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Final Directives for Forest Service Wind Energy Special Use  
Authorizations, Forest Service Manual 2720, Forest Service Handbooks  
2609.13 and 2709.11; Notice

**DEPARTMENT OF AGRICULTURE****Forest Service**

RIN 0596-AC61

**Final Directives for Forest Service Wind Energy Special Use Authorizations, Forest Service Manual 2720, Forest Service Handbooks 2609.13 and 2709.11****AGENCY:** Forest Service, USDA.**ACTION:** Notice of issuance of final directives; response to public comment.

**SUMMARY:** The Forest Service is amending its internal directives for special use authorizations and wildlife monitoring. The amendments provide direction and guidance specific to wind energy projects on National Forest System (NFS) lands. These amendments supplement, rather than supplant or duplicate, existing special use and wildlife directives to address issues specifically associated with siting, processing proposals and applications, and issuing special use permits for wind energy uses. The directives ensure consistent and adequate analyses for evaluating wind energy proposals and applications and issuing wind energy permits. Public comment was considered in development of the final directives, and a response to comments is included in this notice.

**DATES:** *Effective Date:* These final directives are effective August 4, 2011.

**ADDRESSES:** The record for these final directives is available for inspection at the office of the Director, Lands Staff, USDA, Forest Service, 4th Floor South, Sidney R. Yates Federal Building, 1400 Independence Avenue, SW., Washington, DC, during regular business hours (8:30 a.m. to 4 p.m.), Monday through Friday, except holidays. Those wishing to inspect these documents are encouraged to call ahead at (202) 205-1256 to facilitate access to the building.

**FOR FURTHER INFORMATION CONTACT:** Paul Johnson, Minerals and Geology Management, (703) 605-4793, or Julett Denton, Lands Staff, (202) 205-1256.

**SUPPLEMENTARY INFORMATION:****1. Background and Need for the Final Directives***Background*

The Forest Service is responsible for managing approximately 193 million acres of NFS lands. To date, the Forest Service has issued over 74,000 special use authorizations on NFS lands covering more than 180 types of uses. Wind energy uses are governed by the Forest Service's special use regulations

at 36 CFR part 251, subpart B. Wind energy proposals and applications are currently processed in accordance with 36 CFR 251.54 and direction in Forest Service Manual (FSM) 2726 and Forest Service Handbook (FSH) 2709.11, governing administration of special uses.

The final directives add a new chapter 70, "Wind Energy Uses," to the Special Uses Handbook, FSH 2709.11, and a new chapter 80, "Monitoring at Wind Energy Sites," to the Wildlife Monitoring Handbook, FSH 2609.13. These new chapters supplement, rather than supplant or duplicate, existing special use and wildlife directives. In particular, new chapter 70 provides direction on siting, processing proposals and applications, and issuing permits for wind energy uses. New chapter 80 provides specific guidance on wildlife monitoring at wind energy sites before, during, and after construction. The direction in chapter 70 is similar to the procedures established by the U.S. Department of the Interior, Bureau of Land Management (BLM), for managing wind energy uses on public lands. In addition, the directives make corresponding revisions to FSM 2726, "Energy Generation and Transmission," and FSH 2709.11, chapter 40, "Special Uses Administration."

*Need for Wind Energy Directives*

The emphasis on development of alternative energy sources in the Energy Policy Act of 2005 and increasing industry interest in development of wind energy facilities on NFS lands have prompted the Forest Service to issue directives that address issues specifically associated with siting wind energy uses, processing wind energy proposals and applications, and issuing wind energy permits.

The final wind energy directives provide a consistent framework and terminology for making decisions regarding proposals and applications for wind energy uses. Specifically, the directives provide guidance on siting wind energy turbines, evaluating a variety of resource interests, and addressing issues specifically associated with wind energy in the special use permitting process. These issues include potential effects on scenery, national security, significant cultural resources, and wildlife, especially migratory birds and bats.

**2. Public Comments on the Proposed Directives and Agency Responses**

The proposed directives were published in the **Federal Register** on September 24, 2007, (72 FR 54233), with a 60-day public comment period. The

comment period was extended an additional 60 days to January 23, 2008. The Forest Service received 5,630 comments on the proposed directives. Approximately 5,500 of the comments were form letters, while the remaining letters consisted of original comments or form letters with additional comments. Close to 50 comments were received which could not be specifically tied to any particular topic or section of the proposed directives, but rather expressed general opposition or general support for the proposed directives. The Agency considered all timely received comments in development of the final directives.

*Response to General Comments*

*Comment.* One respondent stated that the proposed directives fail to consider the requirements of the Federal Land Policy and Management Act (FLPMA); National Forest Management Act (NFMA); Executive Order (E.O.) 13212, which states increased production and transmission of energy in a safe and environmentally sound manner is essential; and E.O. 13123, which charges each agency to strive to expand the use of renewable energy in its facilities. Another respondent stated that wind energy projects should be treated the same as any other proposed use of Federal lands, that is, they should be subject to applicable law, including FLPMA, NFMA, the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the National Historic Preservation Act (NHPA), and thorough programmatic and site-specific analysis and public participation under the National Environmental Policy Act (NEPA).

*Response.* Wind energy proposals, applications, and authorizations are subject to all applicable Federal law, including NEPA, the ESA, the MBTA, and the NHPA. Wind energy authorizations will be issued under FLPMA, consistent with the applicable land management plan, which is developed pursuant to NFMA. The Agency believes that the proposed and final directives are consistent with E.O. 13212, as they facilitate authorization of wind energy projects in a safe and environmentally sound manner. The Agency does not believe that E.O. 13123 applies to these directives, as it addresses the use of energy in federally owned facilities.

*Comment.* Several respondents believed that the proposed directives failed to take into account the requirements of the NHPA.

*Response.* The Agency agrees and has corrected this omission in the final directives by adding direction regarding

the NHPA to sections 70.5, "Definitions," and 72.21e, "Historic Properties and Cultural Considerations."

*Comment.* One respondent stated that the impacts of the proposed directives on treaty rights and trust resources must be considered and analyzed under both NEPA and the NHPA.

*Response.* Each analysis conducted for a wind energy facility will adhere to applicable Agency NEPA procedures and applicable law, including treaty and reserved rights and the NHPA.

*Comment.* Several respondents suggested that the Agency revise the phrase "minimize damage to scenic and aesthetic values" in 36 CFR part 254, Subpart B, to state that projects must be designed to meet established scenic integrity objectives.

*Response.* The Agency has not proposed any revisions to the regulations at 36 CFR part 254, subpart B. Therefore, this comment is beyond the scope of these directives and was not considered in development of the final directives.

#### *Decisionmaking Process and Methods*

*Comment.* Several respondents recommended that the Forest Service prepare a programmatic environmental impact statement (PEIS) for wind energy development on NFS lands. These respondents noted that pending completion of the PEIS, individual projects could proceed based on project-specific environmental analysis, such as an environmental assessment (EA) or Environmental Impact Statement (EIS). These respondents further stated that once the PEIS is completed, an EA would be appropriate for most wind energy projects on NFS lands. These respondents believed that in not preparing a PEIS, the Forest Service has not complied with NEPA because the Agency has not analyzed or disclosed the cumulative effects of current Forest Service wind energy proposals.

*Response.* The Forest Service has chosen not to prepare a PEIS for wind energy development on NFS lands. Given the diversity of NFS lands and their uses, the Forest Service believes it will be more efficient and effective to look at each proposed wind energy site and assess the potential effects of the proposed use as it relates to that site. The Agency does not believe the preparation of a programmatic NEPA document will save time or inform decisionmakers, since it will still be necessary to analyze the site-specific environmental effects at each project site.

NEPA does not require preparation of a PEIS for the Forest Service's wind

energy program. Rather, NEPA requires assessment of an agency's proposed actions and the Forest Service believes that wind energy projects should be decided on a site-specific basis for the reasons stated above. The level of analysis required will vary depending on site-specific circumstances. After a wind energy proposal passes screening and is accepted as an application, the Agency will analyze its effects consistent with NEPA. In preparing an EA or EIS, the Agency examines the cumulative effects of the proposal (including past, present, and reasonably foreseeable future actions) on the affected environment, per 36 CFR 220.4(f).

*Comment.* Multiple respondents noted that the proposed directives minimally reference best management practices (BMPs) and recommended that the Forest Service develop BMPs and standards as part of developing a PEIS on wind energy development. These respondents recommended that the Forest Service review BLM's Wind Energy Development Program and Associated Land Use Plan Amendments, which established policies and BMPs for administration of wind energy projects and minimum requirements for mitigation measures. These respondents stated that Forest Service review of this document would foster a uniform approach to renewable energy production on Federal lands. This respondent further stated that additional stipulations could be developed as needed to address site-specific concerns on the basis of the relevant land management plan, other mitigation guidance, and mitigation measures identified in the PEIS.

One respondent stated that the proposed directives have little in common with BLM's wind energy policy, despite assertions that the Forest Service's directives would closely track BLM's policy, and that BLM's policy should be included in the list of references in FSH 2709.11, section 70.6.

Another respondent stated that the proposed directives, like BLM's PEIS, should require development of detailed BMPs for monitoring and site selection on a State or regional level as soon as possible. Another respondent suggested Forest Service-wide standards and review for all wind energy projects, including meteorological towers (METs) and wind energy facilities, on NFS lands. This respondent further stated that the national standards should be fine-tuned to site-specific conditions, such as wildlife habitat, topography, and climate.

*Response.* The Agency is familiar with BLM's 2005 wind energy policy

and the BMPs and mitigation measures contained in the policy. BLM's wind energy policy was one of the sources used to develop the Forest Service's wind energy directives.

The Forest Service's wind energy directives closely track BLM's wind energy policy. Some provisions in the Forest Service's directives are worded differently to be consistent with Forest Service procedures. Some provisions, such as section 75.12 regarding the need to ascertain the existence of competitive interest, are required by Forest Service regulations (36 CFR 51.58(c)(3)(ii)).

Nothing in the final directives precludes the authorized officer from using additional information contained in BLM's wind energy policy. To clarify this intent, the Agency has added BLM's 2005 wind energy policy to the list of references in section 70.6 in the final directives.

The Forest Service does not believe that it would be efficient or effective for wind energy development on NFS lands to develop programmatic BMPs and standards that would require amendments to Forest Service land management plans.

*Comment.* Several respondents stated that a programmatic EIS for wind energy development is essential to assess economic effects on community tourism considerations alone.

*Response.* The Forest Service has chosen a different approach. The Forest Service recognizes the potential value of a programmatic approach for planning purposes, however the opportunity for utility scale renewable energy development projects on the national forest system lands is fairly limited. The Agency believes it is more cost efficient and effective to look at each proposed site individually and assess the potential effects at that particular site and, if appropriate, address the socioeconomic impacts as part of the NEPA process. Once a wind energy application has been accepted, the Agency will analyze the effects of the proposed use in accordance with the Agency's NEPA procedures at 36 CFR part 220 and FSH 1909.15.

To be useful, the NEPA document would need to provide a level of detail that would be the equivalent of a site-specific NEPA document. A programmatic EIS does not provide this level of site specific detail.

*Comment.* Several respondents noted that significant benefits from a coordinated permit process would be realized if each Regional Forester would appoint a single person or small team to coordinate wind energy projects for all regions and process all wind energy project applications. These respondents

stated that having a single point of contact between the Forest Service and the wind industry would help ensure that best practices are used and applied consistently across the NFS.

*Response.* For large wind energy projects, the Agency will designate a single point of contact to facilitate coordination. The Agency does not believe it is appropriate to commit to regional processing of wind energy applications, since the regional offices may not have sufficient staff for that purpose. In addition, since the supporting environmental analysis for wind energy applications must be site-specific, it may not make sense to consolidate processing of proposals and applications for wind energy projects.

*Comment.* One respondent stated that the approach to wind energy projects in the proposed directives was reactive, rather than proactive, in that the Agency would be merely responding case-by-case to each application submitted by commercial wind energy developers. This respondent recommended that the Agency develop national siting criteria for wind energy projects and an inventory of areas in the NFS that may be suitable for wind energy projects. This respondent believed that this approach would eliminate analysis in the permitting process and allow the Agency to direct wind energy proponents to areas most suitable for wind energy projects.

*Response.* The proposed and final directives establish a comprehensive, orderly approach to siting wind energy facilities, evaluating resource interests, and addressing specific issues associated with wind energy permits. Moreover, the Agency does not believe it is necessary to establish an inventory of areas on NFS lands that may be suitable for wind energy projects because sufficient wind energy information regarding the NFS generally is available from the U.S. Department of Energy's National Renewable Energy Laboratory. This coordination with the U. S. Department of Energy's National Renewable Laboratory simplifies the process in not duplicating efforts and providing consistency in innovation and technologies for setting renewable energy development opportunities."

*Comment.* Several respondents suggested that the Agency incorporate into the proposed directives the wind power guidelines produced by the Wind Energy Turbines Guidelines Advisory Committee, which consists of representatives from State and Federal agencies and the wind energy industry.

*Response.* The Forest Service recognizes that recommendations from the Wind Energy Turbines Guidelines

Advisory Committee will be used to revise the 2003 U.S. Fish and Wildlife Service (FWS)'s Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines. However, the Forest Service believes it would not be appropriate to limit the siting of wind turbines to one set of guidelines which specifically address only wildlife impacts from wind turbines. In addition, the final directives do not preclude the Forest Service from using any newly developed Federal guidelines, recommendations, or other relevant scientific publications regarding wind energy projects as they become available.

*Comment.* One respondent commented that under the ESA and E.O. 13186, the Forest Service has an obligation to consult with FWS and the National Marine Fisheries Service (NMFS) and prepare a biological assessment prior to issuance of any wind energy permits.

Another respondent commented that under Section 7 of the ESA, special use authorizations must be consistent with the applicable land management plan and must be issued only after the Forest Service has consulted with FWS. In those cases where issuance of the authorization may affect a federally listed threatened or endangered species, a comprehensive analysis under NEPA must be completed.

*Response.* Forest Service policy at FSM 2670 requires the Agency to consult with FWS or NMFS, as applicable, regarding any Forest Service action that may affect any federally listed threatened or endangered species or their critical habitats. Section 72.1 in the final directives directs the authorized officer to clarify expectations for coordination and consultation with FWS and NMFS with a wind energy proponent at the pre-proposal meeting. Consultation and coordination under Section 7 of the ESA should occur concurrently with environmental analysis pursuant to NEPA and should be completed by the time the authorized officer is prepared to issue a NEPA decision document. Sections 73.31, paragraph 2, and 73.4a, paragraph 1, in the final directives address biological evaluations and assessments for purposes of consultation under Section 7 of the ESA. The Forest Service's special use regulations at 36 CFR 251.54(e)(1)(ii) require all proposals, including wind energy proposals, to be consistent with standards and guidelines in the applicable land management plan.

### *Decisionmaking Philosophy*

*Comment.* One respondent suggested that the Forest Service identify wind energy corridors or zones during development of land management plans. This respondent believed that this approach would allow for public participation in wind energy development on NFS lands at the forest-wide rather than only at the project level, as well as for assessment of the cumulative impacts of multiple wind energy projects on a given national forest.

*Response.* Land management plans may be amended or revised as appropriate to address opportunities for wind energy development. In addition, the authorized officer may utilize the energy right-of-way corridors on Federal lands in 11 western states identified under Section 368 of the Energy Policy Act of 2005.

The Agency does not believe it is appropriate to require identification of wind energy corridors in land management plans, as it may be more efficient and effective to assess potential effects only at the project level, given the variety of uses of NFS lands.

*Comment.* One respondent stated that since wind energy technology is rapidly evolving, land management plans may not be sufficient for purposes of evaluating wind energy projects. As an example, this respondent cited the Cherokee National Forest Plan, which was most recently updated in 2004, and noted that there have been significant changes in wind energy technology in the intervening years.

*Response.* The authorized officer may, but is not required to, amend a land management plan at any time to address opportunities for wind energy development and the best available science regarding wind energy development on NFS lands. Land management plans tend to provide general guidance on siting decisions. However, land management plans need not address wind energy development specifically in order for it to occur on NFS lands. Adequate environmental analysis may be conducted at the site-specific level, consistent with the final directives.

### *Public Involvement*

*Comment.* Multiple respondents stated that the Forest Service did not adequately include input from various industry organizations and State agencies in development of the proposed directives.

*Response.* The Agency believes that the appropriate way to obtain input from industry organizations and State

agencies in the development of wind energy directives is through the public notice and comment process and has done so in the development of these directives.

*Comment.* Another respondent stated that the proposed directives failed to involve the various State agencies in assessing the impact of industrial wind power.

*Response.* Wind energy applications will undergo project-specific environmental analysis, as appropriate. In accordance with FSM 1501.2, section 72.1 in the final directives provides for consultation and coordination early in the NEPA process with appropriate State and local agencies and Indian tribes. This early consultation and coordination will help ensure that the requisite environmental analysis for wind energy projects is consistent with State fish and wildlife laws, wildlife plans, and wind energy project guidelines.

*Comment.* One respondent suggested that the Agency consider formation of a citizen's advisory board, consisting of representatives from communities potentially impacted by wind energy projects, to advise the Agency regarding development of wind energy directives.

*Response.* The public input obtained through the notice and comment process combined with Agency's own knowledge, expertise and research have resulted in development of final directives that can effectively guide the Agency employees who will be reviewing wind energy proposals and applications and issuing wind energy authorizations. The chartering of a citizen advisory board under the Federal Advisory Committee Act would not be cost effective and would prolong the development of wind energy directives and therefore, is unwarranted in this case.

#### *Use of Science*

*Comment.* One respondent stated that Forest Service regulations require the Agency to consider the best available science when implementing a land management plan, yet the proposed directives fail to use the best available science in prescribing direction to Forest Service decisionmakers.

*Response.* The Forest Service used the best available science in developing the proposed and final directives. The proposed and final directives were reviewed by numerous Forest Service specialists Agencywide with substantial expertise in natural resource management and research and development. The Forest Service sought advice from FWS and BLM staff experienced in wind energy facility

development and management and from scientists with expertise on bird and bat migration ecology.

The directives were derived from a number of sources, including several peer-reviewed publications, such as FWS's "Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines;" BLM's "Best Management Practices and Mitigation for Wind Power Development;" and the American Wind Energy Association's Wind Energy Siting Handbook. These sources and others listed in section 70.6 of the final directives contain useful information regarding wind energy facilities. Section 72.21 of the final directives enumerates sources that may be consulted in connection with siting of wind energy facilities. The authorized officer may also use any applicable existing or newly developed Federal, State, or non-governmental guidelines, recommendations, and relevant scientific publications in implementing the final directives.

*Comment.* One respondent recommended using recognized site assessment protocols that are based on the best available science and that include ecological attractiveness evaluations, *i.e.*, that assess ecological magnets and other conditions that draw birds and bats to specific sites. This respondent noted that this information is available from the closest FWS Ecological Services field office, as well as from State fish and wildlife or natural resource agencies.

*Response.* The Agency agrees that the authorized officer should use the best available science and information in assessing suitability of sites proposed for wind energy development, including effects on habitat and landscape features and conditions that attract birds and bats. This approach is reflected in sections 73.31 and 73.4a in the final directives. In addition to Forest Service records, the authorized officer may gather information for site evaluations and other environmental analysis from the local FWS Ecological Services field office; State fish and wildlife or natural resource agencies; non-governmental entities; and sources such as Natureserve's Vista Support System, State Heritage databases, State Comprehensive Wildlife Plans, and the Audubon Society's list of important bird areas.

