

C O M M E N T

Addressing the Environmental Impacts of Large Infrastructure Projects: Making “Mitigation” Matter

by David J. Hayes

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I. Overview

We are in the midst of an unprecedented governmentwide focus on infrastructure permitting and development in the United States. Our nation’s energy industry is undergoing a significant expansion across our landscapes. Large, utility-scale solar and wind projects are springing up around the country, thousands of new oil and gas wells are being drilled each year on public and private lands throughout the United States, and new pipelines and electric transmission lines traversing the country are under construction, or are on the drawing boards. Meanwhile, bridges, roads, transit systems, and other key infrastructure are being built, restored, or replaced in every corner of our nation.

By definition, major infrastructure projects impact our landscapes. While avoiding and minimizing the impacts of infrastructure projects must continue to be the first option of project developers and reviewers, some projects may not be able to avoid filling wetlands, disrupting wildlife corridors or other sensitive habitat, or negatively affecting areas in and around parks, wildlife refuges, recreation areas, and other special lands. Impacts may be felt for many years for some projects, and permanently for others.

When highway, port, or airport projects are funded by the federal government, or when large energy infrastructure projects are proposed to cross federal lands, fill wetlands, or otherwise trigger federal permitting or review requirements, federal agencies must analyze their potential environmental impacts. In their analysis, a “mitigation hierarchy” is applied to the proposed infrastructure, with project proponents expected to avoid or reduce potential impacts in the first instance and then, for unavoidable impacts, provide compensation by sponsoring “mitigation” projects that are deemed to be reasonably equivalent to the damaged environmental values.

A. *Theory and Reality Diverge*

The concept of a mitigation hierarchy, and the expectation that project proponents will make meaningful conservation investments that help make up for unavoidable environmental impacts, is sound, but its implementation has been uneven. All too frequently, the mitigation piece of the permitting puzzle has been an afterthought, with project proponents and permitting authorities alike giving limited, late, and inconsistent attention to mitigation requirements. While systems are in place to measure and address wetlands and some endangered species impacts, other types of environmental impacts are dealt with on an ad hoc basis, or not at all. The result is that mitigation often is piecemealed, with project proponents responding to a set of varied and unpredictable requests from agencies that may or may not generate meaningful environmental benefits.

Few are happy with this state of affairs. Even though infrastructure project applicants typically recognize their obligation to mitigate for unavoidable environmental impacts as part of their project planning, it is often difficult for them to determine exactly what mitigation will be required, and rarely is there an adequate dialogue with regulatory agencies about how best to effectuate such mitigation. Instead, project proponents face an unpredictable set of requirements and costs associated with compensatory mitigation that are only revealed late in the game, when financing is already settled and avoidance is no longer a cost-effective option.

On the other side of the coin, overburdened permitting authorities do not find the exercise satisfying either. Often lacking broader guidance from headquarters, regional staff typically take well-worn paths that focus on those types of impacts that are well-codified—wetlands and listed species

in particular—while giving shorter shrift to other types of impacts on land, water, and wildlife.

B. *Interior's Mitigation Strategy: Developing a New Framework*

The major push for new infrastructure now underway provides an opportune time to address these long-standing frustrations and missed opportunities. The U.S. Department of the Interior (DOI)—which plays a major role in permitting many large renewable and conventional energy generation projects, transmission projects, and water projects, among others—has been taking steps to regularize and improve the mitigation evaluation and implementation process for projects under its purview. In so doing, DOI is ushering in a new mitigation approach that holds the promise of converting mitigation from an afterthought to a central tenet of project planning and execution—to the great benefit of both the infrastructure that we are building and the overall environment.

There are two key elements to the new mitigation strategy that DOI has been putting into place. First, is a concerted commitment to enter into early discussions with project proponents regarding key design features of proposed projects, so that agencies can identify serious and potentially project-threatening environmental impacts on the front end. In this way, siting and other design features of major projects can be adjusted to account for serious agency concerns before applicants invest heavily in problematic project features. To inform these decisions, and to integrate early analysis in a programmatic way, DOI's landscape-scale planning efforts have been leveraged to facilitate smarter siting and avoidance of critical resources.

