

## **WATERSHED PROTECTION ON NATIONAL FORESTS**

*An Earthjustice briefing paper relevant to the 2011 National Forest Planning Rule Revisions*

The National Forest System includes 193 million acres of land (about 8% of the United States) in 42 states and Puerto Rico, including 155 national forests and 20 national grasslands. National forests are a critical reservoir of biological diversity, supporting more intact populations of rare species than any other American public land system. Over 3,000 species of birds, mammals, reptiles, amphibians, and fish, and more than 10,000 plant species, call national forests home, including over 400 endangered and threatened species. National forests encompass a wide variety of ecosystems, including large, relatively unfragmented habitat critical to such species as grizzly bears, gray wolves, and lynx; old-growth forests that harbor rare species such as the northern spotted owl; and aquatic habitat and the clean water necessary to protect dwindling populations of salmon, steelhead, and other native fish and aquatic species. National Forest watersheds produce a large share of the water that supports human recreational, scenic, municipal, and industrial use in the United States, particularly in the western states.

### **I. THE NATIONAL FOREST MANAGEMENT ACT**

Public concern about excessive clearcutting and insular management led Congress in 1976 to enact the National Forest Management Act (“NFMA”) as a “fundamental reform.” Congress focused its reform efforts on (1) requiring long-range planning, (2) allowing public participation, and (3) establishing standards and guidelines for managing forests. The Chair of the Senate Subcommittee on the Environment and Land Resources noted that, in enacting

NFMA, “the era of full delegation of land management decision-making authority to Federal agencies is over.” Sponsor Senator Humphrey stated: “The days have ended when the forest may be viewed only as trees and trees viewed only as timber. The soil and the water, the grasses and the shrubs, the fish and the wildlife, and the beauty that is the forest must become integral parts of resource managers’ thinking and actions.”

NFMA imposes substantive duties on the United States Department of Agriculture (“USDA”) by establishing nondiscretionary standards and guidelines for protecting national forest resources and promoting public accountability and long-range planning. *Inland Empire Pub. Lands Council v. U.S. Forest Serv.*, 88 F.3d 754, 757 (9th Cir. 1996) (“NFMA imposes substantive requirements . . . which have been promulgated as regulations”); *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1173 (9th Cir. 2006) (“[S]ubstantive requirements of the NFMA [are] designed to ensure continued diversity of plant and animal communities and the continued viability of wildlife in the forest.”) (citation omitted).

NFMA establishes a three-tiered regulatory approach to forest management, with different requirements existing at the national, regional, and local levels. At the national level, NFMA requires USDA to promulgate regulations that (1) set out the process for the adoption and revision of forest plans and (2) set forth the standards and guidelines for uses of the forests. *Citizens for Better Forestry v. U.S. Dep’t of Agriculture*, 341 F.3d 961, 965 (9<sup>th</sup> Cir. 2003) (“*Citizens I*”) (citing 16 U.S.C. § 1604(g)). The regulations “set broad guidelines (to be followed in preparing regional and site-specific plans) regarding plant and animal species conservation, timber management, and water management.” *Id.* (citing 16 U.S.C. § 1604(g)(3)). At the regional level, NFMA requires USDA to prepare forest plans, which prescribe the uses allowed in a particular national forest and must comply with the nationwide regulations. 16 U.S.C.

§ 1604(a). Forest plans set forest-wide standards and guidelines that control site-specific projects for 15 years or more. And at the “site-specific” level, USDA prepares plans for specific actions, such as timber sales, which “must be consistent with both sets of higher-level rules.” *Id.* at 966 (citing 16 U.S.C. § 1604(i)). The provisions of forest plans are enforceable against the Forest Service, as are the requirements of the forest planning rules under NFMA.

With respect to watershed and aquatic ecosystem protection, NFMA (16 U.S.C.

§ 1604(g)) provides that USDA regulations shall include guidelines for land management plans that:

(A) insure consideration of the economic and environmental aspects of various systems of renewable resource management, including the related systems of silviculture and protection of forest resources, to provide for outdoor recreation (including wilderness), range, timber, watershed, wildlife, and fish;

(B) provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives,...

