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RETHINKING PUBLIC LAND USE PLANNING

Mark Squillace¹

The public land use planning process is broken. The land use plans of the principal multiple-use agencies—the United States Forest Service and the Bureau of Land Management (“BLM”)—are unnecessarily complex, take too long to complete, monopolize the time and resources of public land management agency staffs, and fail to engage the general public in any meaningful way. Moreover, the end result is too often a plan that is not sufficiently nimble to respond to changing conditions on the ground, a problem that appears to be accelerating due to climate change.

It might seem easy to chalk up these problems to the inherent complexity of public land management. But what if public land management were not so complicated? What if the relevant agencies could rethink their current planning models and break down their decisions into more accessible and more manageable chunks?

In this article, I suggest a new public land use planning framework with the potential to make planning more logical, more efficient, and more effective at achieving the goal of the smart management of our public lands that everyone wants. Moreover, this new approach can be carried out in a way that makes planning more accessible to interested members of the general public, thereby enhancing opportunities for meaningful engagement with public land decision-makers.

The ideas proposed here should not be viewed as final or inviolate. Rather, they are offered as an opening bid worthy of testing and debate. We cannot address the crisis facing the current land use planning program if we are unwilling to try new things. Perhaps the ideas presented in this article, even if tried, will be found wanting. But it is my hope and belief that we can and will learn much from rethinking the current public land use planning process.

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1. Raphael J. Moses Professor of Natural Resources Law, University of Colorado Law School. This project evolved over many years and benefited greatly from engagement with the staff of the U.S. Forest Service, the Bureau of Land Management, and many others involved in the public debate over federal land use planning. I have also had the good fortune to be assisted by several outstanding law students, including most notably Eric Dude and Alex Hamilton. They made this article better than it otherwise would have been.

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INTRODUCTION

Anyone who ventures into the esoteric world of public land use planning will likely discover much to criticize. The process is so mind-numbingly complex that it is nearly impossible for the key land management agencies to engage the general public in any meaningful way. This is particularly true because the current planning process for individual plans tends to drag on for many, many years before it is concluded.² The people who are there when the process commences—be they agency officials, professional lobbyists, or the general public—are only rarely there to finish it. A process that already suffers from inefficiency thus lacks for continuity among the relevant players and is rendered even less efficient.

What if it did not have to be this way? What if our public land management agencies could prepare a plan in two or three years with robust public participation on those aspects of planning that people most care about—the choices the agencies make about the uses that are allowed and prohibited on

2. At a Senate hearing before the Senate Energy and Natural Resources Subcommittee on Public Lands, Forests and Mining on June 21, 2016, BLM Director Neil Kornze testified that it takes on average eight years to complete a BLM land use plan and up to thirteen years to complete the process. *Subcommittee Oversight Hearing on the Bureau of Land Management's Planning 2.0 Initiative Before the S. Subcomm. on Pub. Lands, Forests, and Mining of the S. Comm. on Energy and Nat. Res.*, 114th Cong. 2 (2016) (Statement of Neil Kornze, Director, Bureau of Land Management), <https://perma.cc/L4D8-CG3G> [hereinafter "Kornze Testimony"].

particular tracts of public lands? What if simplifying the current process also meant that the agencies could actually add another layer of planning at the landscape level—something they have long seemed to advocate? And finally, what if the new process was tailor-made to allow for meaningful adaptive management, another policy that the agencies profess to support, but have largely failed to achieve?

I argue that such a transformation of public land use planning to meet all of these goals is both desirable and possible if the agencies are willing to fundamentally rethink their current approach to public land use planning. This is, accordingly, an opening salvo toward a new public land use planning paradigm. Part I begins with a brief history of federal public lands and how planning evolved at the major federal public land agencies. It is a complex history that begins largely with policies and laws for disposing of public lands, with a gradual shift toward policies of retention and conservation. That shift amplified conflicts—and thus the need for more planning—among those who would employ public lands for such consumptive uses as mineral development, timber production, and grazing, with those who wanted lands preserved for recreation, wildlife conservation, and wilderness protection. This Part also includes brief references to the planning processes employed by some of the dominant-use agencies such as the National Park Service and the U.S. Fish and Wildlife Service. Planning at these dominant-use agencies tends to be far less complicated, and far less controversial, than planning under the multiple-use, sustained-yield mandate that governs planning on national forests and BLM public domain³ lands. While the dominant-use agencies may benefit from studying the planning challenges that face the multiple-use agencies, it is these multiple-use agencies that are most in need of new thinking, and thus are the focus of this Article.

Part II lays out a detailed description of the current approach to public land use planning at the principal multiple-use land management agencies—BLM and the Forest Service. This is followed by Part III, which outlines both the structural and procedural problems that make the current process so cumbersome and inefficient.

Part IV proposes an alternative planning scheme that operates along four increasingly detailed planning layers. It starts with a landscape level that looks beyond the boundaries of a standard planning unit to take in such natural phenomena as watersheds and wildlife corridors. While necessarily modest in

3. The Forest Service has defined “public domain lands” as the “[o]riginal holdings of the United States that were never granted or conveyed to other jurisdictions or reacquired by exchange for other public domain lands.” U.S. DEP’T OF AGRIC., U.S. FOREST SERV., LAND AND RESOURCE MANAGEMENT PLAN CHATTAHOOCHEE-OCONEE NATIONAL FORESTS, app. B at 47 (2004), <https://perma.cc/9CCC-FZCU>. Although not entirely clear from the definition, the term does not include public lands that have been set aside for particular purposes such as a national forest, an Indian reservation, or national park.

scope, this level would include baseline data, goals for moving that data in the desired direction, and metrics to allow the agency to determine whether it is achieving its goals. Landscape planning would be followed by the unit-level plan, which is the focus of the current planning process. Unlike the current unit-level plans, however, the plans envisioned here would be far simpler, focusing on a zoning-style exercise whereby the agency would decide what uses would be allowed, restricted, and/or prohibited in certain zones. As with the landscape-level plan, the unit-level plan would describe baseline data, establish goals for moving that data in the desired direction, and design metrics sufficient to allow the agency to determine whether its goals are being met. Importantly, the unit plan would not make judgments about how resource development or use might occur, or what restrictions would be required for particular projects, as is often done under the current planning model. These issues would be fleshed out during the final two stages of planning.

The third level of planning would set priorities for development or use of particular resources, establish production or use goals for those resources, and identify potential conflicts. Resources addressed at this level might include, for example, range, recreation, timber, oil and gas, hard rock minerals, and travel management. The bottom planning layer would be reserved for particular projects. At this level, the agency would engage in a detailed site-specific analysis of a proposed project, assess its potential impacts, and design strategies for avoiding and/or minimizing those impacts.

Parts V, VI, VII, and VIII of the Article stress the key procedural requirements for good public land use planning. Part V assumes full compliance with the National Environmental Policy Act ("NEPA") at each planning stage, while recognizing that the relevant NEPA assessments will be integrated and tiered to minimize the time and cost of compliance, especially at the early planning stages.

Parts VI and VII address what may be the most critical missing links from current public land use planning—the need for monitoring resources and activities with good metrics, and the obligation to adapt plans in a timely fashion to reflect the new information gathered during monitoring. Part VII, in particular, argues that adaptive management must be integrated into planning, something that is simply not practical when it takes, on average, eight years to develop a plan. Part VIII discusses the public's role in planning and how the proposed layered planning approach could help facilitate much more meaningful participation. Better, more meaningful participation could also counteract rent-seeking behavior, ultimately leading to better plans.

In an effort to provide context for the preceding material, Part IX offers a case study of the White River National Forest ("WRNF"). By examining a popular and complex national forest, the reader should get some sense for the drawbacks of the current planning process and how the proposal outlined here could lead to better planning. Finally, Part X acknowledges the complexity of

public land use planning and the somewhat radical shift that this proposal represents by arguing for field-testing the proposal or something like it at a planning unit where agency personnel are open to the kinds of changes set forth in this proposal.

The multiple-use agencies and their constituencies who follow planning know that the current scheme for public land use planning is not working. They know too that the problems are systemic and will not be solved by tweaking the current processes as the agencies seem inclined to do. Field-testing a fundamentally different model, particularly one that integrates adaptive management into the planning process, seems well worth a try.

I. A BRIEF HISTORY OF PUBLIC LANDS MANAGEMENT

Federal public lands have played a preeminent role in the history of the United States. Their story arguably begins with the Land Ordinance of 1785,⁴ which established the public land survey system that was used to survey most of the land beyond the original thirteen colonies.⁵ That system, well-known to anyone who has spent time on public lands policy, defined the landmass in terms of six-mile square townships and thirty-six square-mile sections.⁶ But our federal public lands arguably owe their existence to the Northwest Ordinance of 1787⁷ because that legislation came to define the very structure of what would become the United States of America.⁸ In particular, the Ordinance fathered

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4. Journals of the Continental Congress, 1774-1789, at 375 (Worthington Chauncey Ford ed., 1904).
 5. The "rectangular survey system" established by the Land Ordinance was principally intended to lend order to the process of dividing the "western territory." See George W. Geib, *The Land Ordinance of 1785: A Bicentennial Review*, 81 IND. MAG. HIST. 1, 3 (1985).
 6. Journals of the Continental Congress, *supra* note 4, at 375-77. Townships are defined from a point called a meridian. So, for example, Township 6 South, Range 7 West of the 6th Principal Meridian describes a six-mile square parcel of land that begins thirty miles south and thirty-six miles west of the 6th meridian, and ends thirty-six miles south and forty-two miles west of the 6th Principle Meridian. The thirty-six square-mile sections in each township are numbered in zigzag fashion beginning with the northeast section. Each one-mile square section consists of 640 acres. Sections are typically divided into halves or quarters using a uniform description. So, for example, a complete legal description of a forty-acre tract of land might be, SW1/4 [of the] NW 1/4, Section 8, T.6 W, R. 7 S, 6th P.M. See *The Public Land Survey System*, U.S. GEOLOGICAL SURVEY, <https://perma.cc/2Y2D-F35J>.
 7. Northwest Territorial Ordinance of 1787, *reprinted in* 1 Federal and State Constitutions, Colonial Charters, and Other Organic Laws of the United States 429 (B. Poore ed., 2d ed. 1878). This ordinance was later reaffirmed during the First Session of the U.S. Congress and signed by George Washington. An Act to provide for the Government of the Territory North-west of the river Ohio, ch. 8, 1 Stat. 50, 51 (1789).
 8. The Northwest Ordinance chartered a government for the Northwest Territory and established a mechanism and timetable for admitting states within that territory to the United States. The 1785 rectangular survey system was used to demarcate these lands. See generally Douglass C. North & Andrew R. Rutten, *The Northwest Ordinance in Historical Perspective*,

the notion of westward expansion through the admission of new states rather than through the growth of existing states.⁹

Most of what are known today as public lands were acquired by purchase from or treaties with foreign nations, including, most prominently, the Louisiana Purchase of 1803,¹⁰ the 1846 Treaty with Great Britain that led to the establishment of the Oregon Territory,¹¹ the Treaty of Guadalupe Hidalgo (and the resulting Mexican Cession) of 1848,¹² and the Alaska Purchase of 1867.¹³ As the nation grew dramatically in size, private parties claimed the right to use the vast stretch of public domain land for private gain. Pressure on the Congress led to the enactment of many laws that offered private parties the opportunity to acquire title to public lands for a nominal fee, including the Homestead Act of 1862;¹⁴ the Mining Laws of 1866, 1870 and 1872;¹⁵ and the Timber and Stone Act of 1878.¹⁶ This was the era of disposal of federal public lands.¹⁷ While disposal continues—to a very limited extent—even to this day, its demise¹⁸ is perhaps best signaled by the passage of the General Revision Act of 1891, which gave the President the authority “to set aside and reserve . . . public lands wholly or in part covered with timber or undergrowth, whether of commercial value or not as public reservations.”¹⁹ Before its repeal in 1907, that

in ESSAYS ON THE ECONOMY OF THE OLD NORTHWEST 5 (David C. Klingaman & Richard K. Vedder eds., 1987).

9. An Act to provide for the Government of the Territory North-west of the river Ohio, ch. 8, 1 Stat. at 52.
10. Louisiana Purchase, ch. 1, 2 Stat. 245 (1803).
11. Joint Resolution concerning the Oregon Territory, res. 4, 9 Stat. 109 (1846).
12. 9 Stat. 922 (1848).
13. 15 Stat. 539 (1867).
14. 12 Stat. 392 (1862). In 1909, the Enlarged Homestead Act expanded grants on marginal lands used for dry-land farming to 320 acres. 43 U.S.C. §§ 218–20 (1970) (repealed 1976). In 1916, the Stock Raising Homestead Act of 1916 allowed grants of 640 acres for grazing lands. 39 Stat. 864 (1916).
15. 30 U.S.C. § 21 (2012); 30 U.S.C. § 35 (2012); 30 U.S.C. § 72 (2012).
16. 20 Stat. 89 (1878).
17. *See* SAMUEL T. DANA & SALLY K. FAIRFAX, FOREST AND RANGE POLICY 21–24 (Marian D. Proveano ed., 2d ed. 1980) (discussing the Homestead Act of 1862 and subsequent adjustments to this regime).
18. Leigh Raymond and Sally Fairfax make a compelling case that the “shift” to retention was far more fragmented than some commentators have suggested. *See* Leigh Raymond & Sally K. Fairfax, *Fragmentation of Public Domain Law and Policy: An Alternative to the “Shift to Retention” Thesis*, 39 NAT. RES. J. 649 (1999).
19. 26 Stat. 1095, 1103 (1891). After President Theodore Roosevelt had utilized the General Revision Act to withdraw large segments of public land in the West, Congress introduced legislation to repeal the General Revision Act and attached it to an appropriations bill. In early 1907, before signing the bill, Roosevelt signed “no fewer than thirty-eight executive orders,” adding 16 million acres of new reserves in a couple of days. CHARLES F. WILKINSON, *CROSSING THE NEXT MERIDIAN* 127 (1992). All told, Roosevelt’s tenure saw forest reserves grow from about 46 million acres to about 172.5 million acres—an amount not so different from the 193 million acres managed by the Forest Service today. Under President

law gave rise to the establishment of 159 national forest reserves encompassing nearly 151 million acres of national forest land—an area the size of California and Kansas combined.²⁰

Public land management and land use planning took a bit longer to take hold, but early notions of land management are evident in the Forest Service Organic Administration Act of 1897,²¹ which describes the purposes of forest reserves as “to improve and protect the forest . . . , [to secure] favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States.”²² Passage of that law coincided with the rise of the Progressive Era and the commitment of leaders like Theodore Roosevelt and Gifford Pinchot to scientific management of public land resources. Among the important principles that emerged from this movement was the idea that public lands should be retained in public ownership.²³ To be sure, the dominant philosophy was conservation and use of public land resources—and not preservation²⁴—but this policy shift away from disposition of the public lands was nonetheless profound.²⁵

Although in some cases it took many years, all of the major public land management agencies eventually received their own organic authority, and each of these authorities provide for comprehensive land management. The management of our national parks traces to the National Parks Organic Act of 1916, which establishes the park system “to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”²⁶ Changes to the law adopted in 1976 in-

Roosevelt, and Forest Service Chief Gifford Pinchot, the Forest Service grew by 148 million acres. *Id.* at 125. The General Revision Act is not the earliest example of setting aside lands for public purpose. That distinction probably goes to the act establishing the Yellowstone National Park in 1872. 16 U.S.C. § 21 (2012). The law creating Yosemite National Park also predates the General Revision Act by one year. *See* 16 U.S.C. § 46 (2012).

20. *See* SAMUEL P. HAYS, CONSERVATION AND THE GOSPEL OF EFFICIENCY 47 (1959).
21. 16 U.S.C. § 475, 30 Stat. 34 (1897), repealed by the National Forest Management Act, Pub. L. No. 94-579, 90 Stat. 2791 (1976).
22. 16 U.S.C. § 475, 30 Stat. 34 (1897).
23. *See* HAYS, *supra* note 20, at 69 (explaining the goal of “rational development” and its connection to the contentious means of “public ownership” of lands during the Roosevelt Administration).
24. In his compelling autobiography, Gifford Pinchot, the great Progressive Era leader and the first Chief of the Forest Service, notes with approval the preface to *The Use Book* (shorthand for *The Use of the National Forest Reserves*), which declares that “[t]he timber, water pasture, mineral, and other resources of the forest reserves are for the use of the people.” GIFFORD PINCHOT, BREAKING NEW GROUND 265–66 (Commemorative ed. 1998).
25. *See* HAYS, *supra* note 20, at 2–4 (describing the limited number of conservationists and how their vision of the “public interest” cut against the dominant practice of land disposition).
26. National Park Service Organic Act, Pub. L. No. 64-235, 39 Stat. 535 (1916) (codified as amended at 54 U.S.C. § 100101 (2014)). Congress recognized the growth of the national parks and created a unified management system with this law. Congress later reaffirmed that

structed the Director of Park Service to prepare and revise in a timely manner, “[g]eneral management plans for the preservation of each unit of the National Park System.”²⁷

Systemic management of national wildlife refuges took somewhat longer to evolve, arguably beginning with the enactment of the National Wildlife Refuge Administration Act of 1966,²⁸ which offers guidance for managing all areas in the wildlife refuge system “for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas.”²⁹ Comprehensive, organic authority to manage the wildlife refuge system, however, came much later, with the passage of the National Wildlife Refuge System Improvement Act of 1997.³⁰ As described by the Fish and Wildlife Service, this 1997 law provides, among other things, “for a strong and singular wildlife conservation mission for the Refuge System [and] a requirement that the Secretary of the Interior maintain the biological integrity, diversity and environmental health of the Refuge System.”³¹ To that end, the Secretary is required to prepare “a comprehensive conservation plan for each refuge or related complex of refuges . . . in the System.”³²

While public land use planning has touched these and other federally owned lands in some substantial fashion, the need for planning and the controversies that often accompany planning processes are most acute at the chief

purpose, stating that, “the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established.” Redwood Act Amendment, Pub. L. No. 95-250, § 101(b), 92 Stat. 163, 165 (1978) (codified as amended at 54 U.S.C. § 100101(b)(2) (2012)). Since 1916, Congress has not altered the mission of the Park Service as provided by the Organic Act, but has instead reaffirmed that the mission is both one of nature conservation and public use. See ROBERT B. KEITER, *TO CONSERVE UNIMPAIRED: THE EVOLUTION OF THE NATIONAL PARK IDEA* 15 (2013). For designating new parks, Congress originally mandated a “national significance” standard, and added criteria of “suitability” and “feasibility” through amendments in 1976 and 1998. See *id.* at 257–58; 54 U.S.C. § 100507(b)(2) (2012).

27. Pub. L. No. 94-458, 90 Stat. 1939, 1943 (codified as amended at 54 U.S.C. § 100502 (2014)).
28. Pub. L. No. 89-669, 80 Stat. 926 (1966) (codified as amended at 16 U.S.C. § 668dd (2012)).
29. *Id.*
30. Pub. L. No. 105-57, 111 Stat. 1253 (1997), 16 U.S.C. §§ 668dd, 668ee (2012); see also Robert L. Fischman & Vicky J. Meretsky, *Managing Biological Integrity, Diversity, and Environmental Health in the National Wildlife Refuges: An Introduction to the Symposium*, 44 NAT. RES. J. 931, 933 (2004). According to the authors, the Act “thrust[s] leadership upon the Service. In drafting refuge organic legislation that goes much further than any other federal public land charter to incorporate the insights of conservation biology, Congress asked the FWS to lead the nation in demonstrating twenty-first-century conservation.”
31. See *National Wildlife Refuge System Improvement Act of 1997, Public Law 105-57*, U.S. FISH & WILDLIFE SERV. (2009), <https://perma.cc/6MAS-B9YG>.
32. 16 U.S.C. § 668dd(e)(1)(A).

multiple-use agencies: the Forest Service and BLM.³³ Planning is arguably easier for agencies subject to dominant-use mandates such as the National Park Service, the Fish and Wildlife Service, and DOD.³⁴ Unlike the dominant-use agencies, however, the Forest Service and BLM must consider and plan for a wide range of potentially competing land uses and make difficult decisions, often fraught with political implications, about what uses to allow, and what uses to preclude, on the various lands under their jurisdiction.