Second, for those environmental impacts that cannot be avoided, DOI is applying new tools that will facilitate meaningful, landscape-scale mitigation investments in sensitive areas while, at the same time, enable agencies to guide impactful development to the most appropriate areas. More specifically, because DOI's land management and wildlife agencies have been actively collecting data and developing integrated management strategies on a landscape scale, as chronicled below, the Department and its partners are well-positioned to identify restoration and conservation needs on a regional basis. Mitigation obligations for infrastructure projects in a given region can then be coordinated with real restoration or conservation needs in the same region. The results will be better for both companies and the environment: project proponents' mitigation dollars will go toward meaningful, landscape-scale environmental needs—rather than small-bore and/or ad hoc mitigation efforts—and ongoing public and private investments in more significant, regional restoration or conservation needs will get a boost from project-related mitigation dollars.

These new approaches, which have been under development at DOI over the last couple of years, were formally endorsed recently in Secretary Sally Jewell's first Secretarial Order, issued on October 31, 2013. In laying out the purpose of the Secretarial Order, Secretary Jewell noted the central elements of the strategy as follows:

- (1) the use of landscape-scale approach to identify and facilitate investment in key conservation priorities in a region;
- (2) early integration of mitigation considerations in project planning and design;
- (3) ensuring the durability of mitigation measures over time;
- (4) ensuring transparency and consistency in mitigation decisions; and
- (5) a focus on mitigation efforts that improve the resilience of our Nation's resources in the face of climate change.¹

C. *Moving to Consolidated, Permit-Friendly Mitigation Across All Agencies*

While DOI has been showing the way, large infrastructure projects typically bring a number of permitting agencies into play, each with its own authorities and approaches for mitigating unavoidable environmental impacts. As a general matter, the involvement of multiple agencies slows the permitting process for infrastructure projects, frustrating investors and the communities that stand to benefit from such infrastructure alike. At the same time, multiple agencies can require developers to implement different mitigation strategies under their statutory authorities for the same infrastructure project, complicating compliance and diverting limited mitigation funds to disconnected mitigation investments.

The president has taken on the task of improving the multiagency permitting process for infrastructure projects by issuing Executive Order No. 13604, which commits the Administration to increase coordination and substantially reduce the permitting time line for infrastructure projects, while improving environmental results.² One of the strategies that the White House is pursuing to achieve this goal calls on permitting agencies to “identify opportunities to integrate intra- and inter-agency mitigation processes to expedite project review and encourage large-scale—watershed, regional or landscape-level—mitigation planning, where appropriate and feasible.”³

1. See Secretarial Order No. 3330—Improving Mitigation Policies and Practices of the Department of the Interior.
2. Executive Order No. 13604—Improving Performance of Federal Permitting and Review of Infrastructure Projects, available at <http://www.gpo.gov/fdsys/pkg/DCPD-201200202/pdf/DCPD-201200202.pdf>.
3. *Implementing Executive Order 13604 on Improving Performance of Federal Permitting and Review of Infrastructure Projects: A Federal Plan for Modernizing the Federal Permitting and Review Process for Better Projects, Improved Environmental and Community Outcomes, and Quicker Decisions*, available at http://www.permits.performance.gov/sites/all/themes/permits2/files/federal_plan.pdf.

The White House infrastructure permitting initiative presents a unique opportunity to expand on DOI's early efforts to implement compensatory mitigation through a landscape-scale approach that invests mitigation dollars in regional needs that community, state, and federal planning processes have identified. The big payoff will come if state and federal authorities can adopt a common set of criteria to define regional landscapes where compensatory mitigation investments can help address a broad set of environmental values, including watershed health, species and habitat health, and landscape fragmentation. Permitting agencies could then simplify the permitting process by requiring developers to make one-time, direct payments to private conservation banks and other third parties who will have the responsibility to apply these investments on private and public lands in accord with already-approved regional plans.