(E) insure that timber will be harvested from National Forest System lands only where—

(i) soil, slope, or other watershed conditions will not be irreversibly damaged;<sup>1</sup>

(iii) protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat;<sup>2</sup>

## II. WHERE ARE WE NOW? THE CURRENT RULE REVISION PROCESS

Over the last decade, a protracted and highly politicized series of amendments to prior forest planning regulations attempted to weaken both substantive and procedural protections on our national forests. A series of successful lawsuits rebuffed these weakening amendments, and

---

<sup>1</sup> Note that this requirement applies to all timber activities, including roadbuilding in conjunction with timber harvesting.

<sup>2</sup> The Senate Agriculture Committee’s discussion of this section stressed that activities affecting “significant fish and wildlife habitat must be very carefully planned and monitored to assure that

once again, USDA has begun a process to adopt revised forest planning regulations. The promulgation of new regulations presents a unique opportunity to influence the forest planning process for years to come. These national regulations control how individual forest plans are developed, which in turn directly control and affect on-the-ground activities ranging from resource extraction to restoration and protection.

Not only does the statutory language of NFMA require the Forest Service to enact regulations that protect watersheds and instream flows, but Agriculture Secretary Vilsack has specifically called for increased attention to water supplies and watershed protection on our national forests. Most importantly, the reality of climate change and the need to protect the resilience of national forest ecosystems has become a basis for good sound bites, if not any actual action. If the revised forest planning regulations were to mandate – through enforceable standards – watershed and aquatic protections based on the best available science, we would have succeeded in raising the bar *nationwide* for public lands conservation.

### III. HOW DID WE GET HERE?

There have been four prior sets of comprehensive national forest planning regulations – 1982, 2000, 2005, and 2008.<sup>3</sup> All but the 1982 regulations have been struck down for violating procedural requirements of other environmental laws. The legal holdings and discussions in the cases set out below support the position that (1) NFMA imposes substantive requirements for forest planning rules; (2) to date, those substantive requirements have been most specifically enunciated in the 1982 regulations; and (3) the 1982 regulations, for both legal and conservation reasons, effectively constitute the “floor” for any future forest planning rules.

---

habitat values are recognized and properly protected.” S. Rep. No. 893, 94<sup>th</sup> Cong., 2d Sess. 39.

<sup>3</sup> USDA promulgated the first set of national forest management regulations in 1979, 44 Fed. Reg. 53,928 (Sept. 17, 1979), but those were quickly replaced by the 1982 Rule. *National Forest*

A. 1982 Rule

The 1982 Rule “set out a comprehensive approach to forest management, implementing the statutory directive.” *Citizens I*, 341 F.3d at 966. The 1982 Rule featured substantive wildlife management requirements, including that “wildlife habitat shall be managed to maintain viable populations,” and defining a viable population as “one which has the estimated numbers and distribution of reproductive individuals to *insure* its continued existence is well distributed in the [relevant] area.” *Id.* (citing 36 C.F.R. § 219.19 (1982)) (emphasis in original).<sup>4</sup> The 1982 Rule also “contained ‘minimum specific management requirements,’ setting forth mandatory directives which all [forest plans] must follow, and specific, quantifiable baselines below which no [forest plan] or site-specific plan can fall.” *Id.* (citing 36 C.F.R. § 219.27 (1982)). Such requirements included direction for riparian areas:

Special attention shall be given to land and vegetation for approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water. This area shall correspond to at least the recognizable area dominated by the riparian vegetation. No management practices causing detrimental changes in water temperature or chemical composition, blockages of watercourses, or deposits of sediment shall be permitted within these areas which seriously and adversely affect water conditions or fish habitat. Topography, vegetation type, soil, climatic conditions, management objectives, and other factors shall be considered in determining what management practices may be performed within these areas or the constraints to be placed upon their performance.

36 C.F.R. § 219.27(e) (1982). Section 219.27(f) (1982) stated that “[c]onservation of soil and water resources involves the analysis, protection, enhancement, treatment, and evaluation of soil and water resources and their responses under management,” and then discussed “official technical handbooks” to guide planners. In addition, the 1982 Rule required the development of

---

*System Land and Resource Management Planning*, 47 Fed. Reg. 43,026 (Sept. 30, 1982).