Even under the best of circumstances these choices would be difficult. But the circumstances that currently beset our public lands are far more challenging than they have been in the past. Demands for consumptive and non-consumptive public lands resources have increased, and public pressure to follow the scientific principles of conservation biology³⁵ and landscape ecology³⁶ have in-

33. Other federal agencies with substantial public land management responsibilities include the Department of Defense (“DOD”), the Bureau of Reclamation, and the National Oceanic and Atmospheric Administration (“NOAA”). See 43 U.S.C. § 373(c) (2012) (defining Bureau of Reclamation lands); DEP’T OF DEFENSE, INSTRUCTION NO. 4715.03, NATURAL RESOURCES CONSERVATION PROGRAM (2011), <https://perma.cc/3J4H-3X4U>; NOAA’s *Office for Coastal Management*, NOAA, <https://perma.cc/9FTG-VCG7>.

34. The DOD manages nearly 11.4 million acres at sites in every state in the country. CAROL HARDY VINCENT ET AL., CONG. RESEARCH SERV., R42346, FEDERAL LAND OWNERSHIP: OVERVIEW AND DATA, tbls. 2 & 5 (2017), <https://perma.cc/6Q5P-DHBA>. In managing the land, the DOD’s primary goal is military access. Its mission is:

to guarantee DOD continued access to its land, air, and water resources for realistic military training and testing and to sustain the long-term ecological integrity of the resource base and the ecosystem services it provides DOD shall manage its natural resources to facilitate testing and training, mission readiness, and range sustainability in a long-term, comprehensive, coordinated, and cost-effective manner.

DEP’T OF DEFENSE, INSTRUCTION 4715.03, *supra* note 33, at 4. This broad mission can be seen in execution in the protocols for species inventory and monitoring that the DOD implements on lands like the 1.7 million acre Barry Goldwater Range, where the DOD has protocols in place for several species, including the desert tortoise. See U.S. GEOLOGICAL SURVEY, INVENTORY AND MONITORING PLAN FOR A SONARAN DESERT ECOSYSTEM: BARRY M. GOLDWATER RANGE – WEST 50 (2009), <https://perma.cc/7L3X-AJZ6>.

35. Conservation biology is the study of the biology of species, communities and/or ecosystems directly or indirectly affected by human activity, with the goal of establishing principles and tools for protecting and restoring biodiversity; as such, it is a science with a normative aspect. See, e.g., RICHARD B. PRIMACK, ESSENTIALS OF CONSERVATION BIOLOGY 6 (6th ed. 2014) (“Conservation biology [is] a normative discipline—that is, it embraces certain values and attempts to apply scientific methods to achieve those values.”); Michael E. Soulé, *What Is Conservation Biology?*, 35 *BIOSCIENCE* 727, 730–32 (1985) (describing “the normative postulates” of conservation biology).

36. Landscape ecology is “the study of the pattern and interaction between ecosystems within a region of interest, and the way the interactions affect ecological processes, especially the unique effects of spatial heterogeneity on these interactions.” William R. Clark, *Principles of Landscape Ecology*, 3 *NATURE EDUC. KNOWLEDGE* 34 (2010). Landscape ecology can also be defined as the study of spatial variation in landscapes, including the relationships between spatial patterns and processes of landscapes, and how human activity affects those patterns

creased even if they have not yet been fully embraced by the agencies. If this were not enough, climate change has exacerbated all of these problems and has forced agencies to recognize that historic climate patterns are no longer reliable for predicting future conditions. Stationarity, it seems, is dead.³⁷

Taken together, the Forest Service and BLM now manage nearly 460 million acres of land,³⁸ and Congress gave both agencies a comprehensive land use planning mandate in 1976. The following sections describe forest planning under the National Forest Management Act (“NFMA”) and planning on BLM public domain lands under its organic statute. This forms the backdrop for a critique of the current planning processes at the principal multiple-use agencies.

II. MODERN PLANNING AT THE MULTIPLE-USE AGENCIES

A. Land Use Planning at the United States Forest Service

As previously suggested, the history of land use planning on national forest lands begins with the National Forest Organic Administration Act of 1897. The Organic Act made clear that the only reasons for setting aside forest reserves were “to improve and protect the forest within the reservation, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States.”³⁹ Perhaps as importantly, the statute empowered the Secretary of the Interior “to make such rules and regulations and establish such service as will insure the objects of such reservations, namely, to regulate their occupancy and use and to preserve the forests thereon from destruction.”⁴⁰ Gifford Pinchot argued that this language conferred upon the Secretary “every necessary authority and power for [reserve] management by whatever methods he may deem best,”⁴¹ and Pinchot was more than happy to use this expansive view of the

and processes. See SHARON K. COLLINGE, *ECOLOGY OF FRAGMENTED LANDSCAPES* 8 (2009).

37. “Stationarity” is the idea that differences in an observed natural phenomenon occur within a fixed or constant range over time. See, e.g., P. C. D. Milly et al., *Stationarity is Dead: Whither Water Management?*, 319 *SCIENCE* 573, 573–74 (2008).
38. VINCENT ET AL., *supra* note 34, at tbl. 5.
39. 30 Stat. 35 (1897) (codified at 16 U.S.C. § 475 (1897)). In *United States v. New Mexico*, a badly split Supreme Court held that national forests were established only to “conserve the water flows and to furnish a continuous supply of timber. . . .” 438 U.S. 696, 707 (1978) (quoting the Congressional Record from debate regarding the Organic Administration Act of 1897, CONG. REC. 967 (1897)). According to the majority, construing the law to include a third purpose of “improv[ing] and protect[ing] forests” would be inconsistent with “the relatively narrow purposes for which national forests were to be reserved.” *Id.* at 709, 711.
40. 30 Stat. 35 (1897) (codified at 16 U.S.C. § 551 (1897)).
41. HAYS, *supra* note 20 (quoting U.S. DEP’T OF AGRIC., *YEARBOOK OF THE UNITED STATES DEPARTMENT OF AGRICULTURE* 297–98 (1899)).

agency's authority to authorize sustainable timber harvesting, as well as limited livestock grazing and mineral development.

Pinchot's leadership skills and the *esprit de corps* that he infused in the employees of the Forest Service afforded the agency a strong sense of mission and pride in its commitment to professionalism. That spirit, and the impetus it gives to scientific management, arguably carries forward to this day.⁴²

Nonetheless, Congress eventually enacted new laws that clarified and expanded the management mandate of the Forest Service even as it constrained the agency's discretion in how it managed our national forests. The key legislation governing national forest management includes the Multiple Use Sustained Yield Act of 1960 ("MUSYA"),⁴³ the Forest and Rangeland Renewable Resources Planning Act of 1974 ("RPA"),⁴⁴ and, most importantly, NFMA.⁴⁵

MUSYA announced, for the first time, that national forests should be managed for more than their timber and water resources. That statute requires that forests be administered for "outdoor recreation, range, timber, watershed, and wildlife and fish purposes," and MUSYA also requires the Forest Service to "develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained therefrom." "*Multiple use*" requires the Forest Service to manage national forests:

in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources . . . [and recognizing] that some of the land will be used for less than all of the resources . . . and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.⁴⁶

And "*sustained yield*" requires "the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the

42. See *id.* at 46–47 (describing the "spirit of public responsibility" Pinchot brought to the Forest Service); WILLIAM B. GREELEY, *FORESTS AND MEN* 66 (1951) ("Around the solid, realistic job of protecting and administering a hundred million acres of federal forests and ranges, Gifford Pinchot built an organization of three thousand people and inspired it with genuine zeal for public service.").

43. Pub. L. No. 86-517, 74 Stat. 215 (1960) (codified as amended at 16 U.S.C. §§ 528–531 (2012)).

44. Pub. L. No. 93-378, 88 Stat. 476 (1974) (codified as amended at 16 U.S.C. §§ 1601–1610 (2012)).

45. Pub. L. No. 94-588, 90 Stat. 2949 (1976) (codified as amended at 16 U.S.C. §§ 1600–1610 (2012)).

46. 16 U.S.C. § 531(a) (2012).

land.”⁴⁷ While not a planning directive per se, MUSYA sets a clear directive that can obviously constrain management choices on national forest lands.

The RPA serves a more general purpose. It requires the Secretary of Agriculture to prepare a decennial assessment of the nation’s renewable resources. This assessment, the most recent of which was conducted in 2010,⁴⁸ catalogs data, trends, and emerging influences on renewable resources. For example, the 2010 assessment focuses much attention on the threats posed by land development and climate change on renewable resources.⁴⁹ As part of the RPA assessment process, the Secretary of Agriculture is also required to “develop and maintain on a continuing basis a comprehensive and appropriately detailed inventory of all National Forest System lands and renewable resources.”⁵⁰

The 1974 RPA anticipated the passage of NFMA just two years later, and more specifically, that statute’s requirements for unit-level land use plans. Section 6 of NFMA lays out the requirements for “land and resource management plans” (“LRMPs”) on national forest lands.⁵¹ It begins by requiring the Forest Service to use “a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences.”⁵² The statute reinforces this approach by requiring that interdisciplinary teams prepare the plans based upon inventories of forest resources.⁵³ It further requires that the agency incorporate into these plans “the standards and guidelines” required by the statute.⁵⁴ NFMA requires a robust public participation process, including making plans available at least three months prior to adoption, presumably for purposes of soliciting and considering public comments, as well as for publicizing its proposals and holding public meetings or comparable public processes.⁵⁵ Plans must provide for multiple use and sustained yield, and determine forest management systems and timber harvesting levels. They must also be embodied in written materials, including maps.⁵⁶

Although the statute contemplates a single, integrated plan for each unit, the plan can appear in one document or a “set of documents.”⁵⁷ Plans must be

47. *Id.* § 531(b).

48. U.S. DEP’T OF AGRIC., FOREST SERV., GTR-WO-87, FUTURE OF AMERICA’S FORESTS AND RANGELANDS, FOREST SERVICE 2010 RESOURCES PLANNING ACT ASSESSMENT (2012).

49. *Id.* at xiii. The executive summary describes land development and climate change as two key themes and these issues are considered repeatedly throughout the full report.

50. 16 U.S.C. § 1603 (2012).

51. *Id.* § 1604.

52. *Id.* § 1604(b).

53. *Id.* § 1604(f)(3).

54. *Id.* § 1604(c).

55. *Id.* § 1604(d).

56. *Id.* § 1604(e), (f)(2).

57. *Id.* § 1604(f)(1).

revised from time to time to reflect significant changes in conditions (at least every fifteen years)⁵⁸ and must be prepared in accordance with EPA.⁵⁹

NFMA also requires the Forest Service to promulgate regulations that lay out the process for developing LRMPs, and that reflect the standards and guidelines required by the law.⁶⁰ The specific standards and guidelines set forth under the law are fairly vague and would not appear to constrain the agency in any significant way during the planning process. They require, for example, that the Forest Service identify the suitability of lands for resource management,⁶¹ obtain inventory data for various resources, provide for the diversity of plant and animal communities, and carry out research based upon “continuous monitoring and assessment in the field.”⁶² With regards to timber harvesting, the law requires the protection of soils, slopes, streams, and other water bodies,⁶³ and it further generally requires that trees slated for harvest will have reached the point where annual tree growth stops increasing and begins to decline.⁶⁴ Clear-cutting of timber is allowed, but only under specified conditions.⁶⁵

The Forest Service rules that governed the development of most of the extant forest plans were promulgated in 1982,⁶⁶ but those rules were replaced in 2012.⁶⁷ The 2012 rules did not fundamentally change the approach toward public land use planning, although they do modernize the program by focusing more attention on such matters as ecosystem protection⁶⁸ and adaptive management.⁶⁹ These rules are supplemented by a Forest Service Manual⁷⁰ and Forest

58. *Id.* § 1604(f)(5).

59. *Id.* § 1604(g)(1). NEPA requires, among other things, that agencies prepare an environmental impact statement to be included in every recommendation or report “on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C) (2012).

60. *See* 16 U.S.C. § 1604(g) (2012).

61. Separately, and more specifically, the law requires the agency “identify lands . . . [that] are not suited to timber production, considering physical, economic, and other pertinent factors.” *Id.* § 1604(k).

62. *See id.* § 1604(g)(2)(A)–(B), (3)(B)–(C).

63. *Id.* § 1604(g)(3)(E).

64. *Id.* § 1604(m). The technical term is “culmination of mean annual increment of growth,” and is defined by Forest Service rule 36 C.F.R. § 219.19 (2018).

65. *See* 16 U.S.C. § 1604(g)(3)(F) (2012).

66. *See* 47 Fed. Reg. 43,037 (1982).

67. 77 Fed. Reg. 21,162 (Apr. 9, 2012) (codified at 36 C.F.R. § 219 (2012)).

68. *See, e.g.*, 36 C.F.R. § 219.9(a) (2018). Protecting ecosystems is among the most challenging goals for public land managers. Although public land planning units are often quite large, encompassing well over one million acres in many cases, they rarely contain an entire intact ecosystem. These ecosystems will likely spill over onto private lands and lands managed by other government agencies, and coordinating with these other landowners is often difficult and contentious to the point that it is often not done very effectively.

69. *See id.* § 219.5(a). Adaptive management holds much promise and is a major theme of the planning reforms proposed here. As will be shown below, however, adaptive management is

Service Handbook⁷¹ that guide agency employees in complying with NFMA and the agency's rules.

Among the more important provisions in the Forest Service rules are those requiring the development of "standards" and "guidelines" for LRMPs. "Standards" are defined as "a mandatory constraint on project and activity decision-making, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements." "Guidelines" are "constraint[s] on project and activity decision-making that [allow] for departure from its terms, so long as the purpose of the guideline is met."⁷² While these provisions may seem reasonable on their face, they are the source of much of the complexity contained in land use plans, and, as I argue below in the critique of the planning process, the level of detail that they typically embrace is unnecessary and even counterproductive at this stage of the planning process.

B. *Land Use Planning at the Bureau of Land Management*

The General Land Office ("GLO") was established in 1812 as an arm of the Treasury Department for the purpose of selling and disposing of public domain lands and surveying the lands to facilitate their disposal.⁷³ The GLO was made part of the Department of the Interior in 1849.⁷⁴ In 1946, Congress merged the GLO and its field offices in the eleven Western states and Alaska, with the United States Grazing Service, to form BLM.⁷⁵

BLM has jurisdiction over the vast public domain, primarily found in the Western United States and its first real foray into management can be traced to 1934 with the passage of the Taylor Grazing Act.⁷⁶ As its name implies, the focus of the Taylor Act is on grazing, but its language suggests a somewhat broader authority, commanding the Secretary of the Interior "to promote the

fundamentally at odds with the current planning regimes of both the Forest Service and BLM because the planning process takes too many years to unfold and lacks the kind of metrics and monitoring that are essential to making adaptive management work.

70. See U.S. FOREST SERV., FOREST SERVICE MANUAL 1900 (2007), <https://perma.cc/S8ZP-KFUN>.
71. See U.S. FOREST SERV., FOREST SERVICE HANDBOOK (FSH) 1909.12 (2015), <https://perma.cc/5GQM-SFJ2>.
72. 36 C.F.R. § 219.7(e)(1)(iii)–(iv); see also FOREST SERVICE HANDBOOK, *supra* note 71, at 1909.12.22.13–22.14.
73. *National History*, BLM: HISTORY OF THE BLM, <https://perma.cc/MR2E-YMUX>.
74. *History of the Interior*, DOI: WHO WE ARE, <https://perma.cc/69HP-SKMZ>.
75. THE PUB. LANDS FOUND., HISTORICAL RECORD OF THE OFFICES, MANAGERS AND ORGANIZATIONS OF THE U.S. BUREAU OF LAND MANAGEMENT, GRAZING SERVICE, GENERAL LAND OFFICE AND O&C REVESTED LANDS ADMINISTRATION 1934 – 2012, at 14 (2012).
76. Pub. L. No. 73-462, 48 Stat. 1269 (1934) (codified as amended at 43 U.S.C. § 315 (2012)).

highest use of the public lands, pending its final disposal.”⁷⁷ At the same time, the Taylor Act made clear the expectation that the public domain lands managed by BLM would ultimately be subject to disposal. That all changed with the enactment of the Federal Land Policy and Management Act of 1976.⁷⁸ Contrary to the language in the Taylor Act, FLPMA establishes as federal policy that “the public lands be retained in Federal ownership, unless as a result of land use planning . . . it is determined that disposal of a particular parcel will serve the national interest.”⁷⁹ And planning is integral to BLM’s mission as outlined in FLPMA.

Planning under FLPMA essentially begins with an inventory of public land resources and their values.⁸⁰ The law requires that this inventory be prepared and “kept current so as to reflect changes in conditions and to identify new and emerging resource and other values.”⁸¹ In light of climate change, this obligation seems both prescient and essential. If done well, the resource inventory required by FLPMA establishes a baseline of information from which the agency and the public can ascertain over time how well our public domain lands are being managed.

Land use planning for public domain lands is expressly required by Section 202 of FLPMA. Under that section, BLM must “develop, maintain, and, when appropriate, revise land use plans which provide by tracts or areas for the use of the public lands.”⁸² The authority delegated to the agency is broad, but FLPMA lays out several guideposts for the agency to follow:

1. [U]se and observe the principles of multiple use and sustained yield . . . ;
2. [U]se a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences;
3. [G]ive priority to the designation and protection of areas of critical environmental concern;
4. [R]ely, to the extent it is available, on the inventory of the public lands, their resources, and other values;
5. [C]onsider present and potential uses of the public lands;
6. [C]onsider the relative scarcity of the values involved and the availability of alternative means (including recycling) and sites for realization of those values;

77. 43 U.S.C. § 315(a) (2012). The Taylor Act seeks to accomplish this goal by authorizing Interior to establish grazing districts,” with a goal of “preserv[ing] the land and its resources from destruction or unnecessary injury, [and] provid[ing] for the orderly use, improvement, and development of the range.”

78. Pub. L. No. 54-579, § 102 (1976) (declaring the policy that “public lands be retained in Federal ownership”).

79. 43 U.S.C. § 1701(a)(1) (2012).

80. *See id.* § 1711(a).

81. *Id.*

82. *Id.* § 1712(a).

7. [W]eigh long-term benefits to the public against short-term benefits;
8. [P]rovide for compliance with applicable pollution control laws . . . ;
9. . . . [C]oordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of the States and local [and tribal] governments.⁸³

The multiple-use, sustained yield mandate is repeated at Section 302(b) of FLPMA,⁸⁴ but the law plainly contemplates that planning will exclude certain uses from particular tracts of land.⁸⁵ For example, Section 603 of FLPMA requires BLM to review roadless areas and identify which of these areas have wilderness characteristics.⁸⁶ Lands so identified must be managed “so as not to impair the suitability of such areas for preservation as wilderness” until Congress decides otherwise.⁸⁷

FLPMA also requires BLM “take any action necessary to prevent the unnecessary or undue degradation of the lands.”⁸⁸ While the meaning of this phrase has been the subject of legal and scholarly debate,⁸⁹ it provides, at a minimum, a powerful tool for an agency official willing to wield it. Finally, and importantly, FLPMA also requires BLM to ensure opportunities for public participation in the development of land use plans.⁹⁰

83. *Id.* § 1712(c).