There is no reason why this new approach cannot take hold and improve the permitting process, while yielding better environmental results. Many local, state, and federal authorities already have identified important, vulnerable landscapes close to proposed infrastructure projects. They know the lands in their region that have high habitat and watershed values that should be protected and/or restored with compensatory mitigation (and other) dollars. And many infrastructure developers would welcome the opportunity to speed their permitting time lines and simplify their permitting obligations by cashing out their mitigation obligations early and cleanly, particularly if their funds would generate obvious environmental benefits that are important to local communities.

There is no better time than now, with the focus provided by Secretary Jewell's recent Secretarial Order and, even more importantly, the Administrationwide attention provided by the president's infrastructure permitting Executive Order, to expedite and improve the process by which infrastructure permittees discharge the compensatory mitigation obligations that flow from a variety of agency authorities. Working together, and under the direction of the White House and its Office of Management and Budget, agencies can and should define a broader concept of conservation banking that compensates for wetlands, species, and other project impacts in a comprehensive way that makes a difference on a landscape scale. Everyone wins if this is done right.

II. First Step: Early Review of Proposed Projects to Avoid or Minimize Environmental Impacts

The first key step in reinvigorating the "mitigation hierarchy" is for permitting agencies and project proponents to give more serious attention at an early stage—*before* the project proponent has committed to specific project features—so that meaningful siting and design adjustments can be made to avoid or minimize environmental conflicts.

The best example of this approach is the early review process that DOI engaged in over the past five years in siting a large number of complex, large-footprint, renewable energy projects on public lands. For example, proceeding under a Memorandum of Understanding with California Gov. Arnold Schwarzenegger and then Gov. Jerry Brown, and with the full cooperation of developers, utilities, and conservation organizations, promising renewable energy projects in California have been subject to a collaborative review process that enables federal and state regulatory agencies to approach project proponents on a unified basis to identify serious environmental concerns early in the process. The joint federal/state "Renewable Energy Action Team" has provided the forum for early discussions regarding siting and other design features for wind and solar projects in California, triggering significant changes in some proposed projects and paving the way toward a smoother and less divisive permitting process.

After successfully test-driving this early review strategy in the context of the Administration's renewable energy project push, the president called on all agencies to pursue this approach in his 2012 Infrastructure Permitting Executive Order No. 13604. The Executive Order specifically notes that agencies should integrate their evaluation of potential environmental impacts "into project planning processes so that projects are designed appropriately to avoid, to the extent practicable, adverse impacts on public health, security, historic properties and other cultural resources, and the environment, and to minimize or mitigate impacts that may occur."

In many cases, the key to following this path on a more consistent and cross-agency basis is to have serious agency/applicant discussions prior to—and during—the process of preparing environmental impact statements (EISs) under the National Environmental Protection Act (NEPA).⁴ All agency hands need to be on deck early, along with flexible and cooperative project applicants, so that potential issues will be flagged and, hopefully, shaped by candid and productive agency/applicant discussions, before the full EIS process begins in earnest.

III. Off-Site Mitigation: Syncing Up Landscape-Scale Management Initiatives and Infrastructure Mitigation Obligations

Where environmental harms from infrastructure projects cannot be avoided, the next challenge is how to more effectively implement mitigation requirements. Today, mitigation dollars often are not spent in the most environmentally effective way because either (1) government land managers, companies, or nongovernmental organizations (NGOs) have not identified high-value restoration or conservation needs near the location of proposed projects; or (2) in those regions where there already is a focus on landscape-scale

4. 42 U.S.C. §§4321-4370h, ELR STAT. NEPA §§2-209.

restoration or conservation needs, government authorities are not “connecting the dots” and seeking to apply project-related mitigation obligations to those needs.

The potential benefits of providing companies with an opportunity to apply and leverage their mitigation obligations toward higher profile, regional restoration or conservation needs is enormous—for the companies, who want their mitigation to be spent in a meaningful way, and for land managers and communities, who are looking to leverage investments in important restoration or conservation projects.

The president’s infrastructure Executive Order is showing the way, and encouraging DOI and other agencies to combine landscape-scale planning exercises and project mitigation strategies.