*Comment.* Several respondents recommended that the Agency carefully consider infrastructure and carbon audits in reviewing wind energy applications.

*Response.* The Agency will address all relevant issues in the NEPA process. Infrastructure (transmission lines and

ancillary facilities) and carbon audits (carbon footprint) are two examples of issues that may be applicable and appropriate during site-specific environmental analysis.

*Comment.* One respondent cited a report issued by the British Government stating that roughly 20 percent of wind farms generate noise complaints. This respondent advocated minimizing noise impacts by utilizing important design principles, such as installation of blades that turn on the upwind side of the towers to avoid the pressure differential that causes rhythmic thumping as the blades pass the tower. The respondent cautioned against inaccurate assessment of noise and recommended using proper microphone shielding techniques so that existing ambient noise is properly measured, as well as referring to a 2006 study addressing the impact of atmospheric conditions on night-time noise levels so that those levels are properly measured.

*Response.* Section 73.4c in the final directives requires the authorized officer to ensure that wind energy applicants minimize noise where possible and practical and, if possible and practical, minimize the amplitude of wind turbine and associated generator noise using available noise dampening technologies. In particular, section 73.4c, paragraph 2a, requires the authorized officer to ensure that wherever possible, applicants restrict noise to 10 decibels above the background noise level at nearby residences and campsites, in or near habitats of wildlife known to be sensitive to noise during reproduction, roosting, or hibernation, or where habitat abandonment may be an issue. Section 73.4c, paragraph 2b, requires the authorized officer to ensure that applicants provide for comparison of noise measurements of proposed equipment during wind turbine operation with the background noise level in the project area over a 24-hour period.

#### *Purpose and Need*

*Comment.* Several respondents commented that under NEPA a clear and compelling purpose and need must be identified for any project and that the Agency should require that a compelling case be made for the use of NFS lands versus non-NFS lands for wind energy projects. These respondents asked the Agency to explain the apparent change in this long-standing special uses policy, which they believed was reflected in the proposed directives.

*Response.* Under NEPA, it is up to the Agency to determine the purpose and need of a project. Current directives

require authorized officers to analyze the need to use NFS lands in evaluating a special use proposal (FSM 2703.1, para. 3), as well as the appropriateness of the use on NFS lands (FSM 2703.1, para. 4). In addition, current directives provide for denial of proposals that can reasonably be accommodated on non-NFS lands (FSM 2703.2, para. 3). Current directives at FSM 2703.2 also direct the authorized officer not to authorize the use of NFS lands simply because it affords the applicant a lower cost and less restrictive location than non-NFS lands. These directives apply to all special uses, including wind energy development.

The preceding directives need to be read in conjunction with the final directives, which direct authorized officers to authorize wind energy facilities on NFS lands to help meet America's energy needs (FSM 2726.02a, para. 1) and to facilitate wind energy development when it is consistent with managing NFS lands to sustain the multiple uses of its renewable resources while maintaining the long-term productivity of the land (FSM 2726.02a, para. 3).

*Comment.* One respondent noted that the January 2005 assessment of renewable energy potential on NFS lands conducted by the Forest Service and the U.S. Department of Energy's National Renewable Energy Laboratory shows that other renewable energy sources offer better potential than wind energy.

*Response.* Wind energy is an important potential source of renewable energy on NFS lands. The Agency recognizes that other potential sources of renewable energy on NFS lands are also important and is developing directives on hydrological, geothermal, and solar energy facilities on NFS lands. Each project will be decided on its own merits.

#### *Need for Environmental Analysis*

*Comment.* One respondent believed that the proposed directives should link implementation of wind energy projects to NEPA requirements for environmental analysis, including assessment of cumulative effects.

*Response.* Sections 74 and 74.1 require the Agency to comply with NEPA and Forest Service NEPA procedures in processing applications for wind energy permits. Agency NEPA procedures are enumerated in 36 CFR part 220, with additional guidance in FSM 1950 and FSH 1909.15. These procedures describe requirements for analysis and documentation, as well as implementation of decisions and

monitoring of direct, indirect, and cumulative effects.

*Comment.* One respondent commented that the proposed directives do not clearly articulate that a site-specific environmental analysis will be required for all projects; that the proposed directives should require an EIS for all large-scale wind energy projects; that the proposed directives should clarify when, where, and how NEPA requirements and all natural resource objectives in the applicable land management plan will be met; and that NEPA should be strictly adhered to before any wind turbine construction proceeds.

One respondent requested that environmental analysis be conducted at every level of a wind energy project, including prior to erection of METs. This respondent recommended review of guidelines for construction of METs issued by the State of Washington's Department of Fish and Wildlife, which this respondent believed were more comprehensive than those in the proposed directives.

Some respondents believed an EIS with a 90-day public comment period was warranted for every proposed wind energy facility on NFS lands.

*Response.* Section 74.1 of the final directives expressly provides that each wind energy application, including applications for installation of METs (site testing and feasibility permits), is subject to NEPA. Section 74.1 of the final directives states: "Environmental analysis for wind energy applications must comply with Agency NEPA procedures at 36 CFR part 220 and FSH 1909.15 and should be commensurate with the activities proposed and potential effects anticipated."

The appropriate level of environmental documentation—EIS, EA, or categorical exclusion (CE) from documentation in an EA or EIS—depends on the anticipated significance of the environmental effects of the proposed action and is therefore site-specific. Therefore, it is not appropriate for the final directives to require an EIS for all wind energy projects or to specify when, where, and how NEPA requirements and all natural resource objectives in the applicable land management plan will be met. As wind energy proposals are analyzed, resource specialists will utilize a wide range of information, including the variety of State guidelines that are available. If an EIS is required, the Agency would provide at least 45 days for public comment. The responsible official has the discretion to extend the public comment period.

*Comment.* Multiple respondents objected to 36 CFR 220.6(e)(3), which authorizes a CE for approval, modification, and continuation of minor special uses, including METs, using less than 5 contiguous acres of land. These respondents stated that wind energy development on NFS lands does not warrant this low level of environmental analysis and public disclosure and that no wind energy activities should be subject to a CE.

*Response.* The Agency has not proposed revising 36 CFR 220.6(e)(3) in connection with these directives. Therefore, these comments are beyond the scope of these directives. The Agency's experience with installation of METs in many locations on NFS lands has shown that reliance on a CE for this activity is often warranted. The analysis conducted to comply with the Agency's NEPA regulations will be based on site-specific information and anticipated environmental effects. Provided that extraordinary circumstances are not an issue under 36 CFR 220.6(b), the CE in 36 CFR 220.6(e)(3)(i) may apply to applications for minimum area site testing and feasibility permits, which involve up to 5 acres. Per section 75.11, paragraph 2, in the final directives, issuance of a site testing and feasibility permit does not ensure issuance of a permit for construction and operation of a wind energy facility. Applications for construction and operation of a wind energy permit are subject to further environmental analysis, as appropriate.

*Comment.* One respondent stated that permit applications that are limited to road or transmission line access across NFS lands should not require the same level of environmental analysis as wind energy projects and that an EA should be sufficient for most roads and transmission lines.

*Response.* The environmental analysis required for a wind energy application must consider connected actions, *i.e.*, actions that (1) automatically trigger other actions which may require an EIS, (2) cannot or will not proceed unless other actions are taken previously or simultaneously, or (3) are interdependent parts of a larger action and depend on the larger action for their justification (40 CFR 1508.25(a)(1)(i)–(iii)). In the case of a wind energy application, access roads and transmission lines likely would be connected actions and likely would be analyzed in connection with the proposed wind energy use. Accordingly, section 71 in the final directives states that environmental analyses for each wind energy permit should address the connected actions essential to enabling the proposed wind energy use and that

connected actions for a permit for the construction and operation of a wind energy facility might include reconstruction of an NFS road to accommodate oversized vehicles needed to move wind turbine components and construction of a power line to connect the proposed site with the existing energy grid.

*Comment.* One respondent noted that some of these projects will be influenced by the renewable portfolio standards (RPS) initiatives, which distribute costs and concentrate environmental damage.

*Response.* The Agency is aware of State RPS initiatives. State RPS initiatives in part would require energy providers to produce a percentage of electricity from renewable resources. State RPS initiatives are consistent with the Federal focus on renewable energy sources, which prompted development of these directives.

*Comment.* One respondent stated that E.O. 13212 sets a national policy for Federal agencies to expedite review of new energy projects on Federal lands and that the proposed directives would hamper review and authorization of new wind energy projects.

*Response.* Establishing a standard framework for reviewing considerations that affect wind energy development and review of proposals and applications for wind energy projects will enhance Agency efficiency. In addition, these final directives do not impose any new requirements on wind energy projects. While E.O. 13212 encourages expediting new energy projects, it does not exempt agencies from compliance with applicable law, such as NEPA and the ESA. NEPA, the ESA, and other Federal laws impose requirements regardless of whether these directives are promulgated. The complexity of proposals and applications will influence the time frame for their review.

*Comment.* Citing *Citizen for Better Forestry v. United States Department of Agriculture*, 481 F. Supp. 2d 1059, 1097 (N.D. Cal. 2007), one respondent stated that under the ESA, the Forest Service must formally consult with FWS or the NMFS when developing regulations that may affect Federally listed threatened or endangered species.

*Response.* *Citizens for Better Forestry v. United States Department of Agriculture*, 481 F. Supp.2d 1059, 1097 (N.D. Cal. 2007), involved a regulation that revised species viability and diversity requirements for national forest management. The court held the rule could have indirectly affected listed species in the NFS. In contrast, the final directives provide additional guidance

to Agency employees on siting wind energy facilities and addressing issues specifically associated with proposals and applications for wind energy uses on NFS lands. The final directives do not have the effect of a rule. Rather, they merely overlay an existing regulatory and policy framework for authorizing special uses on NFS lands. Thus, issuance of the final directives does not require formal or informal consultation with FWS or NMFS. In addition, the directives remind authorized officers and others of their responsibilities under the ESA to consult on wind energy projects as applicable.

#### *Issues That Should Be Addressed*

*Comment.* One respondent stated that the Forest Service should be cautious in providing for mitigation of adverse effects. This respondent believed that offsite and compensatory mitigation should be provided for through environmental analysis and utilized to help restore other portions of the landscape, so as to minimize the cumulative impact on the visual environment.

*Response.* Section 74.1 in the final directives provides that all wind energy applications are subject to NEPA and the Forest Service's NEPA regulations at 36 CFR part 220 and NEPA procedures at FSH 1909.15. Pursuant to these authorities, each wind energy application will be subject to scoping to determine the appropriate level of environmental analysis and documentation. In addition, per section 73.4b in the final directives, visual impacts associated with wind energy applications will be evaluated using the SMS.

*Comment.* One respondent suggested providing for additional public comment on the proposed directives.

*Response.* The Agency believes that the 60-day initial comment period, followed by a 60-day extension, was sufficient to provide for adequate public input on development of the final directives and is therefore issuing these final directives.

*Comment.* One respondent commented that the siting of wind energy facilities and associated infrastructure should take into consideration the need to protect the ability of species to adapt to climate change.

*Response.* The Agency is developing a strategic framework for climate change. Once completed, the strategic framework for climate change will be used as a guide when climate change is identified as an issue during environmental analysis.

*Comment.* One respondent expressed a concern that exercise of the power of eminent domain would be necessary to route power lines for wind energy facilities beyond the boundaries of the NFS.

*Response.* The Agency believes the exercise of the power of eminent domain to route power lines for wind energy facilities across private lands is beyond the scope of these directives.

*Comment.* One respondent commented that holders of ski area permits should have the exclusive right to develop wind energy resources on the NFS lands covered by their ski area permits, given their long-term capital investments, the potential for interference with their operations, and safety and access concerns. This respondent analogized the exclusive right that ski area permit holders should have in this context to the withdrawal of ski areas on NFS lands from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral and geothermal leasing under the National Forest Ski Area Permit Fee Act. This respondent noted that ski area permit holders may choose to collaborate with other entities in wind energy development, but that the permit holders must remain in control.

*Response.* Pursuant to 36 CFR 251.54(e)(1)(iv) and 251.55, Forest Service special use permits do not grant exclusive use. The Agency may use or allow others to use any part of a permit area for any purpose that is not inconsistent with the holder's existing rights and privileges, after consultation with all affected parties and agencies (36 CFR 251.55(b)). If wind energy development is proposed within a ski area, the Agency would consult with all affected parties and agencies. If it is determined that both uses can coexist, it would be important to plan, design, and operate both uses to be compatible. Additionally, the Agency could modify a ski area boundary to exclude land suitable for wind energy development.

#### *Technical and Editorial Comments*

*Comment.* One respondent suggested that the Agency strengthen key provisions in the proposed directives by the substituting "shall" for "should" and that not doing so would allow authorized officers to set up monitoring programs that might not appropriately measure the environmental impacts of wind energy proposals.

*Response.* In the final directives, the Agency has substituted the word "must" for "should" in sections 72.21d governing species of management concern; 73.1 governing application

requirements for all wind energy permits; and 73.31 governing study plans. Elsewhere, imposing a mandatory duty on the Forest Service is inappropriate, given the need for the Agency to retain discretion in exercising its authorities.

#### *Natural Resource Management*

*Comment.* Several respondents expressed opposition to the proposed directives because they believed wind energy development on NFS lands would disrupt geological and hydrological conditions and cause deforestation, erosion, and pollution, resulting in adverse impacts on wildlife and humans.

*Response.* The proposed and final directives at FSH 2709.11, section 72.1, reference a number of items the authorized officer must clarify with proponents at a pre-proposal meeting. In addition, the proposed and final directives at FSH 2709.11, section 72.2, describe the screening process and criteria for evaluating a wind energy proposal. Potential infrastructure effects, deforestation, and erosion and the other issues identified by the respondent may be addressed at these stages. In addition, wind energy proposals that are accepted as applications will be analyzed as appropriate pursuant to NEPA. If any unique site-specific factors are present, they will be considered as part of the analysis of environmental effects in the NEPA process. Where applicable, the scoping process will provide another opportunity for public involvement.

*Comment.* One respondent suggested that the Agency conduct an analysis of the impacts of wind energy projects on fire control and firefighting and that the Agency require mitigation measures to minimize these impacts.

*Response.* For the reasons given in an earlier response, the Agency chose not to conduct a PEIS for wind energy projects. Any site-specific analyses conducted on wind energy projects will take into consideration environmental effects of the proposed action, including potential impacts on fire control, as applicable, in accordance with the Agency's NEPA procedures.

#### *Socioeconomic Concerns*

*Comment.* Several respondents commented that output from wind energy facilities on NFS lands would address local energy needs and would result in a cost savings to consumers. Other respondents stated that there is absolutely no guarantee that the output from wind energy facilities on NFS lands would be available to local communities or that wind energy

produced from these facilities would provide cost savings or tax revenue for State or local residents. Some respondents believed that wind energy projects would produce insufficient energy to warrant the sacrifice of acres of NFS lands. One respondent stated that Federal lands should not be destroyed to satisfy the energy demands of population centers in other parts of the country. One respondent stated that wind turbines cannot generate sufficient power and must rely on backup generation from conventional power plants and therefore will do nothing to help meet America's energy needs.

One respondent stated that wind turbines must be placed where they will have the least impact on beautiful areas in the NFS, so as to protect local economies that rely on tourism and to preserve the psychological benefit these areas confer on those who cherish the national forests. Another respondent questioned the Forest Service's determination that the proposed directives would not have an economic impact on small businesses, given the likely effect of wind energy development on numerous businesses, such as tourism and real estate, that rely on access to or pristine views of NFS lands. This respondent believed that it would be highly unlikely that the benefit of wind power would compensate for even the most minimal environmental and economic costs. One respondent believed that wind energy projects would not produce enough jobs to offset their negative effects, such as diminished property values and decreased recreational use due to disturbance of pristine national forests and wildlife habitats. One respondent believed that electrical power derived from wind energy would be most effective from a cost and reliability perspective along coastlines and near population centers, rather than on NFS lands. Another respondent was concerned about the large size of wind turbines, the number required for wind energy facilities, and their distant location from population centers. This respondent stated that small wind turbines and solar panels should be located along highways near population centers, not in national forests. One respondent believed that in assessing each wind energy proposal, authorized officers should consider its potential psychological, physical, and spiritual impacts on the next seven generations, as well as its impacts on natural resources. One respondent was concerned that wind energy development would result in further

industrialization of the eastern United States.

*Response.* Consistent with the Energy Policy Act of 2005, the Agency has determined that renewable energy projects are appropriate uses of NFS lands and will help meet America's energy needs. These final directives provide Agency employees with guidance and a consistent framework for consideration of relevant factors for siting wind energy projects and consideration of wind energy proposals.

FSH 2709.11, section 72.21, addresses siting considerations for initial screening of wind energy proposals and review of wind energy applications. FSH 2709.11, section 73.4b, in the final directives requires authorized officers to ensure that applicants integrate wind turbine strings and design into the surrounding landscape, based on the scenic integrity objectives in the applicable land management plan. FSH 2709.11, section 73.32, paragraph 12, in the final directives requires authorized officers to ensure that applicants produce a visual simulation depicting the scale, scope, and visual effects of all components of their proposed wind energy project.

Consistent with applicable law, authorized officers will address the potential effects of wind energy projects, including effects on recreational values, cultural resources, scenery, public access, and public safety, in environmental analysis conducted on wind energy applications. Authorized officers will consider the number of acres proposed for use at pre-proposal meetings, during screening of proposals, and during review of applications, including environmental analysis. Impacts for the next seven generations may not be reasonably foreseeable. NEPA and its implementing regulations require analysis of reasonably foreseeable impacts, and the Agency will comply with that requirement in its site-specific NEPA analysis.

#### *Response to Comments on FSM 2726*

*Comment.* One respondent recommended adding recreation and scenic impacts to the list of detrimental impacts to be minimized, so that FSM 2726 would provide for minimizing detrimental social, recreational, scenic, and environmental impacts, including direct, indirect and cumulative impacts.

*Response.* Proposed and final FSM 2726 do not provide a list of detrimental impacts to be minimized. Nevertheless, impacts on recreation and scenery will be analyzed at the site-specific project level as appropriate.

*Comment.* One respondent suggested that the authorized officer delegate



determination of the appropriate environmental analysis for wind energy projects to resource specialists to prevent delays in initiating studies.

*Response.* The basic principles for delegation of authority are in FSM 1230 and are further enumerated throughout the Forest Service Directive System. Unless specifically delegated, the authority to make decisions rests with Regional Foresters, Forest or Grassland Supervisors, and District Rangers, not resource specialists. FSM 2726.04b, paragraph 4, provides for delegation of wind energy authorities from the Regional Forester to the Forest Supervisor as provided in FSM 2704.33. The authorized officer utilizes the expertise of resource specialists, as needed, to inform decisions, including decisions regarding appropriate environmental analysis and documentation.

*Comment.* One respondent recommended mentioning species that are listed or are candidates for listing as endangered in FSM 2726.02a, paragraph 5, and adding FWS to the list of Federal agencies with a coordination role in FSM 2726.21a, paragraph 1.

*Response.* FSM 2726.02a, paragraph 5, already directs authorized officers to consider species of management concern, which includes threatened and endangered species and their critical habitats in siting wind energy facilities.

The Agency agrees with the second recommendation and has added FWS and NMFS to the list of agencies in FSM 2726.21a, paragraph 1. The list is not comprehensive; there are other Federal agencies that may be contacted regarding protected species, including NMFS.