<sup>4</sup> *See also* 36 C.F.R. § 219.19 (1982) (to ensure species viability, “habitat must be provided to support . . . a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area”); *id.*

so-called “regional guides,” which “provide[d] standards and guidelines for addressing major issues and management concerns which need to be considered at the regional level to facilitate forest planning.” 47 Fed. Reg. at 43,042 (revising 36 C.F.R. § 219.8-9).

The Forest Service promulgated most, if not all, original forest plans under the 1982 Rule. Although the first forest plans varied considerably in the breadth and depth of their analysis, most were structured around two central concepts: (1) zoning, or placing lines on maps that defined management areas; and (2) standards and guidelines for forest-wide and area-specific activities. Most forest plans included Management Indicator Species as a way to comply with the viability regulation. Missing from almost all forest plans was any comprehensive, mandatory monitoring – a requirement also notably missing from the 1982 Rule.

Many of these original forest plans, however, simply failed to protect ecological resources; one of the legal impetuses for the Northwest Forest Plan (which amended the 19 individual forest plans of the national forests in the range of the northern spotted owl) was the failure of those original plans to protect the viability of the owl. Indeed, it was NFMA and the 1982 forest planning regulations that prompted USDA to adopt the Northwest Forest Plan’s Aquatic Conservation Strategy several years before numerous salmon and steelhead populations were protected under the Endangered Species Act.

B. The 2000, 2005, and 2008 Rules

Three times in the last decade, USDA attempted to revise the 1982 forest planning regulations. Each revision failed to comply with the procedural requirements of the National Environmental Policy Act (“NEPA”) and the Endangered Species Act (“ESA”) because USDA clung to an assertion that the rules had no effect on the environment and no impact on listed

---

§§ 219.19(a)(1-7), 219.26, 219.27(a)(5), 219.27(g).

species, and therefore it had no duty to prepare an environmental analysis or to consult with expert biological agencies. Environmental plaintiffs successfully challenged USDA's attempt to revise the forest planning regulations each time.

*1. Round One: The 2000 Rule*

In the first round, the Ninth Circuit noted that the 2000 Rule substantially changed existing regulations, “decrease[d] substantive environmental requirements,” and “pose[d] an actual, physical effect on the environment in national forests.” *Citizens I*, 341 F.3d at 972-73. The appellate court discussed the fact that the 2000 Rule “substantially modified the 1982 Rule” ... including by “relax[ing] the species ‘viability’ requirement” by changing the standard for continued species existence from the stringent “insure” to a less certain “high likelihood,” and eliminating many of the “minimum specific management requirements.” *Citizens I*, 341 F.3d at 967-68, 972 (citations omitted).<sup>5</sup>

*2. Round Two: The 2005 Rule*

In the second round of litigation, USDA took an even more extreme position. USDA admitted that the 2005 Rule “embodie[d] a paradigm shift in land management planning,” 70 Fed. Reg. 1022, 1024 (Jan. 5, 2005), even from the more relaxed standards of the 2000 Rule. In fact, the 2005 Rule eliminated nearly all mandatory management requirements in the 1982 Rule. For example, in the 1982 Rule, USDA complied with its NFMA duty to “provide for diversity of plant and animal communities,” by adopting regulations requiring the Forest Service to maintain viable populations of wildlife species. 36 C.F.R. § 219.19 (1982). The 2000 Rule relaxed this standard but still required plan decisions to provide a “high likelihood” that ecological conditions

---

<sup>5</sup> The Ninth Circuit made these observations in concluding that environmental plaintiffs were eligible to challenge the 2000 Rule, but the Court did not reach the merits. The demise of the 2000 Rule was political, as the incoming Bush administration brought a pro-development agenda to the table that viewed the 2000 Rule as excessively worried about ecosystems.

support the viability of species. *Citizens I*, 341 F.3d at 967-68 (citing 36 C.F.R. § 219.20 (2000)). In contrast, the 2005 Rule provided no meaningful standards regarding species' viability, instead requiring only an "overall goal" of providing ecological conditions to support diversity of plant and animal communities and an undefined "framework" for providing such conditions, while giving the responsible official complete discretion to determine whether any additional "provisions" were needed for specific species. 36 C.F.R. § 219.10(b) (2005). In eliminating the standards of the earlier rules, USDA relegated specific guidance for managing forest resources to unenforceable agency directives. *Id.* § 219.12(b)(2).<sup>6</sup>