DOI’s implementation plan under the Executive Order accepts the challenge and notes that DOI already is “foster[ing] inter-agency collaboration” on a number of fronts, “including the Solar Programmatic Environmental Impact Statement [the ‘Western Solar Plan’]; the Geothermal Environmental Impact Statement; the Desert Renewable Energy Conservation Plan; the Arizona Restoration and Design Energy Project; BLM’s [Bureau of Land Management’s] Rapid Ecological Assessments and the Sage-Grouse Habitat Conservation and Planning Strategy.”⁵ Indeed, as discussed below, BLM has gone one step further by issuing interim mitigation guidance that encourages that the nation’s largest land manager—BLM—apply a suite of offsite mitigation tools, including a new emphasis on regional mitigation strategies and planning, so that project-based mitigation dollars can be spent more effectively.

For a variety of reasons that I recently described in a speech at Stanford’s Lane Center for the American West, federal, state, and tribal authorities—working with communities, NGOs, and other interested parties—are engaged in an unprecedented number of landscape-scale management and planning exercises.⁶ Many of these are the same landscapes in which large, new infrastructure projects are being planned or built. The trick now is to connect the dots, and better match up the restoration and conservation needs these integrated landscape-scale management and planning exercises are identifying with project-based mitigation obligations related to the siting of major infrastructure projects in those regions.

Examples of landscape-scale initiatives that are assisting in the siting of new projects in lower conflict areas, *and* in identifying regional mitigation needs that might provide a good match for those projects’ mitigation obligations, include the following:

- **Western Solar Plan.** Through its Western Solar Plan, BLM has reviewed landscapes in six south-

western states and identified “solar energy zones” that have fewer environmental conflicts, access to transmission, and other features that make them particularly suitable for solar project development and attractive to project developers. Importantly, the Western Solar Plan calls on BLM and its partners to identify regional mitigation opportunities that can be paired with solar energy zones, so that applicants who are siting projects in solar energy zones can invest their mitigation dollars in meaningful, landscape-scale needs in the region. In this way, project-specific mitigation obligations can be directed into larger and more meaningful investments that mesh with broader environmental restoration and protection investments that federal and state governmental authorities, tribes, local communities, NGOs, and others may be prioritizing.

- **Desert Renewable Energy Conservation Plan.** BLM and the U.S. Fish & Wildlife Service (FWS) are working with the California Energy Commission, the California Department of Fish and Wildlife, and other state, local, and tribal partners in developing the Desert Renewable Energy Conservation Plan: an ambitious plan covering more than 20 million acres in the Mojave Desert in California that identifies “development focus areas” for project development, on the one hand, and conservation lands that should be protected from development, on the other hand. Mitigation is being baked into an integrated, landscape-scale management and planning exercise that is driven by the need to site large renewable energy projects in future years in southern California.
- **Rapid Eco-Regional Assessments.** DOI’s BLM has launched 14 Rapid Eco-Regional Assessments (REAs) since 2010 that examine ecological values, conditions, and trends within large eco-regions, such as the Sonoran Desert and the Colorado Plateau. REAs span administrative boundaries and include both public and private lands. They identify regionally important habitats for fish, wildlife, and species of concern and gauge the potential of these habitats to be affected by four overarching environmental change agents: climate change; wildfires; invasive species; and development (both energy development and urban growth). At the same time, REAs also help identify areas that do not provide essential habitat, that are not ecologically intact or readily restorable, and where development activities may be directed to minimize impacts to important ecosystem values.
- **The Western Governors Association’s Crucial Habitat Assessment Tool.** The Western Governors Association has been working for several years on a project that is developing Crucial Habitat Assessment Tool (CHAT) to identify wildlife corridors and other key habitats that need priority attention. The CHAT initiative develop landscape-level data that,

5. Department of the Interior Agency Plan Implementing Executive Order 13604 on Improving Performance of Federal Permitting and Review of Infrastructure Projects, *available at* <http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageid=359605>.