*Response to Comments on FSH 2709.11, Chapter 70*

#### 70.1—Authority

*Comment.* One respondent suggested adding to the list of authorities the Bald and Golden Eagle Protection Act, the ESA, E.O. 13186, the MBTA, and NEPA.

*Response.* This section addresses the Forest Service's authority to issue permits for wind energy uses on NFS lands, which is in section 501(a)(4) of FLPMA, 43 U.S.C. 1761(a)(4), and to recover costs in connection with processing wind energy applications and monitoring wind energy permits, which is in section 504(g) of FLPMA (43 U.S.C. 1764(g)). FSH 2709.11, sections 73.4 and 74.1, in the final directives addresses compliance with NEPA, the ESA, and other environmental laws in connection with authorizing wind energy uses.

#### 70.2—Objectives

*Comment.* Several respondents disagreed that wind energy development would reduce the United States' dependence on foreign energy sources and thus believed that wind energy development was inappropriate on NFS lands. These respondents noted that wind energy components produced outside the United States would require more fossil fuel for their manufacture and transport than would be saved from the generation of wind energy. These respondents further noted that wind energy facilities in Europe have not replaced or caused the closing of any fossil fuel plants.

*Response.* In response to this comment, the Agency believes wind energy would help reduce net fossil fuel consumption and promote clean air. In addition has revised section 70.2 to read:

The Energy Policy Act of 2005 recognizes the Forest Service's role in meeting the renewable energy goals of the United States. Consistent with Agency policies and procedures, the use and occupancy of NFS lands for alternative energy production, such as wind energy development, are appropriate and will help meet the energy needs of the United States. For additional objectives regarding wind energy facilities see FSM 2726.02a.

#### 70.5—Definitions

*Comment.* Some respondents indicated that a better definition for "adaptive management" was needed.

*Response.* The Agency has removed the definition for "adaptive management" because that term is not used in chapter 70.

*Comment.* One respondent suggested replacing all references to "significant cultural resources" with "historic properties" because historic properties are listed or eligible for listing in the National Register for Historic Places, and their significance is presumed.

*Response.* The Forest Service agrees that historic properties are a type of cultural resource and that the significance of cultural resources as defined in the final directives is presumed. Accordingly, the Agency has revised the definition for "cultural resource" and added a definition for "historic property," to read as follows:

*Cultural Resource.* A product or location of human activity, occupation, or use identifiable through field survey, historical documentation, or oral evidence, including prehistoric, archaeological, or architectural sites and structures, historic properties, sacred sites and objects, and traditional cultural properties.

*Historic Property.* Any prehistoric or historic district, site, building, structure, or object included or eligible for inclusion in

the National Register of Historic Places, including artifacts, records, and remains that are related to and located within these properties.

*Comment.* One respondent believed the proposed definition for the phrase "reasonably foreseeable future actions" as "those activities not yet undertaken, for which there are existing decisions, funding, or identified proposals," was too narrow. Specifically, this respondent believed that the phrase "not yet undertaken" would eliminate from evaluation those effects that have taken place and will continue; that there were reasonably foreseeable future actions that would occur even in the absence of "existing decisions, funding, or identified proposals;" and that these actions would have effects and must be evaluated.

*Response.* The phrase "reasonably foreseeable future actions" is defined in the Forest Service's NEPA regulations at 36 CFR 220.3. The definition for this phrase was vetted by the public, other Federal agencies, and the Council on Environmental Quality (CEQ) prior to its adoption. The Forest Service's NEPA regulations are beyond the scope of the wind energy directives.

*Comment.* One respondent objected to the definition for "site plan" on the grounds that it would require siting individual wind turbines, rather than turbine corridors. This respondent stated that it is impossible to identify specific turbine locations at the application stage when the turbine model to be used and overall project capacity are still unknown. The respondent further noted that most State and county agencies require applicants to site turbine corridors, rather than individual turbines, for this reason.

*Response.* In response to this comment, the Agency has modified the definition for "site plan" in the final directives to read:

A scaled, two-dimensional graphic representation of the location of all proposed wind turbines, buildings, service areas, roads, structures, and other elements of a wind energy facility that are displayed in relationship to existing site features, such as topography, major vegetation, water bodies, and constructed elements.

*Comment.* One respondent suggested that the Agency remove the word "generally" from the definition of "species of management concern," so that migratory bird and bat species are included.

Some respondents suggested expanding the definition for species of management concern to include species that are listed or that are candidates for listing by States as endangered or threatened. One respondent

recommended that the definition for species of management concern be limited to species protected under Federal law.

Other respondents suggested including a wide variety of species without regard to Federal or State status, such as raptors, grassland gallinaceous bird species, ground-nesting bird species that exhibit significant avoidance or other behavioral modifications and habitat fragmentation in response to vertical structures, and big game, such as elk and deer. Additionally, respondents cautioned that care must be taken to avoid placement of wind energy facilities in big game migration corridors, critical fawning or calving grounds, or winter habitat.

*Response.* In the final directives, the Agency has removed the word “generally” from the definition for “species of management concern.”

The Agency does not believe it is appropriate to limit species of management concern to those protected by Federal law. Therefore, the Agency has added State-protected species to the definition for clarity. Species of management concern may be any single species or group of species (e.g., big-game, small game, upland game birds, amphibians, reptiles, and butterflies) and their corresponding habitats that may be affected by the proposed project and that therefore should be included in the site-specific environmental analysis.

Project-specific species of management concern may be identified by reviewing the applicable land management plan; Regional Forester sensitive species list; interagency species recovery or management plans; and State wildlife action plans. Species or groups of species may also be identified through consultation with other Federal agencies, State agencies, and tribal and local governments; public scoping and involvement; site testing and feasibility evaluations; and pre-construction survey and inventory.

*Comment.* Some respondents wanted the proposed directives to include definitions for “blade-swept area,” “turbine array,” “wind farm or park,” and “wind resource area.”

*Response.* The Forest Service has not included definitions for these terms because they do not appear in the final directives.

#### 70.6—References

*Comment.* One respondent suggested referencing FWS’s Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines; the Government Accountability Office’s 2005 Wind Audit Recommendations; and any FWS

public documents available on wind and wildlife interactions.

*Response.* The Forest Service used the FWS’s Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines in developing the Forest Service’s proposed and final wind energy directives. These guidelines are cited in section 70.6, along with all other sources used to develop the directives.

The authorized officer may use any applicable Federal, State, and non-governmental guidelines, recommendations, and scientific publications in connection with NEPA compliance and review of proposals and applications and issuance of permits for wind energy uses.

*Comment.* Several respondents suggested additional references for inclusion in the proposed directives.

*Response.* After careful review, the Agency has added two references cited by these respondents, including Assessing Impacts of Wind Energy Development on Nocturnally Active Birds and Bats: A Guidance Document and the FWS’s Interim Guidelines to Avoid and Minimize Wildlife Impacts From Wind Turbines to section 70.6 in the final directives.

#### 71—Types of Wind Energy Permits

*Comment.* One respondent stated that if the proposed regulation at 36 CFR 220.6(d)(10)(ii) allowing for conversion of an existing special use authorization, such as a permit, to a new type of special use authorization, such as a lease or easement, without creation of a project or case file or decision memo is promulgated, the Forest Service should preclude its application to wind energy permits. This respondent reasoned that special use permits, leases, and easements are very different legal instruments and are not interchangeable. The respondent believed if this regulation applied to wind energy permits, it would allow conversion of a 30-year wind energy facility permit to an easement or a lease, which often has a longer term or may be granted in perpetuity. This respondent believed that an authorization with this type of term could set a dangerous precedent in permanently removing public access to NFS lands without public notice.

Another respondent stated that unless METs require new road construction, they should be eligible for a CE from documentation in an EA or EIS or less detailed environmental analysis. This respondent was concerned that the provisions regarding site testing and feasibility permits in the proposed directives appeared to require a wildlife

monitoring plan for installation of METs, as well as all the studies needed to process an application for a permit to construct and operate a wind energy facility. This respondent stated that since METs are temporary structures with minimal impact, no environmental or cultural resources studies should be required for applications for site testing and feasibility permits. This respondent also stated that studies needed to process an application for a wind energy permit should be required only if the application is filed.

*Response.* The proposed and final directives provide for issuance of a permit, rather than a lease or an easement, for wind energy uses. Regardless, the Forest Service’s NEPA regulations at 36 CFR part 220 are beyond the scope of these directives.

Provided that extraordinary circumstances are not an issue under 36 CFR 220.6(b), installation of METs under a minimum area site testing and feasibility permit, which involves up to 5 acres of land, may qualify for a CE under 36 CFR 220.6(e)(3)(i). This CE applies to approval of construction of a meteorological sampling site requiring less than 5 contiguous acres of land.

The Agency agrees that a monitoring plan should be required for permits for construction and operation of a wind energy facility, not for site testing and feasibility permits. Therefore, in the final directives, the Agency has removed the requirement for a monitoring plan from the provisions in section 75 governing site testing and feasibility permits.

Section 75.1, paragraph 3a, of the proposed directives stated that if equipment is not installed and operational within 2 years after issuance of a site testing and feasibility permit, the permit shall terminate. In the final directives, the Agency has added the phrase, “unless a written justification for the delay is submitted and accepted by the authorized officer prior to the end of the 2-year period,” to address situations where the delay is caused by circumstances that are beyond the holder’s control.

Section 75.1, paragraph 3b, of the final directives states that if test results from METs or other instruments are not reported to the Forest Service within 3 years after issuance of either type of site testing and feasibility permit, the permit shall terminate, unless a request for an extension is submitted at least 6 months before termination and is approved by the authorized officer. In addition, section 75.11, paragraph 1, of the final directives provides that studies on the feasibility of a wind energy project and its environmental compatibility are

required for processing an application for a permit to construct and operate a wind energy facility and must accompany the study plan (sec. 73.31).

Consistent with section 75.1, paragraph 3b, the Agency has clarified section 71, paragraph 1, in the final directives to state that site testing and feasibility permits are issued for a term of up to 3 years, with the option to extend the permit for up to 2 years, pursuant to section 75.1, paragraph 3b.

*Comment.* One respondent questioned whether a special use permit was the appropriate mechanism for dealing with wind energy development and suggested that the Forest Service explore other approaches because of the permanent or quasi-permanent aspect of these developments. In particular, this respondent believed that the provisions in the proposed directives concerning wildlife monitoring and adaptive management were weak and questioned whether, once a special use permit was issued, the Forest Service would have sufficient authority to impose new requirements on the permit holder in response to new information that might require substantial and costly modifications to the project.

*Response.* Section 501(a)(4) of FLPMA, (43 U.S.C. 1761(a)(4)) authorizes the Forest Service to grant rights-of-way for the use and occupancy of NFS lands for generation, transmission, and distribution of electric energy. Forest Service regulations at 36 CFR part 251, Subpart B, provide for issuance of permits for rights-of-way granted under FLPMA. Both FLPMA (43 U.S.C. 1765(a)(ii)) and Forest Service regulations (36 CFR 251.56(a)(1)(i)(B)) allow the Agency to include terms and conditions that minimize damage to fish and wildlife habitat and otherwise protect the environment.

In addition, the standard forms that will be used to authorize wind energy uses contain a provision that allows the authorized officer to amend the permit in whole or in part at the discretion of the authorized officer, when deemed necessary or desirable to incorporate new terms, conditions, and stipulations that are required by law, regulation, the applicable land management plan, or other management decisions.

*Comment.* One respondent believed that the guidance in proposed section 71, paragraph 3, "environmental analysis for each type of wind energy permit should address only the proposed use for that type of permit," would ensure that environmental analysis for site testing and feasibility permits would be conducted on the

larger project area being secured by the site testing and feasibility permit.

*Response.* The environmental analysis for each type of wind energy permit should address only the use proposed for that type of permit. For example, environmental analysis for a site testing and feasibility permit should address the proposed use of NFS lands for site testing and feasibility, as opposed to construction and operation of a wind energy facility, which may be proposed at a later time.

*Comment.* One respondent suggested increasing the term of a permit for construction and operation of a wind energy facility from 30 to 40 years or more on the grounds that wind energy development is costly and the return on the investment may not be realized in a 30-year period, and financing may be difficult to obtain if the certainty of the project is unknown after 30 years.

Another respondent noted that the 30-year term for a permit for construction and operation of a wind energy facility was misleading, since once wind turbines, which have a typical life of more than 60 years, are installed, they are essentially permanent because of the cost of removing them.

*Response.* The Agency believes that a 30-year term, which is one of the longer terms for Forest Service special use authorizations, is sufficient for purposes of recouping the investment in a wind energy facility and for purposes of obtaining financing. In addition, the use covered by a permit for construction and operation of a wind energy facility may be reauthorized under 36 CFR 251.64, provided that the facility is still being used for wind energy purposes, is being operated and maintained in accordance with all the provisions of the permit, and is consistent with the decision that approved the facility. In reauthorizing the use, the authorized officer may modify the terms and conditions of the permit to reflect new requirements imposed by current Federal and State land use plans, laws, regulations, or other management decisions.

Forest Service regulations at 36 CFR 251.54(e)(1)(iv) preclude authorization of permanent facilities. A wind energy permit will terminate upon expiration, and the use will be discontinued, unless a new permit is issued for the use. In addition, section 77.5 in the final directives provides for restoration of wind energy facility sites upon discontinuation of the use.

#### 72.1—Pre-Proposal Meetings

*Comment.* One respondent suggested that a public meeting be held before a wind energy proposal is submitted, so

that the public can be involved early in the process. Another respondent stated that the Forest Service should ensure that wind energy proponents provide for adequate public awareness through public meetings and coordination with affected local and State agencies, and that any concerns raised during these efforts should be documented and presented to the Forest Service. One respondent stated that siting and design criteria should be discussed at the beginning of the process, rather than relying on mitigation measures imposed at the end of the process. Another respondent suggested that Forest Service personnel trained in scenery management be included in pre-proposal meetings. One respondent noted that BLM's best management practices for fluid minerals might serve as a model for improving on-site reviews.

*Response.* The Agency believes it is not necessary or appropriate to conduct a public meeting before a wind energy proposal is submitted. A pre-proposal meeting between the proponent and the Forest Service is required by 36 CFR 251.54(a) and section 72.1 of the final directives. Under these provisions, a wind energy proponent must contact the Forest Service as early as possible to ensure that the proponent fully understands the implications and requirements associated with a wind energy proposal. The anticipated level of public interest, environmental concerns, siting, and potential effects on the visual resource are included in this exchange. The Forest Service normally utilizes a broad range of resource specialists, including those trained in scenery management, in the proposal development phase. Because a pre-proposal meeting is conducted early in the process, a proposal may not be fully developed at that time. Therefore, public involvement initiated by the Forest Service is not appropriate or required at that point. Per 36 CFR 251.54(e)(6), (g)(1), and (g)(2)(i), public involvement initiated by the Agency is required after a proposal is accepted as an application.

However, a proponent may wish to seek public input in developing a wind energy proposal. The Agency supports public outreach efforts by a proponent in developing a wind energy proposal. Section 73.5 in the final directives directs authorized officers to ensure that wind energy applicants consider conducting meetings to inform the public regarding wind energy development, including the design, operation, and public benefit of a proposed facility.

*Comment.* One respondent stated that the Forest Service should require consultation and coordination with State fish and game agencies throughout the process for wind energy development, including pre-screening and pre- and post-development monitoring plans, in addition to the opportunity to comment through the NEPA process. Another respondent suggested specifying a minimum period for development of a wind energy proposal to ensure adequate pre-proposal coordination with appropriate local and State agencies and other stakeholders.

*Response.* Section 72.1, paragraph 2g, in the final directives addresses discussion at pre-proposal meetings of consultation and coordination with appropriate State and local agencies and Indian tribes. Section 73.1, paragraph 1, in the final directives provides for coordination and consultation with tribal governments and with regulatory agencies such as FWS regarding wind energy applications. These provisions will help ensure that project reviews and NEPA analyses are coordinated with State, local, and tribal governments and are consistent with State wildlife laws, wildlife plans, and wind energy development guidelines. The Forest Service does not believe it is necessary or appropriate to specify a minimum period for development of a wind energy proposal to ensure adequate pre-proposal coordination with interested parties. Applicable regulations and directives provide sufficient opportunity for coordination by requiring proponents to contact the Forest Service as early as possible.

*Comment.* One respondent stated that where federally listed species or their habitat are likely to be impacted by wind energy development, the Forest Service should clarify the Agency's roles and responsibilities with the FWS, including designating a wind energy applicant as a non-Federal representative for purposes of informal consultations under Section 7 of the ESA.

*Response.* The authorized officer may choose to designate a wind energy applicant as a non-federal representative pursuant to 50 CFR 502.08 for purposes of informal consultation under Section 7 of the ESA. The Forest Service will furnish guidance and supervision and will independently review the scope and contents of the biological assessment. When formal consultation is necessary, it will be conducted by the Forest Service in accordance with Section 7 of the ESA.

#### 72.2—Federal Interagency Coordination

*Comment.* One respondent stated that the obligation to obtain clearance for obstructions in airspace rests with the FAA, not the Department of Defense (DoD) or the Department of Homeland Security (DHS), and that the FAA does not require obstruction evaluations for most new construction less than 200 feet above ground. Consequently, this respondent recommended notifying proponents of the need for an obstruction evaluation only when their proposal includes project components that would be taller than 200 feet. The respondent also noted that separate FAA environmental analysis of proposed wind energy development should not be necessary because of the environmental analysis of wind energy applications conducted by the Forest Service.

*Response.* The Agency agrees that an FAA obstruction evaluation is generally needed only for wind energy construction 200 feet above ground level or within close proximity of an airport, in which case wind energy turbines may interfere with radar. The Agency believes that sections 72.1, paragraph g, and 73.1, paragraph 1, in the final directives adequately address coordination with the FAA in connection with proposed wind energy projects on NFS lands. The Agency believes that it is more appropriate for the FAA, rather than the Forest Service, to provide any additional necessary detail regarding compliance with FAA radar and electronic security requirements in this context. The Agency also agrees that separate FAA environmental analysis of proposed wind energy development is not necessary because of the environmental analysis of wind energy applications that will be conducted by the Forest Service.

*Comment.* One respondent stated that the proposed directives need to provide for coordination with the Federal Energy Regulatory Commission (FERC).

*Response.* The Agency does not believe it is necessary to provide for coordination with FERC in connection with wind energy proposals. Proponents are responsible for inter-connection agreements and other aspects of the project that may fall within FERC's preview. FWS, DoD, DHS, the FAA, and the National Weather Service all have an interest in wind energy development because these agencies' activities involve airspace and could be adversely affected by interference with instrumentation.

*Comment.* One respondent stated that the proposed directives should provide

for coordination with FWS and NMFS as required under the Bald and Golden Eagle Protection Act, the ESA, the MBTA, and similar requirements under other Federal and State wildlife laws. This respondent also stated that the proposed directives need to provide for consideration of sensitive species and management indicator species in each region in any analysis, assessment, and evaluation related to wind energy development and protection of those species through mitigation measures included in wind energy permits.

One respondent recommended that State fish and wildlife agencies and FWS be consulted regarding the suitability of a proposed site and known wildlife resources in the vicinity. Another respondent stated that the proposed directives circumvent environmental analysis and consultation with FWS and give too much discretion to local Forest Service officials and wind energy permit holders. Another respondent recommended establishing an interagency committee of State and Federal wildlife experts, including representatives from FWS, to assist in review of wind energy applications.

