollution from runoff poisons animals and plants, and noise pollution disrupts feeding and mating patterns.

For all these reasons, activists and environmental protection agencies for decades aggressively opposed transportation facilities that threatened to intrude into pristine habitats, whether on land or in water. Epic legal battles lasted for years, with people on both sides claiming to speak for the public interest, and seeing no option but to keep fighting. The two sides have combined to spend millions of dollars on legal fees and advocacy — money they could otherwise have spent on transportation projects and environmental protection.

In recent years, however, we have seen a sea change. Transportation agencies have started to consider money spent on mitigation — actions taken to offset environmental impacts — as an investment, rather than just an added cost. They have begun incorporating funds for environmental stewardship into transportation programs, using an approach called "advance mitigation." Environmentalists have responded by gradually starting to see transportation agencies as potential allies rather than enemies.

Conflicts between environmental advocates and transportation agencies often arise when proposed highway, runway, or rail construction threatens to destroy or fragment critical habitat, such as a wetland, and when the damage cannot be avoided or mitigated at that site. It is often possible, however, to preserve some land away from the project to compensate for its environmental damage. This mitigation might involve protecting part of another existing wetland or patch of forest from future development, restoring a wetland that has become degraded, or even creating a new wetland or meadow.

Environmental mitigation is not new, but transportation agencies often addressed it late in the design and planning stages of a project, after already making critical decisions and commitments. Mitigation was piecemeal, and often resulted in transportation agencies setting aside individual and frequently isolated parcels of land to protect particular plants or animals. Preserving land here and there was useful but not ideal. Neither agencies nor

environmentalists were happy with the result. Agencies did not like challenges and costs that arose late in a project's development when they had to pay a premium to buy or restore land. Advocates worried that piecemeal mitigation did not address the larger problem of habitat loss affecting many species across wider areas. Animals often need large expanses of land to migrate, feed and reproduce, so complex ecologies require large protected spaces. Mitigation, to use a familiar metaphor, was preserving a few trees while ignoring the forest.

Advance Mitigation Proves its Worth

As a solution to these concerns, transportation agencies now employ advanced mitigation to address environmental damage even before they've begun the project proposal process. Like many good ideas, this one was started by a single insightful and creative act. Decades ago, the California Department of Transportation (Caltrans) acquired a large tract of environmentally sensitive land near Beach Lake, in the Sacramento River Valley. Caltrans bought the land intending to build on it, but by the 1990s plans had changed and the agency decided the land was no longer needed. Caltrans intended to sell the land as surplus, but a staff member urged the agency to consider a different use: keep the land and use it for environmental mitigation. A large piece of sensitive land, after all, could offset damage from multiple future transportation projects at other locations. The agency agreed to what was an unusual move at the time. The gamble paid off handsomely, as over time the land fulfilled the mitigation requirements for 49 separate road projects in 14 counties, saving Caltrans more than $25 million. Since then Caltrans and many local transportation agencies have accepted advance mitigation having discovered that it improves their road and transit programs while promoting preservation of the natural environment. It also converts many environmental interest groups from opponents to project partners.

Advance mitigation preserves larger and thus more environmentally valuable tracts of land, and does so at a lower cost. It saves project sponsors the money and time spent fighting environmental opposition, and the money and time spent redesigning projects in response to challenges. Consequently, advance mitigation has become an increasingly attractive strategy for both transportation planners and environmental advocates, and has built trust between the two groups. Advance mitigation has allowed transportation agencies to strategically use their revenue to achieve environmental ends.

The Conservation-Transportation Finance Conundrum

The legal basis for collaboration between agencies that build infrastructure and those that protect fragile environments is Section 10 of the federal Endangered Species Act. The act prohibits the "taking" (killing or endangering) of listed endangered plant and animal species through direct harm or habitat destruction, but authorizes the Secretary of the Interior to issue permits for the "incidental take" of endangered and threatened species if the damage is mitigated through a Habitat Conservation Plan, or HCP. Incidental take permits thus allow otherwise lawful activity, like building infrastructure, to proceed as long as there is a plan in place to mitigate the damage done to affected species and their habitats. The Endangered Species Act requires, among other things, that infrastructure projects conserve more acres of land than they develop or take.

Quite a bit of money is needed to support this process: agencies must plan ahead, and then buy and manage habitat. Management is expensive: the agency must maintain the land into the future, and continue the conservation program. Because funding is so important, the Endangered Species Act requires an HCP to demonstrate a "reasonably secure" funding source, and show that projected revenues can cover projected costs over decades to come. If an agency cannot demonstrate this financial stability, its take permit may be denied.

Many local governments raise revenue through exactions on land development. These are fees charged as a condition for issuing permits to build new homes and businesses. New development destroys habitat so some communities devote a portion of the revenue from their exactions to the funding of local habitat conservation plans. For many HCPs, exactions are a major source of revenue, providing money to buy land and restore it to pristine condition. Unfortunately, money produced by exactions typically does not arrive until well into a project's life. Relying on exactions to fund an HCP means waiting for the transportation project to be completed and development to begin, typically years and sometimes more than a decade after initial project planning. But mitigation is best started much earlier. Thus, HCPs face a persistent "catch 22" when they rely on revenue from exactions. Land costs are usually lowest *before* development occurs. By the time exactions arrive, development has already driven up land prices, making mitigation more expensive. During economic downturns, land prices fall but, because development also slows down, revenue from exactions falls just when it would be most valuable. Revenue for land acquisition is necessarily lowest when the cost of land is lowest, and revenue is always highest when land is most expensive.