6. See http://west.stanford.edu/sites/default/files/DJHayes_Lane_Center_Speech-20130430.pdf; see also David J. Hayes, *Testimony: Thinking Big*, 30:6 ENVTL. F. 40 (Nov./Dec. 2013).

much like BLM's REAs, can help direct new projects to lower conflict areas, while also identifying regional restoration or conservation needs that are good candidates for mitigating project impacts.⁷

- **Sage Grouse Habitat Protection Plans.** DOI and other federal and state authorities are devoting significant attention to the habitat needs of greater sage grouse in 11 western states in a coordinated planning effort designed to obviate a potential listing of sage grouse under the Endangered Species Act (ESA)⁸ or to reduce the impact if listing is necessary. In concert with the federal land management planning, states are developing landscape-scale plans that identify sage grouse strongholds and related sage grouse habitat protection strategies. This extensive, science-driven planning exercise potentially could provide a road map for impactful mitigation-related investments for project developers who potentially may be impacting sage grouse habitat (e.g., transmission lines; oil and gas, and wind developments).

There are other landscape-scale management exercises that provide similar opportunities. By way of example, DOI, working in partnership with the U.S. Forest Service, has instituted a new approach for allocating a significant percentage of its Land and Water Conservation Funds (LWCF) to focus on the most deserving and in-need landscapes. When infrastructure is proposed to be sited in these regions, mitigation dollars can potentially be matched up with public LWCF monies to create a more significant environmental benefit.

Similarly, a massive interagency process is underway to address long-standing restoration needs in the Gulf of Mexico, following the Deepwater Horizon oil spill. With so much expertise being focused on sound restoration investments in the Gulf, there may be significant leveraging available for offsite project mitigation dollars from the region.

Finally, land, water, and wildlife managers at all governmental, tribal, and NGO levels are using DOI-supported Landscape Conservation Cooperatives and regional Climate Science Centers around the country to better understand conservation challenges in their regions and to identify adaptation and resilience investments that can address such pressures—investments that project mitigation dollars might be appropriately directed toward.

The challenge—and the opportunity—is to sync up mitigation obligations with these landscape-scale assessment and planning exercises so that restoration and conservation needs identified through landscape initiatives can be addressed, in part, with mitigation dollars from projects in the region.

DOI is establishing the policy framework to accomplish this mission. The agency plan issued by the Department

under the president's infrastructure Executive Order, for example, explicitly makes this point:

DOI remains focused on prioritizing investments which are likely to preserve and enhance mitigation benefits over time; facilitate adaptive management; address and mitigate for distinct or unique assemblages of species or communities or locations that provide valuable ecosystem services; and that contribute to the permanence of conservation protections. *To promote the implementation of these principles across projects, DOI will continue to use current landscape-level planning initiatives . . . to identify sensitive habitats and landscape-scale mitigation opportunities in these regions.* (Emphasis added.)

BLM's mitigation "instruction memorandum" expands even further on these points. It urges BLM managers to adopt a "regional mitigation approach" that "shifts the BLM's mitigation focus from a permit-by-permit perspective to a landscape-scale planning perspective." As BLM explains: "This landscape-scale planning perspective will enhance the BLM's consideration of mitigation at the project level and afford greater certainty to permit applicants, partners, stakeholders, and the public."⁹ And, even more recently, Secretary Jewell's October 31 Secretarial Order reinforces these efforts and calls on her senior team to develop recommendations for implementing improvements in the Department's mitigation practices and policies.

IV. Moving Beyond Interior to a Governmentwide Mitigation Framework

While DOI's leadership in promoting landscape-scale planning and regional mitigation concepts is commendable, it is not enough. Large infrastructure projects typically generate unavoidable environmental impacts that may trigger mitigation-related permitting obligations from a number of federal (or state) agencies. Examples include: agencies whose lands will be affected by the project (such as BLM, the U.S. Department of Agriculture's Forest Service, or the U.S. Department of Defense for oil and gas, renewable energy, or transmission projects); agencies that have responsibilities to address impacts to specific types of resources (such as the U.S. Army Corps of Engineers (the Corps) for wetlands or FWS for endangered species); and agencies that have overall environmental review and approval obligations because they are funding infrastructure projects (such as the U.S. Department of Transportation for highways, bridges, and ports) or because the law requires their approval for certain types of projects (such as the U.S. Department of State for cross-border projects or the Federal Energy Regulatory Commission for gas pipeline projects).