One respondent noted that all federally listed threatened and endangered species and State-protected species and their habitat should be considered in long-term management decisions concerning wind power development. Another respondent stated that wind energy proposals should not be accepted if they destroy or degrade critical habitats for listed threatened and endangered species. This respondent believed that because wind turbines tower high above ridges, the turbines would kill thousands of eagles and hawks soaring on updrafts and would pose an increasing risk to eastern populations of peregrine falcons.

*Response.* Section 7 of the ESA and FSM 2670 require the Forest Service to consult with FWS or NMFS regarding any Forest Service action that may affect a threatened or endangered species or its critical habitat. FSM 2670 addresses sensitive species, management indicator species, and other species of management concern. Section 7 consultation occurs concurrently with NEPA analysis and is completed by the time the authorized officer is prepared to issue a NEPA decision document. All consultation, coordination, and project review required under the Bald and Golden Eagle Protection Act (16 U.S.C. 668–668d), MBTA (16 U.S.C. 703–712), and E.O. 13186, regarding the responsibilities of Federal agencies to protect migratory birds, are also conducted concurrently with NEPA

analysis and completed before a NEPA decision document is released.

With respect to wind energy development, section 72.1, paragraph g, of the final directives requires the authorized officer at pre-proposal meetings to clarify expectations for coordination and consultation with FWS, NMFS, and State agencies. Additionally, as part of NEPA compliance for wind energy applications, the Forest Service will ask State agencies and Federal wildlife experts for input through the public scoping process. Therefore, the Forest Service does not believe it is necessary to establish an interagency committee of State and Federal wildlife experts to assist in review of wind energy applications.

The final directives contain numerous provisions addressing protection of wildlife. Section 70.5 of the final directives defines "species of management concern" broadly to include federally listed threatened and endangered species; species that are candidates for listing as threatened or endangered; Forest Service species of concern, species of interest, species of high public interest, and management indicator species; and State-protected species. Section 72.1, paragraph 2g, provides for clarification at pre-proposal meetings of expectations for coordination and consultation with FWS. Section 72.21d addresses siting considerations for species of management concern. To protect birds and bats, section 73.2 provides for avoiding the use of guy wires on METs. Section 73.31, paragraph 1, requires applicants for a permit for construction and operation of a wind energy facility to submit a study plan that includes a review of existing information regarding species of management concern. Section 73.31, paragraph 2, requires applicants to identify information and methods by which to gather information for the development of biological assessments and evaluations of project-specific species of management concern and their habitats.

Section 73.4a addresses in detail species of management concern in the context of construction and operation of wind energy facilities. Section 75.11, paragraph 1d, provides for evaluation of site feasibility for wind energy development relative to bat and bird migration routes and installation of bat detection equipment on METs. Section 75.21, paragraph 6, requires a wildlife monitoring plan for permits for construction and operation of a wind energy facility.

#### 72.31a—General Considerations

This section in the proposed directives addressed general considerations associated with siting wind energy facilities on NFS lands.

*Comment.* One respondent stated that before considering wind energy projects for a particular administrative unit, the Forest Service should amend the applicable land management plan to identify those areas that are inappropriate, appropriate, or designated for wind energy development and, with regard to the latter two, those areas that are subject to a higher standard of review before any wind energy project is approved.

*Response.* The Agency does not believe it is necessary or appropriate to require programmatic analysis and amendment of land management plans for siting wind energy facilities on NFS lands. The Agency believes that the appropriateness of siting a wind energy facility on a particular administrative unit of the NFS is best addressed in a site-specific manner. However, when land management plans are revised, they should address renewable energy development as needed or appropriate.

Several sections of the final directives address siting of wind energy facilities. For example, siting of wind energy facilities will be discussed at pre-proposal meetings per section 72.1. Section 72.2 addresses siting considerations in the context of screening wind energy proposals. Section 72.2 precludes issuance of permits for wind energy facilities in wilderness areas and wilderness study areas, in wild and scenic river corridors, at national historic sites, on National Historic or National Scenic Trails, in other special areas where Federal law precludes land use for wind energy production, in areas authorized for use by the DoD or one of its agencies, and in areas where DoD, DHS, FAA, or National Weather Service express concern that a proposed wind energy facility would diminish national security, military readiness or suitability of training areas, radar and electronic security, or safety of military or civilian airspace. Sections 72.21 through 72.21e address specific siting considerations in the context of screening wind energy proposals. Section 73.32 states that a wind energy plan of development, which must be submitted by an applicant for a permit for construction and operation of a wind energy facility, is used to determine if a wind energy project is consistent with the applicable land management plan and facilitates the safe and orderly use of land for wind energy production.

*Comment.* One respondent stated that the Forest Service should adhere to FWS regulations and NEPA with regard to siting wind turbines.

*Response.* FWS's Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines were used to develop the proposed and final directives. However, the Forest Service believes it would not be appropriate to limit the siting of wind turbines to one set of guidelines. The Forest Service must be able to use the most applicable and best information throughout the wind energy permitting process. Sections 71, 72.1, and 74 of the final directives address NEPA compliance in the context of wind energy development on NFS lands.

*Comment.* One respondent noted that maps are available which display areas on NFS lands with strong wind resources and recommended that the proposed directives facilitate maximization of wind energy production for those NFS lands that are suitable for that purpose.

*Response.* The Agency has determined that renewable energy projects are appropriate uses of NFS lands and will help meet America's energy needs. Pursuant to the Multiple Use-Sustained Yield Act (16 U.S.C. 528–531), the Forest Service manages NFS lands for multiple uses, without favoring one use over another. The NFS is not reserved for any particular use, nor must every use be accommodated on every acre of NFS lands. Suitability of the proposed location for wind energy facilities will be considered as part of the application process.

*Comment.* One respondent commented that the proposed directives should encourage buffer zones around wilderness areas to protect wildlife, viewsheds, and other values protected by wilderness areas. Some respondents provided a list of scenarios where wind energy development should be discouraged. These respondents further recommended that the proposed directives provide for denial of wind energy permits if a finding is made that their impacts cannot be mitigated or that the proposed use would conflict with existing uses or plans for multiple-use areas.

One respondent commented that NEPA allows for unavoidable adverse impacts and that the proposed directives hold wind energy projects to a higher standard than other projects, since section 72.31a, paragraph 7a, states that a wind energy project may be inappropriate if the authorized officer makes a finding that "resource impacts cannot be mitigated." This respondent recommended stating that a wind

energy project may be inappropriate if the authorized officer makes a finding that adverse resource impacts outweigh the positive impact derived from generating renewable energy.

Two respondents stated that if another Federal agency raised a concern about a wind energy project, even without any basis, it would be enough to stop the project. These respondents believed that if an unacceptable impact is demonstrated, mitigation measures should be explored before a proposal is rejected. One of these respondents recommended requiring other Federal agencies to demonstrate that anticipated project impacts would be unacceptable based on a technical review conducted through a process that would allow for consideration of concerns raised by all sides.

*Response.* The Agency does not believe that buffer zones around wilderness and other special areas are necessary. The proposed actions in the viewshed from designated wilderness areas would include an analysis of the effects on the scenic values for protecting sensitive wilderness areas during the environmental analysis process. It is the viewshed rather than a buffer zone that's more relevant to protecting wilderness values.

In addition, sections 72.31b through 72.31e in the proposed directives and sections 72.21a through 72.21e in the final directives iterate several categories of siting considerations, e.g., impacts on recreation and scenery and wildlife, which must be taken into account in screening wind energy proposals.

Wind energy projects are subject to the same environmental standards as other proposed projects on NFS lands. The Agency has not retained the provision in section 72.31a, paragraph 7a, in the proposed directives because it is duplicative. Sections 72.21a through 72.21e in the final directives adequately address consideration of resource impacts in screening wind energy proposals. In addition, under the initial screening criteria in the special use regulations at 36 CFR 251.54(e)(1)(v), proposed uses may not unreasonably conflict or interfere with other scheduled or authorized uses of the NFS or use of adjacent non-NFS lands. The Agency agrees that if a proposed wind energy facility would cause unacceptable impacts, mitigation measures may be explored to eliminate the impacts or reduce them to an acceptable level.

Proposals for wind energy facilities may be denied, rather than must be denied, in areas where the DoD, DHS, FAA, the National Weather Service expresses concern that a proposed wind

energy facility would diminish national security, military readiness or suitability of training areas, radar and electronic security, or safety of military or civilian airspace. Per section 72.1, paragraph g, the likelihood of these types of concerns will be addressed at the pre-proposal meeting. The Agency does not believe it would be appropriate to require other Federal agencies to document concerns they have regarding the effects of a proposed wind energy facility on national security, military readiness or suitability of training areas, radar and electronic security, or safety of military or civilian airspace.

*Comment.* One respondent noted that while the proposed directives list various resources to be considered, avoided, and protected, the proposed directives should include species protected under the ESA, State-listed species (including species of "greatest conservation need"), State trust wildlife resources, and Audubon Watchlist species.

*Response.* Section 70.5 in the final directives broadly defines species of management concern to include federally listed threatened and endangered species; species that are candidates for listing as threatened or endangered; Forest Service species of concern, species of interest, species of high public interest, and management indicator species; and State-protected species. Section 72.21d provides for consideration of all species of management concern in screening wind energy proposals, with an emphasis primarily on birds and bats because of their particular vulnerability to METs and wind turbines during flight.

*Comment.* One respondent noted that wind power would provide a measure of security and resilience to the tourism industry, since it would diminish the reliance on foreign sources of energy. This respondent also commented that wind power facilities would be an additional tourist attraction that could offer educational opportunities for visitors. Another respondent stated that siting considerations should include educational and demonstration opportunities that wind energy facilities may offer and location and infrastructure requirements necessary to transport power from wind energy facilities to users.

*Response.* The Agency supports education and demonstration opportunities that may be offered by wind energy facilities, which could be discussed at the pre-proposal meeting with the authorized officer. However, the Agency does not believe it is necessary to require consideration of education and demonstration

opportunities that may be afforded by wind energy facilities. Infrastructure requirements are addressed in sections 73.32 and 75.21, paragraph 3, of the final directives, which address a plan of development for wind energy facilities.

*Comment.* One respondent commented that in authorizing long-term wind energy projects, the Forest Service should consider State renewable energy portfolio standards for wind energy development.

*Response.* Compliance with applicable State renewable energy portfolio standards for wind energy development is beyond the scope of these directives. The Forest Service's special use regulations at 36 CFR 251.54(d)(5) allow the authorized officer to require any other information and data necessary to determine compliance with requirements for associated clearances, certificates, permits, or licenses and to require suitable terms and conditions to be included in special use authorizations. Standard special use authorization forms require the holder to comply with all applicable laws, regulations, and standards, as well as laws relating to the siting, construction, operation, and maintenance of any authorized facility, improvement, or equipment.

*Comment.* One respondent stated that processing of wind energy proposals and applications should be an objective process and that siting and suitability of wind energy facilities is appropriately addressed in the environmental review section of BLM's Instruction Memorandum No. 2005-069, "Interim Offsite Compensatory Mitigation for Oil, Gas, Geothermal and Energy Right-of-Way Permits."

*Response.* The Agency agrees that processing of wind energy proposals and applications should be an objective process. The Agency used BLM's Instruction Memorandum No. 2005-069 in developing the final directives and referenced it in section 70.6, paragraph 4, of the final directives.

*Comment.* One respondent believed that the proposed directives represented another attempt to privatize Federal lands. This respondent stated that locating wind turbines in areas that could also support solar energy development might minimize environmental impacts while reducing costs. The respondent also noted that far fewer impacts would result from wind energy development on national grasslands or other uninhabited lands than from wind energy development in national forests.

*Response.* Issuance of special use authorizations for wind energy facilities or any other uses does not result in

privatization of Federal lands. The Forest Service's special use regulations at 36 CFR 251.55(b) state that all rights not expressly granted by a special use authorization are retained by the United States, including continuing rights of access to all NFS lands; a continuing right of physical entry to any part of the authorized facilities for inspection, monitoring, or any other purposes or reason consistent with any right or obligation of the United States under any laws or regulation; and the right to require common use of the land or to authorize use by others in any way that is not inconsistent with the holder's rights and privileges, after consultation with all affected parties and agencies. The final directives, including the siting considerations, apply to all NFS lands. The Agency believes it would not be appropriate to create a preference for one type of NFS lands over another with respect to wind energy development.

*Comment.* One respondent noted that all facilities associated with a wind energy project on NFS lands should be covered by the proposed directives and suggested clarifying the second sentence of the section 72.31a, paragraph 2, which states, "Other facilities may be required for access, construction, operation, and maintenance," to make that point explicit.

*Response.* The Agency agrees that this sentence needs to be revised to clarify that it applies to wind energy projects. Accordingly, the Agency has revised this sentence, which appears in section 72.21 of the final directives, to read: "Other facilities may be required for access, construction, operation, and maintenance of a wind energy facility." It is possible that not all facilities required for access, construction, operation, and maintenance of a wind energy facility will be authorized under a wind energy permit. For example, access to a wind energy facility may be authorized under a separate special use authorization granting a right-of-way, and use of NFS roads may be authorized under a road use permit. See sections 73.32, paragraph 8, and 75.22, paragraph 3, in the final directives.

*Comment.* One respondent suggested including a statement in the general considerations section that the direct, indirect, and cumulative effects of construction of or additions to facilities associated with a wind energy project, including roads, must be considered in evaluating wind energy proposals, regardless of whether these actions will occur on NFS lands.

*Response.* The Agency does not believe it is necessary to include the statement suggested by the respondent. Section 74.1 in the final directives

provides for compliance with the Forest Service's NEPA procedures at 36 CFR part 220 and FSH 1909.15 in reviewing applications for wind energy facilities. In conducting environmental analysis of these applications, the Agency will take into consideration the cumulative effects associated with the proposed use. In many cases, construction of roads, facilities, and power lines may be connected actions and will be analyzed accordingly, where appropriate, under applicable law.

*Comment.* One respondent suggested including in the general considerations section statements from an otherwise unspecified letter dated May 13, 2003. In addition, this respondent recommended (a) revising proposed section 72.31a, paragraph 2, to state that electricity produced by wind turbines "may," rather than "will likely," require a generation substation and transmission lines to carry it to a power grid; (b) revising proposed section 72.31a, paragraph 4a, to provide for consideration in assessing site suitability of "other environmental, recreational, or other human resource considerations," rather than "other environmental or human resource considerations"; (c) revising proposed section 72.31a, paragraph 4c, to provide for consideration in wind energy planning of "the proximity of proposed wind turbines to transmission lines and the need to construct new transmission lines," rather than "the proximity of proposed wind turbines to transmission lines"; and (d) revising proposed section 72.31a, paragraph 4d, to provide for consideration in wind energy planning of "project area resources and uses sensitive to noise from wind turbines," rather than "noise from wind turbines."

A second respondent recommended the following additional suitability factor to proposed 72.31a, paragraph 4a: "the potential impacts, including fragmentation and habitat abandonment, on important wildlife corridors, large contiguous habitat areas, or any globally unique, rare, or threatened ecosystem or habitat type."

A third respondent recommended revising proposed section 72.31a, paragraph 4a, to provide for consideration in assessing site suitability of "the presence of or habitat for federally or State listed protected species, candidates for such protection, and other species of management concern, as defined in section 70.5," rather than "the presence of federally listed fish, wildlife, or rare plant habitat."

*Response.* Without more information, the Agency was unable to locate the letter referenced by the first respondent

and was unable to address the comment concerning that letter. The Agency has not made the revision suggested by this respondent to proposed section 72.31a, paragraph 2 (sec. 72.21 in the final directives), because the Agency believes that electricity produced by wind turbines will require a generation substation and transmission lines to carry it to a power grid.

The Agency has included the introductory text of proposed section 72.31a, paragraph 4, in section 72.21 in the final directives. However, the Agency has not retained proposed section 72.31a, paragraphs 4a through 4d, in the final directives or added the suitability factor suggested by the second respondent because they are duplicative. Sections 72.21, 73.3, 73.4, and 75.11, paragraph 1, in the final directives adequately address consideration of resource impacts, the wind resource, proximity of proposed wind turbines to transmission lines, and noise from wind turbines in evaluating wind energy proposals and applications.

The Agency agrees with the third respondent that the definition of species of management concern should include State-protected species and has accordingly revised that definition in section 70.5 of the final directives.

*Comment.* One respondent suggested revising section 72.31a, paragraph 6, to state that authorizations for wind energy development will not be issued for development incompatible with specific resource values, including areas of critical environmental concern, wilderness areas, wilderness study areas, Wild and Scenic Rivers, National Historic and National Scenic Trails, and areas where resource impacts cannot be mitigated.

*Response.* The Agency has addressed this concern in section 72.2, paragraphs 2 and 3, of the final directives by providing for denial of proposals for wind energy facilities in wilderness areas and wilderness study areas and in areas authorized for use by the DoD.

#### 72.31b—Recreation and Scenery Considerations

*Comment.* Some respondents doubted that 400-foot wind turbines could meet partial retention standards under the Recreation Opportunity Spectrum (ROS) and Scenery Management System (SMS). These respondents were unsure about the criteria, timing, and process for taking into account these visual and recreation standards in making decisions regarding wind energy facilities.

*Response.* "Partial retention" is an obsolete term that was used under the Visual Management System (VMS),



which predated the SMS. In contrast to the SMS, the categories in the VMS described visual goals. For partial retention, the goal was to retain in part the visual character of the landscape. The Agency shifted from the VMS to the SMS (FSM 2380), which is based on scenic integrity, *i.e.*, the current condition of the landscape, rather than visual goals. The Agency found that establishment of visual goals under the VMS tended to predetermine the outcome of the planning process.

Section 72.21a, paragraphs 1 through 4, in the final directives address the use of the ROS in screening wind energy proposals. Section 72.21a, paragraph 5, in the final directives addresses the use of the SMS in screening wind energy proposals.

*Comment.* One respondent recommended revising proposed section 72.31b, paragraph 2b, which stated, "Consider how recreational settings could be affected by dust or air quality impacts," by adding "during construction or maintenance."

*Response.* The Agency agrees with this comment and has added this phrase to the corresponding provision, section 72.21a, paragraph 2b, in the final directives.

*Comment.* One respondent recommended including a standard set of restrictions for wind energy development for areas that fall into the most restricted category of visual resource management.

*Response.* The SMS does not establish categories for visual resource management. Rather, the SMS employs scenic integrity objectives, which define the degree of deviation from the landscape character that may occur at any given time (FSM 2380.5). Consistent with the SMS, section 72.21a, paragraph 5, in the final directives directs the authorized officer in screening wind energy proposals to assess the value of scenery in the project area, the experience it provides relative to competing resource demands, and the impacts on scenery from project construction and operation.

#### 72.31c—Community Tourism Considerations

*Comment.* One respondent stated that community tourism values must be protected and that inclusion of the phrase, "where possible and to the extent practicable" in proposed section 72.31c, paragraph 1, and the word "consider" in proposed section 72.31c, paragraph 2, make these criteria more like guidelines than standards. This respondent also expressed concern that the direction on siting considerations applies only to screening of wind energy

proposals and not to processing of wind energy applications.