84. *See id.* § 1732(a).

85. *See id.* § 1712(e). FLPMA defines “multiple use” to mean “the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people.” *Id.* § 1702(c).

86. *Id.* § 1782(a).

87. *Id.* § 1782(c).

88. *Id.* § 1732(b).

89. The legal debate has largely focused on the impact of hardrock mining on the public lands, and two conflicting opinions by successive Solicitors at the Department of the Interior over the meaning of the phrase. In 1999, Interior Solicitor John Leshy issued an opinion to the effect that activities that “irreparably harm” public lands meet the unnecessary and undue degradation standard. *See Regulation of Hardrock Mining*, Dep’t of the Interior M. Opp. 36,999, at 2, 7 (Dec. 27, 1999). Regulations implementing a “substantial irreparable harm” standard were subsequently adopted by BLM in 2000. *See* 65 Fed. Reg. 69,998 (Nov. 21, 2000). In 2001, following the election of George W. Bush, the new Solicitor, William G. Myers, III, issued an opinion rejecting the reasoning in the earlier opinion and effectively ordered the repeal of the 2000 regulations. *Surface Management Provisions for Hardrock Mining*, Dep’t of the Interior M. Opp. 37,007, at 8–15 (Oct. 23, 2001). The current rules appear to render the phrase “unnecessary or undue degradation” superfluous since it applies only where other provisions of law are violated. *Cf.* 43 C.F.R. § 3809.415 (2013); *see also* Kathryn M. Mutz, *Mineral Development*, in KATHRYN M. MUTZ, GARY C. BRYNER, & DOUGLAS S. KENNEY, *JUSTICE AND NATURAL RESOURCES* 317–19 (2002) (describing changes to BLM’s interpretation of the “unnecessary or undue degradation” language in FLPMA).

90. 43 U.S.C. § 1712(f).

As with the Forest Service, the actual process for developing land use plans is set out in BLM's planning rules,⁹¹ and in BLM's Land Use Planning Manual⁹² and Handbook.⁹³ While the Handbook repeatedly states that planning should be carried out over multiple scales,⁹⁴ BLM defaults to planning for "the geographic area associated with a particular field office,"⁹⁵ which tends to be understood as the resource management area ("RMA") level. Hence, BLM typically describes its plans as resource management plans or "RMPs".⁹⁶ Like LRMPs on national forest lands, RMPs are typically prepared alongside an environmental impact statement ("EIS") as required by NEPA.⁹⁷ Thus, a draft EIS accompanies a draft RMP and is developed with opportunities for public comment and participation, followed by a final EIS and a proposed RMP with further opportunities for public input. This ultimately leads to a record of decision ("ROD") and a final approved RMP.⁹⁸

While the Handbook provides agency personnel with step-by-step instructions for developing land use plans, an overview of BLM's land use planning process can best be gleaned from Appendix C, which describes the program-specific and resource-specific decisions that the agency must make in the context of planning. Broadly speaking, the Handbook provides that land use plans should establish "desired outcomes" and determine "allowable uses

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91. 43 C.F.R. §§ 1601, 1610 (2017). BLM published final rules designed to adapt existing rules to modern pressures. *See* 81 Fed. Reg. 89,580, 89,581 (Dec. 12, 2016). However, those rules were rejected by the Congress under the terms of the Congressional Review Act of 1996, 5 U.S.C. § 801 (2012), following the election of Donald Trump. 82 Fed. Reg. 60,554 (Dec. 21, 2017).
 92. BUREAU OF LAND MGMT., MS 1601, REL. 1-1666, LAND USE PLANNING MANUAL (2000), <https://perma.cc/BD67-RDKC>.
 93. BUREAU OF LAND MGMT., H-1601, REL. 1-1693, LAND USE PLANNING HANDBOOK (2005), <https://perma.cc/VRS7-MZF9> [hereinafter "BLM HANDBOOK"].
 94. *Id.* at 14 ("Planning at multiple scales may be necessary to resolve issues for a geographic area that is different from the planning area for the RMP. . . . If broad-scale (regional) analysis identifies issues . . . that cross BLM field office boundaries or other jurisdictional boundaries, desired outcomes and management actions . . . may be described and addressed in the context of the broader landscape."); *see also id.* at app. C pp. 2–3, app. D pp. 8–9.
 95. *Id.* at 14; 43 C.F.R. § 1610.1(b) (2017) ("A resource management plan shall be prepared and maintained on a resource or field office area basis, unless the State Director authorizes a more appropriate area.").
 96. Appendix F of the BLM Handbook describes the standard format for plans in the context of RMPs. *See* BLM HANDBOOK, *supra* note 93, at app. F. The BLM Handbook also notes that "[I]and use plans include both resource management plans (RMPs) and management framework plans (MFPs)." *Id.* at 1. The term "management framework plans" simply describes plans developed by BLM prior to the establishment of the RMP framework. *See Planning and NEPA*, BLM.GOV, <https://perma.cc/9KDE-Z7B3>.
 97. *See* 42 U.S.C. § 4332(2)(C) (2012) (describing EIS requirements for "major Federal actions significantly affecting the quality of the human environment").
 98. A flow chart in the BLM Handbook describes the planning process in terms of the NEPA documents and the RMP. BLM HANDBOOK, *supra* note 93, at 17.

and actions to achieve outcomes.”⁹⁹ These outcomes and determinations are supposed to be described for myriad public lands resources including, air, soil and water, vegetation, special status species, fish and wildlife, wild horses and burros, cultural resources, paleontology, visual resources, wildland fire management, wilderness characteristics, and cave and karst.¹⁰⁰ The uses that BLM must consider include forestry, livestock grazing, recreation and visitor services, trails and travel management, lands and realty, and various types of mineral resources.¹⁰¹ Although the BLM Land Use Planning Handbook does not speak specifically to “standards and guidelines” in the same way as the Forest Service rules and Handbook, the approach is similar. So, for example, BLM land use plans are supposed to:

describe how these public lands will be managed to become as productive as feasible for livestock grazing, including a description of possible grazing management practices . . . , [and] changes in seasons of use and/or stocking rates [and] in addition, identify guidelines and criteria for future allotment-specific adjustments in the amount of forage available for livestock, season of use, or other grazing management practices.¹⁰²

What is supposed to emerge from all of this is a detailed and complex plan designed to guide project-level decisions over many years, even though the details of specific projects are not known and may never even come to pass. BLM RMPs can, of course, be amended or revised,¹⁰³ but many plans remain in place for two decades or more.¹⁰⁴

99. *Id.* at app. C p. 1.

100. *Id.* at app. C pp. 2–13. Appendix D also provides for the use of social science to inform land use planning.

101. *Id.* at app. C pp. 13–26.

102. *Id.* at app. C pp. 14–15.

103. *Id.* at 44 (describing plan maintenance, amendments, and revisions).

104. For example, BLM’s Northeast Area RMP in Colorado was initially completed in 1985. *See* U.S. DEP’T OF THE INTERIOR, BUREAU OF LAND MGMT., NORTHEAST RESOURCE AREA RESOURCE MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT (1985). In 2015, BLM announced that it would prepare a new Eastern Colorado RMP that would replace both this RMP and the Royal Gorge Resource Area RMP, which was approved in 1996. *See* Notice of Intent to Prepare the Eastern Colorado Resource Management Plan and an Associated Environmental Impact Statement for the Royal Gorge Field Office, Colorado, 80 Fed. Reg. 31,063 (June 1, 2015). As of the time of this Article, that planning process remained ongoing. *See Colorado Resource Management Plans, Amendments, Revisions & Evaluations*, BUREAU OF LAND MGMT., <https://perma.cc/9kmm-flpw>. The San Juan/San Miguel RMP was also completed in 1985. *See* U.S. DEP’T OF THE INTERIOR, BUREAU OF LAND MGMT., SAN JUAN/SAN MIGUEL PLANNING AREA RESOURCE MANAGEMENT PLAN (1985). BLM released a draft revised RMP for this area as part of the revised plan for the Uncompahgre Field Office RMP in 2016. *See* Notice of Availability of the Draft Resource Management Plan and Draft Environmental Impact Statement for the Uncompahgre

The BLM Handbook also addresses the problem of monitoring the implementation and effectiveness of the plan, evaluating whether the plan is achieving the established goals, and adapting the plan and management program to address the issues identified during the evaluation process.¹⁰⁵ This may include amending the plan and engaging in further NEPA compliance.¹⁰⁶ Unfortunately, BLM does not actually carry out much post-plan monitoring, leaving little hope for timely identification and diagnosis of the inevitable problems that arise with plans. Adaptive management under these circumstances becomes a hollow promise.

III. PROBLEMS WITH THE PUBLIC LAND PLANNING PROCESSES

A. *The Structural Problem*

In 1890, Major John Wesley Powell, the great American explorer, published a map of the Western United States to support his proposal to divide the Western states along watershed boundaries.¹⁰⁷ Looking at Powell's map today, it is not hard to appreciate Powell as our first landscape ecologist. While Powell was focused primarily on finding ways to make western irrigation more efficient, it was not lost on him that watersheds respected landscapes and that it is easier to manage these landscapes if they are contained in a single coherent political unit. Powell's approach, of course, did not carry the day, and the west was carved up into states with boxy shapes that largely ignore the area's natural geography. Although both the Forest Service and BLM have made some effort to consider geography when designing resource management areas, the inclination to identify compact units with straight-line boundaries (which also tend to respect political borders) has proved difficult to break.

Field Office, Colorado, 81 Fed. Reg. 35,793, 35,794 (June 3, 2016). BLM anticipates issuing an approved RMP for this area in spring 2019. See *Uncompahgre Field Office Resource Management Plan*, BUREAU OF LAND MGMT., <https://perma.cc/T7S3-7A5P>.

105. BLM HANDBOOK, *supra* note 93, at 32–37.

106. *Id.* at 37–42.

107. U.S. GEOLOGICAL SURVEY, 11TH ANNUAL REPORT OF THE U.S. GEOLOGICAL SURVEY, PART II, PL. LXIX (1891).



While it may be unrealistic to think that public land management agencies could simply ignore political boundaries in carrying out land use planning, it seems equally implausible that trained scientists employed by the agencies could be blind to the ramifications of unit-level planning choices for the larger landscape or ecosystem. As discussed in more detail below, BLM took an important step in the direction of landscape-level planning by preparing “rapid ecoregional assessments” for the major ecoregions throughout the western United States.¹⁰⁸ These assessments should help move the federal government toward Powell’s vision of using natural boundaries to better understand western geography.

B. *The Planning Process Problem*

The geographical problem aside, there is an inherent logic to the planning processes followed by the Forest Service and BLM. They inventory, they assess, they plan, and then, finally, they monitor and adapt. The problem with this model, as currently conceived, is that the middle two steps—assessing and

108. According to BLM, these rapid ecoregional assessments (“REAs”) “seek to identify important resource values and patterns of environmental change that may not be evident when managing smaller, local land areas. REAs look across all lands in an ecoregion to identify regionally important habitats for fish, wildlife, and species of concern. REAs then gauge the potential of these habitats to be affected by four overarching environmental change agents: climate change, wildfires, invasive species, and development.” *Rapid Ecoregional Assessments (REAs)*, *Landscape Approach Data Portal*, BLM, <https://perma.cc/QSS9-QKNJ>.

planning—are unnecessarily complex and take an inordinate amount of time and resources to complete, and the fourth step—monitoring and adapting—is given short shrift if it is carried out at all.

To be sure, much of what is now part of the unit-level plans prepared by both the Forest Service and BLM will still have to be addressed at some point in the decision-making process. But it is inappropriate and inefficient to address issues that can be better and more meaningfully addressed at a later stage in the process, closer in time to the proposed action.

This problem can best be understood with an example. Suppose that BLM is preparing an RMP for a management unit known to have high potential for oil and gas development. Parties interested in the development of the plan on all potential sides of the issue will want to know: (1) where BLM proposes to allow oil and gas development, and (2) where such development might be foreclosed due to other conflicting uses. Obviously, such development will be precluded by law from certain protected areas such as wilderness areas, but other areas that are not legally protected might also warrant protection under the plan if they are deemed more valuable for incompatible uses such as recreation or wildlife conservation. In those areas that are left open to oil and gas development, interested parties may still want to know what restrictions might be imposed on such development, and BLM's current process typically addresses these issues in the RMP.¹⁰⁹ But these are not issues that need to be resolved at the unit planning stage. Rather, they are better resolved by engaging in a lower level of planning that focuses *only* on a particular resource like oil and gas, or perhaps more appropriately, at the project level when the agency *actually* proposes to authorize oil and gas leasing or development.

During the Obama Administration BLM began to experiment with “master leasing plans” (“MLPs”),¹¹⁰ but as with unit-level plans, BLM's limited experience with these plans illustrated a tendency on the part of the agency to do more than necessary at that stage of the process. BLM implemented MLPs as part of a reform to create a “deliberative process” that worked with stakeholders, considered impacts to protected areas, and used an adaptive management framework.¹¹¹ In 2016, Secretary of the Interior Sally Jewell described an

109. See BLM HANDBOOK, *supra* note 93, app. C p. 24 (describing “condition objectives” of management as they relate to best practices and grants of waivers/exemptions).

110. BUREAU OF LAND MGMT., IM 2010-117, OIL AND GAS LEASING REFORM LAND USE PLANNING AND LEASE PARCEL REVIEWS, s.II (2010), <https://perma.cc/SZU5-M279>; see, e.g., BUREAU OF LAND MGMT., RECORD OF DECISION AND MOAB MASTER LEASING PLAN/APPROVED RESOURCE MANAGEMENT PLAN AMENDMENTS FOR THE MOAB AND MONTICELLO FIELD OFFICES (2016), <https://perma.cc/ZC45-SHXL>. The Trump Administration has since abandoned the policy of issuing MLPs. For an example of an MLP, see BUREAU OF LAND MGMT., IM 2018-034, UPDATING OIL AND GAS LEASING REFORM – LAND USE PLANNING AND LEASE PARCEL REVIEWS (2018), <https://perma.cc/T8SK-R7CR>.

111. IM 2010-117, OIL AND GAS LEASING REFORM, *supra* note 110.

MLP as a “blueprint for balancing energy development with conservation and outdoor recreation.”¹¹² An MLP would ideally look holistically at the prospects for oil and gas development in those areas open for leasing under the unit-level plan, and would identify and assess strategies for promoting smart and efficient development opportunities. For instance, the MLP for Moab, Utah, allowed for oil and gas development while protecting national parks, recreation areas, and Native American cultural sites.¹¹³ Where oil- and gas-bearing formations lend themselves to horizontal drilling, for example, the MLP might identify preferred sites for well pads that would maximize production opportunities and minimize environmental impacts.¹¹⁴ The MLP might also identify infrastructure needs such as pipelines, power lines, and roads, and how oil and gas fields might be designed to minimize the need and extent of these facilities.

More specifically, the MLP might look at the need for gathering lines to capture waste gas from the area.¹¹⁵ It might also consider the potential for capturing that waste gas and using it to power a local power generation facility. If additional power is still needed, it might consider other efficient ideas for meeting power needs, such as a local solar or wind facility. Further, it might consider how to manage wastewater most efficiently and effectively. What an MLP should *not* try to do is to determine what kinds of restrictions or “standards and guidelines” should be imposed on individual oil and gas well permits. These issues can and should be addressed if and when the agency chooses to make particular tracts available for leasing and/or an application for a permit to drill (“APD”) is received by the agency.¹¹⁶

The logic of this incremental approach to the planning process becomes clear when one considers the Supreme Court’s decision in *Ohio Forestry Association v. Sierra Club*.¹¹⁷ In that case, the Court held that a challenge by the Sierra Club to a forest plan that left 126,000 acres of the Wayne National Forest open to logging was not ripe for review. The Court reasoned that the Forest Service could not actually allow logging to go forward without making a subsequent decision to sell timber on a particular tract of land.¹¹⁸ That later decision might

112. Sally Jewell, *The Next 100 Years of Conservation*, MEDIUM (Apr. 19, 2016), <https://perma.cc/X38M-2XQ9>.

113. See Scott Streater, *Key Obama-Era Leasing Reform to Get the Ax*, E&E NEWS (Oct. 27, 2017), <https://perma.cc/QW4B-KNKS>.

114. See BUREAU OF LAND MGMT., H-1624-1, PLANNING FOR FLUID MINERAL RESOURCES, at V-3 to V-6 (2013), <https://perma.cc/S5XC-JCZW> (describing potential resource protection measures).

115. See *id.* at V-5 (describing application of new technologies to capture emissions).

116. See IM 2010-117, OIL AND GAS LEASING REFORM, *supra* note 110, at s.III (describing more detailed requirements for site-specific leasing environmental analysis).

117. 523 U.S. 726 (1998).

118. See *id.* at 733–37.

never happen, but if it did, it would be subject to full NEPA compliance and a final decision that could then be challenged by the Sierra Club.

If decisions such as authorizing oil and gas development or selling timber are not ripe for judicial review because they cannot proceed without a further decision, then courts are likely to follow the *Ohio Forestry* precedent and deny the right to challenge such decisions at the unit planning level. But if the choices made at the unit planning level are truly not ripe for review, and if making those choices unduly complicates the unit-level planning process, then the agency cannot justify trying to deal with these issues at the unit level.

This proposed reorientation of the planning process should allow some level of streamlining, and, as described more fully below, will allow for more meaningful public engagement in the planning process. But the most important reasons for rethinking public land use planning along these lines are to provide land management agencies with the capacity to do certain things they are either not doing or are not doing well. These include, most importantly, landscape-level planning, monitoring with smart metrics, and committing to timely adaptation when monitoring shows that the plans are not achieving their objectives.

To be clear, while the approach I advocate streamlines the early layers of planning, it may require more robust analysis at later stages. The goal, however, is to conduct the analysis at the appropriate time to help achieve efficiencies in the review and decision-making processes. NEPA compliance will still be necessary at each layer of planning, but it can and should be conducted more efficiently. “Tiering,”¹¹⁹ for example, can be used to avoid premature evaluation of questions that are not ripe for consideration. I now turn to a more fulsome description of what I call the “layered planning” approach.

IV. THE PATH FORWARD – LAYERED PLANNING

The problems with the current planning process suggest an obvious path forward: simplify unit-level planning, engage in more robust resource or activity-level planning, and, to the extent possible, avoid site-specific assessment until a particular project or action is proposed for a particular site. I flesh out this approach in detail below with one important addition. For at least the past decade, public land management agencies have recognized the importance of landscape-level planning.¹²⁰ Thus far, however, neither BLM nor the Forest Service has done much to implement a distinct, landscape-level planning process. Their reluctance undoubtedly stems, at least in part, from the fact that the current unit-level planning process is so cumbersome that it must seem impractical to actually add yet another layer of planning. But my proposal for “layered planning” adds a landscape-level layer at the outset of the planning process. It is made possible largely because, under my approach, the next layer of planning

119. 40 C.F.R. § 1508.28 (2018).

120. Cf. BLM HANDBOOK, *supra* note 93 (describing planning at different geographic scales).

(at the unit-level) would be greatly simplified, thereby freeing up significant resources. Figure 2 below offers a graphic illustration of my proposed new planning framework.