Consistent with its attempt to turn binding forest plans that govern every activity on the national forests into only "a description of a vision for the future," 70 Fed. Reg. at 1031, the 2005 Rule also eliminated the requirement to prepare an environmental analysis pursuant to NEPA for most forest planning decisions, declaring that "under this rule approval of a plan, plan amendment, or plan revision typically will not have environmental effects." *Id.* at 1032. U.S. Forest Service planners began to describe the 2005 Rule as turning forest plans into aspirational documents that described desired future conditions but remained free of standards, guidelines, and other specific criteria for management decisions that in the past had allegedly tied their hands.

---

<sup>6</sup> In another sharp departure from prior rules, the 2005 Rule eliminated the applicability of the NFMA regulations to site-specific projects. 36 C.F.R. § 219.2(c) (2005). While NFMA requires site-specific projects to be consistent with the forest plan, 16 U.S.C. § 1604(i), the 2005 Rule allowed forest officials to implement a project inconsistent with the plan by simply exempting that project. 36 C.F.R. § 219.8(e) (2005). And although NFMA requires public notice before a forest plan is amended and substantial public involvement if the changes would be "significant," 16 U.S.C. § 1604(f)(4), the 2005 Rule allowed significant changes to a plan without any public notice at all, by classifying such changes as "administrative corrections." 36 C.F.R. § 219.7(b) (2005). Further, the 2005 Rule required each national forest to adopt an "environmental management system" ("EMS"), a corporate management tool, as a central element of managing forests. 36 C.F.R. § 219.5 (2005).

Environmental plaintiffs again challenged the 2005 Rule under NEPA and the ESA and prevailed on both claims. *Citizens for Better Forestry v. U.S. Dep't of Agriculture*, 481 F. Supp. 2d 1059 (N.D. Cal. 2007) (“*Citizens II*”). The court set aside and enjoined implementation of the 2005 Rule until the agency “fully complied” with the law. *Id.* at 1100.

### 3. *Round Three: The 2008 Rule*

To start the third round, USDA republished the 2005 Rule as a proposed rule, sought public comment on that proposal, and issued a draft environmental impact statement. 72 Fed. Reg. 48,514, 48,533 (Aug. 23, 2007). In spring 2008, USDA published the 2008 Rule. 73 Fed. Reg. 21,468 (Apr. 21, 2008).

Most provisions of the 2008 Rule were identical to the 2005 Rule. The 2008 Rule included the same vague provision on biological diversity while deleting all previous requirements for species viability and wildlife protection, 36 C.F.R. § 219.10(b); it allowed the approval of site-specific projects inconsistent with a forest plan at the discretion of the local official, *id.* § 219.8(e)(3); it eliminated the applicability of the forest planning regulations to site-specific projects, *id.* § 219.2(c); it allowed timber management projections and monitoring programs to be changed in any manner without public review, *id.* § 219.7(b)(3), (4); and it retained the EMS requirement, in a slightly modified form, as an improper substitute for NEPA review of forest plan revisions. *Id.* § 219.5.

While the 2000 Rule *weakened* mandatory resource protections in the 1982 Rule, the 2008 Rule, like the 2005 Rule before it, *eliminated* many of these protections altogether and instead primarily adopted discretionary goals. Yet, despite the *Citizens I* ruling that the 2000 Rule’s less sweeping changes from the 1982 Rule posed actual physical effects on the environment, and the *Citizens II* ruling that full environmental analysis was necessary for the lawful adoption of the 2005 Rule, USDA prepared an environmental review document for the

2008 Rule that once again merely asserted that adopting a significantly weakened forest planning rule had no effects on the environment. Indeed, while the environmental impact statement identified alternatives to the 2008 Rule, including the 1982 Rule and 2000 Rule, it asserted that none of these vastly different regulatory schemes had any impacts. Similarly, with respect to threatened and endangered species, USDA simply restated its position that revising the forest planning regulations would have no effects on listed species.