*Response.* Both paragraphs 1 and 2 referenced by the respondent contain guidelines, rather than standards. The qualification "where possible and to the extent practicable" in paragraph 1 is appropriate because it may not always be possible or practicable to manage wind energy uses to protect community tourism values associated with natural scenery, recreation settings, wildlife viewing, fishing, and cultural resources. Paragraph 2 appropriately directs the authorized officer to consider the effects of wind energy uses on tourism values and communities because this section of the directives enumerates siting considerations that need to be taken into account in screening wind energy proposals. Therefore, the Agency has not made the changes suggested by the respondent in the final directives.

Community tourism considerations apply only to screening wind energy proposals, rather than to evaluation of wind energy applications, because community tourism considerations need to be addressed in connection with siting wind energy facilities in the context of a proposal. This approach is reflected in the heading, "Siting Considerations" in section 72.31 in the proposed directives and section 72.21 in the final directives, both of which encompass the section on community tourism considerations. Once a wind energy proposal is accepted as an application, a site has already been determined, and the siting considerations as reflected in a site plan (sec. 73.33 in the final directives) are much more specific.

#### 72.31d—Public Access Considerations

*Comment.* One respondent noted that while security and safety should be a priority for protecting wind energy facilities, public access to those facilities should be guaranteed for monitoring adverse impacts of the facilities on wildlife, either residing at or migrating past the site, and their habitat. One respondent stated that the proposed directives should provide additional guidance on avoiding, minimizing, and mitigating habitat abandonment and other impacts of wind energy facilities, including post-construction monitoring of those impacts.

Another respondent commented that security and safety at wind energy facilities would not be benefited by open public access, and that access to those facilities should be controlled by the permit holder and should be limited to authorized staff or approved guided tours.

*Response.* The Agency agrees that security and safety should be a priority at wind energy facilities. However, the Agency does not believe that it is appropriate or necessary to guarantee public access to wind energy facilities for purposes of monitoring impacts on wildlife. The Forest Service's special use regulations at 36 CFR 251.55(b)(2) confer on the United States, rather than members of the public, a continuing right of physical entry to authorized facilities for monitoring purposes.

The Agency believes that the final directives provide adequate guidance on avoiding, minimizing, and mitigating impacts on wildlife from wind energy facilities. Specifically, section 75.21, paragraph 6, of the final directives requires applicants for a permit for construction and operation of a wind energy facility to submit a detailed monitoring plan that will become an appendix to the permit. Section 73.32, paragraph 9, in the final directives requires the plan of development that must be submitted by applicants for a permit for construction and operation of a wind energy facility to address potential impacts on existing land uses, including necessary restrictions on public use, which should address effects on Federal and State species of management concern and their habitats. Section 75.21, paragraph 6, of the final directives provides for wildlife monitoring before and after construction of a wind energy facility. Per 36 CFR 251.55(b)(3), the Agency may require common use of NFS lands authorized for wind energy facilities or allow their use by others in any way that is not inconsistent with the holder's rights and privileges, after consultation with all affected parties.

*Comment.* One respondent noted that the Forest Service should not allow its hiking trails to be used as service roads for wind energy facilities. This respondent stated that the proposed directives should address road density in critical habitat areas.

Another respondent stated that construction of roads for wind energy projects causes more ground disturbance than construction of typical two-track, unpaved Forest Service roads and thus has a greater impact on fish and wildlife.

*Response.* Numerous provisions in the final directives address access to wind energy facilities, including the need for and effects and management of access roads. Section 72.21c in the final directives directs the authorized officer to review road management objectives for NFS roads and trail management objectives for NFS trails (FSM 7714); consider the effect of traffic on NFS



roads and NFS trails needed for construction, operation, and maintenance of wind energy facilities on the ability of those roads and trails to meet their management objectives; and consider the effects of extending the availability of NFS roads that are open seasonally to year-round use for purposes of maintaining wind energy facilities.

Section 73.31, paragraph 6, in the final directives requires applicants for a permit for construction and operation of a wind energy facility to submit a study plan that includes an inventory of existing infrastructure and resource investments such as access roads under the jurisdiction of the Forest Service or a public road authority.

Section 73.32, paragraph 2, in the final directives requires these applicants to submit a plan of development that describes the proposed location and number of ancillary structures and facilities, including access roads. Section 73.32, paragraph 5, in the final directives requires the plan of development to address needed road or trail access and provides for existing roads to be utilized to the maximum extent feasible. Section 73.32, paragraph 8, in the final directives requires the plan of development to describe management requirements necessary for safe and reliable operation and maintenance, including rights-of-way for access.

NFS trails may be actively managed for more than one mode of travel. However, under 36 CFR 212.51, Forest Service administrative units and ranger districts are designating those NFS trails that are open to motor vehicle use. Therefore, whether an NFS trail managed for hiker/pedestrian use is used as an access road for a wind energy facility would depend at least in part on the trail's management intent and whether the trail has been designated for motor vehicle use. When a trail or segments of a trail encumbering a proposed wind energy facility, this is a connected action for consideration during the environmental analysis process and trail would be re-routed out of the proposed project area for the safety of hikers/pedestrians.

*Comment.* A number of respondents were concerned that the proposed language, "Consider the effects of wind energy uses on public access via roads, trails, and waterways," in proposed section 72.31d sets too low a bar for compliance. These respondents believed that a standard should be established for assessing effects of wind energy uses on public access.

*Response.* Given the variety of situations on NFS lands, the Agency

does not believe it is appropriate to establish a standard for assessing effects of wind energy facilities on public access to NFS lands. However, the Agency agrees that more guidance is needed in this provision with respect to management of NFS roads and NFS trails. Consequently, in section 72.21c of the final directives, the Agency has added the following:

Review road management objectives for NFS roads and trail management objectives for NFS trails (FSM 7714). Consider the effect of traffic on NFS roads and NFS trails needed for construction, operation, and maintenance of wind energy facilities on the ability of those roads and trails to meet their management objectives. Consider the effects of extending the availability of NFS roads that are open seasonally to year-round use for purposes of maintaining wind energy facilities.

#### *72.31e—Wildlife, Fish, and Rare Plant Considerations*

*Comment.* One respondent stated that the proposed directives should be as precise as possible in identifying which plant and animal species should be considered for each particular investigation or analytical or monitoring activity associated with wind energy uses. Other respondents expressed concern about harmful effects of wind energy development on butterflies and big game migration routes.

*Response.* Since the wind energy directives are national in scope, the species that could be impacted by wind energy uses will vary by geographic region. The proposed and final directives specifically address bats, birds, and species of management concern, which is broadly defined in the final directives to include federally listed threatened and endangered species; species that are candidates for listing as threatened or endangered; Forest Service species of concern, species of interest, species of high public interest, and management indicator species; and State-protected species. More specific lists of species and species groups will be made at the local level during the scoping process for each proposed wind energy facility.

*Comment.* One respondent stated that wind turbines in migratory areas do not necessarily pose a risk to avian species and that migration corridors need to be delineated by the Forest Service based on scientific studies or evaluated in project-level avian surveys. This respondent recommended using "minimize" throughout proposed section 72.31e or qualifying the entire section with the phrase, "to the extent commercially practicable."

Numerous respondents expressed concerns regarding the effect of wind

energy facilities on bats, particularly during their migration and hibernation periods. These respondents cited studies that indicate a high risk of bat mortality, especially along Appalachian ridges, from wind energy uses and stated that hibernating bats could be susceptible to detonations during wind energy facility construction. One respondent noted that wind energy structures can alter movement patterns of birds and wildlife and shift their distribution. This respondent stated that grassland and shrubland birds in particular avoid tall structures and can be significantly displaced by wind energy structures.

Another respondent recommended enumerating in the proposed directives those areas where there are large numbers of one or more bird species of management concern. This respondent noted that micro-siting decisions on wind energy development would minimize impacts on birds.

One respondent stated that decisions regarding turbine placement should take into account species' foraging strategies and flight patterns, as well as topography, wind patterns, prey density, and all seasons of a species' habitat, including migratory as well as wintering areas.

Another respondent recommended not just avoiding placement of METs in sensitive habitats, but avoiding placement of METs in locations where they would adversely impact sensitive habitats, including buffer zones.

One respondent wanted the general considerations in proposed section 72.31a, paragraphs 4, 6, and 7, to apply to proposed section 72.31e.

*Response.* The Forest Service is aware of potential effects on wildlife from wind power development, especially the susceptibility of bats and birds to collision with wind energy facilities. Numerous studies, including those cited in section 70.6 in the final directives, document known and potential risks to birds and bats from wind energy facilities. The Agency is also aware of the important role that bats and bird play in the health of the human environment.

Accordingly, the Agency has expanded the provisions in the final directives regarding the need for careful evaluation of environmental conditions, landscape features, and habitats that attract concentrations of birds, bats, and other species of management concern. See sections 72.21; 72.21d; 73.31, paragraphs 1 and 2; 73.4a; and 75.21, paragraph 6. In particular, section 72.21d, paragraph 1, in the final directives lists examples of protected and ecologically sensitive areas,

including critical habitat of wildlife protected under Federal or State law; nests of hawks, eagle, falcons, and owls; and prairie or shrub-steppe grouse breeding grounds. Given the diversity of protected and ecologically sensitive areas on NFS lands, the Agency believes it is more appropriate to provide examples than to list specific areas. Site evaluations and all other relevant information needed to evaluate the potential effects of wind energy development on species of management concern and their habitats will be analyzed through the NEPA process.

The final directives are not intended to provide a comprehensive list of all the potential effects of wind energy development on species of management concern and their habitats, nor are the final directives intended to identify all measures that may be taken to avoid or mitigate those effects. The intent of the final directives is to highlight some of the more widely known wildlife issues associated with wind energy development and recommendations for addressing them, primarily regarding susceptibility of birds and bats to aerial collisions with wind power facilities such as METs, guy wires, and turbine towers and blades.

The Agency believes that section 72.21d, paragraph 1, in the final directives adequately addresses sensitive habitats. This provision directs authorized officers to locate METs, roads, wind turbines, and other necessary facilities away from protected areas or where ecological resources are known to be sensitive to human activities and lists specific examples of these areas.

Proposed section 72.31a (sec. 72.21 in the final directives) addresses general considerations associated with siting wind energy uses at the proposal stage. Proposed sections 72.31b through 72.31e (sec. 72.21a through 72.21e in the final directives) address specific considerations associated with siting wind energy uses at the proposal stage.

*Comment.* One respondent stated that there are no known bat migration corridors. Another respondent commented that “migration corridor” is too broad a term for purposes of proposed section 72.31e, which this respondent believed appears to provide for blanket avoidance of birds and bats. This respondent noted that bird and bat collisions with wind turbines are more likely where birds and bats are within the height range of the turbines or funneled along geographical features in the vicinity of the turbines.

Another respondent objected to the statement in the proposed directives to avoid locating METs and wind energy

facilities in bird or bat migration corridors, on the grounds that there is insufficient information to indicate that wind energy projects have significant impacts on areas with migratory birds and bats. This respondent believed that these areas should not be off-limits to wind energy development. Rather, this respondent believed that wind energy projects in these areas should be monitored to determine if they pose a significant risk to migratory species.

One respondent stated that many documented bird migration corridors are so broad as to be regional or State-wide, rather than site-specific, which makes the reference to “documented bird or bat migration corridors” in the proposed directives less meaningful.

*Response.* Daily or seasonal bat flight pathways may be discovered through pre-construction surveys. The Agency agrees that “migration corridor” is too imprecise a term and has removed it from section 72.21d, paragraph 1, in the final directives. In addition, for clarity, the Agency has included examples of protected and ecologically sensitive areas. As a siting consideration for species of management concern, this paragraph now states:

Locate METs, roads, wind turbines, and other necessary facilities away from protected areas or where ecological resources are known to be sensitive to human activities. Examples of such areas include wetlands, riparian zones, streams, lakes, bogs, or fens; globally unique, rare or threatened ecosystems; critical habitat of wildlife protected under Federal or State law; nests of hawks, eagle, falcons, and owls; and prairie or shrub-steppe grouse breeding grounds.

As currently written, this provision does not provide for blanket avoidance of birds and bats. Rather, this provision states that METs, roads, wind turbines, and other necessary wind energy facilities should not be installed in protected areas or where ecological resources are known to be sensitive to human activities. To address the problem of funneling migrants, the Agency has added the following to section 72.21d in the final directives:

Avoid or minimize the placement of wind turbines in areas where topography and landscape features may funnel nocturnal migrants, such as over mountain passes, along river corridors, or ridge tops.

*Comment.* One respondent commented that it was inappropriate to recommend categorically that areas of fog and mist be avoided, given the lack of scientific evidence that wind energy development in those areas results in higher avian or bat mortality or that bat navigation is disrupted by mist and fog or guy wires on METs.

*Response.* The Agency believes that fog and mist can increase avian and bat mortality. However, the Agency agrees that the statement in proposed section 72.31e, paragraph 2, was too broad. Consequently, the Agency has qualified the statement in corresponding section 72.21d, paragraph 2, in the final directives to read:

Avoid or minimize the placement of wind turbines in areas with a high incidence of frontal weather events that lead to frequent fog or mist if existing information indicates a high risk to migratory birds or bats during these weather events.

#### 73.11a—Wildlife, Fish and Rare Plant Considerations

*Comment.* One respondent suggested that since the guidance in this section was similar to FWS voluntary guidelines, they should be referenced.

*Response.* FWS’s Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines was one of the sources used to develop the final directives. This source is cited in sections 70.6 and 73.4 in the final directives.

*Comment.* Some respondents stated that applications for wind energy uses that would have unacceptable impacts on wildlife should be denied and that analysis of cumulative impacts should be emphasized where regional trends for wind energy development have the potential to impact migratory populations.

Other respondents suggested speed limits for motor vehicles to minimize wildlife mortality; addressing migratory patterns of all species that may be impacted, including big game; addressing the impacts on entire populations, not just individual animals; and providing barriers or adding humanly inaudible sirens or whistles to divert wildlife from rotor blades.

*Response.* Several provisions in the final directives address potential effects on wildlife, including cumulative effects, at the application stage. Section 73.4a, paragraph 7, directs authorized officers to ensure that applicants assess effects on wildlife, as applicable, and lists specific items that at a minimum should be considered in assessing these effects. Section 73.4a, paragraph 8, directs authorized officers to ensure that applicants consider the effects of proposed wind energy uses on bats and birds that are continental migrants, semi- or regional migrants, or year-round residents; habitat use and requirements; seasonal use; and migration activity. Section 73.4a, paragraph 9, directs authorized officers to ensure that applicants include in

their assessment of direct, indirect, and cumulative effects on migrant birds and bats all factors routinely assessed for resident species, including susceptibility to mortality from collision with or electrocution from proposed project facilities and seasonal variation in the effects that construction or operation of wind energy facilities may have on these species.

The Agency does not believe it is necessary or appropriate for the final directives to establish a speed limit for motor vehicles accessing wind energy uses; to address migratory patterns of all species that may be impacted; to address potential impacts on entire wildlife populations; or to require applicants to provide barriers or add humanly inaudible sirens or whistles to divert wildlife from rotor blades. These issues are more appropriately handled generally in the final directives (see sec. 73.32, para. 8, governing road management objectives, and sec. 73.4a, paras. 4, 5, 8, and 9, governing avoidance of bird and bat collisions and other effects on wildlife) and addressed as needed in greater specificity case by case.

*Comment.* Several respondents stated that the direction in proposed section 73.11a, paragraph 1, to avoid use of guy wires on METs would result in greater resource impacts due to the need to construct a larger concrete foundation for METs. These respondents also stated that the direction to avoid guy wires on METs “to the maximum extent possible” was too qualified to permit assessment of resource impacts associated with the use of a larger concrete foundation for METs.

Several respondents suggested revisions to the provision requiring avoidance of guy wires on METs to the maximum extent possible. One respondent suggested requiring the use of bird flight diverters or markers on taller METs when guy wires are necessary. Another respondent stated that minimizing the height of METs would reduce the necessity for guy wires and lights and the potential for bird and bat collisions. One respondent recommended the use of monopole over lattice towers to reduce the potential for collisions and perching. One respondent noted that tower height seems to have a direct effect on bat mortality and suggested encouraging the use of shorter turbine towers, consistent with rotor size.

*Response.* In response to these comments, the Agency has replaced the phrase “to the maximum extent possible” with the phrase “if feasible” in the final directives. The Agency has made other revisions to this provision to

address the potential for bird and bat collisions. Section 73.2 in the final directives states:

To reduce bat and bird mortality, require applicants to avoid the use of guy wires on METs, if feasible. If applicants propose to use guy wires, require applicants to mark them with bird-deterrent devices when possible (see “Suggested Practices for Raptor Protection on Powerlines: The State of the Art in 1996,” as updated in 2000). To reduce potential effects on scenery, require applicants to limit the height of METs to a functional minimum.

With respect to the type and height of turbine towers, section 73.4a, paragraph 5, in the final directives directs authorized officers to ensure that applicants design wind energy structures, including utility poles and wires, to discourage perching or nesting by birds.

*Comment.* Some respondents noted that the direction in proposed section 73.11a, paragraph 2, to locate placement of wind turbines, roads, and ancillary facilities in the least environmentally sensitive areas does not take into account where the wind resource is located and other engineering realities. These respondents also expressed concern regarding the lack of a definition for the term “the least environmentally sensitive areas.”

Other respondents suggested that “environmentally sensitive areas” should include grassland habitats, shrublands, prairies, shorelines, cliffs, estuaries, old growth forests, aspen stands, talus, and wildlife breeding, brooding, and roosting areas and that habitat fragmentation, climate change adaptability, and avoidance and other behavioral impacts on species sensitive from the presence of vertical structures should be considered.

*Response.* In response to these comments, in the final directives, the Agency has replaced “locate wind turbines, roads, and ancillary facilities in the least environmentally sensitive areas, such as away from” with “locate wind turbines, roads, and ancillary facilities away from protected and sensitive areas such as.” In addition, the Agency has added more examples of protected and sensitive habitats.

*Comment.* One respondent stated that guidance in proposed section 73.11a, paragraph 3, to avoid areas with a high incidence of fog and mist should not be limited to protecting birds and bats during migration, but should also include resident birds and bats. Another respondent suggested removing the phrase “to the maximum extent possible” with regard to avoiding placement of wind turbines in areas with a high incidence of fog and mist.

Several respondents suggested strengthening direction in section 73.11a, paragraph 4, in the proposed directives to avoid, minimize, or mitigate the potential for bird and bat collisions by configuring wind turbines to avoid landscape features known to attract migrating wildlife. Several respondents suggested adding the word “fully” prior to “mitigate” so that it is clear that mitigation will be comprehensive and complete. With respect to the qualification to avoid, minimize, or mitigate the potential for bird and bat collisions if site studies show that placing wind turbines in that location would have adverse impacts, one respondent stated that the proposed directives must specify how these studies would be utilized in site design, evaluating wind energy applications, wind energy operations, wildlife monitoring, and mitigation of adverse effects on wildlife.

Another respondent recommended that the Forest Service adopt the published, updated Avian Power Line Interaction Committee (APLIC) guidelines to minimize electrocutions and collisions by avian species.

*Response.* Resident species are included in the definition of species of management concern in section 70.6 in the final directives. In addition, section 73.4a, paragraph 8, in the final directives directs the authorized officer to consider the effects of proposed wind energy uses on bats and birds that are year-round residents and their habitat use and requirements.

The Agency agrees that the statement in proposed section 73.11a, paragraph 3, was too broad. Consequently, the Agency has removed the phrase “to the maximum extent possible” from corresponding section 72.21d, paragraph 2, in the final directives.