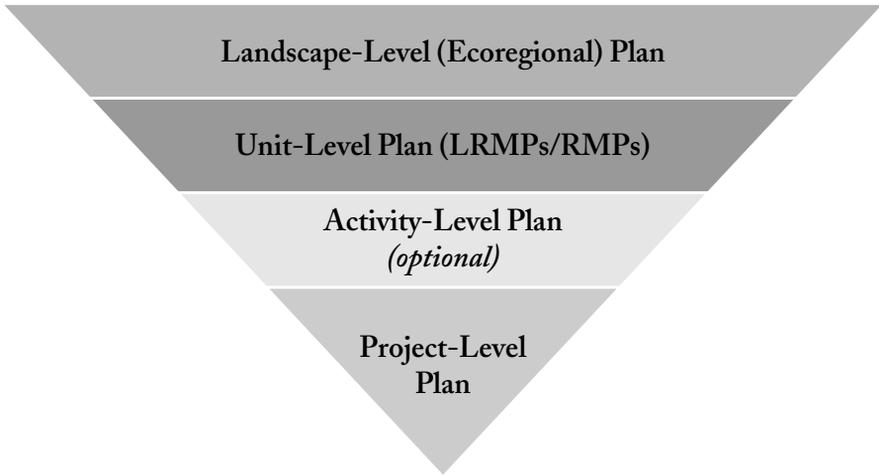


FIGURE 2: THE LAYERED PLANNING MODEL

The inverted triangle has four layers to represent four proposed levels of planning:

1. Landscape-level or ecoregional planning;
2. Unit-level planning (LRMPs and RMPs);
3. Activity-level (or resource-level) planning; and
4. Project-level planning.

The upper layers are wider, signifying a much broader scale, but shallower, indicating less depth. By contrast, the lower layers are narrower but deeper. The proposed “layered planning” framework describes a planning system that occurs on multiple scales to reflect the different objectives of the agency at each planning level. Each succeeding layer must be compliant with the layer above it, and each will generally have a narrower geographic focus even as it offers greater detail.

These different planning levels, which are described in more detail below, reflect the unique decisions that face the agency at each level. While at first blush adding additional layers to the current planning process might appear to impose substantial new burdens on the agency, the goal of layered planning is to narrowly define the Forest Service and BLM’s responsibilities at each level so as to simplify the planning process at each stage and thereby minimize the impact on agency resources. If carefully designed and implemented, the Forest Service and BLM will also find it easier to adapt their landscape-level and unit-level plans to respond to new information developed during the monitoring and

evaluation process, because the plans themselves will be so much simpler. An important additional benefit of the proposed layered planning approach will be to increase transparency and make it easier for the public to participate meaningfully in the planning process. I now turn to a more detailed description of each of the layers that appear in Figure 2.

A. Landscape-Level Planning

1. The Legal Argument for Landscape-Level Planning

Before describing the entirely new layer of planning that I propose, it is fair to ask whether BLM and Forest Service even have the authority to engage in planning at the landscape level. They plainly do. Section 202(c)(9) of FLPMA requires BLM to:

coordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of the States and local governments within which the lands are located, . . . and of or for Indian tribes by, among other things, considering the policies of approved State and tribal land resource management programs¹²¹

Thus, FLPMA commands BLM to coordinate planning with other relevant agencies. Likewise, Section 6 of NFMA requires the Forest Service to “develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System, *coordinated with the land and resource management planning processes of State and local governments and other Federal agencies.*”¹²² Implicitly, the coordination called for by both FLPMA and NFMA becomes necessary when resources and impacts spill over to lands beyond the jurisdiction of any single agency, and these spillover effects quite naturally occur over an entire landscape. The most logical response for addressing the coordination mandate is through a modest, integrated planning process that allows federal and non-federal agencies to better see the landscape holistically, and thereby identify appropriate management policies that can take account of what other agencies are doing.

In addition to FLPMA and NFMA, BLM and the Forest Service have a sufficiently broad environmental mandate under NEPA,¹²³ and perhaps also the

121. 43 U.S.C. § 1712(c)(9) (2012).

122. 16 U.S.C. § 1604(a) (2012) (emphasis added). NFMA also recognizes that forest plans can be contained in a single document or in a “set of documents,” thus opening the way for multi-level planning. *Id.* § 1604(f)(1).

123. 40 C.F.R. § 1508.7 (describing cumulative impacts over time); *id.* § 1508.8(b) (“Indirect effects . . . related to induced changes in the pattern of land use, population density or

Endangered Species Act,¹²⁴ to support a decision to prepare plans that address coordinated management over a landscape or ecoregion.

2. Landscape-Level Plans

The idea for landscape-level planning comes from the relatively new science of landscape ecology, which looks at “the pattern and interaction between ecosystems within a region of interest, and the way the interactions affect ecological processes.”¹²⁵ From a public land management perspective, the most important patterns and interactions revolve around ecosystems, and patterns and interactions among plant and animal species are best understood by looking holistically at a landscape level. Climate change makes it especially important to appreciate patterns and interactions among species and ecosystems, because these may be shifting in ways that land managers must recognize and document in order to adapt their plans to those changing conditions.

Because unit plans tend to follow political and jurisdictional boundaries (not ecological boundaries), unit-level planning can easily overlook patterns and interactions that may be important to managing resources at the unit level. As Major Powell’s map illustrates, for example, watershed boundaries rarely respect public land planning units. Likewise, wildlife species that follow seasonal migration corridors, often require land resources that extend well beyond public land unit boundaries. Landscape planning can also identify rights-of-way corridors, industrial zones, and urban corridors in ways that can better inform both public and private land management. A modest landscape-level planning process is thus critical to identifying the best strategies for managing resources within smaller planning units.

Landscape-level planning nonetheless poses significant challenges, primarily because it requires planners to look beyond their own jurisdictional boundaries. In particular, it arguably takes land managers out of their comfort zone by mandating coordination and cooperation with state and local agencies, other federal agencies, and private parties who have interests located within the landscape, even where relationships among those parties may be difficult. Still, landscape-level planning, as proposed here, need not be particularly complex. It might include, for example, an inventory of resources, a rough outline of goals and objectives for the region, and a set of metrics that can be monitored to determine whether the goals and objectives are being met. While public land

growth rate, and related effects on . . . natural systems, including ecosystems.”); *id.* § 1508.25(a)(2) (“Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts.”).

124. 16 U.S.C. § 1531(b) (2012) (“The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.”).

125. Clark, *supra* note 36, at 34.

managers cannot control choices made by other land owners and managers, they *can* inform other parties about positive or negative trends, and they can coordinate responses among willing participants. Furthermore, they can adjust their own choices in ways that compensate for problems identified on other lands within the larger landscape, and public land managers will only know about these problems if they are able to look at the landscape holistically. If, for example, a public land manager knows that habitat for one or more keystone species has been or is being severely degraded outside the planning unit, that manager can engage in more aggressive conservation efforts to protect that habitat *within* the planning unit.

During the Obama Administration, both the Forest Service and the Department of the Interior committed to taking landscape-level considerations into account during the unit-level planning process, even as they have seemed reluctant to actually engage in landscape-level planning.¹²⁶ For example, Secretarial Order 3330, which focused on improving mitigation policies on public lands, contemplated the *incorporation of “landscape-level strategies to address [the] impacts” of climate change.*¹²⁷ Similarly, Secretarial Order 3289A1 focused on “the impacts of climate change on America’s water, land, and other natural and cultural resources,” and provided that because of those impacts, “*management responses to such impacts must be coordinated on a landscape-level basis.*”¹²⁸

The Trump Administration revoked Secretarial Order 3330,¹²⁹ and thus far has shown little interest in improving BLM’s planning process, either generally or as applied to landscape-level issues. Nonetheless, some degree of landscape-level planning seems inevitable over the long term: it makes such good policy sense, especially if the agencies are able to reduce complexity at the unit-

126. The 2012 Forest Service planning rule, for example, claims to adopt a “planning rule framework . . . [that] supports an integrated approach to the management of resources and uses, [and] incorporates the landscape-scale context for management.” 77 Fed. Reg. 21,161, 21,162 (Apr. 9, 2012) (to be codified at 36 C.F.R. pt. 219). Landscape-scale considerations are mentioned repeatedly throughout the preamble to the rule and even in the rule itself, but the rules do not require actual planning at the landscape scale. Rather, it requires some consideration of the broader landscape in the context of unit-level planning. *Id.* The BLM planning rule, which was finally promulgated in 2016, but which was then rejected by the Congress pursuant to the Congressional Review Act, mentions some variant of “landscape-scale planning” approximately fifty-two times in the preamble to the final rule. Yet the phrase never appears even once in the rule itself. *See* 81 Fed. Reg. 89,580 (Dec. 12, 2016) (to be codified at 43 C.F.R. pt. 1600).

127. DEP’T OF THE INTERIOR, SECRETARIAL ORDER NO. 3330, IMPROVING MITIGATION POLICIES AND PRACTICES OF THE DEPARTMENT OF THE INTERIOR, § 2 (2013) (emphasis added).

128. DEP’T OF THE INTERIOR, SECRETARIAL ORDER NO. 3289A1, ADDRESSING THE IMPACTS OF CLIMATE CHANGE ON AMERICA’S WATER, LAND, AND OTHER NATURAL AND CULTURAL RESOURCES, § 3.c. (2012) (emphasis added).

129. DEP’T OF THE INTERIOR, SECRETARIAL ORDER NO. 3349, AMERICAN ENERGY INDEPENDENCE, § 4.a. (2017).

level planning stage and thereby free up resources for things like landscape-level planning.

Leaving aside the question of whether BLM and the Forest Service are committed to landscape-level planning, I applaud BLM for having taken an important first step toward this goal by developing a series of fifteen REAs that encompass ecosystems throughout the western United States and Alaska.¹³⁰ These detailed assessments appear to meet the requirement for a comprehensive inventory of resources within each ecoregion. Moreover, since they simply involve data collection, they are not by themselves “federal actions” that might trigger an obligation to comply with NEPA.

BLM intends that REAs will “identify important resource values and patterns of environmental change that may not be evident when managing smaller, local land areas.”¹³¹ They achieve this by “look[ing] across all lands in an ecoregion to identify regionally important habitats for fish, wildlife, and species of concern.”¹³² More specifically, BLM has identified eight important goals for REAs:

1. Identify and answer important management questions;
2. Document key resource values (referred to as conservation elements), with a focus on regionally significant terrestrial habitats, aquatic habitats, and species of concern;
3. Describe influences from four environmental change agents: climate change, wildfire, invasive species, and development;
4. Describe places where management decisions occur or where resource values have been identified;
5. Assess the collective effects of projected trends;
6. Identify and map key opportunities for resource conservation, restoration, and development;
7. Identify science gaps and data needs; and
8. Provide a baseline to evaluate and guide future management actions.¹³³

Unfortunately, as currently conceived, REAs are not used to make landscape-level planning decisions. They might identify important wildlife habitats or corridors, but they do not actually provide for their protection. Moreover, while these REAs are intended to “inform resource management,” they do not bind resource managers. And, most importantly, they are not built to be adaptive. For these REAs to become something more than inventories and serve a

130. See *Landscape Approach Data Portal*, BUREAU OF LAND MGMT., <https://perma.cc/SFL8-4KUY>.

131. *Rapid Ecoregional Assessments*, BUREAU OF LAND MGMT., <https://perma.cc/Q7ZY-6EJN>.

132. *Id.*

133. See, e.g., DEP'T OF THE INTERIOR, FINAL REPORT, CENTRAL BASIN AND RANGE RAPID ECOREGIONAL ASSESSMENT 24 (2013), <https://perma.cc/3Y2W-UQTC>. BLM, under the Trump Administration, removed this list of goals from its website. See *A Landscape Approach*, BUREAU OF LAND MGMT., <https://perma.cc/C3JM-YQB4>.

planning function they will need to incorporate goals, metrics, and monitoring requirements sufficient to allow land managers to determine whether conditions are improving or deteriorating from a baseline. And, of course, if conditions are deteriorating, the plans will have to be adapted. Adding metrics and monitoring and committing to adaptation will trigger a requirement for NEPA compliance, but these are critical choices that warrant public scrutiny and a thoughtful process.¹³⁴

Landscape-level plans need not be detailed or complex, but they must be adequate to allow the planning agencies to identify, protect, and monitor important resources that transcend traditional planning boundaries. Landscape-level planning will necessarily focus on the ecological resources of the ecoregion, including the extent and scope of plant and animal communities, habitats of protected species, and migration corridors, but landscape plans also facilitate choices about actual and proposed transportation, rights-of-way, and industrial or urban corridors.

To promote simplicity at the landscape level, land management agencies might design landscape plans primarily as mapping exercises. Maps could be prepared to offer several alternative visions for the landscape and could be designed to illustrate for BLM and the public: (1) the nature and scope of the ecoregion's resources; (2) land ownership within the ecoregion; (3) the geographic areas or resources that may warrant special protections and/or further monitoring and evaluation; (4) wildlife, urban, and industrial corridors as they currently exist or as they are evolving; and (5) an aspirational vision of what the landscape might look like under better management. These maps might also suggest areas or resources that warrant temporary protection until sufficient information is available to make more permanent decisions.

As suggested above, the only significant requirements for landscape plans beyond good mapping is the identification of an appropriate set of goals with corresponding metrics and a good monitoring program that will allow the management agencies to ascertain changes to the ecosystem from the baseline, and ultimately to adapt based upon the new information that monitoring reveals. A useful model for thinking about metrics is the so-called "SMART" model, which promotes criteria that are "*specific, measurable, assignable, realistic [or re-*

134. Plans can be adapted only if they include good metrics and a monitoring plan sufficient to inform the agency whether the goals of the plan are being met. If those goals are not being met, then adaptation is in order. Thus, the choice of metrics and monitoring, and how the agency uses monitoring data to propose adaptation are matters of intense public interest that should be subject to public scrutiny through the NEPA process. This does not mean that the scope of the plan needs to expand. It simply means that the agency needs to develop a system to ensure that its planning goals are being met.

sults-oriented], and *time-related*.”¹³⁵ The Fish and Wildlife Service employs this model for its comprehensive conservation plans.¹³⁶

The need to identify specific and measurable metrics and to monitor them with a robust and thorough monitoring plan cannot be overstated. Too often, this is where current plans fall down. So, for example, if one goal of a unit plan is to increase the habitat and population of sage-grouse within the planning area, then the unit plan will have to include good baseline data and a solid monitoring program with good metrics that will allow the agency (and the interested public) to determine whether, for example, big sagebrush habitat, which is preferred by sage-grouse, is increasing from the baseline within the planning area, whether the number of leks and the population of birds within the planning area are increasing or decreasing, and whether the changes are meeting the goals and objectives laid out in the plan.

Landscape-level plans would be layered on top of unit-level plans, activity plans, and project-level proposals, and would require that those plans conform to the requirements set out in the landscape-level plan. Of course, these other planning levels will likely generate more specific information that can and should be used to adapt landscape plans as necessary to reflect new information that becomes available. This is fully consistent with the adaptive management model described more fully below.

3. Unit-Level Planning

Among the most serious challenges facing the planning programs at both BLM and the Forest Service is how to use their limited resources more efficiently and effectively. The most obvious place to claw back agency resources is at the unit-planning level. Unit-level plans currently consume a substantial portion of the budgets of the multiple-use public lands agencies, even while the plans take far too long to produce.¹³⁷ This must change. In particular, unit-level plans will have to be simplified, the costs associated with preparing them reduced, and the preparation timeframe shortened considerably. The most obvious way to achieve these goals is to make the unit-level planning process more like the proposed landscape-level planning process described above. Like landscape-level plans, and as required by NFMA and FLPMA, unit-level plans

135. George T. Doran, *There's a S.M.A.R.T. Way to Write Management's Goals and Objectives*, 70 MGMT. REV. 35, 36 (1981) (emphasis added).

136. U.S. FISH AND WILDLIFE SERV., SERVICE MANUAL 620 FW 1 EXHIBIT 1, OUTLINE AND GUIDANCE FOR DEVELOPING HABITAT MANAGEMENT PLANS, § IV.C.1 (2002), <https://perma.cc/3KNB-ETER>; see also Richard L. Schroeder, *Evaluating the Quality of Biological Objectives for Conservation Planning in the National Wildlife Refuge System*, 26 GEORGE WRIGHT FORUM 22, 24–28 (2009) (discussing the Fish and Wildlife Service approach to comprehensive conservation planning and the use of the SMART model).

137. See Kornze Testimony, *supra* note 2.

would begin with an inventory of the resources of the planning unit.¹³⁸ Also, like landscape-level plans, the agencies should seek to describe unit-level planning largely through a series of maps that consider—and solicit comment on—the alternative visions for managing the unit and the various zones within the unit. At a minimum, these alternative visions would have to be consistent with any management restrictions contained in the relevant landscape-level plan. The planning model that I envision at both the landscape and unit levels can best be described with a diagram that depicts planning as a cyclical process (Figure 3).

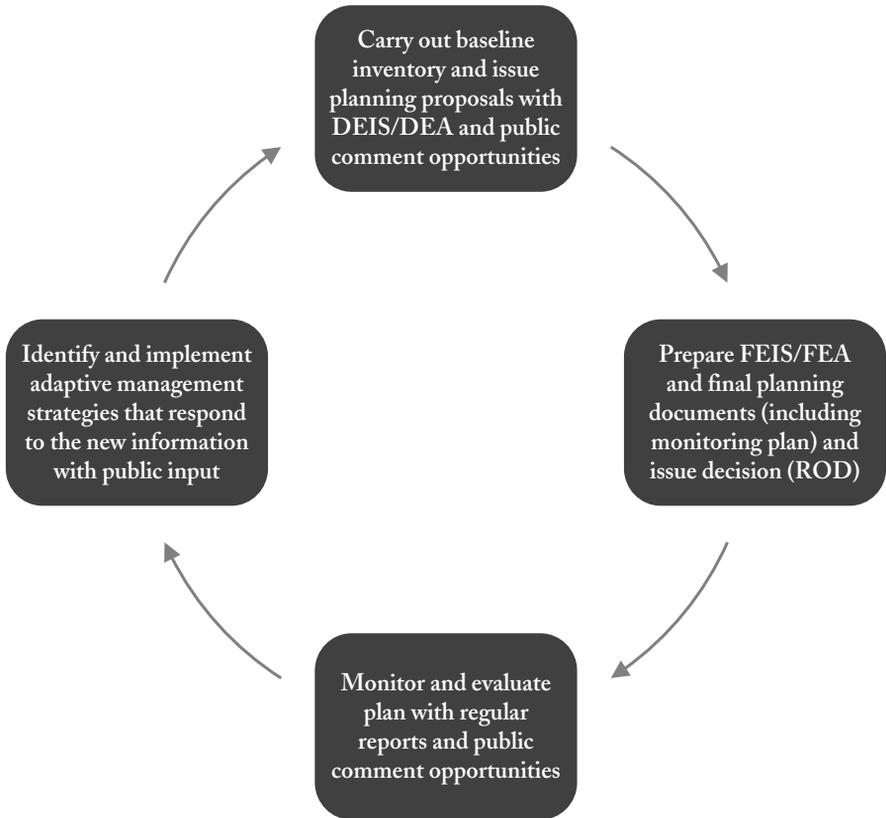


FIGURE 3: THE PUBLIC LAND USE PLANNING CYCLE FOR LANDSCAPE- AND UNIT-LEVEL PLANS

In order to simplify unit-level planning, BLM and the Forest Service will have to abandon their current policy of developing detailed standards and

138. See 16 U.S.C. § 1604(g)(2) (2012); 43 U.S.C. §§ 1711(a), 1712(c)(4) (2012).

guidelines¹³⁹ or making “implementing decisions” for particular activities that might be encountered after the unit-level planning phase. Instead, the written portion of plans should be limited to simple narrative descriptions of the resources found in the planning area, the plan’s goals and objectives for each management area and for each resource, clear metrics for assessing whether the goals are being met, and a comprehensive plan for monitoring based on those metrics. An adaptation plan and strategy should also be set out describing when and how decisions will be made to amend the plan to reflect the information gathered during monitoring and to ensure that the goals for the planning area are being met.