New development often directly follows the building of new highways so local habitat conservation agencies long sought additional funding from state and local highway agencies. Fuel taxes and transportation sales taxes provide stable revenue streams compared to more volatile development revenues. More importantly, their revenue is available well before any particular project has begun. An HCP cannot buy a large swath of land years in advance using fees exacted from development on that land that has not started or even been proposed. But the agency *can* purchase land using fuel tax or sales tax revenue if a transportation agency makes that money available. These revenue streams can thus get the mitigation started. Once the development begins, exactions can be used to help finance its continuation. Transportation agencies at first refused to contribute to habitat conservation but gradually learned that doing so meant that they could claim they had already mitigated the environmental damage caused by their new projects. This reduced their costs and sped up transportation project approvals.

A good example of this approach is the Western Riverside County Multiple Species Habitat Conservation Plan. This plan is a comprehensive, multi-jurisdictional, long-term effort to conserve 146 endangered and threatened plant and animal species and their habitats, on more than 1.2 million acres, while accommodating some major new transportation projects. The agency that implements the plan receives revenue from exactions on new land development, but also receives some county sales tax revenue, which it uses to buy land and preserve habitat. The preserved land fulfills the mitigation requirements for the new road and freeway projects. The Conservation Plan was an adjustment, and highway authorities came to the table reluctantly. Over time, however, they participated with increasing commitment, having seen that it streamlines the process of permitting their projects.

Sales Taxes Bring Opponents to the Table

Since the 1970s, many counties and cities across the United States have responded to stagnating federal transportation funding by adopting voter-approved local option sales tax (LOST) measures. These measures raise the sales tax slightly, and dedicate the resulting revenue to transportation spending. The Riverside County case above shows that the rise of these local taxes can help the cause of advance mitigation. The benefits actually flow both ways: advance mitigation can also help enact local transportation sales taxes.

Getting voter approval for new taxes is always difficult, especially in California where state law requires new taxes to win a two-thirds supermajority. Approval is even more challenging if the tax revenue is going to build

highways that many environmentally-minded voters might oppose. In these circumstances, sales tax proponents need to broaden their base of support, and bring environmentalists on board. One way to win over "green voters," is for transportation agencies to promise that some of the tax revenue will be used for advance environmental mitigation. Including dedicated funding for environmental mitigation of transportation projects in Orange and San Diego counties led to vital support from environmental advocacy groups for voter approval of the tax measures.

Sales tax revenue has dramatically supported habitat conservation in California. In the first 25 years of the Western Riverside County agency, $12 billion worth of transportation projects were supported by $371 million of mitigation funding. Of that, almost a third ($121 million) came from Riverside County's voter-approved sales tax measure.

In Orange County, the transportation authority developed an HCP to mitigate transportation projects, and helped fund land purchases and habitat restoration by dedicating 5 percent of the revenue from the county's proposed transportation sales tax. This commitment earned the support of environmental groups, which in turn helped deliver the votes needed to pass the measure. Likewise, in 2004, San Diego County residents voted to extend the county's TransNet half-cent sales tax for transportation infrastructure by 40 years. Included in the measure was a commitment to spend $650 million to purchase mitigation land through several HCPs. That commitment led environmentalists to endorse the extension.

Advance Mitigation Goes Statewide

In 2017, California's state legislature approved a controversial law called the Road Repair and Accountability Act (SB1). The bill was controversial because it substantially increased the state's gasoline and diesel fuel taxes, which had not been raised in 25 years, and also raised annual vehicle registration and use fees. The bill's proponents said the state desperately needed revenue to manage and maintain its infrastructure. Opponents called it a money grab.

Almost unnoticed among these arguments was that SB1 also created a statewide Advance Mitigation Program. To address the mitigation needs of multiple future transportation projects, the law allocated $120 million, to fund a revolving advance mitigation bank account. Caltrans will be able to withdraw money from this account and use it to buy and preserve sensitive land. When the agency completes transportation projects, and has received federal and state funding to construct them, it will reimburse the revolving account, and by replenishing it will ensure that later projects can also draw on it.

Conclusion

Transportation planners should be sensitive to environmental concerns. Some proposed transportation projects would so severely damage the environment that they should probably be cancelled. Other projects, however, deliver substantial transportation benefits with environmental impacts that can probably be managed. Environmentalists should not just routinely oppose all transportation projects. Decades of conflict and distrust between transportation agencies and environmental advocates, however, made compromise difficult. Advance mitigation has increased dialog among these different groups, and made finding a middle ground feasible. Transportation officials have come to realize that meeting environmental requirements in piecemeal fashion after the planning and design of projects was inefficient and intensified disagreement. Environmentalists who opposed virtually all transportation investments, similarly, have gradually realized that collaboration and mutual accommodation, if it involves preserving large swaths of land, can be a more fruitful path to improved environmental protection. Proactive cooperation has led to more positive outcomes for travelers and for surrounding ecosystems and the environment in general. Money is

always a good lubricant that smooths rough edges among competing public policies. The small steps taken thus far show that spending transportation project money wisely on advance mitigation can, in the long run, preserve sensitive land, enhance species' habitats, and deliver transportation projects more quickly and at lower cost.

This article is derived from a chapter by M. Wachs, J. Lederman, and G. C. Sciara entitled "Building Environmental Collaborations While Funding Highways in California," which will appear in a forthcoming book, The Future of Habitat Conservation Planning, to be published by the Environmental Law Institute in Washington, D.C.

Further Reading

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