The Agency has revised the final directives to remove site studies as a precondition for avoiding, minimizing, and mitigating the potential for bird and bat collisions with wind turbines. Specifically, section 73.4a, paragraph 3, in the final directives states:

Avoid, minimize, or mitigate the potential for bird and bat collisions by configuring wind turbines to avoid natural and man-made landscape features and habitats known to attract or concentrate wildlife, particularly if site surveys demonstrate that such placement would create adverse impacts.

Section 73.4a, paragraphs 3a and 3b, enumerate factors relevant to the consideration of the potential for bird and bat collisions. The Agency has declined to add the word “fully” before “mitigate” because it would be difficult to show full mitigation of the potential for bird and bat collisions.

In addition, in assessing effects of proposed wind energy uses on species of management concern, paragraphs 6a and 6b direct the authorized officer to consider site climate and weather patterns, facility footprint, configuration of the facility within the landscape, and potential impacts on species migrating to or dwelling in the proposed project area, as well as the presence or proximity of natural and man-made landscape features and habitats that attract, congregate or concentrate wildlife.

The Agency used the APLIC guidelines in developing the guidance in section 73.4a, paragraph 3, in the final directives regarding avoidance of bird and bat collisions. Section 73.4a, paragraph 4, directs authorized officers to ensure that applicants use the 2006 APLIC recommendations for design of above-ground lines, transformers, and conductors. All applicable APLIC guidelines may be used during project-specific environmental analysis. In addition, the Agency has included the APLIC guidelines as a reference in section 70.6 in the final directives.

*Comment.* One respondent suggested changing “to discourage use as perching or nesting substrates” to “discourage use as roosting or nesting substrates” in paragraph 6, since bats roost, rather than perch.

*Response.* The Agency has not made this change, since there is no indication that bats roost on wind energy substrates.

*Comment.* Respondents generally supported burial of utility lines provided for in proposed section 73.11a, paragraph 7. Some respondents suggested removing the phrase “where possible” in connection with burial of utility and distribution lines to minimize visual disturbance and impacts on wildlife. Other respondents noted the need for aerial distribution lines over sensitive or rare habitat, where the effects on wildlife from ground disturbance would be greater than the effects on wildlife from use of aerial distribution lines.

One respondent recommended replacing the phrase “to lessen impacts and disturbance to wildlife” with “when such action would reduce rather than increase ecological impacts.” This respondent also recommended adding the following sentence: “Ensure that original soils and native vegetation are restored to their original condition following any burial of utility and transmission lines and that adequate measures are taken to preclude the colonization and/or spread of invasive species.”

*Response.* There may be situations where it is not possible to bury utility and distribution lines. Therefore, the Agency has retained the phrase “where possible” in section 73.4a, paragraph 6, in the final directives. In these situations, aerial distribution lines may be appropriate. Both the proposed and final directives direct the authorized officer to use existing utility corridors and structures to the extent practical and to avoid development of new infrastructure.

Section 73.32, paragraph 7, in the final directives addresses control of invasive species in the plan of development. Section 77.3, paragraphs 1 and 2, in the final directives address control of invasive species during construction and site restoration after construction of a wind energy facility.

#### 73.11b—Scenery Management

*Comment.* One respondent stated that although it is impossible to mitigate all of the visual impact of wind energy projects, thoughtful siting and use of best practices can greatly reduce the impact. This respondent suggested referencing BLM’s Instruction Memorandum No. 2005–069, “Interim Offsite Compensatory Mitigation for Oil, Gas, Geothermal and Energy Right-of-Way Permits,” regarding micrositing and suitability of wind energy projects.

*Response.* The Agency agrees and has included this reference in section 70.6 in the final directives.

*Comment.* Several respondents objected to the requirement in proposed section 73.11b, paragraph 2, for applicants to integrate wind turbine arrays and design into the surrounding landscape. These respondents believed that scenery management decisions regarding wind energy projects should be based on professional judgment regarding whether a particular facility will (a) Result in undue harm to valuable aesthetic resources in a particular setting; (b) significantly degrade scenic resources; (c) visually degrade an area valued for its wildness and remoteness; and/or (d) be at a scale, in terms of wind turbine height or number of turbines, that overwhelms the landscape.

One respondent suggested that the Forest Service balance any potential aesthetic impacts with the environmental benefits of a wind power project in terms of reducing global warming and emissions.

One respondent asked whether proposed section 73.11b, paragraph 5, provides for meeting scenic integrity objectives or merely enumerates sources that may be consulted in connection with that goal.

One respondent recommended using a 10-mile radius for non-sensitive landscapes and a 20-mile radius for mountain ridgelines and other sensitive landscapes in analyzing visual impacts of wind energy facilities. This respondent also wanted the visual impact of wind energy projects on wilderness and other restricted areas to be taken into account and to meet the scenic integrity objectives for those areas. In addition, this respondent recommended requiring visual simulations prior to approval of wind energy uses.

*Response.* Section 73.4b, paragraph 2, of the final directives requires authorized officers to ensure that applicants consult a variety of sources in planning, designing, and siting wind energy structures and facilities, including USDA Handbook #701 (Landscape Aesthetics), FS-710 (The Built Environment Image Guide for the National Forests and Grasslands), and FSM 2380, which contains the SMS.

The SMS establishes 3 levels of observer distance zones: the foreground, middle ground, and background. The background includes areas seen from 4 miles to the horizon. Consistent with the SMS, section 73.4b, paragraph 1, in the final directives requires authorized officers to ensure that applicants integrate wind turbine strings and design into the surrounding landscape, considering the scenic integrity objectives of the applicable land management plan, and where the scenic integrity objectives may not be met, to ensure that applicants consider offsite mitigation opportunities. When scenic integrity objectives are established, wilderness and other special areas are considered. The final directives provide for visual simulations in sections 73.32, paragraph 12, and 73.4b, paragraph 1b.

*Comment.* With regard to the provision regarding limiting the height of METs in proposed 73.11b, paragraph 1, one respondent suggested defining the phrase “proper functioning” or replacing it with “for accurate measurement of wind speed and direction.”

*Response.* The Agency has not included this provision in the final directives.

*Comment.* With respect to proposed section 73.11b, paragraph 2, one respondent questioned whether ensuring that applicants consider turbine clustering would undermine wind energy projects from an engineering and financial standpoint. Another respondent suggested removing the phrase “where appropriate” in connection with this direction.

The second respondent also suggested specifying key design elements, including visual uniformity, use of tubular towers, the proportion and color of wind turbines, and the prohibition of commercial messages; using rigorous viewshed mapping, photographic and virtual simulations, computer simulations, and field inventory techniques that illustrate sensitive and scenic viewpoints and that show with reasonable accuracy the visibility of proposed wind energy facilities; prioritizing elimination or reduction of lighting, consistent with FAA requirements, e.g., through use of light-colored wind turbine generators; designing and configuring wind turbines to provide visual order among clusters of turbines; designing and configuring rotor blades, nacelles, and turbine towers to create visual uniformity in their shape, color, and size; and properly maintaining wind turbine generators.

*Response.* In section 73.4b, paragraph 1, in the final directives, the Agency replaced the sentence, "Where appropriate, consider turbine clustering," with the sentence, "Where SIOs may not be met, consider off-site mitigation opportunities."

The Agency agrees with the other changes suggested by the second respondent and has incorporated them in section 73.4b, paragraph 1, in the final directives.

*Comment.* One respondent suggested that the environmental analysis for wind energy facilities should address visual impacts resulting from air pollution and additional transmission lines from fossil fuel power plants. This respondent stated that the proposed directives should provide for consideration of the views of a representative sample, rather than a vocal minority, of people visually impacted by wind energy projects.

*Response.* NEPA requires assessment of site-specific effects. The level of analysis required will vary depending on site-specific circumstances. After a wind energy proposal passes screening and is accepted as an application, the Agency will analyze its effects consistent with NEPA. In preparing an EA or EIS, the Agency examines the cumulative effects of the proposal (including past, present, and reasonably foreseeable future actions) on the affected environment, per 36 CFR 220.4(f). If an EA or EIS is required, the Forest Service will seek public input in connection with the environmental analysis.

*Comment.* Some respondents believed that the direction in proposed section 73.11b, paragraph 6, to ensure that

applicants avoid placing substations or large buildings at high elevations and along skylines that are visible to the public should apply to wind turbines as well. These respondents also stated that any direction regarding the location, design, or concealment of electrical substations should note that the first priority with regard to these structures is safety.

*Response.* The Agency has not expanded this provision, which appears in section 73.4b, paragraph 3, in the final directives, to apply to wind turbines. Each wind energy project will be analyzed at the site-specific level, and it may or may not be appropriate to place wind turbines at highly visible elevations or along skylines that are visible to the public. Safety is addressed in section 73.32, paragraphs 6 and 8, in the final directives.

*Comment.* One respondent suggested adding a cross-reference in proposed section 73.11b, paragraph 7, regarding burial of distribution lines for scenery management, to proposed section 73.11a, paragraph 7, regarding burial of distribution lines for wildlife management. This respondent also suggested qualifying the requirement in proposed section 73.11b, paragraph 7, with the phrase "where feasible."

*Response.* The Agency does not believe that a cross-reference in proposed section 73.11b, paragraph 7 (sec. 73.4b, para. 4, in the final directives) is necessary. However, to be consistent with the provision regarding burial of distribution lines for wildlife management in section 73.4a, paragraph 6, in the final directives, the Agency has qualified section 73.4b, paragraph 4, in the final directives to state: "Where possible, bury utility and distribution lines to minimize visual disturbance." In addition, the Agency has added a paragraph regarding consideration of SIOs in the location, design, and construction of the power line connecting a wind energy project to the energy grid.

#### 73.11c—Noise Management

*Comment.* One respondent noted that medical studies have shown many adverse effects on nearby residents from the sounds and shadows from wind turbine blades.

*Response.* The proposed and final directives (proposed section 73.11c) and final section 73.4c require authorized officers to ensure that applicants minimize noise where possible and practical and, if possible and practical, minimize the amplitude of wind turbine and associated generator noise using available sound dampening technologies. In particular, these

provisions require authorized officers to ensure that applicants restrict noise to 10 decibels above background noise levels, when possible, at nearby residences and campsites, in or near habitats of wildlife known to be sensitive to noise during reproductive, roosting, or hibernation, or where habitat abandonment may be an issue. These provisions also require authorized officers to ensure that applicants provide for comparisons of noise measurements of planned equipment during wind turbine operation with background noise levels in the project area over a 24-hour period.

*Comment.* Some respondents suggested removing the words "when possible" and "where possible" from proposed section 73.11c and revising proposed paragraph 2a to require restriction of noise to 10 decibels above background noise levels at nearby residences and campsites and in wildlife habitat. Other respondents believed that in the vicinity of residences, hiking trails, and campgrounds, even 10 decibels above background noise levels is unacceptable, especially at night. Two respondents suggested that the proposed directives provide for measurement of and limitations on infrasound (low frequency noise inaudible to humans) and high frequency sound. Other respondents commented that the noise level in this provision was impossible to measure and recommended a fixed limit, such as 50 decibels, near residences, critical habitat, and campgrounds. These respondents also suggested setting a fixed decibel level at a fixed distance from wind turbines, as prescribed in the corresponding environmental analysis. These respondents noted that acoustic shielding is already included on wind turbines and therefore suggested revising proposed paragraph 2c, which provided for minimizing wind turbine noise through the use of acoustic shielding in nacelles and associated facilities, if technologically feasible.

*Response.* The Agency does not believe it would be appropriate to establish specific noise restrictions in the final directives because the appropriate level of noise restrictions is a site-specific decision that needs to be based on local conditions. Section 73.4c, paragraph 2, in the final directives provides for minimizing the amplitude of wind turbine and associated generator noise using available noise dampening technologies, rather than acoustic shielding. Ten decibels above the background noise level was selected based on FWS's

Interim Guidelines on Avoiding and Minimizing Wildlife Impacts From Wind Turbines. The Agency believes it is not necessary to address infrasound and high frequency sound in this context.

*Comment.* One respondent noted that the noise level from construction of wind energy facilities would be harmful to and could drive away wildlife that would not later return.

*Response.* Section 75.21 in the final directives requires applicants to submit a monitoring plan prepared in consultation with the authorized officer that will become part of the permit for construction and operation of a wind energy facility. Section 75.21, paragraph 6a, in the final directives lists as an item that may need to be addressed in the monitoring plan the effects of wind turbine construction and operation on species of management concern and their habitats.

#### 73.11d—Lighting

*Comment.* Some respondents believed that any flashing lights on top of 400-foot towers would be a source of light pollution and that any high-intensity lighting should be turned off unless needed for specific tasks. These respondents also recommended that the proposed directives include a statement that compliance with FAA requirements cannot be used to justify a failure to meet scenic integrity objectives.

*Response.* The Agency has clarified requirements regarding lighting for wind energy facilities. For example, proposed section 73.11d directed authorized officers to ensure that applicants use the minimum amount of warning lights required by the FAA. Section 73.4d in the final directives directs authorized officers to ensure that, unless otherwise required by the FAA, applicants mark approximately 1 in 5 turbines with dual red-strobe lights on the top of the nacelles of marked turbines and that under no circumstance should L-180 lights be used. Section 73.4b addresses scenic integrity objectives in the context of authorization of a wind energy facility.

*Comment.* Several respondents supported FAA and FWS guidelines providing for use of red strobe lights for wind energy facilities. These respondents recommended that only the minimum number and intensity of strobe lights be used and suggested including a reference to the FWS guidelines at <http://www.fws.gov/migratorybirds/issues/towers/cotow.html> in the proposed directives.

*Response.* The FAA and FWS guidelines regarding wind energy uses recommend marking approximately 1 in

5 turbines with dual red-strobe lights on the top of the nacelles of marked turbines and that under no circumstance should L-180 lights be used. Section 73.11d in the proposed directives and section 73.4d in the final directives are consistent with these guidelines. In addition, section 73.4d, paragraph 2, in the final directives directs authorized officers to ensure that, unless otherwise required by the FAA, applicants use the minimum intensity and maximum “off” phase (*i.e.*, 20 flashes per minute) that effectively marks the facility boundary and turbines within the project site, making the facility visible to pilots at night. The Agency has included a reference to the FWS guidelines in section 70.6 of the final directives.

#### 73.12—Public Outreach

*Comment.* Several respondents recommended changing “ensure that applicants consider conducting public meetings” to “ensure that applicants conduct public meetings.” One respondent believed that this provision was redundant, since public meetings were already included in the NEPA process. Another respondent noted that the proposed directives should address public education, as well as public outreach, regarding wind energy uses on NFS lands.

*Response.* The Agency does not believe it is appropriate or necessary to ensure that applicants conduct public meetings. Proposed section 73.12 (sec. 73.5 in the final directives) addresses public outreach conducted by applicants. Therefore, proposed section 73.12 does not duplicate public meetings conducted by the Forest Service during the NEPA process. Public meetings conducted by the Forest Service during the NEPA process may be educational.

#### 73.2—Application Requirements for a Permit for Construction and Operation of a Wind Energy Facility

*Comment.* One respondent stated that the proposed directives were disconnected from how wind energy projects are actually financed and developed. For example, the proposed directives allowed the Agency to require that wind turbines be moved after a project is already in operation. This respondent believed that the possibility of required wind turbine relocation would preclude financing of wind energy projects. The respondent stated that to avoid unnecessary administrative costs, the proposed directives should encourage the use of private sector practices and standardization of commercial terms and conditions in wind energy permits.

*Response.* Like the proposed directives, the final directives require the authorized officer to ensure that applicants for a permit for the construction and operation of a wind energy facility submit a study plan (sec. 73.31), plan of development (sec. 73.32), and site plan (sec. 73.33). These documents must take into consideration placement of and site disturbance from proposed wind turbines, facilities, access roads, trails, utility corridors, and other facilities.

Section 77.4, paragraph 8, in the final directives directs authorized officers to ensure that holders of wind energy permits use results from multi-year monitoring to adjust operations to mitigate or eliminate impacts on species of management concern and their habitats, while still achieving the energy production objectives for the facility.

#### 73.21—Study Plan

*Comment.* One respondent stated that the purpose and timing of the study plan were unclear and that the proposed directives required applicants to gather environmental information for the study plan that should be collected later in the NEPA process. This respondent also noted that the Forest Service already has inventories of improvements, resources, and existing conditions and management plans and that applicants should not be responsible for updating or duplicating this work.

*Response.* The requirements in section 73.21 in the proposed directives (section 73.31 in the final directives) are necessary for the authorized officer to evaluate wind energy applications fully during environmental analysis. The inventories and other information compiled in the study plan are specific to each proposed use and relate to assessment of potential impacts on wildlife, other uses, and valid outstanding rights.

*Comment.* Several respondents recommended the following changes to proposed section 73.21: (1) In the introductory paragraph, changing the phrase “submit a study plan which enumerates and provides a brief description of the methodologies for the studies required” to “submit a study plan which specifies and describes the methodologies and studies required;” (2) requiring submission of actual studies and underlying data, and stating that the studies described in the study plan must, rather than should, enable the authorized officer to evaluate the application fully during environmental analysis; (3) in proposed paragraph 2, adding a reference to duration and timing in connection with the presence of certain species, critical habitats, or

other important habitat features; (4) in proposed paragraph 6, changing “an inventory of improvements and resource investments, such as distribution lines, powerlines and other utilities, access roads, reforestation, restoration, wildlife habitat structures, and fencing” to “an inventory of facilities, such as power lines and other utilities and resource management activities such as reforestation, restoration, habitat structures and fencing”; (5) in proposed paragraph 7, changing “an inventory and assessment of the existing project area” to “an inventory and assessment of the proposed project area”; and (6) in proposed paragraph 8, after “a review of land ownership records,” adding “and evidence of easements or negotiations for access to private inholdings.”

Other respondents suggested referring specifically to habitat mapping; raptor nest surveys; general avian use surveys; and wildlife impacts, including loss, modification, fragmentation, and abandonment of forest, grassland, and sage-steppe habitat, increase in edge, potential increase in nest parasitism and predation, potential for reduced nesting and breeding densities, attraction to modified habitats, and other potential effects on wildlife behavior.

*Response.* In response to these comments, the Agency has revised the introductory paragraph to proposed section 73.21 (sec. 73.31 in the final directives) to require study plans to provide a brief description of the studies required for processing the application, including the methodologies to be used in needed studies. In addition, the Agency has revised proposed section 73.21, paragraph 7 (sec. 73.31, para. 7, in the final directives) to require study plans to include an inventory and assessment of the landscape using the SMS or an alternate visualization technique suitable for assessing potential impacts on scenery. The Agency has revised proposed section 73.21, paragraph 8 (sec. 73.31, para. 8, in the final directives) to require study plans to include a review of land ownership records, noting any valid outstanding rights, including mining claims and land use authorizations.

With respect to submission of actual data, as opposed to descriptions of studies, section 74.3 in the final directives directs authorized officers to require applicants for a permit for construction and operation of a wind energy facility to submit sufficiently detailed wind energy data to support environmental analysis of the application and to allow evaluation of the proposed development. In addition, section 75.4, paragraph 2, in the final directives directs authorized officers to

ensure before issuance of a permit for construction and operation of a wind energy facility that applicants have submitted a study plan that includes survey outcomes from site testing and feasibility studies.