More specifically, and as with landscape-level plans, the agencies must employ something akin to the SMART model for unit plans whereby the agencies commit to designing metrics that are specific, measurable, achievable, realistic, and time-bound, and then monitoring resources in the planning area to determine whether the plan is moving toward achieving its goals and objectives. Where monitoring reveals that a plan is not achieving its goals, the plan must be adapted, and that adaptation must occur in a timely fashion. In this regard, agencies should learn to embrace the word “nimble.” It is not a word that many would ascribe to the current generation of land use plans. And what this means is that the current plans are simply not designed to accommodate quick and efficient adaptation, thereby compromising and perhaps foreclosing the opportunity to respond to problems identified during monitoring.

While avoiding or greatly simplifying the development of standards and guidelines at the unit-level planning stage represents a significant departure from the current planning process, such a change is urgently needed. The argument for detailed standards and guidelines at the unit level rests on the assumption that they help facilitate project-level decisions. So, if a particular section of the planning area is likely to experience logging or mineral development, the plan can identify those conditions and restrictions that should be placed on those activities. In practice, however, efforts to design specific standards for project-level proposals while planning for a unit that may encompass one million acres or more has never worked well. Agencies rarely know enough about a site-specific project during the unit-level planning phase to decide on appropriate standards for that project. Likewise, the scope and scale of the various public interests at stake are rarely well-understood before a specific project proposal is made. As a result, the agencies are inevitably forced to reevaluate their standards and guidelines anyway, or even worse, follow standards that are poorly

139. As previously noted, the specific requirements for “standards and guidelines” contained in NFMA are sufficiently vague that the Forest Service can satisfy the statute with general requirements. *See* 16 U.S.C. § 1604(g) (2012). Moreover, since NFMA recognizes that planning can involve a “set of documents,” further details as to how particular activities might be restricted can be set out during activity-level planning or at the project level. *See id.* § 1604(f)(1).

suites to the specific project and location. Why not wait until a project is proposed to perform the site-specific analysis and decide on the standards that should govern the project? Abandoning specific standards and guidelines at the unit-level could greatly simplify plans, and allow appropriate standards to be developed at either the activity or project level where more information will be available about the specific resource or project involved.

In addition to saving time and money, a simplified unit-level planning process will facilitate adaptive management. As new information about a planning area becomes available and suggests a need to adapt the management plan, the agencies will be amending a plan with a much simpler design. This, in turn, will allow amendments to be processed more quickly and with fewer agency resources.

Simplifying the unit-level planning process will also enhance public participation by focusing the public's attention on what they care most about—the particular uses that will be allowed, restricted, or prohibited in the various zones within the planning area.¹⁴⁰ Indeed, this “zoning” exercise, the statement of the plan's goals and objectives, the development of good metrics, and a well-designed monitoring and adaptation plan are the only things that need to be carried out at the unit planning level.

To sum up the message of this section, land use planning reform is simply not possible without a fundamental rethinking of the current unit-level planning process. But unit-level planning is also the hardest part of planning to change because it is weighted down with decades of policies and practices that are hard-wired into the culture of the agencies. Still, change is possible, especially given the consistent lip service that the agencies pay to adaptive management. If they believe that adaptive management is an essential component of modern land use planning then at some point they must come to realize that it cannot happen in any meaningful way without changing the planning paradigm.

4. Activity-Level Planning

As noted above, modern unit-level plans prepared by the Forest Service and BLM often include detailed prescriptions for carrying out certain activities within the unit-level planning area. My proposal for unit-level planning is designed to minimize activity-level planning *at that stage* and move much of that planning to a subsequent level. To the extent that the unit-level plan effectively resolves an issue about use (and does not or will not require any further agency decision), the management criteria for that decision may have to be laid out in the unit plan. For example, if the agency designates certain lands within the planning unit as open to off-road vehicle use, the unit-level plan will need to

140. Public participation is addressed more fully below. *See infra* Part VIII.

address things like the appropriate metrics and monitoring for that use, so the agency can know whether off-road vehicle use is interfering with the goals and objectives of the plan. However, the model proposed here would shift as much of the analysis as possible to a lower level of planning focused on a particular activity. So, for example, travel management plans, which are commonly prepared in conjunction with unit-level plans, should be relegated entirely to the activity planning level, and problematic uses should be restricted until the travel management plan is complete and a decision is made as to how to best manage travel within the management unit.

Likewise, activity or resource plans should be prepared that focus on particular resources with substantial potential for use or development within the unit, such as oil and gas, timber, or rangeland. But even here, the goal should be to focus on resource or activity *planning*, avoiding issues that are best addressed at the project level. For example, an activity plan for an area with high potential for oil and gas development might identify infrastructure needs that would best promote the logical development of the resource: what pipelines and gathering lines would make sense, how can water best be managed to minimize impacts, what is the most logical and least impactful way to locate well pads. While the tendency of the agencies has historically been to leave these kinds of decisions to the developers, the interests and motivations of a developer or consumptive user may be quite different from what the agencies and the public see as good public land management. To be sure, those developing a resource like oil and gas must be allowed to play a role in the activity planning process, but the whole point of public land management is to get the planning agencies to manage *proactively* and not simply to react to proposals made by public land users.¹⁴¹

Moreover, if particular activities occur infrequently in a management area, or if the impacts associated with certain uses of particular lands tend to be *sui generis*, then an activity plan for that particular resource may be unnecessary. In this situation, when a project-level proposal arises for such activities, an assessment of the potential impacts of those activities, including any possible cumulative impacts, can be made at that time.

5. *Project-Level Planning*

Project-level planning would be largely unchanged by this proposal, except that the Forest Service and BLM will likely have less specific direction about the particular standards or restrictions that should be imposed on the project. Assuming, however, that an appropriate environmental document¹⁴² will be

141. See Mark Squillace, *Managing Unconventional Oil and Gas Development as If Communities Mattered*, 40 VT. L. REV. 525 (2016).

142. The phrase “environmental document” is used here as defined in the Council of Environmental Quality (“CEQ”) rules to refer to either an environmental impact statement or an

prepared for the project as required by NEPA, that document is likely to afford a much better platform for developing project-based standards for at least two important reasons. First, it will contain information that is more current—possibly much more current—than the information contained in the unit-level or activity-level plan. Second, because a project-level assessment will necessarily focus on the particular project site rather than a large planning area, the Forest Service and BLM will be in a much better position to identify the site-specific impacts that might be associated with a proposed project and develop appropriate standards and restrictions necessary to protect public land resources.

V. NEPA COMPLIANCE UNDER THE PROPOSED PLANNING MODEL

One possible criticism of the planning framework that I propose here is that it will likely require NEPA compliance at each of the four planning layers, rather than at the two or three layers that exist under the current scheme.¹⁴³ As with the planning process itself, however, the NEPA procedures used to assess each layer of planning can be handled more efficiently and effectively by carefully defining and cabining the decisions made at each level.

So, for example, the environmental document for a landscape-level plan might focus on assessing the risks and opportunities for the ecological, urban, and industrial corridors in the relevant landscape. It could also consider various options for changing the management of those corridors in ways that anticipate future levels of planning. More specifically, if a landscape-level plan identifies risks to a particular species, ecosystem, or watershed from non-federal lands within the landscape, this would presumably signal to the federal land manager the need to design unit plans to compensate for these problems, even as they cultivate cooperation and support from non-federal land managers. A NEPA document would also lay out alternative sets of goals and objectives for managing and protecting the resources found in the landscape,¹⁴⁴ and this should impel the agency to develop corresponding metrics that would allow monitoring

environmental assessment as those terms are further defined in the CEQ rules. 40 C.F.R. §§ 1508.9, 1508.11 (2018).

143. Each of the proposed layers would involve “federal action,” although not every step would necessarily involve a “major federal action” requiring an environmental impact statement. *See id.* § 1508.18. In some cases, an environmental assessment might be sufficient. *See id.* § 1501.4; *id.* § 1508.9. NFMA expressly requires NEPA compliance in conjunction with plan development, 16 U.S.C. § 1604(g)(1) (2012), and BLM has consistently required the same. *See, e.g., Planning and NEPA*, BLM.GOV, <https://perma.cc/ZZ4A-T5MJ>.

144. The CEQ rules describe the alternatives analysis as the “heart of the environmental impact statement.” 40 C.F.R. § 1502.14. It is supposed to “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public.” *Id.*

for relevant changes in the environment that might trigger adaptive alterations to the landscape plan.¹⁴⁵

The environmental document prepared for a unit-level plan would focus specifically on the alternatives for managing specific zones in the planning area, and, like the landscape plan assessment, will address alternative goals and objectives, and metrics and monitoring options. However, the document will ideally avoid assessing the impacts from actual development or use of planning area resources, particularly where subsequent decisions will be necessary before such development can proceed. In other words, the environmental document prepared for the unit plan will engage the public on the options for managing the planning area, the outcomes that the agencies are hoping to achieve, and ways to measure those outcomes. It need only address particular uses very generally, because those uses will be addressed more fully either at the activity or project planning levels.

Environmental documents prepared at the activity level should also be somewhat circumscribed, remembering that the goal is still planning, not assessing site-specific impacts. So, assessing the impacts from alternative sequences and rates of development or use, including identifying and sequencing infrastructure needs that might promote efficient and logical development or use of the resource, would be wholly appropriate at this stage. But it should not be necessary to consider in-depth the impacts of actual development, so long as that development remains subject to a further agency decision.¹⁴⁶

In the environmental document at the activity planning stage, the agency might also want to consider the type of information and advance work that it will require for project-level applications. For example, for areas that are rich in archaeological resources or important wildlife species or habitats, the agencies might require appropriate surveys in advance of accepting applications. But the surveys *themselves* would not have to be completed at this stage, beyond what was already done at the unit planning level to determine what uses to allow or restrict within individual planning zones.

145. To the extent possible, the goals for the plan, and the metrics used to assess whether those goals are being achieved, must be sufficiently specific so that the monitoring will reveal to all interested parties whether the plan is working. For example, one of the goals for a plan might be to increase big sagebrush habitat by twenty percent over a ten-year period, with appropriate milestones set for every two-year monitoring cycle. If the milestones are not met, then adaptation would be in order. Exactly what adaptive strategies might be available to correct the problem would likely be a matter of some debate and would likely benefit from an environmental assessment process. But plainly the agency would either have to change the goals of the plan or change its management strategies to ensure that it is achieving the required increase in big sagebrush habitat.

146. Under NEPA, agencies may not make “any irreversible and irretrievable commitments of resources” until they fully comply with the statute. 42 U.S.C. § 4332(2)(C)(v) (2012). But where an agency reserves the right to withhold approval of an action with potentially adverse environmental consequences, it can hold off on full NEPA compliance. *See Conner v. Burford*, 848 F.2d 1441, 1448 (9th Cir. 1988), *cert. denied*, 489 U.S. 1012 (1989).

The environmental document at the project level should be the most comprehensive, because it is here where the agencies must decide whether to actually allow development to proceed, and if so, under what specific constraints. The actual development or use of the public land is what will trigger the environmental impacts to land, air, and water, and these impacts are best assessed once the agencies have a particular proposal in hand. These project-level decisions can come from the agency as, for example, when the agencies propose a timber or mineral lease sale. But they can also come from a private party as, for example, when a party applies for a permit to drill,¹⁴⁷ or submits a plan of operations to mine public lands.¹⁴⁸

To be sure, there will likely be some overlap in the environmental documents carried out during the different planning stages. But the goal should be to minimize overlap by asking at each stage in the planning process whether particular issues can be addressed better and more meaningfully at a later stage in the process. If so, and if the agency has preserved a legitimate choice at that later stage, including the option to say no, then limiting the scope of the environmental document during the earlier stages makes good sense and should survive a legal challenge.¹⁴⁹

Before concluding this discussion of NEPA compliance in the planning context, it bears noting that all of the environmental documents prepared during the various stages of planning will be tiered to one another, and the process of tiering these documents will help to minimize overlap, but also ensure that important issues do not fall through the cracks. The CEQ regulations encourage agencies to use “tiering,”¹⁵⁰ which the CEQ defines as a “sequence of statements or analyses . . . from a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis.”¹⁵¹ The sequence of analyses described in the rules more or less tracks the public land use planning process. The CEQ rules further admonish agencies to use tiering “to focus on the actual issues ripe for decision at each level of environmental review.”¹⁵² If employed thoughtfully at each stage of the land use planning process, this advice should provide the

147. See 43 C.F.R. § 3162.3-1 (2018).

148. See 43 C.F.R. § 3809 (2018); 36 C.F.R. § 228 (2018).

149. The key question that the agencies must ask for purposes of NEPA compliance at every stage of the planning process is whether they are making “irreversible and irretrievable commitments of resources.” 42 U.S.C. § 4332(2)(C)(v). If so, then the agency cannot go forward with that part of the decision without first analyzing its impacts. See, e.g., *Burford*, 848 F.2d at 1453; see also Karin P. Sheldon, *Timing of NEPA Compliance*, in *THE NEPA LITIGATION GUIDE 67–75* (Albert M. Ferlo et al. eds., 2d ed. 2012).

150. 40 C.F.R. §§ 1500.4(i), 1502.4(d), 1502.20, 1508.28 (2018).

151. 40 C.F.R. § 1508.28.

152. 40 C.F.R. § 1502.20.

agencies with a clear roadmap for the efficient, effective, and lawful use of NEPA.¹⁵³

VI. MONITORING AND ADAPTING

Land use planning cannot succeed unless public land agencies are committed to monitoring the impacts that various activities and events have on land resources, and to adapting the management of those resources to meet the goals and objectives laid out in their plans over time. A robust, transparent, and meaningful monitoring and evaluation program is especially important at the landscape and unit planning levels, since it is at these levels where the broad impacts of planning policies are likely to be best understood. Moreover, experience with adaptive management suggests that it works best at larger scales where there is far more flexibility to adapt to new information.¹⁵⁴ Adaptation might also prove necessary at the activity- and project-planning levels, but appropriate conditions can (and should) be baked into activity- and project-level decisions as necessary to ensure that the evolving goals and objectives in the higher level plans are not compromised.¹⁵⁵

A necessary predicate to successful monitoring and adaptation is a plan that contains adequate protection for resources and appropriate metrics to assess the ongoing health of those resources. If appropriate metrics are identified during landscape- and unit-level planning, and a good monitoring program put in place, then the agency should be able to determine whether the goals and objectives of the plans are being met. If the goals and objectives are *not* being met then the plans should be promptly amended (adapted) to help ensure either that the goals and objectives will be achieved, or that conditions have changed sufficiently that the goals and objectives *themselves* should be changed.

153. For example, a comprehensive assessment of environmental impacts and alternatives for a “project” that involved as many as 2,000 coal bed methane wells allowed streamlining of individual permitting decisions. *See, e.g., Theodore Roosevelt Conservation P’ship v. Salazar*, 616 F.3d 497, 511–12 (D.C. Cir. 2010) (“In general, an agency preparing an environmental assessment for a drilling permit is not required to reevaluate the analyses included in the relevant project’s EIS. Instead, NEPA regulations allow ‘tiering[.] . . . The Atlantic Rim Project did address the impact drilling would have on ozone concentrations. Tiering a POD’s environmental assessment to that analysis in compliance with the governing regulation is hardly arbitrary and capricious.”).

154. *See* J.B. Ruhl & Robert L. Fischman, *Adaptive Management in the Courts*, 95 MINN. L. REV. 424 (2010).

155. *See Theodore Roosevelt Conservation P’ship*, 616 F.3d at 517 (discussing adaptive management at the project-level, finding that “[t]hrough the adaptive management plan, the Bureau plans to monitor the real effects of the development it authorizes, and adapt its mitigation measures to specific drilling proposals in response to trends observed. Allowing adaptable mitigation measures is a responsible decision in light of the inherent uncertainty of environmental impacts, not a violation of NEPA”).

Unfortunately, neither the Forest Service nor BLM currently seem committed to a timely and effective monitoring program. The 2012 Forest Service Planning rules define “monitoring” as “[a] systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships.”¹⁵⁶ The rules further require that a “monitoring plan” for each unit “sets out the plan monitoring questions and associated indicators.” These “must be designed to inform the management of resources on the plan area, including by testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the plan’s desired conditions or objectives.”¹⁵⁷ While the definition and monitoring plan requirements could give rise to a strong set of metrics, the Forest Service seems more inclined to focus on general standards that are unlikely to yield the kind of data that can quickly trigger adaptive measures.¹⁵⁸

The Forest Service rules also require a biennial monitoring report that “must indicate whether or not a change to the plan, management activities, or the monitoring program, or a new assessment, may be warranted.”¹⁵⁹ The monitoring evaluation report is supposed to be used to trigger adaptive management.¹⁶⁰ But without clear metrics designed to inform the agency and the public about the conditions that warrant adaptation, it seems unlikely that the Forest Service monitoring program will lead to robust adaptation of unit level plans. Moreover, the Forest Service planning rules specifically provide that “[t]he monitoring evaluation report is not a decision document representing final Agency action,”¹⁶¹ and therefore it is not subject to administrative review. If, however, the monitoring report is not a decision document, then it is unlikely to trigger the adaptive management that the rules seem to demand. Finally, given the length of time it currently takes to develop and implement a unit-level plan, the notion that the agency is prepared to make anything more than cosmetic changes to unit-level plans in response to monitoring reports seems far-fetched.

Despite the myriad problems with its monitoring and adaptation program, the Forest Service has at least been engaged in regular monitoring of resources found in the planning area.¹⁶² By contrast, BLM has only recently begun to think about monitoring and adaptation in the context of land use planning. Its rules on monitoring are vague. They require monitoring and evaluation of

156. 36 C.F.R. §§ 219.19, 219.5(a)(3) (2018).

157. *Id.* § 219.12.

158. These rules require monitoring programs to “contain one or more monitoring questions and associated indicators” addressing a wide range of issues from watershed conditions to ecological conditions to visitor use and satisfaction. *Id.* § 219.12(a)(5). What seems to be missing, however, are any requirements for specific, measurable metrics to clearly trigger an adaptive response.

159. *Id.* § 219.12(d).

160. *See id.*

161. *Id.* § 219.12(d)(4).

162. *See id.* §§ 219.5(a)(3), 219.12 (describing mandatory monitoring).

plans, but establish no timetables, fail to require specific metrics, and do not require preparation of monitoring reports.¹⁶³ In 2011, in response to criticism from the Office of Management and Budget about “gaps in monitoring . . . to support management decisions,” BLM developed an “*Assessment, Inventory, and Monitoring (AIM) Strategy*.”¹⁶⁴ The Strategy focuses on three attributes for describing, interpreting, and monitoring ecosystems: (1) soil and site stability; (2) hydrologic function; and (3) biotic integrity.¹⁶⁵ The Strategy is designed to operate at multiple scales, but is largely limited to acquiring and managing data. A logical and systematic program for gathering and managing data is an important first step for identifying potential problems with resource management, and in that sense, the AIM Strategy provides BLM with a good start. Unfortunately, at least two important items critical to a comprehensive monitoring and adaptation program are missing from the Strategy. First, the Strategy, like the Forest Service rules, fails to commit BLM to monitoring for specific standards that can be easily measured and reasonably achieved. In this regard, and as previously described, both agencies should commit to something like the SMART model, which, as previously noted, requires the regulator to develop *specific, measurable, achievable, results-oriented, and time-limited standards*.¹⁶⁶

Of course, while the SMART model promotes better management, it will likely be resisted by agencies fearful of opening themselves to new litigation. Where, for example, specific metrics indicate that an agency is not achieving its goals for a plan, it must either adapt the plan or change its goals. That is the whole point of adaptive management. But agencies often move slowly and reluctantly to change plans, especially when these changes may interfere with private users of public lands who enjoy strong political support. If, for example, the metrics for grazing on a particular tract of rangeland are not being met, the agency may have to reduce livestock numbers and risk conflicts with ranchers. On the other hand, if they change the goals and objectives to allow degradation of ranchland, the environmental community might object. While the risk of litigation and conflict is real, it does not in any way undermine the compelling

163. 43 C.F.R. § 1610.4-9 (2018) (“The proposed plan shall establish intervals and standards, as appropriate, for monitoring and evaluation of the plan. Such intervals and standards shall be based on the sensitivity of the resource to the decisions involved and shall provide for evaluation to determine whether mitigation measures are satisfactory, whether there has been significant change in the related plans of other Federal agencies, State or local governments, or Indian tribes, or whether there is new data of significance to the plan.”).