On June 30, 2009, the U.S. District Court for the Northern District of California vacated and enjoined the U.S. Forest Service from further implementation of the 2008 Rule and ordered the U.S. Forest Service to reinstate either the 1982 or 2000 version of the land management planning regulations. *Citizens for Better Forestry v. U.S. Dep't of Agriculture*, 632 F. Supp.2d 968 (N.D. Cal. 2009) (“*Citizens III*”). The district court noted that:

[t]he 2008 Rule eliminates or modifies standards that applied to all [forest plans] and site-specific plans. For example, the 2008 Rule does not require that [forest plans] and site-specific plans “insure” the viability of existing vertebrate species, as the 1982 Rule did, or even provide a “high likelihood” of viability, as the 2000 Rule did. Instead, the 2008 Rule states a goal of providing a “framework to contribute to sustaining native ecological systems by providing appropriate ecological conditions to support diversity of native plant and animal species in the plan area.” 36 C.F.R. § 219.10(b). ... As the Ninth Circuit found, the “USDA’s argument ... that there is no reason to believe that lower environmental safeguards at the national programmatic level will result in lower environmental standards at the site-specific level [ ] suggests that it conceives of plan development rules merely as exercises in paper-pushing.” *Citizens I*, 341 F.3d at 975.

USDA did not appeal the district court’s decision, instead announcing a public process intended to culminate in new, final revised NFMA planning regulations by November 2011.

#### IV. AN EXAMPLE: THE NORTHWEST FOREST PLAN’S AQUATIC CONSERVATION STRATEGY

During the late 1980s and early 1990s, a series of lawsuits focused on rampant logging on federal public land in the Pacific Northwest uncovered “a remarkable series of violations of the

environmental laws,” and “a deliberate and systematic refusal ... to comply with the laws protecting wildlife.” *Seattle Audubon Soc’y v. Evans*, 771 F. Supp. 1081, 1089-90 (W.D. Wash.), *aff’d*, 952 F.2d 297 (9<sup>th</sup> Cir. 1991). To end the gridlock, President Clinton directed the Forest Service and the Bureau of Land Management to craft a comprehensive, long-term management strategy that is “scientifically sound, ecologically credible, and legally responsible.” Northwest Forest Plan Record of Decision (“ROD”) at 3. The agencies assembled a team of leading scientists, called the Forest Ecosystem Management Assessment Team (“FEMAT”), to develop ecosystem management strategies that would meet this goal. *Seattle Audubon Soc’y v. Lyons*, 871 F. Supp. 1291, 1303 (W.D. Wash. 1994), *aff’d*, 80 F.3d 1401 (9<sup>th</sup> Cir. 1996); FEMAT Report at I-1, II-36 to-37, ch. V.

The 1994 Northwest Forest Plan included the Aquatic Conservation Strategy (“ACS”) developed by FEMAT. Because of the dynamic and variable nature of aquatic environments, FEMAT eschewed one-size-fits-all standards. FEMAT Report at V-29 to-31; Northwest Forest Plan ROD at B-9 (“[a]ny species-specific strategy aimed at defining explicit standards for habitat elements would be insufficient for protecting even the targeted species”). Instead, the ACS establishes a process to tailor prescriptions to fit the needs of each watershed. FEMAT at V-29 to-31.

The ACS has four basic components: (1) a system of key watersheds or refugia comprising watersheds with the best aquatic habitat or the greatest potential for recovering at-risk fish stocks; (2) riparian reserves along streams where certain activities are constrained; (3) watershed analysis to be used to tailor activities to specific watersheds needs; and (4) a comprehensive, long-term watershed restoration program. Northwest Forest Plan ROD at B-12; FEMAT at V-32.