Similar to proposed section 73.21, paragraphs 1 and 2, section 73.31, paragraphs 1 and 2, in the final directives require study plans to include:

1. A review of existing information regarding identified species of management concern, including habitat use, location, or presence in the study area, and identification of ecologically sensitive areas in or near the study area, including landscape and topographical features known to attract or concentrate birds or bats;

2. Identification of information and methods by which to gather information for the development of biological assessments and evaluations of project-specific species of management concern and their habitats;

The Agency believes that these provisions are broad enough to encompass habitat mapping, raptor nest surveys, general avian use surveys, and wildlife impacts and that it is not necessary to reference these studies specifically in the final directives.

#### 73.22—Plan of Development

*Comment.* Some respondents were unsure of the meaning and intent of proposed section 73.22, paragraph 9, which addressed proposed alteration of existing uses. With respect to proposed section 73.22, paragraph 13, which required photo-realistic simulations of all wind energy facilities, one respondent stated that it would be impractical to prepare photo-realistic simulations other than for wind turbines. This respondent also noted that proposed section 73.22 should provide for a preliminary plan of development as part of an application and a revised plan of development that includes mitigation measures identified in the NEPA decision document for the project. Another respondent requested that “should” be changed to “must” in paragraphs 5, 7, and 11.

*Response.* In response to these comments, the Agency has clarified proposed section 73.22, paragraph 9 (sec. 73.32, para. 9, in the final directives) by removing the reference to the relationship of proposed alteration of existing uses to management objectives for the site and associated restrictions on uses. The final directives require a plan of development to address proposed alteration of the project area and potential impacts on existing land uses, including necessary restrictions on public use.

The Agency believes it is feasible and necessary for a plan of development to contain photo-realistic visual simulations depicting all proposed wind energy facilities, not just wind turbines, and has therefore not revised section 73.32, paragraph 12, in the final directives.

Section 75.21, paragraph 2, in the proposed directives and section 75.21, paragraph 3, in the final directives provide for revision of a plan of development, as appropriate, based on environmental analysis of a wind energy application. Section 75.21, paragraph 3, in the final directives requires a plan of development to be included as an appendix to a permit for construction and operation of a wind energy facility.

The Agency has changed the word “should” to “must” to ensure that the specifications are met in a plan of development in section 73.32, paragraphs 5, 7, 11a, and 11b.

With regard to access to wind energy facilities, the Agency has added a reference to the width of roads, in addition to their number and length, in proposed section 73.22, paragraph 5 (sec. 73.32, para. 5, in the final directives). The Agency has revised proposed section 73.22, paragraph 6 (sec. 73.32, para. 6, in the final directives) to specify that a plan for security of wind energy facilities and equipment must address fire protection and spill prevention, containment, and cleanup. In addition, the Agency has expanded proposed paragraph 6 to require the site plan to address emergency repair and scheduled equipment replacement and has revised proposed paragraph 10 to require that reclamation plan provide for removal of foundations, roads, and associated infrastructure; re-vegetation using native species; invasive species control; and restoration of the project area upon termination of the authorized use.

#### 73.23—Site Plan

*Comment.* With respect to the introductory paragraph for proposed section 73.23, respondents recommended requiring the authorized official to consult with the applicant, rather than advising the applicant to consult with the authorized officer, during preparation of the site plan to ensure that it is adequate.

One respondent stated that it would be impractical to provide the exact location and number of all wind turbines, as required by proposed section 73.23, paragraph 1. This respondent believed that the Agency should give applicants the flexibility to propose the maximum number of wind turbines supported by predetermined



areas that have been studied and cleared for that purpose.

*Response.* The Agency agrees that the authorized officer must consult with applicants during preparation of a site plan to ensure that wind energy projects are adequately described and has revised section 73.33 in the final directives to reflect that intent.

The Agency believes that it is feasible and necessary to show the location of all proposed facilities, including wind turbines, in the site plan and has therefore retained this requirement in section 73.33, paragraph 1, of the final directives.

#### 74—Requirements for Processing Wind Energy Applications

*Comment.* One respondent suggested stating that teams reviewing wind energy applications should have experience and training in wind energy.

*Response.* The Agency typically utilizes a range of resource specialists in reviewing special use applications, including those with experience and training in special uses, environmental analysis, and, as needed, wildlife and other areas of expertise. The expertise needed generally is based on the effects of the proposed use on existing conditions and therefore does not tend to vary based on the type of the proposed use. Therefore, the Agency does not believe it would be appropriate to state that those reviewing wind energy applications should have experience and training in wind energy. Both the teams reviewing applications and the authorized officer can consult as needed with those who have that training and experience.

#### 74.1—Effects on Species of Management Concern

*Comment.* One respondent stated that the proposed directives should encourage wind energy developers and the Forest Service to comply with applicable State wildlife laws.

*Response.* The final directives provide for compliance with all applicable Federal and State law concerning wildlife and their habitats, including NEPA and the ESA. In particular, section 73.4a, paragraphs 1 and 2, require authorized officers to ensure that applicants for a permit for construction and operation of a wind energy facility comply with all Federal and State laws and regulations regarding wildlife, fish, and rare plants. Section 74.1 addresses environmental analysis of wind energy applications.

*Comment.* One respondent stated that peer-reviewed guidelines and recommendations must, rather than should, be used and sampling must,

rather than should, occur over multiple days and nights and across multiple seasons to account sufficiently for spatial and temporal variation in wildlife activity.

*Response.* Section 73.4a of the final directives addresses seasonal and spatial variation in wildlife activity in connection with wind energy facilities. In particular, section 73.4a, paragraph 8, in the final directives requires authorized officers to ensure that applicants for a permit for the construction and operation of a wind energy facility consider the effects of proposed wind energy uses on bats and birds that are continental migrants, semi- or regional migrants, or year-round residents; habitat use and requirements; seasonal use; and migration activity. In addition, section 73.4a, paragraph 9, in the final directives requires authorized officers to ensure that applicants for these permits include in assessment of direct, indirect, and cumulative effects on migrant birds and bats all factors routinely assessed for resident species, including susceptibility to mortality from collision with or electrocution from proposed wind energy facilities and seasonal variation in the effects that construction or operation of wind energy facilities may have on these species.

*Comment.* Some respondents noted that to be consistent with the way the Agency analyzes the effects of other proposed uses on wildlife, the effects of proposed wind energy uses on wildlife must be biologically significant to be addressed in environmental analysis. Additionally, these respondents believed that proposed section 74.1 was overly restrictive with respect to site testing and feasibility permits and recommended a 30-day environmental review period for site testing and feasibility permits, as in BLM's policy.

*Response.* The final directives are entirely consistent with the way the Agency analyzes the effects of other proposed uses on wildlife. Section 73.4a, paragraph 1, in the final directives requires the authorized officer to ensure that applicants for a permit for construction and operation of a wind energy facility develop biological evaluations and assessments for Forest Service sensitive species and federally designated threatened, endangered, and candidate species that meet the requirements of FSM 2670, and, if needed, conduct consultation pursuant to Section 7 of the ESA. Section 73.4a, paragraph 2, in the final directives requires the authorized officer to ensure that applicants for a permit for construction and operation of a wind energy facility comply with all other

Federal and State laws and regulations regarding wildlife, fish, and rare plants.

It would be inconsistent with Forest Service directives to provide that impacts on wildlife from proposed wind energy uses must be biologically significant to be addressed during environmental analysis. The Agency addresses the significance of any potential environmental effects of proposed uses on a site-specific basis during the NEPA process in accordance with applicable law. To reinforce this point, the Agency has added a statement in section 74.1 in the final directives that environmental analysis for wind energy applications must comply with Agency NEPA procedures at 36 CFR part 220 and FSH 1909.15 and should be commensurate with the activities proposed and potential effects anticipated.

The Agency has revised proposed sections 73.11a through 73.11d governing wildlife, scenery, noise, and lighting management (sec. 73.4a through 73.4d in the final directives); 73.12 governing public outreach (sec. 73.5 in the final directives); and 74.1 governing wildlife management (sec. 73.4a in the final directives) to clarify that they apply only to applications for permits for construction and operation of a wind energy facility, not to applications for site testing and feasibility permits.

*Comment.* Some respondents suggested that the amount of baseline data required on wildlife impacts should be determined on a project-specific basis. These respondents believed that reliance on anecdotal models or wildlife assumptions would result in information of little utility in assessing impacts on birds and bats and therefore recommended that scientifically rigorous surveys of avian and bat use be conducted prior to construction of wind energy projects.

*Response.* Several provisions in the final directives provide for acquiring baseline data on wildlife impacts, conducting additional surveys, and implementing a monitoring program. Section 72.1 provides for identification of potential information needs at the pre-proposal meeting. In particular, paragraph 2c states: "Identify environmental or cultural resource analyses that may be required." Section 73.1, paragraph 1, requires coordination with Federal, State, and tribal agencies, which will result in identification of site-specific information needs. Section 73.31 lists the types of baseline data that are needed to prepare a study plan. In addition, FSH 2609.13, Wildlife Monitoring and Wind Energy Facilities, enumerates the requirements for



collecting additional information under a monitoring plan.

*Comment.* In proposed section 74.1, paragraph 1, in the absence of intensive survey efforts, one respondent suggested considering each potentially affected species with range overlaps in the proposed area as potentially affected, rather than as present in the area. In addition, in proposed section 74.1, paragraph 2, this respondent suggested adding that structural measures, such as shielding exposed electrical lines and installing perch guards, are the best way to reduce the likelihood of electrocution of birds and bats. Another respondent commenting on proposed section 74.1, paragraph 2, stated that greater susceptibility of certain species to mortality from collision with or electrocution by wind energy facilities has not been established.

*Response.* Environmental analysis of wind energy applications will assess whether species of management concern are potentially affected. For purposes of establishing the scope of the analysis, it is more appropriate to speak in terms of species in the area being present, rather than potentially affected. The Agency has clarified this point in section 73.4a, paragraph 7a, of the final directives.

Section 73.2 in the final directives directs authorized officers to require applicants to avoid the use of guy wires on METs, if feasible, to reduce bat and bird mortality, and if applicants propose to use guy wires, to require applicants to mark them with bird-deterrent devices when possible. Section 73.4a, paragraph 5, in the final directives directs authorized officers to ensure that applicants for a permit for construction and operation of a wind energy facility design wind energy structures, including utility poles and wires, to discourage perching or nesting by birds and to use the 2006 APLIC recommendations for design of above-ground lines, transformers, and conductors.

Studies have shown the susceptibility of birds and bats to mortality due to collision with or electrocution from wind energy facilities. Some of these sources, including "Mitigating Bird Collisions With Power Lines: The State of the Art in 1994," published by the Edison Electric Institute, and "Suggested Practices for Raptor Protection on Powerlines: The State of the Art in 1996," published by the Edison Electric Institute and Raptor Research Foundation, are cited in section 70.6 of the final directives.

#### 74.2—Applications Involving Lands Under the Jurisdiction of Multiple Agencies

*Comment.* Some respondents recommended adding a reference to FWS, the National Park Service, and State fish and wildlife agencies in the first paragraph of proposed section 74.2. One respondent suggested providing for investigations, hearings, and proceedings conducted jointly by the Forest Service and other Federal and State agencies.

Another respondent stated that proposed section 74.2 improperly focuses on activities taking place primarily on NFS lands and fails to mention other agencies' activities on private, State, tribal, or other Federal lands, as required by CEQ's NEPA regulations. This respondent noted that the potential for ignoring activities on private lands is especially troubling given the miles of NFS lands bordering private land and the increasing effects of private land use, such as primary and secondary housing development and resort communities. This respondent further noted that ignoring activities on adjacent State, other Federal, or tribal lands could result in failure to identify potential sources of conflict or potential opportunities to site and develop wind energy facilities effectively.

*Response.* Section 74.2 in the proposed and final directives addresses coordination in connection with processing wind energy applications that involve lands under the jurisdiction of the Forest Service and one or more other Federal agencies. Lands under the jurisdiction of FWS and the National Park Service are covered by section 74.2. Lands under the jurisdiction of State fish and wildlife agencies are not covered by section 74.2. The Forest Service does not coordinate processing of applications for use of NFS lands with applications for use of State lands. However, the Agency has revised proposed section 72.1, paragraph 2h (para. 2g in the final directives) to provide for discussion of the need to coordinate with affected State agencies.

To clarify the scope of section 74.2, the Agency has changed its title in the final directives to "Applications Involving Lands under the Jurisdiction of Multiple Federal Agencies," rather than "multiple Agencies." In addition, the Forest Service has added a statement that each affected agency must issue a land use authorization for the lands under that agency's jurisdiction.

Section 74.2 does not address investigations, hearings, and proceedings. Section 74.2 also does not address environmental and aesthetic

effects and therefore does not preclude consideration, as appropriate, of those effects in siting wind energy uses and evaluating wind energy applications. Environmental and aesthetic considerations are addressed in sections 72.21a, 72.21d, 73.4a, 73.4b, and 74.1 of the final directives.

#### 74.3—Proprietary Information

*Comment.* One respondent commented that only summaries of wind inventory data, rather than actual data, should be required in site testing and feasibility studies on the grounds that wind data are sensitive commercial information that should not be made available to the public. This respondent believed that once these data were submitted to the Forest Service, they would be subject to disclosure under the Freedom of Information Act.

Another respondent believed that wind inventory data needed to be better defined so that truly proprietary information could be protected. This respondent also believed that data collected by wind energy developers related to wildlife, plants, and other resources on Federal lands should be shared with the public. Other respondents stated that wind energy developers who use Federal lands should be required to make their resource data available to the public as a trade-off for using Federal lands.

*Response.* The Agency believes that actual wind inventory data, rather than summaries of the data, are necessary to support environmental analysis of applications for permits for construction and operation of a wind energy facility and to allow evaluation of the proposed development. In addition, section 74.3 in the proposed and final directives states that wind inventory data collected under a site testing and feasibility permit are proprietary information that may be withheld from public review to the extent allowable by law and shall be used only for analysis and decisionmaking related to authorization of construction and operation of the proposed wind energy facility. Therefore, the Agency has not changed the substance of section 74.3 in the final directives.

#### 74.4—Change in Ownership of an Applicant

*Comment.* One respondent suggested requiring applicants that have undergone a change in ownership to provide additional documentation or to refile their application.

Several respondents stated that the requirement to file a new application upon a change in ownership was overly burdensome financially and would

delay the application process by months. These respondents recommended transfer of the application to the new owner, as allowed with communications site authorizations.

*Response.* Section 74.4 in the proposed directives required submission of additional documentation or refiling of the application when an applicant has undergone a change in ownership. The Agency has revised section 74.4 in the final directives so that it applies to a change in control, as well as a change in ownership, of an applicant. In addition, the Agency has clarified that the entity that acquires ownership or control, as opposed to the original applicant, has the option of filing a new application.

Section 74.4 in the final directives gives the authorized officer the option to require the applicant to provide current documentation of ownership or control or to require the entity that has acquired ownership or control to withdraw the pending application and file a new one with any necessary revisions. Forest Service regulations require special use applicants to demonstrate technical and financial capability to conduct their proposed use. 36 CFR 251.54(e)(5)(iv). Therefore, when an applicant undergoes a change in ownership or control, the application may not simply be transferred to the entity that acquires ownership or control. Additional analysis of the applicant's or new entity's technical and financial capability may be required, but does not have to result in a lengthy delay, particularly if the application is subject to cost recovery.

The application process when there is a change in ownership or control is no different for applicants for a communications site lease. However, holders of a lease for a communications site may assign their lease to an entity that acquires ownership or control of the communications site facility. The Forest Service allows assignment only of authorizations like leases and easements that convey an interest in real property. A wind energy permit does not convey an interest in real property.

#### 74.5—Cost Recovery Requirements

*Comment.* One respondent stated that the cost of NEPA documentation for wind energy applications should be borne by the applicants, not the taxpayers.

*Response.* Section 74.5 in the proposed and final directives incorporates the cost recovery requirements in Forest Service regulations for processing special use

applications, including cost recovery for NEPA documentation.

#### 75.1—Site Testing and Feasibility Permits

*Comment.* One respondent suggested providing specific guidance on application requirements for site testing and feasibility permits. For example, this respondent suggested encouraging the use of a CE for site testing and feasibility permits, given the minimal impact of METs.

Other respondents suggested that a monitoring plan should be required for every wind energy permit, including site testing and feasibility permits. These respondents cited the need for monitoring data and the difficulty in obtaining these data from private landowners. Another respondent wondered which criteria would be used for monitoring effects on wildlife and noted that baseline data must be collected before an area is disturbed by installation of METs.

*Response.* Section 73.1 in the final directives provides direction on application requirements for all wind energy permits. Section 73.2 in the final directives provides direction on application requirements for site testing and feasibility permits. The appropriate level of environmental documentation is site-specific. Therefore, the Agency believes it is best to address NEPA compliance generally in the final directives.

The Agency's experience with installation of METs in many locations on NFS lands has shown that reliance on a CE for this activity is often warranted. The analysis conducted to comply with the Agency's NEPA regulations will be based on site-specific information and anticipated environmental effects. Provided that extraordinary circumstances are not an issue under 36 CFR 220.6(b), the CE in 36 CFR 220.6(e)(3)(i) may apply to applications for minimum area site testing and feasibility permits, which involve up to 5 acres.

The Agency has determined that a monitoring plan is not needed for a site testing and feasibility permit, given the minimal effect of METs on the environment. Therefore, the Agency has removed proposed 75.1, paragraph 1, which addressed the need for a monitoring plan for a site testing and feasibility permit, from the final directives. Section 75.21, paragraph 6, in the final directives requires submission of a monitoring plan as a prerequisite to issuance of a permit for construction and operation of a wind energy facility and addresses the contents of the plan.

*Comment.* One respondent suggesting requiring holders of site testing and feasibility permits to prepare a site restoration plan and post a bond to cover the costs of restoring the site if the project terminates before wind turbines are installed.

*Response.* The Agency does not believe it is necessary to regulate holders of a testing and feasibility permit to prepare a site restoration plan. However, the Agency has revised section 75.13 in the final directives to require holders of these permits to obtain a construction and reclamation bond of at least \$2,000 per MET.

*Comment.* One respondent was concerned that an EIS and 2 years of extensive wildlife monitoring could be required for site testing and feasibility permits, given the ambiguity in the proposed directives regarding the applicability of proposed sections 73.11a and 74.1, regarding effects on wildlife, to those permits.

*Response.* Section 73.2 in the final directives states that an application for a site testing and feasibility permit requires less documentation than that required for a permit to construct and operate a wind energy facility. In addition, the Agency has revised proposed sections 73.11a and 74.1 (sec. 73.4a in the final directives) to clarify that these provisions regarding effects on wildlife apply only to permits for construction and operation of a wind energy facility.

*Comment.* Several respondents stated that new roads and utilities should not be built for METs and that METs should not be located in sensitive habitats or areas where ecological resources are known to be sensitive to human activities. One respondent suggested enumerating performance standards and criteria that should be included in a CE or finding of no significant impact for a MET, such as avoiding locating METs in ecologically sensitive areas or at cultural or historic sites; prohibiting permanent foundations for METs; and avoiding construction of new roads to access METs.

*Response.* The Agency believes that the final directives appropriately address sensitive habitats, sensitive ecological resources, cultural and historic sites, and minimizing development in connection with siting METs. Specifically, section 72.21d, paragraph 1, directs the authorized officer to locate METs away from protected areas or where ecological resources are known to be sensitive to human activities and lists examples of these areas. Section 72.21d, paragraph 4, directs the authorized officer to use existing roads and utility corridors to

the extent feasible and to minimize the number, length, and size of new roads. Section 72.21e directs the authorized officer to consider potential effects on historic properties and cultural resources and to comply with section 106 of the NHPA and FSM 2360.