164. GORDON R. TOEVS ET AL., BUREAU OF LAND MGMT., ASSESSMENT, INVENTORY, AND MONITORING STRATEGY FOR INTEGRATED RENEWABLE RESOURCES MANAGEMENT 1 (2011), <https://perma.cc/4QKP-ACRH>; see also DEP’T OF THE INTERIOR, BUREAU OF LAND MGMT., BLM BULL. No. 2012-080, ASSESSMENT, INVENTORY, AND MONITORING (AIM) STRATEGY UPDATE, INFORMATION BULLETIN (2012), <https://perma.cc/7JFR-NGP2>.

165. See TOEVS ET AL., *supra* note 164, at 9.

166. See Doran, *supra* note 135, at 36.

substantive arguments that favor good monitoring, good metrics, and prompt adaptation.

Another problem with the AIM Strategy is that it offers no clear guidance to land managers as to whether and how often BLM will prepare monitoring reports. In addition to guiding land managers, the Strategy should explain how BLM will engage the public in the development and release of monitoring reports. Public engagement can help BLM determine the scope, reliability, and proper interpretation of monitoring reports, but it will appropriately push BLM toward regularizing its monitoring and evaluation process. While annual monitoring and evaluation reports would be ideal, biennial reporting, as currently required under the Forest Service rules, might afford a more realistic goal.

Beyond its call for monitoring and data collection, the Strategy is devoid of any requirement that BLM adapt its management plans to reflect monitoring data and meet the goals and objectives set for their plans. As noted above, the Forest Service is not much better on this score because it fails to treat the monitoring report as a decision document that leads to corrective action. Monitoring serves little purpose unless it is used to inform future actions and guide timely amendments to existing plans. Both agencies should commit to making their monitoring reports action documents.¹⁶⁷ This commitment should include a timetable for identifying and implementing remedial actions that will address deficiencies found during monitoring. Indeed, BLM's AIM Strategy might more appropriately be renamed the AIMA Strategy to reflect assessment, inventory, monitoring, and adaptation.

In thinking about how to carry out monitoring, and how to effectively involve the public in the monitoring program, the agencies should consider using tables and other visual tools that can help illustrate the resources being evaluated through the monitoring program, the trends for those resources following plan implementation, and possible strategies for addressing negative trends. Set forth below is a prototype for a table that depicts some of the information that the agency and the public will want to know. The actual table will have to be expanded to encompass particular species, habitats, corridors, and special-purpose lands that are supposed to receive some protection under the plan, and it might be more useful to develop individual tables for each important resource, particularly because the table will have to include appropriate data and narrative descriptions. Still, this might serve as a useful example for how to display information about management trends visually (Figure 4).

167. This would, of course, require the Forest Service to amend its rule at 36 C.F.R. § 219.12(d)(4).

FIGURE 4: MONITORING AND EVALUATION OF RESOURCES FOR LANDSCAPE PLANS AND RMPs

<i>Affected resource (as described in the plan)</i>	Natural condition	Baseline condition (when plan approved)	Specific management goals and objectives	Management strategies (may be in activity or project plans)	Hypotheses, metrics and frequency of measurements	Precision and reliability of metrics	Results and adaptive strategies suggested by those results
Range							
Important wildlife habitats							
Wildlife corridors							
Riparian areas							
Sensitive, at-risk, or indicator species							
Designated off-road vehicle areas							
Degraded lands							
Roadless areas							
Protected lands							

An important argument favoring biennial monitoring reports, as currently required under Forest Service rules, is that they provide a relatively fixed point in time for adapting plans to address problems identified in the report. While in theory, and perhaps ideally, adaptation should occur constantly throughout the management cycle, regularizing reporting and adaptation over a two-year cycle has the advantage of setting reasonable expectations for both the agency and the public as to how and when adaptation will take place. While it is conceivable that no changes will be necessary at the end of each two-year cycle, that seems unlikely, given the dynamic nature of public land resources and the growing impact of climate change.

It might be easiest to explain how this would work with an example. In 2010, the Fish and Wildlife Service identified the greater sage-grouse, a species found across eleven states in the West that requires sagebrush steppe ecosystems, as warranted for Endangered Species Act listing but precluded due to

other priorities.¹⁶⁸ In response to that finding, the Forest Service and BLM began an effort to revise land-use plans to include sage-grouse conservation.¹⁶⁹ Suppose that a unit-level plan includes a management objective of reversing the decline of sage-grouse populations in one or more particular zones or regions, and the monitoring report documents a continuing decline in sage-grouse numbers. This should lead the agency to take one of two possible actions: (1) change (with public input) the management goals and objectives to accept the declining populations in the relevant area either temporarily or permanently; or (2) change (with public input) management practices as appropriate to reverse the population decline.¹⁷⁰

In designing adaptive strategies, the agencies will benefit from monitoring for specific “testable hypotheses.” For example, in an area designated to promote sage-grouse habitat, how does the habitat change when livestock grazing is reduced or eliminated from the area? Similarly, what impact do oil and gas wells have on sage-grouse leks when wells are located a half-mile, one mile, or two miles from the lek? Monitoring to answer these types of questions will help the agency design adaptive strategies for sage-grouse.

VII. MAKING ADAPTIVE MANAGEMENT INTEGRAL TO PUBLIC LAND USE PLANNING

The adaptive management protocol for public land use planning that I advocate in this article requires a leap of faith on the part of the public. It asks the public to accept something less than a complete analysis of the environmental impacts of a proposed plan in exchange for a promise that the decision-making authority will closely monitor outcomes and modify the decision after it has already taken effect as necessary to protect important resources. While reliance on assumptions during preparation of an environmental document may raise issues regarding NEPA compliance, courts have shown a willingness to accept less-than-complete agency assessments where the agency adopts an adaptive management protocol with clear, substantive criteria that trigger changes to the management regime.¹⁷¹

168. See Press Release, Dep’t of the Interior, Historic Conservation Campaign Protects Greater Sage-Grouse (Sept. 25, 2015), <https://perma.cc/JYY9-XA2S>; see also U.S. DEP’T OF AGRIC., U.S. FOREST SERV., GREATER SAGE-GROUSE CONSERVATION 3, <https://perma.cc/8ZWR-GSC2> (no date) (timeline of greater sage-grouse conservation measures).

169. See Historic Conservation Campaign Protects Greater Sage-Grouse, *supra* note 168.

170. In 2015, BLM and Forest Service finalized 98 land-use plan amendments across 10 states for sage-grouse. See *id.* Two years later, Interior reversed course and has now decided to open much of this land to mineral development. See Coral Davenport, *Trump Drilling Plan Threatens 9 Million Acres of Sage Grouse Habitat*, N.Y. TIMES (Dec. 6, 2018), <https://perma.cc/7QRB-BBD9>.

171. See Ruhl & Fischman, *supra* note 154, at 463–66, 470. The authors analyzed thirty-one cases that “grapple[d] with the legality of adaptive management.” *Id.* at 445. In particular, the

A big part of the attraction of adaptive management is its potential to overcome what is surely one of the worst problems with the conventional decision-making process under NEPA: its finality once the decision has been made, and the consequent lack of follow-up to ensure that significant impacts that occurred but were not predicted are nonetheless addressed.¹⁷² The problem arises because assumptions on the part of the decision-maker at the time of the decision may turn out to be fundamentally different from the facts that become apparent after seeing how the decision plays out on the ground. Adaptive management affords agencies greater freedom to make assumptions, so long as they commit to testing those assumptions and taking corrective action as necessary to meet the goals and objectives of the underlying decision.

For some decisions, particularly those that occur at the project level, adaptation may be impractical. Once the agency has approved the development of an open-pit gold mine and the pit has been dug, the prospects for adapting that decision are much more limited. However, other decisions, especially those that occur over a large scale—such as public land use plans—are well-suited to the adaptive management model.¹⁷³ Specifically, the adaptive management model replaces finality with a process that—if it works—ensures that decisions will evolve to reflect the facts as they become evident from the experience of *actually taking action*—“learning by doing,” as adaptive management is sometimes described.¹⁷⁴ It tolerates more limited analysis up front—at a time when uncer-

authors contrast two cases by the same district court judge in California, upholding one plan that contained specific, enforceable standards that triggered adaptive management but rejecting the other that, while “procedurally elaborate,” did not impose mandatory requirements on the agency to adapt its decision as necessary to protect the Delta smelt—the species at issue in that case. *Id.* at 464–66.

172. The CEQ rules allow agencies to bind themselves to carry out mitigation measures in their final decision, but the rules do not require mitigation or even monitoring to inform the agency whether the impacts that were predicted are those that actually occur. 40 C.F.R. § 1505.3 (2018). While monitoring is generally required for public land use plans, see 36 C.F.R. § 219.12 (2018) (forest plan monitoring); 43 C.F.R. § 1610.4-9 (2018) (resource management plan monitoring and evaluation), the monitoring policies of both BLM and the Forest Service lack sufficient rigor to ensure timely adaptation of decisions.

173. As Ruhl and Fischman note:

Spatial and temporal scale is a critical component of adaptive management. Applying adaptive management through larger area, longer time frame plans has tended to produce better outcomes for agencies in the courts . . . [T]he primary advantage enjoyed by large scale plans is slack.

Ruhl & Fischman, *supra* note 154, at 447–48.

174. See GEORGE H. STANKEY, ROGER N. CLARK & BERNARD T. BORMANN, U.S. DEP’T OF AGRIC., U.S. FOREST SERV., *ADAPTIVE MANAGEMENT OF NATURAL RESOURCES: THEORY, CONCEPTS, AND MANAGEMENT INSTITUTIONS*, PNW-GTR-654, at 7 (2005). The authors offer a deeper and more compelling statement of adaptive management as:

shar[ing] the general premise of learning by doing, [but] add[ing] an explicit, deliberate, and formal dimension to framing questions and problems, undertaking experimentation and testing, critically processing the results, and reassessing the

tainty is highest—in exchange for a commitment to constantly improve the decision over time. Particularly in the context of public land use planning, where high levels of uncertainty are commonplace and where the facts on the ground are constantly changing due to natural and human-caused phenomena,¹⁷⁵ this seems like a deal worth making.

VIII. PUBLIC PARTICIPATION UNDER A LAYERED PLANNING MODEL

The layered management framework proposed here holds a distinct advantage in making planning more accessible to the general public, especially at the landscape and unit levels. At these levels, the focus will be on: (1) the different uses that will be allowed or prohibited within public land planning areas; (2) overall goals and objectives for the public land planning areas; (3) the metrics that will be used to determine whether those goals and objectives are being met; (4) the monitoring plan that will ensure timely and accurate accounting of those metrics; and (5) timely adaptation of the original decision to reflect the new information obtained during monitoring. All of these matters can be made fairly easily accessible to the interested public, and this should allow the public to engage agencies in a more meaningful dialogue, even if they lack specialized knowledge or training.¹⁷⁶

Public engagement should be especially useful in helping the agencies improve their development and implementation of an effective monitoring and evaluation program. This is undoubtedly the most time-consuming and expensive part of plan implementation, and, as already noted, is the point at which the current planning process often breaks down. One senses, from the way that monitoring is currently handled, that agencies are strongly tempted to cut corners and keep metrics sufficiently vague so as to retain maximum flexibility to avoid doing what monitoring suggests needs to be done—adapting land use plans to reflect the new data.

policy context that originally triggered investigation in light of the newly acquired knowledge [A]daptive management in this context involves more than traditional incrementalism; learning derives from purposeful experimentation that, in turn, derives from deliberate, formal processes of inquiry, not unlike scientific study.

Id.

175. *Id.* at 1 (describing uncertainties and man-made interventions in natural resource management).

176. To be sure, the choice of metrics in particular will likely be grounded in scientific literature, but the public should be able to grasp the importance of matters like species populations, habitat, and nesting areas if the responsible agency sufficiently prioritizes transparency in the scientific information used. *See, e.g.*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., A CITIZENS' GUIDE TO NATIONAL FOREST PLANNING 15 (2016) (“[O]ne of the fundamentals to effective use of scientific information is transparency in how it is used.”). And, over time, the public will be able to see trends that will allow even untrained parties to appreciate whether the management is moving in the right direction.

Embracing public participation in the context of monitoring programs will undoubtedly make it harder to avoid specific metrics, since the public will rightly demand such metrics. In turn, this will likely make adaptation of plans far more commonplace, because specific data showing things like declining populations of keystone species will be hard to ignore. On the other hand, cutting the public out of the monitoring program and treating monitoring reports as non-decisional documents, as is done under the Forest Service rules,¹⁷⁷ makes a mockery of the agencies' commitment to adaptive management, because it is the monitoring report that provides the essential record and justification for adapting a land use plan. The Forest Service rules requiring biennial monitoring reports suggest an appropriate reporting timeframe,¹⁷⁸ but the public might fairly question any monitoring report covering multiple resources on a planning area of a million acres or more that did not lead to *some* adaptation of the plan to better achieve the plan's goals and objectives.

Encouraging public participation throughout a layered planning process—especially during the monitoring phase—might seem counterproductive, since it could exacerbate the already difficult resource challenges facing the agencies. But there are good reasons to think that public participation could make it easier, and in the long run less costly, for the agencies to adopt an effective adaptive management program. Here's why.

Under the layered planning approach, planning would begin with an inventory of landscape-scale resources. This would lead to a relatively simple proposal for a landscape-level plan. That plan might provide for the recognition and perhaps protection of wildlife corridors and habitats, as well as industrial, rights-of-way, and urban corridors. It might also identify areas where development would not be expected to undermine the protection of the ecosystem. Given the large scale over which these plans will be developed, the public's help in identifying appropriate boundaries for these areas could prove extremely valuable and might suggest areas needing further study. This will fit well with an adaptive management protocol. In particular, public input could prove helpful to the agencies in devising testable hypotheses where uncertainty exists. For instance, a 2016 BLM rule rejected by Congress included a "high quality information" standard for data collection and assessment that would have allowed citizen scientists to assist in monitoring.¹⁷⁹ This approach would still have required the agency to analyze, verify, and act on the data provided for effective adaptive management.¹⁸⁰

But even while landscape-level plans will designate areas for protection, they need not specify which activities will be allowed or prohibited in any area.

177. 36 C.F.R. § 219.12(d)(4) (2018).

178. *Id.* § 219.12(d) (biennial monitoring reports).

179. *See* Resource Management Planning, 81 Fed. Reg. 89,580, 89,644–46 (Dec. 12, 2016). This rule was rejected by Congress. *See* discussion *supra* note 91.

180. In addition to verifying that the submitted data is "high quality information," BLM would also have had to consider the "fitness for use" of the citizen science. 81 Fed. Reg. at 89,646.

Those decisions can be reserved for the unit planning level. The unit-level plan must be consistent with the protections set out in the landscape-level plan. But given the limited purposes of that landscape plan, challenges to it would likewise be limited. Parties might raise questions about the factual assumptions made, but so long as the planning agencies have some reasonable basis for those assumptions, courts will likely defer to the agency's decision. This seems especially true if the agency is firmly committed to a plan of monitoring, evaluating, and adapting as new information becomes available.¹⁸¹

Public participation in conjunction with the simpler unit-level planning process proposed here should also prove far more meaningful. Since the proposed unit-level process would essentially be stripped down to a zoning exercise, the plans would focus on where particular uses will be allowed or excluded in various zones, which is what the public cares about most. Likewise, a simpler EIS or EA for a unit-level plan would essentially encompass a description of alternative spatial visions for the planning area, appropriate goals and objectives that reasonably correspond to those different visions, and various approaches for measuring and monitoring outcomes. Public comments would thus focus on those alternative visions, the reasonableness of the objectives established for those visions, and the preferred approaches for monitoring the success of the plan. Moreover, a simpler unit-level would lend itself to discussion in a public, town-meeting-style forum where different visions for managing a planning area could be shared. This would allow the federal agencies to come away with a sense of whether a rough consensus exists among community members or whether irreconcilable conflicts exist.¹⁸² Importantly, however, and as with

181. See, e.g., *Pac. Coast Fed'n of Fishermen's Ass'ns v. Gutierrez*, 606 F. Supp. 2d 1122, 1185 (E.D. Cal. 2008) (upholding an adaptive management plan for smelt that was "subject to enforceable, definite, and certain requirements").

182. The mechanisms used to engage the public would say much about BLM's interest in embracing public participation. Town hall meetings where BLM actively engages the participants in a discussion of issues can go a long way to building trust between the public and the agency. Some members of the public will certainly disagree with the positions taken by the agency. But if the agency is willing to engage honestly and forthrightly, and set out reasonable arguments for its positions, the public will generally respect that approach. Some BLM staff have acknowledged that the agency has historically failed to build trust with the public during the planning process. See, e.g., Elizabeth Shogren, *How the BLM is Overhauling Land-Use Planning*, HIGH COUNTRY NEWS (May 30, 2016), <https://perma.cc/3MMG-X57Q> (BLM field manager quoted as saying that historically "we have not done a great job of developing relationships between us and the public"). On the other hand, the modern preference for an open-house-style meeting should be avoided. It might have the advantage of diffusing conflict and controversy at the time of the meeting itself, but it ultimately fails to promote the kind of meaningful engagement among members of the public and the agency that is critical to a successful process. See, e.g., Judy Fahys, *BLM Hosts Monument Open Houses but Some Don't See a Welcome Mat*, KUER (Mar. 18, 2018), <https://perma.cc/Y7XX-D5ZV> (stakeholder at an open house remarking, "We're hearing one thing, but the actions say something else," and describing a perceived "direct effort to cut people out of the process").

landscape-level plans, an agency decision to approve a unit-level plan will not likely afford a significant handle for administrative appeals or other legal challenges because the agency will not be adopting detailed standards and guidelines for particular activities at this stage.¹⁸³ The agencies will simply have to choose from among the alternative visions for the planning area, and perhaps among alternative approaches for monitoring the planning area to ensure timely findings about the need to change the plan. So long as the agencies' choices are supported with reasonable arguments, they will likely receive broad deference from any reviewing body.

Activity- or resource-level planning could still prove complicated, but it might also be unnecessary in cases where the use of particular resources could reasonably be expected to be limited and without any significant cumulative impacts. On the other hand, if certain zones within a planning area have high potential for something like oil and gas development, the agency would be wise to prepare an oil and gas activity plan that establishes standards and guidelines for such development. Any standards and guidelines developed for such activity should, however, assiduously avoid detailing how *particular* parcels should be developed. That can wait for the decisions involving leases and APDs. Instead, the activity plan should retain a focus on planning. Where should well pads be located to achieve the most efficient development with the least environmental impact? What infrastructure needs, including roads, power lines, and pipelines and gathering lines, will be needed to ensure that development proceeds according to a logical and well-conceived plan that minimizes impacts and promotes efficient development? How should fracking water and wastewater be managed? To what extent should methane emissions be monitored and captured? And finally, are there cumulative impacts that should be considered before decisions are made about individual projects? Planning at the activity level will ensure that the public has an opportunity to engage the agency on the design of particular activities, but also has the advantage of limiting participation to parties with an interest in the development or use of the particular resources being studied.