7. See www.westgovchat.org.

8. 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18.

9. Bureau of Land Management IM 2013-142, Interim Policy, Draft Regional Mitigation Manual Section 1794, available at http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2013/IM_2013-142.html.

In each case, NEPA typically requires the permitting agencies to analyze the proposed project and various alternatives, including mitigation requirements that may be imposed as permit conditions for unavoidable environmental harms.¹⁰ Where multiple agencies must issue permits or other types of approvals for a large infrastructure project, it would be ideal from both a permittee perspective, and from the environmental benefits side of the equation, if a single, agreed-upon compensatory mitigation investment could be identified as satisfying all of the agencies' interests. If the single investment approach could also cover the type of one-off mitigation requirements now typically required by the Corps for wetlands impacts, or by FWS for endangered species impacts, all the better.¹¹

This type of mitigation streamlining can be accomplished if compensatory mitigation is tied into regional planning processes. Through jointly conducted landscape-scale evaluation and planning efforts, federal, state, and local authorities can identify important landscapes whose environmental values, including watershed health, habitat and species health, wildlife corridors, and other landscape "intactness" values, will be broadly enhanced through the application of compensatory mitigation dollars. Then, rather than concoct one-off mitigation projects that deal with environmental harms on a piecemeal basis, the agencies should work on a multiagency basis, applying common criteria and metrics, to match the type and level of harm associated with a given project to an investment in a regional landscape need. The criteria and metrics need to be straightforward and workable so that private conservation mitigation bankers and other third parties can help facilitate investments in the targeted, regionally significant landscapes. Performance will need to be monitored and adjustments made, where needed, to confirm that mitigation investments are, in fact, generating the expected compensatory environmental benefits.

This idea that agencies should work together to identify regionally significant landscapes and then set up a consoli-

dated permitting structure that facilitates compensatory mitigation investments in such landscapes makes common sense. We have all seen how large footprint oil and gas and renewable energy projects and other infrastructure projects, like highways and transmission or pipeline corridors, have fragmented local landscapes, disrupted wildlife migration corridors, and negatively impacted the proper functioning of local watersheds. Traditionally, these project impacts have either been ignored or addressed by requiring permittees to invest in postage stamp-sized, localized mitigation projects that generate limited environmental benefits. The White House's initiative holds the promise that permitting agencies can work with developers to apply mitigation dollars in a coordinated and efficient way, guided by regional planning, and dedicated to meaningful environmental results: conservation and restoration of regionally important landscapes and their watershed and wildlife habitat values.

V. Conclusion

The unprecedented attention that DOI has devoted to landscape-scale management and planning has improved the siting process for major energy and other infrastructure projects. DOI's new landscape-scale approaches also hold the promise of applying project-related mitigation obligations more sensibly, and efficiently, to important regional conservation needs. Now, with the attention of the White House on developing cross-agency mitigation approaches that tie into advanced regional planning, there is a unique opportunity to work across all permitting agencies and to address mitigation obligations in a holistic way. It is the classic definition of a "win-win": developers reap the benefit of expedited infrastructure permitting processes while, at the same time, their compensatory mitigation dollars are invested wisely and effectively in a consolidated manner, on regionally significant landscapes, in accordance with sound planning.

10. Section 1508.20 in the Council on Environmental Quality's NEPA regulations outlines the type of mitigation that agencies should be evaluating and potentially requiring as permit conditions. Mitigation measures considered should include:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

11. So long as watershed and species health is being promoted by landscape-scale investments, this generalized approach should be able to satisfy the Clean Water Act (CWA, 33 U.S.C. §§1251-1387, ELR STAT. FWPCA §§101-607) and ESA's mitigation requirements in most cases, while also meeting more generalized mitigation obligations that arise through the NEPA process, or through underlying permitting statutes. Both the CWA and the ESA give significant discretion to permitting agencies to craft appropriate mitigation. In recent years, for example, the Corps has relied on this authority to adopt a watershed health-based mitigation approach that moves away from acre-by-acre comparisons of lost versus restored wetlands.