The ACS imposed constraints on habitat-degrading activities in two ways. First, binding standards and guidelines restrict certain activities within riparian reserves and key watersheds. See Northwest Forest Plan ROD at C-7, C-30 to C-38. Second, FEMAT recognized the need to constrain: (1) activities outside riparian reserves in, *e.g.*, unstable areas; and (2) the cumulative impacts of activities throughout a watershed. FEMAT at V-29. Instead of imposing explicit constraints on such activities, the ACS has nine objectives that require aquatic habitat to be maintained and restored to properly functioning conditions. Northwest Forest Plan ROD at B-11; FEMAT at V-30 to-31. The Northwest Forest Plan ROD gave the ACS objectives binding force as standards and guidelines and explicitly required that federal lands shall be managed to attain the ACS objectives:

The important phrases in these standards and guidelines are “meet Aquatic Conservation Strategy objectives,” “does not retard or prevent attainment of Aquatic Conservation Strategy objectives,” and “attain Aquatic Conservation Strategy objectives.” These phrases, coupled with the phrase “maintain and restore” within each of the Aquatic Conservation Strategy objectives, define the context for agency review and implementation of management activities. Complying with the Aquatic Conservation Strategy objectives means that an agency must manage the riparian-dependent resources to maintain the existing condition or implement actions to restore conditions. The baseline from which to assess maintaining or restoring the condition is developed through watershed analysis . . .

. . . The intent is to ensure that a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy objectives. The decision maker will use the results of watershed analysis to support the finding. In order to make the finding that a project or management action “meets” or “does not prevent attainment” of the Aquatic Conservation Strategy objectives, the analysis must include a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given watershed, and how the proposed project or management action maintains the existing condition or moves it within the range of natural variability. Management actions that do not maintain the existing condition or lead to improved conditions in the long term would not “meet” the intent of the Aquatic Conservation Strategy and thus, should not be implemented.

When Judge Dwyer upheld the validity of the Northwest Forest Plan, he cautioned with respect to the ACS that, “[i]f the plan as implemented is to remain lawful, the monitoring, watershed analysis, and mitigating steps called for in the ROD will have to be faithfully carried out, and adjustments made if necessary.” *Seattle Audubon Soc’y*, 871 F. Supp. at 1322.

More recently, courts have found that FEMAT embodies the best available scientific information pertaining to the impacts of forestry activities on salmon and their habitat. *PCFFA v. NMFS*, 71 F. Supp.2d 1063, 1069 (W.D. Wash. 1999); *see also PCFFA v. NMFS*, No. 04-1299RSM, Order on Report and Recommendation, slip op. at 6 (W.D. Wash. March 30, 2007) (“The FEMAT scientists are respected scientists and their views relevant.”). That later decision upholding the ACS under the Endangered Species Act in 1998 emphasized that “[b]oth FEMAT and the [Northwest Forest Plan] contemplate that projects must be consistent with ACS objectives.” *Id.* at 4.

In response, in 2004, the Forest Service and Bureau of Land Management attempted an overhaul of the ACS, a decision that would have made the ACS objectives and watershed analysis findings optional, and would have eliminated all but the few rules that protect streamside forests. Before making its changes, the Bush administration asked the FEMAT scientists whether they thought the weakened ACS conformed to the original intent of the Northwest Forest Plan. The scientists said it did not conform, but the administration never disclosed their views, instead making the contrary claim that the harmful changes were in fact consistent with the scientists’ original recommendations. Another lawsuit ensued, and in March 2007, the district court found the amendment to the ACS in violation of several federal laws and set it aside, reinstating the original 1994 Northwest Forest Plan ACS. *Id.*

## APPENDIX A: CURRENT PLAN REVISIONS

Although the new planning regulations revision is ongoing, 18 Forest Plan revisions are currently underway and will continue using the 1982 Rule. They are:

**Region 1:** Kootenai and Idaho-Panhandle National Forests (Montana and Idaho -- one revision effort for both forests)

**Region 2:** San Juan National Forest (Colorado)

**Region 3:** Coronado, Apache-Sitgreaves, Kaibab, Prescott, and Coconino National Forests (Arizona); Cibola National Grassland (New Mexico, Oklahoma, Texas)

**Region 5:** Lake Tahoe Basin Mgmt Unit (California)

**Region 6:** Malheur, Umatilla, and Wallowa-Whitman National Forests (Oregon – one revision effort for the three forests), Colville and Okanogan/Wenatchee National Forests (Washington – one revision effort for the two forests)

**Region 8:** National Forests in Mississippi, Uwharrie National Forest (North Carolina) and George Washington National Forest (Virginia – 2<sup>nd</sup> round of LRMP Revision)