Project-level planning will likely proceed largely as it does today, but it would not be burdened with the same constraints that exist under current unit-level plans, because these would largely be developed at the project level. While some may argue that constraints need to be put in place in advance of considering a project, it is simply not realistic to think that appropriate standards can be developed before a site-specific, project-specific analysis takes place. Moreover, it ensures that the information used to develop those standards is current at the time the environmental document for the project is prepared, rather than being

183. The Supreme Court has been wary of wading into public land use planning disputes prematurely. See *Norton v. S. Utah Wilderness All.*, 542 U.S. 55, 69 (2004) (describing land use plans as a "preliminary step in the overall process of managing public lands"); *Ohio Forestry Ass'n, Inc. v. Sierra Club*, 523 U.S. 726, 733–39 (1998) (applying ripeness doctrine to forest plan).

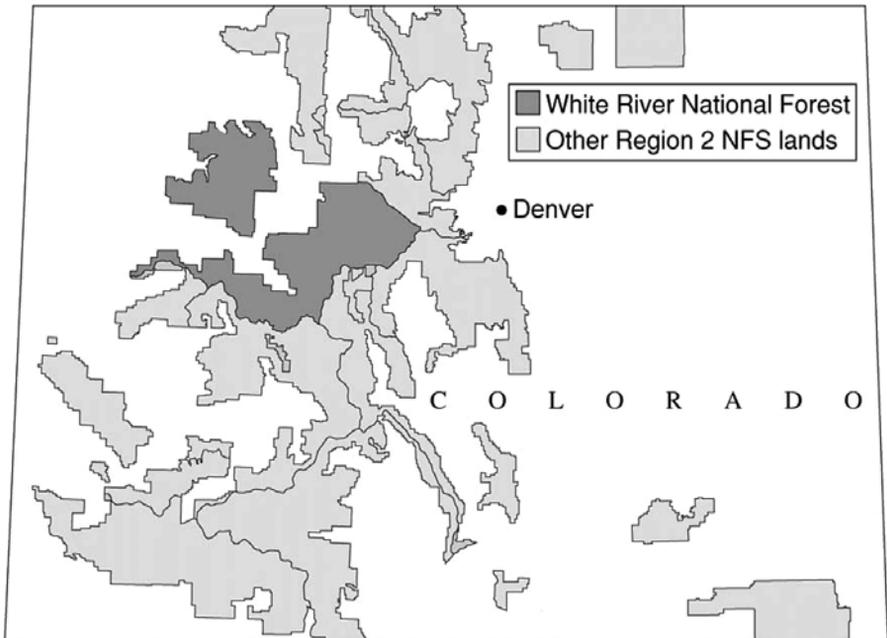
based upon a land use plan that lacked site-specific information and that may be more than a decade old.

IX. APPLYING THE NEW FRAMEWORK TO AN EXISTING LAND USE PLAN

Throughout this article, I have lamented the unnecessary complexity of the current unit-level planning process and have suggested that the process could be simplified by breaking it down into component parts and avoiding consideration of issues until the agency is at the point of making a decision for which the consequences cannot be easily reversed. In this section, I review the unit-level land and resource management plan for the White River National Forest in Colorado, with an eye toward highlighting problems with the current planning process and identifying opportunities for simplifying the plan, especially where issues might be deferred to a later stage in the planning process.

A. The White River National Forest

FIGURE 5: THE WHITE RIVER NATIONAL FOREST



The WRNF is located in central-western Colorado, west of the continental divide. Established in 1891 as the White River Plateau Timber Reserve, the

WRNF now includes 2.27 million acres within nine Colorado counties.¹⁸⁴ The WRNF's breadth and dramatic elevation change—from arid sagebrush steppe below 6000 feet to alpine tundra above 14,000 feet—yields a diversity of biomes and attendant flora and fauna.¹⁸⁵

Since the second half of the 20th century, the WRNF has also been a recreation hub. It is currently the most visited national forest in the system, largely due to ski tourism.¹⁸⁶ The WRNF is home to several world-renowned ski areas, including Aspen, Vail, and Breckenridge.¹⁸⁷ Ninety percent of all WRNF jobs and labor-related income is associated with downhill skiing.¹⁸⁸ Hiking, river sports (including Colorado River access), and backcountry recreation also draws many visitors. About one-third (750,000 acres) of the WRNF is designated as wilderness, including some of the most popular wilderness areas in the country, such as Collegiate Peaks, Eagles Nest, Flat Tops, Holy Cross, and Maroon Bells-Snowmass.¹⁸⁹ Many tourists are likewise attracted to the WRNF for its ecological diversity, which includes endangered fauna like lynx and black-footed ferrets, dramatic alpine wildflower blooms, and large aspen stands.¹⁹⁰

Historically, resource extraction has also been an important force in the WRNF. Currently, nearly 200,000 acres (about nine percent of the forest) are administratively available for oil and gas leasing.¹⁹¹ Thirty-seven percent of the WRNF is “tentatively suitable” for timber management, although only four percent of the forest has been affected by logging since 1900.¹⁹² Livestock grazing was the primary economic use of the WRNF in the early 1900s, but was

184. *White River National Forest, History & Culture*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/RQ4R-GFED>; see also U.S. DEP'T OF AGRIC., U.S. FOREST SERV., FINAL ENVIRONMENTAL IMPACT STATEMENT VOLUME 1 FOR THE WHITE RIVER NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN 2002 REVISION, at P-4 (2002) [hereinafter “USFS, WRNF FEIS”].

185. USFS, WRNF FEIS, *supra* note 184, at P-6.

186. *White River National Forest: It's All Yours to Explore, Discover & Enjoy*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/G839-VSZH>.

187. USFS, WRNF FEIS, *supra* note 184, at P-9; see also *White River National Forest, Winter Sports*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/WG7H-Y32M>.

188. USFS, WRNF FEIS, *supra* note 184, at 3-651.

189. *Id.* at P-6, P-9; see also *White River National Forest, Wilderness Areas*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/ZF95-MPY6>.

190. *White River National Forest, Nature & Science*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/NBS2-QZ3V>.

191. U.S. DEP'T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: RECORD OF DECISION: OIL AND GAS LEASING ON LANDS ADMINISTERED BY THE WHITE RIVER NATIONAL FOREST 4 (2015) [hereinafter “USFS, 2015 WRNF OIL AND GAS”].

192. USFS, WRNF FEIS, *supra* note 184, at 3-589; U.S. DEP'T OF AGRIC., U.S. FOREST SERV., FINAL ENVIRONMENTAL IMPACT STATEMENT SUMMARY FOR THE WHITE RIVER NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN 2002 REVISION 12 (2002) [hereinafter “USFS, WRNF FEIS SUMMARY”].

sharply curtailed after severe overgrazing in the 1930s.¹⁹³ About 840,000 acres, roughly thirty-seven percent of the WRNF, are now considered suitable for grazing.¹⁹⁴

The multiple uses of the WRNF, coupled with high visitation rates, a lucrative tourism industry, sizable wilderness designations, and various types of resource extraction, require careful management to balance the WRNF's myriad economic and ecological interests. In turn, this requires careful forest planning. The 2002 LRMP under which the WRNF continues to operate was the result of a nearly *eight-year* planning process.¹⁹⁵ And, like many other forest plans, it is legally beyond the maximum fifteen year revision deadline set by NFMA.¹⁹⁶ For the purposes of this article, then, the 2002 LRMP offers a useful example of the current federal land use planning process, and how planning might look different under the proposed model.

B. *The White River National Forest LRMP – 2002 Revision*

The first WRNF LRMP was issued in 1984.¹⁹⁷ In an apparent effort to honor NFMA's fifteen-year planning horizon,¹⁹⁸ preliminary work on a revised plan began in 1994, with formal inventories of the WRNF's ecological and economic resources.¹⁹⁹ In 1996, the Forest Supervisor published a five-year monitoring report, which concluded that conditions and public demands on the WRNF had changed enough in the preceding eight years to warrant a substantial plan revision. Later that year, the WRNF interdisciplinary team set out the "purpose and need" for the revision, organized by broad categories like biodiversity, recreation, and travel management,²⁰⁰ that would form the basis for the revised plan.

In 1997, the Forest Service released an "Analysis of the Management Situation," which assessed present and future public needs and the WRNF's capacity to meet those needs. The Forest Supervisor suggested that during the NEPA process this report would serve as a foundation for the development of

193. USFS, WRNF FEIS SUMMARY, *supra* note 192, at 9.

194. *Id.* at 12.

195. *Id.*; see also U.S. DEP'T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: LAND AND RESOURCE MANAGEMENT PLAN - 2002 REVISION (2002), <https://perma.cc/C2G8-UUM7> [hereinafter "USFS, 2002 LRMP"]; *White River National Forest Planning*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/6PSE-MV87>.

196. 16 U.S.C. § 1604(f)(5) (2012).

197. U.S. DEP'T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: LAND AND RESOURCE MANAGEMENT PLAN (1984); USFS, 2002 LRMP, *supra* note 195, at P-1.

198. 16 U.S.C. § 1604(f)(5). The WRNF LRMP has been amended three times, with the most recent amendment in March of 2006.

199. 36 C.F.R. § 219.10 (2018); USFS, WRNF FEIS, *supra* note 184, at P-2.

200. USFS, WRNF FEIS, *supra* note 184, at P-2.

alternatives to the existing plan.²⁰¹ Shortly thereafter, a Notice of Intent (“NOI”) to prepare an EIS was published in the Federal Register.²⁰² By 1998, six alternatives to the 1984 Plan had been developed. A year later, they were analyzed in the Draft EIS (“DEIS”), which was published and made available for public comment.²⁰³ The comment period on the DEIS ended in 2001, after two extensions. The agency received approximately 14,000 comments.²⁰⁴ The FEIS and ROD were published, and the 2002 LRMP was promulgated, more than a year later.

As mentioned, this process lasted eight years, from the initial inventories to the publication of the Plan. The core of the planning process—beginning with the determination that a revision of the 1984 Plan *was* necessary—took six years.²⁰⁵ There were three subsequent amendments to the plan in March 2005, January 2006, and March 2006.²⁰⁶

The 2002 LRMP itself is only 173 pages long, but it includes eight appendices, and with the three amendments, the Plan includes an additional 135 pages.²⁰⁷ The final EIS for the Plan is 794 pages long, with an additional 640 pages of responses to public comment, fourteen other appendices which total 422 pages, and a fifty-one-page ROD.²⁰⁸ If one includes all of these related documents, the WRNF LRMP tips the scales at a whopping 2,215 pages.

201. *Id.* at P-3.

202. Revised Land and Resource Management Plan, White River National Forest, Colorado, 62 Fed. Reg. 42,230 (Aug. 6, 1997); USFS, 2002 LRMP, *supra* note 195, at P-3.

203. Availability of Proposed Revised Land and Resource Management Plan for the White River National Forest and Draft Environmental Impact Statement, 64 Fed. Reg. 42,900 (Aug. 6, 1999).

204. USFS, WRNF FEIS, *supra* note 184, at P-3.

205. This six-year period was shorter than is typical for federal public land use plans. *See* Kornze Testimony, *supra* note 2.

206. *See* U.S. DEP’T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT, FOREST PLAN AMENDMENT 01-05 (2005); U.S. DEP’T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT, FOREST PLAN AMENDMENT 02, ALPINE AND ROADLESS STANDARDS AND GUIDELINES (2006); U.S. DEP’T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT, FOREST PLAN AMENDMENT 03/06, MANAGEMENT INDICATOR SPECIES (MIS) (2006). In addition to these three amendments, two additional regional amendments that applied to multiple forests throughout the Rocky Mountains, including the WRNF, were adopted to address the listing of the Canada lynx as a threatened species under the Endangered Species Act. *See* Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Contiguous U.S. Distinct Population Segment of the Canada Lynx and Related Rule, 65 Fed. Reg. 16,052 (Mar. 24, 2000). References to the lynx amendments can be found at *White River National Forest Plan*, U.S. DEP’T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/6PSE-MV87>.

207. USFS, 2002 LRMP, *supra* note 195.

208. USFS, WRNF FEIS, *supra* note 184.

C. Structure and Goals of the 2002 LRMP

Like other forest plans prepared in the Rocky Mountain Region (Forest Service Region 2),²⁰⁹ the 2002 WRNF LRMP is supposed to comply with the goals and objectives laid out in the Forest Service's 1992 Rocky Mountain Regional Guide, which provided guidance on overarching Region 2 goals, objectives, standards and guidelines.²¹⁰ Those regional goals are to:

1. Protect basic soil, air, water, and land resources;
2. Provide for a variety of life through management of biologically diverse ecosystems;
3. Provide for multiple uses and sustainability . . . in an environmentally acceptable manner;
4. Provide for scenic quality and a range of recreational opportunities that respond to the needs of forest customers and local communities;
5. In cooperation with other landowners, strive for improved land ownership and access patterns to the mutual benefit of both public and private landowners;
6. Improve the financial efficiency of all programs and projects;
7. Emphasize cooperation with individuals, organizations and other agencies while coordinating planning and project implementation; and
8. Promote rural development opportunities.²¹¹

In addition to regional goals, the 2002 LRMP introduced *forest-wide goals* that speak to the desired conditions within the WRNF. These generally overlap with or incorporate the regional goals and include: (1) ecosystem health, (2) multiple benefits to people, (3) scientific and technical assistance, (4) effective public service, (5) public collaboration, and (6) American Indian rights and interests.²¹²

Each of these six goals has corresponding *objectives*. These are concrete, measurable steps taken to accomplish those goals, along with *strategies* to realize those objectives.²¹³ These objectives and corresponding strategies take varying

209. The U.S. Forest Service Rocky Mountain Region ("Region 2") is headquartered in Golden, Colorado. It comprises seventeen national forests and seven national grasslands—40 million acres in the states of Colorado, Kansas, Nebraska, South Dakota, and Wyoming. See *Regional Overview, Rocky Mountain Region*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/2Z9R-LVMS>.

210. U.S. DEP'T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: ROCKY MOUNTAIN REGIONAL GUIDE, at 1-1 (1992).

211. *Id.* at 1-1 to 1-5; USFS, 2002 LRMP, *supra* note 195, at 1-1.

212. USFS, 2002 LRMP, *supra* note 195, at 1-2.

213. See 16 U.S.C. § 1604(g) (2012); USFS, 2002 LRMP, *supra* note 195, at 1-1.

levels of detail and specificity: for example, Objective 2a (under the goal of “multiple benefits to people”) is to improve the capacity of the WRNF to “provide diverse, high quality recreation opportunities.”²¹⁴ Strategies to accomplish this are both quantitative—“[b]y the end of the plan period, rehabilitate or reconstruct 20 percent of trailheads to meet agency standards”—and qualitative—“[f]oster quality opportunities for . . . skiing and snowboarding through partnerships.”²¹⁵

While objectives and strategies are designed to identify and achieve specific forest goals, *standards and guidelines* (“S&Gs”) are developed for each specific forest resource.²¹⁶ *Standards* are “a course of action that must be followed, or a level of attainment that must be reached, to achieve forest goals.”²¹⁷ Adherence to standards is mandatory, as standards are used to supplement or clarify existing laws and policies surrounding a given resource, and define what may constitute unacceptable outcomes in relation to that resource.²¹⁸

Guidelines indicate the preferred mechanism for realizing those standards. The S&Gs in the 2002 LRMP are extensive—over forty-five pages long—and comprehensive, including physical, biological, social, disturbance, and administrative processes.²¹⁹ These include indirect economic resources like wildlife, alpine areas, and soil quality, as well as extractive resources like travel development, silviculture, grazing, and ski recreation. The S&Gs contain particularly exhaustive detail for these latter forest uses, such as acceptable utilization of various tree species and allowable use for cattle allotments by season.²²⁰

The many forest-wide goals, objectives, and standards inform the *management area prescriptions* for the 2002 LRMP. Lands within the WRNF are divided into seven different categories or “zones” with varying environments, management emphases, and desired conditions.²²¹ All land within the WRNF is placed into one of these seven categories, and this determines how that land can be used. Each category has subcategories, and each subcategory contains its own conditions, as well as area-specific S&Gs. Broadly, the categories are:

214. USFS, 2002 LRMP, *supra* note 195, at 1-10.

215. *Id.*

216. 16 U.S.C. § 1604(c).

217. USFS, 2002 LRMP, *supra* note 195, at 2-1.

218. 16 U.S.C. § 1604(c) (“The Secretary shall begin to incorporate the standards and guidelines required by this section in plans for units of the National Forest System.”); USFS, WRNF FEIS SUMMARY, *supra* note 192, at 16.

219. *See* USFS, 2002 LRMP, *supra* note 195, at 2-1 to 2-45.

220. *See id.* at 2-9, 2-10 to 2-15. For example, there are twelve standards and thirteen guidelines provided for silviculture, with details regarding acceptable size of harvestable trees or what constitutes an “opening” in different forest types. *See id.* at 2-10 to 2-15.

221. *See id.* at 3-1. The plan provides for eight categories, but no lands are listed as Category 6 grasslands under the 2002 LRMP. *See* USFS, WRNF FEIS SUMMARY, *supra* note 192, at 22.

1. Wilderness and minimal-use areas;
2. Research natural areas and minimal-use special areas;
3. Management areas that balance ecological values with human occupancy;
4. Areas emphasizing scenic values and recreation;
5. Primarily forested ecosystems that are managed to meet a variety of ecological and human needs;
6. [*Category 6 applies to grasslands specifically, but no lands are included in this category under the 2002 LRMP*];
7. Areas where public and private lands are intermingled, so USFS management is tempered by landowner uses and objectives;
8. Areas where human activities have permanently altered ecosystem processes.²²²

To take one example, Category 1—“wilderness and other minimal-use management areas”—contains eight subcategories. These include “pristine wilderness,” “recommended for wilderness,” and non-motorized backcountry recreation with “limited” winter motorized access.²²³ As a further example, conditions for this last subcategory (Category 1.32) include a landscape which is “primarily natural and relatively undisturbed by humans,” trails for non-motorized recreation, with some areas open to over-the-snow vehicles in the winter, no road building and limited new trail construction, and dispersed camping.²²⁴ Standards for Category 1.32 include prohibition of motor vehicles during snow free-periods, except by special-use permit or administrative/emergency purposes; guidelines for Category 1.32 include conversion or decommissioning of existing unclassified roads.²²⁵

The NEPA process for the 2002 LRMP largely focused on alternative ways to divide up the forest into these seven categories.²²⁶ The S&Gs for the 2002 LRMP are the same across those seven alternatives, although they vary in terms of the size and location of the different management zones.²²⁷ That is, the seven categories do not change; what changes between alternatives is the amount of land designated under each category, and this depends upon the management emphasis of that alternative. The differences between alternatives,

222. See USFS, 2002 LRMP, *supra* note 195, at 3-3, 3-19, 3-27, 3-39, 3-49, 3-73, 3-77.

223. *Id.* at 3-4.

224. *Id.* at 3-13.

225. *Id.* at 3-14.

226. USFS, WRNF FEIS SUMMARY, *supra* note 192, at 15.

227. *Id.* at 3. For example, Alternative D emphasizes ecological processes over human uses of the forests, and designates thirty-seven percent and forty-seven percent of the WRNF as categories 1 (wilderness) and 5 (wildlife habitat and rangeland), respectively. *Id.* at 28-29. In contrast, Alternative E emphasizes economic benefit from recreation activities, and designates forty-one percent and sixteen percent of the WRNF as categories 1 and 5, respectively. *Id.* at 30-31.

then, can be fairly easily understood by comparing color-coded maps which lay out management area variations.

Some alternatives proposed management extremes, for example, maximum output of commodity resources or minimum human intervention in natural disturbance regimes, and these were characterized by management area allocations. The selected alternative (Alternative K), developed in response to public comment after publication of the DEIS, attempts to balance multiple uses and errs toward conservative recreation growth and active ecosystem management:

[Alternative K] sustains the capabilities of forest ecosystems while addressing social values and expectations, as well as managing for multiple resource outputs. Ecosystem components are actively managed to improve wildlife habitat, water quality, and soil productivity. Management activities will maintain or restore ecosystem structure, function and composition. Recreation activities across the forest will continue to be diverse. Emphasis will be placed on quality recreation experiences in a predominately natural setting. Recreation growth will become more managed, while still allowing modest increases in use.²²⁸

Alternative K establishes a wide range of uses and goals for the WRNF. Thus, the final section of the Plan is dedicated to monitoring and assessment of how the courses of action laid out in the Plan interact with conditions in the WRNF.²²⁹ This section establishes monitoring priorities, questions related to the goals and objectives of the Plan, and broad strategies for answering those questions.²³⁰

D. *Monitoring and Evaluation in the 2002 LRMP*

The 2002 LRMP defines monitoring as the periodic taking of observations to detect changes or trends in the WRNF.²³¹ Monitoring *priorities* serve to ensure that WRNF monitoring resources are leveraged to answer the “most pertinent questions” about how and whether the WRNF is moving toward desired conditions.²³² Monitoring priorities for the 2002 LRMP include, for example, questions like: “Is there a high degree of disparity between existing and desired conditions?” and “Is there a high degree of uncertainty associated with

228. *Id.* at 36.

229. See USFS, WRNF FEIS, *supra* note 184, at 4-1; 16 U.S.C. § 1604(g)(3)(C) (2012) (requiring research and evaluation “to the end that [management] will not produce substantial and permanent impairment of the productivity of the land”); see also 36 C.F.R. § 219.12 (2012).

230. USFS, 2002 LRMP, *supra* note 195, at 4-12 to 4-25.

231. *Id.* at 4-1.

232. *Id.* at 4-7.

management assumptions?”²³³ In turn, each monitoring *question* must align with one or more of these monitoring priorities.

Monitoring questions are categorized by whether they address the *effectiveness* of a specific management strategy or the *implementation* of those strategies in practice.²³⁴ Within those categories, each specific question is stated along with its corresponding monitoring priorit(ies), as well as a *driver*: a goal/objective, statute, regulation, or some combination thereof which supports the requirement that this information be collected. *Potential monitoring items* to answer each question are listed. For example, a question regarding water quality lists certain types of watersheds as monitoring items.²³⁵ In addition, questions are given a binary *precision and reliability* rating (indicating how precisely or quantitatively that monitoring question may be answered); a *scale*, from the entire administrative unit to a district or a specific geographic location; and a designated *frequency of reporting*.²³⁶

The 2002 LRMP establishes a monitoring guide, with a list of specific information to be provided for each monitoring item. To implement this guide, a Monitoring Interdisciplinary Team prepares an annual *work plan* whereby the team reviews the monitoring results from prior years to determine if the methodology and protocols are effective. The monitoring guide is then adjusted as necessary.²³⁷

Key findings of the monitoring process are reported annually, along with a “synthesis of results, interpreted to draw conclusions about whether or not [the WRNF is] moving toward forest goals and desired conditions.”²³⁸ This information is then used to determine if changes to management or monitoring in the WRNF are warranted.²³⁹

Ascertaining whether forest management is achieving the goals of the plan and moving toward desired conditions requires baseline data as a point of reference—something explicitly acknowledged in the 2002 LRMP.²⁴⁰ Baseline data for the WRNF, however, was not established prior to the publication of the 2002 LRMP. In fact, the protocols and guidance for establishing that baseline data did not yet exist.²⁴¹ Even the five-year monitoring and evaluation report

233. *Id.*

234. *See id.* at 4-13, 4-23.

235. *Id.* at 4-12.

236. *Id.*

237. *Id.* at 4-8 to 4-9.

238. *Id.* at 4-10 to 4-11.

239. 36 C.F.R. § 219.12(d)(2) (2012).

240. USFS, 2002 LRMP, *supra* note 195, at 4-10.

241. *See* U.S. DEP’T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: MONITORING EVALUATION REPORT (2004) (“A ‘Monitoring Evaluation Report’ for fiscal year 2003 was never completed because direction in the monitoring guide and specific monitoring protocols had not been defined.”).

often refers to the prior half-decade of monitoring as “creating a baseline.”²⁴² Several modifications have since been made to monitoring questions and strategies since the 2002 LRMP, including recommendations for changes, presented along with monitoring results, in the five-year report, and in the 2016 “Updated Monitoring Plan.” This brought WRNF monitoring into compliance with the 2012 USFS Planning Rule.²⁴³

E. Rethinking the 2002 WRNF LRMP under a Layered Planning Framework

While the 2002 WRNF LRMP promotes coordination with other land management agencies,²⁴⁴ it does not actually engage in landscape-level planning. Nonetheless, a relatively simple landscape-level plan could be extremely useful, as, for example, in identifying wildlife corridors, connected or complementary habitats, transportation corridors, and industrial zones. Under the proposed layered planning framework, a landscape-level plan might be comprised almost entirely of maps that encompass the entire ecoregion, with alternatives that illustrate different visions for the landscape. The only additional need would be for specific metrics to monitor changes over the landscape.

What is now called an LRMP would be somewhat more detailed than a landscape-level plan, but not much. It too could focus primarily on mapping and alternative scenarios for managing the forest. It too would require metrics and a monitoring plan that was designed to ensure timely identification of problems and adaptation of the plan to address those problems. Much of the detail now found in an LRMP might still need to be addressed, but most could be left for resource- or project-level plans.

The current 2002 WRNF LRMP, of course, goes well beyond the type of unit-level plan proposed here. Beyond the basic zoning exercise, the LRMP attempts to describe how specific natural resources will be managed if and when they are developed. In particular, it tries to analyze the relationship between every goal of the plan, every ecosystem process, and every natural resource use in the WRNF. While this seems like a laudable goal in the abstract, it helps to make the WRNF plan far too complex to allow for nimble, timely adaptive management when monitoring data shows that management goals and objec-

242. U.S. DEP'T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: 5-YEAR MONITORING AND EVALUATION REPORT, OCT. 2002–SEPT. 2007, at 24, 32 (2008) [hereinafter “USFS, 2008 MONITORING REPORT”] (describing use of monitoring data to inform a baseline).

243. U.S. DEP'T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: WHITE RIVER FOREST PLAN: UPDATED MONITORING PLAN 4-3 to 4-17 (2016) (describing requirements for monitoring under the 2012 rule and applying those to the White River National Forest).

244. *See* U.S. DEP'T OF AGRIC., U.S. FOREST SERV., WHITE RIVER NATIONAL FOREST: RECORD OF DECISION FOR THE LAND AND RESOURCE MANAGEMENT PLAN – 2002 REVISION 1-1, 1-5 to 1-7 (2002) (describing coordination with federal and state authorities).

tives are not being met. To give just one example, the WRNF unit-level plan determines how much of the land base is “tentatively suitable” for timber production (thirty-seven percent) and how much timber should be sold in the WRNF through the life of the plan.²⁴⁵ Why is the Forest Service making these decisions in the unit-level plan? As was previously noted, only four percent of the WRNF has been impacted by logging since 1900 and timber producers seems unlikely to become major players on the forest anytime soon. So why expend resources deciding on logging levels and the suitability of lands for logging at this stage of planning? Why not wait to see if any parties have an interest in logging and if so, whether the particular logging proposal is compatible with other uses of the forest.

The 2002 WRNF LRMP required that this exhaustive review process be carried out for every resource, and, during the NEPA process, for every alternative. By introducing goals, strategies, and S&Gs for every possible resource use of the WRNF, the planning team ensures that the NEPA review must consider all of these aspects. Addressing every resource simultaneously leads to a lengthy and complex planning and NEPA review process. This is not to say that a detailed review of something like a logging proposal is unnecessary or unimportant, but rather that the detailed analysis should take place closer in time and closer to the proposed development site.

It is telling that the 2002 WRNF plan has not been amended since 2006 and, despite the fact that the WRNF plan is now two years past the deadline for revising forest plans as required by NFMA,²⁴⁶ the Forest Service has not even announced plans to commence the revision process. Does anyone really believe that the WRNF should be managed under the same standards that were adopted seventeen years ago? Given the absence of baseline data, inadequate monitoring, and the lack of good metrics, the Forest Service cannot possibly

245. For example, Objective 2c (“Improve the capability of national forests and rangelands to sustain desired uses, values, products, and services”), under the goal of “multiple benefits to people,” contains such diverse strategies as “2c.1: By the end of the plan period, offer for sale the allowable timber sale quantity” and “2c.11: Over the life of the plan, approve special-use proposals that are consistent with desired conditions, standards, and guidelines.” USFS, 2002 LRMP, *supra* note 195, at 1-11 to 1-12. Each one of these strategies is specific enough that it requires exhaustive review at the unit-level stage which would be better served in a resource- or project-level plan. Consider: 2c.1 requires that the LRMP include S&Gs for silviculture, including allowable timber sale quantities for each tree species, timber size requirements, desired species densities, appropriate silviculture systems (with a corresponding appendix in the FEIS), and late-successional and old-growth forests (with a corresponding appendix in the LRMP). In turn, these S&Gs must be addressed during the NEPA process, determining how silviculture (and changes thereof) relates to wildlife biodiversity, aquatic resources, forested vegetation, fire management, and livestock grazing—and how each of those processes might be affected differently within each proposed alternative.

246. 16 U.S.C. § 1604(f)(5) (2012).

know whether a revised plan is needed. And without such data, talk of adaptive management is meaningless.

Agency officials will no doubt complain that they lack sufficient resources to revise plans within the fifteen year timeframe mandated by Congress. That tends to be their excuse for inadequate monitoring and adaptation as well. But this is precisely the point. In the face of limited resources, the Forest Service and BLM need to rethink their entire approach to planning and figure out how they can manage our public lands better with less.

A layered planning framework would allow the land management agency to avoid setting specific S&Gs for silviculture, grazing, special forest products, mineral resources, and many social uses (like recreation and ski areas) until the appropriate time and in an appropriate document focused on that resource and the particular locus where the resource will be developed.²⁴⁷ To be sure, the Forest Service and BLM can both point to limited examples where they have tiered to other planning documents, in an effort to streamline their decisions.²⁴⁸ But these are the exception and they need to become the rule.

F. Adapting the WRNF Plan under a Layered Planning Framework

As previously argued, layered planning requires good monitoring protocols. It requires good metrics and a good monitoring plan with sufficient resources to implement the plan. I have previously argued for the use of something like the SMART model. Metrics need to be “*specific, measurable, achievable, results-oriented, and time-limited.*”²⁴⁹ The monitoring questions in the 2002 WRNF LRMP do not conform to the SMART model. The metrics are broad, not “specific,” and often long-term, and thus not effectively time-bound, due in large part to the breadth of the plan. Some are broad topically. For example, the monitoring plan for the WRNF asks: “Is habitat effectiveness on

247. This postponing of S&Gs is consistent with NFMA, which does not require high specificity for S&Gs, nor does it mandate that all S&Gs are established in the same level of planning. Moreover, NFMA seems to contemplate planning at different scales where it provides for “an *integrated plan* for each unit of the National Forest System, incorporating in one document or *one set of documents* . . . all of the features required by [NFMA].” *Id.* § 1604(f)(1) (emphasis added).

248. On the WRNF itself, the 2002 LRMP tiers to a 1993 EIS on WRNF oil and gas leasing for guidance. This Oil and Gas Plan is not a resource- or activity-level plan as discussed here, because it was not informed by a higher-level (i.e., landscape- or unit-level) plan. However, the 1993 plan—and its 2015 revision—*do* designate lands available for oil and gas leasing, pending project-level NEPA analysis, and thus remove the discussion of oil- and gas-related S&G from the 2002 LRMP and its NEPA process. In this sense, it is not dissimilar to a layered planning framework. See U.S. DEP’T OF AGRIC., U.S. FOREST SERV., FINAL RECORD OF DECISION: OIL AND GAS LEASING ON LANDS ADMINISTERED BY THE WHITE RIVER NATIONAL FOREST (1993); USFS, 2015 WRNF OIL AND GAS, *supra* note 191.

249. See Doran, *supra* note 135 and accompanying text.

the forest being maintained or enhanced?”²⁵⁰ Nothing about this question is specific or measurable, and since there is nothing to measure, it is not possible to know whether it has been achieved. Others are more specific and maybe even measurable, but they are so broad that determining whether they have been achieved is not likely very meaningful. For example, the monitoring plan asks whether “the safety and economy of Forest Service roads, trails, facilities and operations [have] improved.”²⁵¹ One might be able to answer yes, even absent a meaningful record supporting claimed improvements. The monitoring plan generally requires that most metrics be reported every five years, but this is far too long to ensure timely adaptation of the 2002 WRNF LRMP, especially given that the Plan is supposed to be revised every fifteen years.²⁵²

But monitoring is not an end in itself. Rather, as the 2002 LRMP acknowledges, monitoring is critical because “successful adaptive management depends on collectively evaluating the effectiveness of management activities in moving the forest toward desired conditions.”²⁵³ Indeed, monitoring and evaluation are necessary precursors to good adaptive management.²⁵⁴ Nonetheless, despite multiple appeals to the *theory* of adaptive management, the 2002 LRMP contains no explicit mechanisms for ensuring that emergent data informs and triggers future management changes. In fact, while the Forest Service planning rules require monitoring, they do not require that any specific action be taken based on monitoring results, apart from “periodic determination and evaluation of the effects of management practices.”²⁵⁵ The reluctance of the agency to commit itself to adapting the 2002 LRMP is perhaps understandable, given the LRMP’s complexity. The goal of timely and meaningful adaptation not less than every two years of a plan as complicated and detailed as the 2002 LRMP must seem nearly impossible. Yet if we hope to design a better land use planning system, plans like the WRNF LRMP will have to become more nimble. And they will become more nimble only if we can figure out how to make them far less complex.

X. FIELD TESTING THE LAYERED PLANNING APPROACH

Reasonable people may disagree about how best to reform the public land use planning process, but it is hard to shake the conclusion that the current process is fundamentally broken. Conventional, unit-level planning takes too

250. USFS, 2002 LRMP, *supra* note 195, at 4-16.

251. *Id.* at 4-21.

252. *See* USFS, 2008 MONITORING REPORT, *supra* note 242; *see also* 16 U.S.C. § 1604(f)(5) (2012). The current rules require that monitoring plans be evaluated, revised, and published every two years. 36 C.F.R. § 219.12(d)(1) (2018).

253. USFS, 2002 LRMP, *supra* note 195, at 4-9.

254. *See id.* at 4-2 to 4-3, 4-9; *see also* 36 C.F.R. § 219.12(d)(2).

255. 36 C.F.R. § 219.5(a)(1).

long and costs too much, both financially and in terms of personnel resources, and it robs the agencies of the resources needed to properly address both individual project proposals and other planning levels. Furthermore, in terms of public engagement it favors paid professionals, often with private, financial interests, over the general public. And in addition to all of these process problems, it is a largely ineffective planning tool because it pays so little attention to monitoring of conditions on the ground, evaluating that monitoring information, and then adapting the program to reflect that information in a timely fashion.

The complexity of current plans also invites litigation, thereby further taxing agency time and resources. Not surprisingly, and largely because of these problems, many public land use plans are woefully out of date with little hope that the backlog can be effectively addressed anytime soon.²⁵⁶

In this Article, I have proposed a fairly radical rethinking of the land use planning process. The key components include:

1. A *layered planning framework* that breaks planning into smaller and more logical parts;
2. A comprehensive and timely *monitoring and evaluation program for the landscape and unit levels of planning*;
3. A compulsory *adaptive management program* that flows directly from the monitoring and evaluation process; and
4. An *agency culture that embraces public participation*.

I recognize, however, that embarking on a wholesale revision of the current land use planning process, without first field-testing some of these ideas and strategies, would be imprudent. Moreover, even if some of the ideas put forward here make sense, field-testing them could help reveal strategies for—*in keeping with the theme of this Article*—adapting these ideas and thereby further improving the planning process. For that reason, I encourage both the Forest Service and BLM to establish pilot programs for testing a new approach to public land use planning along the lines proposed here. A major change such as is proposed here will force both the Forest Service and BLM out of their comfort zones on planning and it will likely require creative thinking when obstacles are encountered, as they surely will be. But if the agencies are truly committed to a robust adaptive management program, then significant changes to the current approach to planning are inevitable.

The pilot program I envision would begin by identifying a particular ecoregion with a range of resource challenges and an agency staff open to testing new ideas. It would also be best if the communities located in or near the

256. The White River National Forest Plan, for example, was promulgated in 2002 and thus was due to be revised no later than 2017 under the terms of NFMA. 16 U.S.C. § 1604(f)(5) (2012). The planning page on the WRNF website gives no indication that the Forest Service is even considering a revision to the existing plan, let alone establishing a timetable for its development. *Planning, White River National Forest*, U.S. DEP'T OF AGRIC., U.S. FOREST SERV., <https://perma.cc/LJ9W-3QZ8>.

planning area have experience working with the agency and support the goals of the pilot program. BLM, for example, might choose an ecoregion where it has already completed a rapid ecological assessment, and where area and district managers have a good rapport with community leaders and are open to experimenting with some or all of the strategies proposed here. If the pilot program is successful, it could gradually be expanded throughout the agency, subject, of course, to any adaptation that might be appropriate based upon experiences in the field.

CONCLUSION

Public land use planning has followed a standard path for at least the last four decades. It focuses heavily on large units, often in excess of one million acres, that are often incongruent with watershed and ecological boundaries. And the plans for these units take many years to develop, in large part because they try to be far too comprehensive. While comprehensive planning might, at first blush, seem like a good idea, it comes at a significant cost. Not only does it consume a substantial portion of agency resources, the time and effort required for the current planning process makes it nearly impossible for agencies to adapt their plans to reflect new information in a timely and meaningful way.

While the key multiple-use agencies—BLM and the Forest Service—could fundamentally rework their planning processes on their own, that seems unlikely to happen without substantial public pressure. Both agencies recently engaged in extensive public rulemaking processes on land use planning²⁵⁷ that were designed to improve their planning processes. Despite some improvements, both agencies have ultimately retained the basic flawed structure of the existing planning programs. Still, sweeping changes to public land use planning as proposed here could happen if the agencies and the public commit themselves to rethinking planning from the ground up.

We know enough now to understand that timely and meaningful adaptive management is simply not feasible under the current planning regime. Moreover, a new planning model, such as that proposed here, is simple enough to be easily explained and compelling enough that it just might win over skeptics on all sides. In particular, a planning protocol that requires relatively simple zoning-type decisions at the higher levels of planning, coupled with good baseline data, clear goals and objectives, specific metrics, sufficient monitoring, and a commitment to timely adaptation, is pretty much all that is needed. Experience shows that anything more is likely to prove counterproductive.

The time is long overdue for the multiple-use agencies to admit that the current land use planning scheme is not working, and that it cannot be fixed without fundamental change. I have proposed a model here that outlines a very

257. See *supra* notes 67–72 & 91.

different approach to planning that could both streamline the process and make for far better public engagement, even as it strives to reach that elusive goal of meaningful adaptive management. Perhaps some of the ideas offered here will work. Perhaps others will not. But the time for trying a new approach to public land use planning is long overdue. Let's start now.