*Comment.* Some respondents suggested increasing the term of site testing and feasibility permits to a maximum of 6 years, consistent with BLM's approach, to allow holders to meet the rigorous requirements for site testing and feasibility permits. These respondents stated that having to conduct extensive pre-installation wildlife monitoring would economically deter or preclude the necessary site testing and feasibility phase.

*Response.* Under Section 75.1, paragraph 3, in the final directives, the holder of a site testing and feasibility permit has 2 years to install and operate METs. In the final directives, the Agency has added the phrase, unless a written justification for the delay is submitted and accepted by the authorized officer prior to the end of the 2-years period. The holder has 3 years to report results of site testing to the Forest Service. The authorized officer may extend the permit for up to 2 years, up to a maximum term of 5 years, pursuant to section 75.1, paragraph 3b. The Agency believes a maximum term of 5 years is adequate for installing and operating METs and reporting test results to the Agency.

The Agency has determined that a monitoring plan is not needed for a site testing and feasibility permit, given the minimal effect of METs on the environment. Therefore, the Agency has removed proposed 75.1, paragraph 1, which addressed the need for a monitoring plan for a site testing and feasibility permit, from the final directives.

*Comment.* One respondent objected to requiring a study plan for site testing and feasibility permits, which merely authorize data-gathering devices.

*Response.* The introductory paragraph of section 73.21 in the proposed directives and section 73.31 in the final directives states that a study plan must be submitted by applicants for a permit for construction and operation of a wind energy facility, not by applicants for a site testing and feasibility permit.

#### 75.11—Types of Site Testing and Feasibility Permits

*Comment.* With respect to proposed section 75.11, paragraph 2, one respondent questioned whether it was feasible or necessary for proponents to justify the proposed number of METs and the proposed acreage for project

area permits, since only the minimum number of METs would ever be proposed to obtain needed data. Other respondents recommended that justification of the proposed number of METs and the proposed acreage be mandatory. Another respondent stated that the reference to the Department of Energy's National Renewable Energy Laboratory in Denver, Colorado, should be changed to "National Wind Technology Center in Golden, Colorado (<http://www.nrel.gov>).

*Response.* Proposed section 75.11, paragraph 2, required proponents to justify the proposed number of METs and the proposed acreage for project area permits. The Agency has retained this provision in section 75.1, paragraph 2, in the final directives because a project area permit authorizes multiple METs and excludes use of the authorized area for site testing and feasibility study by other project proponents. The Agency believes it is feasible and necessary for purposes of evaluation to project proposed development in all special use proposals and applications. In section 75.1, paragraph 2, in the final directives, the Agency has modified the reference to the National Wind Technology Center as requested by the respondent.

#### 75.13—Site Testing and Feasibility Permit Form

The Agency received no comments on this section. However the Agency revised this section to read, "To authorize site testing and feasibility, use form FS-2700-4, Special Use Permit, and use code 414, "Wind energy site testing." See FSH 2709.11, for guidance on completing form FS-2700-4."

The Agency added a paragraph to this section to require construction and reclamation bonding of at least \$2,000 per MET for all site testing and feasibility permits. Bonding may take the form of corporate surety, U.S. Treasury bills, notes, bonds, or other negotiable securities, cash deposits, irrevocable letters of credit, assignment of savings accounts, or assignment of certificates of deposit.

#### 75.21—Pre-Authorization Requirements

*Comment.* With respect to proposed section 75.21, paragraph 1, several respondents questioned the need at the pre-authorization stage for documentation that construction and operation of a wind energy facility will not "hinder national security, military readiness and training areas, radar and electronic security, and military and civilian airspace. These respondents believed that this documentation would

already be provided in the environmental analysis.

*Response.* The items listed in proposed and final section 75.21 are prerequisites for issuance of a permit for construction and operation of a wind energy facility. Documentation required in paragraph 1 may have been provided during environmental analysis or some other stage of the evaluation process. However, if the required documentation has not been provided beforehand, it must be provided at the pre-authorization stage.

Consistent with section 77.2, paragraph 1, of the final directives, the Agency has added a requirement in section 75.21, paragraph 5b, governing the annual operating plan for the operational phase for holders of a permit for construction and operation of a wind energy facility to provide an annual inspection report of METs and other authorized wind energy equipment. In addition, to address potential reporting requirements, the Agency has also added a requirement in this section for holders to provide an annual report of the amount of energy produced by the authorized facility and where that energy is sold.

The Agency has moved the requirement for bonding for permits for construction and operation of wind energy facility to this section to ensure that the required bonding is obtained before the permit is issued.

*Comment.* One respondent suggested requiring applicants to submit a site-specific mitigation plan to minimize environmental degradation.

*Response.* Proposed section 75.21, paragraph 3 (para. 4 in the final directives) requires applicants to submit a final site plan consistent with the corresponding environmental analysis before a permit for construction and operation of a wind energy facility is issued. Proposed section 75.21, paragraph 5 (para. 6 in the final directives) requires applicants to submit a monitoring plan that addresses the potential effects on wildlife and any required mitigation measures discussed in the corresponding environmental analysis and site testing and feasibility studies before a permit for construction and operation of a wind energy facility is issued.

*Comment.* In proposed section 75.21, paragraph 4a, one respondent suggested stating that the operating plan must, rather than should, address minimizing hazards resulting from increased truck traffic.

*Response.* The Agency agrees and has stated that an operating plan must address minimizing hazards resulting from increased truck traffic in section

75.21, paragraph 5a, in the final directives.

*Comment.* With respect to proposed section 75.21, paragraph 4b(1), one respondent questioned the need for applicants to specify the dates or seasons of operation if wind energy projects are operated 24 hours a day, year round.

*Response.* Depending on the climate and other site-specific factors, wind energy facilities may not be able to operate all the time. Specifically, there may be seasonal limitations on the use of heavy equipment and requirements for plowing snow, as addressed in sections 75.21, paragraphs 5a and 5b(1), in the final directives. The Agency needs to know when these facilities will operate to minimize their resource impacts.

*Comment.* One respondent stated that relocating wind energy facilities based on monitoring results, as suggested by proposed section 75.21, paragraph 5b, would be cost-prohibitive and should be a consideration only during the planning phase.

*Response.* The Agency agrees and has revised section 75.21, paragraph 5b (para. 6b in the final directives), by removing the reference to relocating wind energy facilities or staging areas.

*Comment.* In proposed section 75.21, paragraph 5c, one respondent suggested replacing “evidence identified through ongoing monitoring of newly discovered ecologically significant habitats or features” with “data from ongoing monitoring of newly discovered ecologically significant habitats or features.”

*Response.* The Agency has removed proposed section 75.21, paragraph 5c, from the final directives because it is covered by proposed paragraph 5d (para. 6c in the final directives), which requires the holder to submit to the authorized officer an annual report summarizing results of all monitoring data and use of the annual report as appropriate to revise the next annual operating plan.

*Comment.* One respondent stated that to allow independent validation and analysis of data and to return some value to the public for the development of Federal lands, proposed section 75.21, paragraph 5d, should require that all monitoring data—not just summaries of the data—be submitted to the authorized officer in the annual report.

*Response.* The Agency believes that requiring summaries of the results of monitoring are sufficient for purposes of annual reporting to the authorized officer under the operating plan. Section 75.21, paragraph 6c, in the final directives also provides for use of the

annual report as appropriate to revise the next annual operating plan, including adding provisions to mitigate adverse effects on species of management concern. The authorized officer may request the underlying data, if needed.

*Comment.* One respondent suggested adding a reference in proposed section 75.21, paragraph 5e, to avoiding harassment and disturbance of wildlife during fledging seasons.

*Response.* The Agency agrees and has added this reference to section 75.21, paragraph 6d, in the final directives.

#### 75.22—Authorization of Wind Energy Facilities

*Comment.* Some respondents believed that a special use permit is not adequate for financing wind energy projects and that a lease or an easement, which conveys an interest in real property, is necessary to obtain a loan for these projects.

*Response.* The Agency believes that issuance of a long-term permit of up to 30 years is appropriate for wind energy projects. Many other uses of NFS lands involving significant improvements, such as ski areas, marinas, and resorts, are authorized with a long-term permit, and the holders of these permits have been able to obtain financing. Directives at FSM 2717.3 and standard form FS-2700-12, Agreement Concerning Loan for Holder of Special Use Permit, facilitate this process. The form explains the legal effect of a Forest Service special use permit and the rights and obligations of the holder, the lender, and the Forest Service in this context.

*Comment.* One respondent stated that proposed section 75.22, paragraph 2, should specify the terms of the site restoration bond; should allow corporate guarantees and letters of credit in lieu of bonds; and should cite section 2.6 in BLM’s PEIS regarding bonding. Another respondent stated that the Forest Service should establish national forms and amounts for bonding. Another respondent stated that the holder should be required to obtain a construction bond for site restoration prior to commencement of construction, rather than upon completion of construction, to protect against insufficient funds being available to restore the site if construction is not completed.

One respondent suggested revising proposed section 75.22, paragraph 2, to state that holders of a permit for construction and operation of a wind energy facility must obtain a construction bond “for site restoration or dismantling of a facility upon completion of construction,” rather than

“for site restoration upon completion of construction.” This respondent believed that this revision would ensure that structures are not left indefinitely at the site.

*Response.* The Agency intends to require holders of a permit for construction and operation of a wind energy facility to obtain a construction bond prior to commencement, not upon completion, of construction. The construction bond is for site restoration upon completion of construction. To clarify this point, the Agency has moved the bonding provision to section 75.21, paragraph 7 in the final directives. Section 75.21 enumerates the prerequisites for issuance of a permit for construction and operation of a wind energy facility. Placing the bonding requirement in that section will require applicants for those permits to obtain a construction bond before the permit is issued.

The Agency believes it would be inappropriate to specify the terms, including the amount, of construction bonds in the directives because the terms may change based on site-specific considerations. In addition, the Agency does not believe it is necessary to develop a standard form for construction bonds because they are common and readily available. Forest Service Handbook 2709.11k, chapter 70, section 75.21, paragraph 7, in the final directives provides that bonding may take the form of corporate surety, U.S. Treasury bills, notes, bonds, or other negotiable securities, cash deposits, irrevocable letters of credit, assignment of savings accounts, or assignment of certificates of deposits. It would not make sense to provide for a construction bond for dismantling a wind energy facility upon completion of construction, because upon completion of construction, wind energy facilities will operate. Therefore, the Agency has made this change in the final directives.

*Comment.* One respondent stated that the 2-year limit in proposed section 75.22, paragraph 3a, for commencement of construction of a wind energy facility is problematic because this requirement does not account for delays resulting from having to secure other permits or other events outside the holder’s control. This respondent recommended including a provision allowing for reasonable construction delays with notification. Another respondent noted that there was a significant backlog on orders of many wind energy facility components (5 years for wind turbine components) and that the 2-year timeframe for commencement of construction was therefore unrealistic. This respondent recommended

increasing the time frame for commencement of construction to 5 years and increasing the time frame for having turbines operational to 7 years.

*Response.* Forest Service special use regulations at 36 CFR 251.54(d)(5) state that the authorized officer may require proponents to comply with requirements for clearances, certificates, permits, or licenses associated with the proposed use. Proponents and applicants should plan on obtaining other necessary permits before their special-use permits are issued, so that they are ready to start construction upon issuance.

Forest Service special use regulations at 36 CFR 251.54(d)(3) require all proponents to provide sufficient evidence to satisfy the authorized officer that the proponent has, or prior to commencement of construction will have, the technical and financial capability to construct, operate, maintain, and terminate the proposed use. Accordingly, to pass second-level screening, a proponent must demonstrate the financial and technical capability to undertake the proposed use. 36 CFR 251.54(e)(5)(iv). To meet these requirements, proponents must show that they have or will have the capability to construct a wind energy facility, including wind turbines.

However, to address situations where the delay in construction or operation of a wind energy facility is due to circumstances beyond the holder's control, the Agency has provided an exception to termination in the final directives, if a written justification for the delay is submitted and accepted by the authorized officer prior to the end of the termination period and the authorized officer establishes a new time frame for the required actions.

#### 76—Land Use Fees

*Comment.* One respondent suggested establishing a land use fee payment system similar to BLM's so that wind energy applicants have an approximation of the amount prior to approval of their application.

*Response.* FSH 2709.11, section 76, establishes the method for calculating the land use fees for wind energy permits. Authorized officers should be able to provide an estimate of the annual land use fee before a wind energy application is granted.

*Comment.* For increased efficiency and standardization, several respondents proposed establishing a standard land use fee schedule that would be uniformly applied to all Forest Service wind energy permits. Alternatively, these respondents proposed basing land use fees on the

quality of the wind resource and the term of the permit. These respondents believed that land use fees should increase as the wind capacity and permit term increase. These respondents stated that the Forest Service could reserve use of the fee schedule until industry or economic conditions change. These respondents believed that appraisals should be used only to confirm that the values in the fee schedule achieve a fair return to the Government for use of NFS lands. These respondents stated that while standardization in assessment of the value of the land use is important, the Forest Service should recognize and allow for unique situations.

Another respondent stated that assessment of land use fees should take into account generating capacity, including anticipated intermittency in the wind resource, and should create a disincentive for sprawl in siting wind turbines.

One respondent stated that because wind energy facilities are essentially permanent structures, taxpayers should receive a fair and significant royalty on each megawatt of electricity they generate.

*Response.* The Agency does not believe that a fee schedule is appropriate for wind energy uses. The Forest Service's special use regulations at 36 CFR 251.57(a)(1) authorize charging a land use fee based on the market value of the authorized use, as determined by appraisal or other sound business management principles. Section 76.1, paragraph 1, in the final directives provides for standardization of the land use fee by establishing a flat fee for each MET authorized under a minimum area permit. Section 76.1, paragraph 2, in the final directives provides for use of an appraisal to assess the value of the use authorized by a project area permit. Section 76.2 in the final directives provides for use of an appraisal to assess the value of the use authorized by a permit for construction and operation of a wind energy facility. In assessing the value of the authorized use, the appraiser will take into account all relevant factors, in accordance with applicable appraisal standards.

#### 76.1—Land Use Fees for Site Testing and Feasibility Permits

*Comment.* One respondent stated that the land use fee of \$100 for minimum area permits is much too low and that the fee should cover all Forest Service administrative and monitoring costs for the permit.

*Response.* Proposed section 76.1, paragraph 1, stated that the land use fee for minimum area permits shall be the

regional minimum fee or \$100 for each MET, whichever is higher. The Agency agrees that \$100 for each MET is too low. Accordingly, the final directives provide that the land use fee for minimum area permits shall be the regional minimum fee or \$600 for each MET. This amount will be revised annually, based on the Consumer Price Index, (CPI-U). This change in the CPI is posted in section 97 of the FSH 2709.11. This fee is rounded to the nearest \$10.

#### 77.2—Inspections

*Comment.* With respect to proposed section 77.2, paragraph 1, one respondent stated that annual technical inspection reports of METs and other wind energy equipment should be mandatory, not optional.

*Response.* Proposed and final sections 77.2, paragraph 1, require holders to provide annual technical inspection reports of METs and other wind energy equipment. In addition, section 75.21, paragraph 5b(5) in the final directives requires the annual operating plan for the operational phase to provide for an annual inspection report of METs and other authorized wind energy equipment.

#### 77.3—Construction Requirements

*Comment.* With respect to proposed section 77.3, paragraph 1, one respondent suggested adding the following sentence: "Ensure that habitat features attractive to wildlife, especially prey species, are not left in place among the turbines." Another respondent requested additional guidance on avoiding, minimizing, and mitigating adverse effects of construction of wind energy facilities. Another respondent suggested adding the following after the first sentence: "Minimize impacts on groundwater and surface water, including sedimentation and other impacts on water quantity and quality."

*Response.* Effects on wildlife and their habitats, including landscape features that attract species of management concern, are addressed in sections 72.21d, 73.4a, and 75.21, paragraph 6, in the final directives. Section 75.21, paragraph 6a, addresses effects of wind turbine construction and operation on species of management concern. The Agency believes that impacts on groundwater and surface water from special uses generally should be addressed in separate directives, and the Agency is working on those directives.

#### 77.4—Operational Requirements

*Comment.* Another respondent believed that proposed section 77.4

would allow operation of a wind energy facility even if injury to protected species were occurring, in violation of the MBTA. This respondent stated that any violation of the MBTA should be reported to the enforcement branch of the FWS and the U.S. Department of Justice.

*Response.* None of the provisions in proposed and final section 77.4 authorizes operation of a wind energy facility in violation of the MBTA. To the contrary, section 77.4 addresses maintenance of wind energy facilities, proper use of security lighting, noise management, control of noxious weeds and invasive species and proper use of pesticides. In addition, paragraph 7 in the final directives provides for using results from multi-year monitoring to adjust operations to mitigate or eliminate impacts on species of management concern and their habitats, while still achieving the energy production objectives for the facility.

*Comment.* One respondent suggested adding deadlines for operational requirements.

*Response.* The Agency believes that it would not be appropriate to include deadlines for operational requirements, as they may vary depending on project-specific circumstances. Section 73.32, paragraph 4, in the final directives states that the applicant's plan of development must describe the development process, including the sequence, timing, and duration of construction phases; construction methods; required access to facilities; and additional development that may be requested in the future. In addition, section 75.21, paragraph 5a, in the final directives requires applicants to submit an annual operating plan that addresses transportation and traffic management for the construction phase of the project. Therefore, the Agency has not made the change suggested by the respondent.

*Comment.* With respect to proposed section 77.4, paragraph 1, one respondent stated that wind turbines should be cleaned "as needed," rather than "yearly," to minimize the need to bring large cranes to the site to perform the task.

*Response.* The agency agrees and has revised proposed section 77.4, paragraph 2, by replacing "yearly" with "as needed."

*Comment.* One respondent stated that there is an inconsistency between proposed section 77.4, paragraph 2, and proposed section 73.11d, paragraph 5, in that the former provides for motion sensors for security lighting, while the latter provides for designing the site to minimize or eliminate the need for security lights. This respondent

recommended limiting security lighting requirements to certain sites. Another respondent noted that motion sensors for security lighting are not typical at wind energy facilities and may unduly disturb wildlife in the area. This respondent stated that motion sensors should not be required for security lighting, especially given that proposed section 73.11d, paragraph 5, provides for designing the site to minimize or eliminate the need for security lights.

*Response.* There is no inconsistency between the two provisions. It is consistent to require that wind energy sites be designed to minimize or eliminate the need for security lighting, but to require that if security lighting is used, the lighting be activated by motion sensors. However, the Agency has clarified sections 77.4, paragraph 3, in the final directives by requiring that security lighting be limited to areas where safety is a concern.

*Comment.* With respect to proposed section 77.4, paragraph 4, another respondent requested clarification of the phrase "sound-control devices" and wondered whether it referred to something other than the acoustic shielding referenced in proposed section 73.11c.

*Response.* The sound-control devices referenced in section 77.4, paragraph 5, in the final directives are the available noise-dampening technologies referenced in section 73.4c, paragraph 2, in the final directives.

*Comment.* With respect to proposed section 77.4, paragraph 6, a respondent suggested discouraging the use of rodenticides to control rodent burrowing around towers.

*Response.* Section 77.4, paragraph 6 in the proposed directives and section 77.4, paragraph 7, in the final directives adequately address proper use of pesticides at wind energy facilities.

*Comment.* With respect to proposed section 77.4, paragraph 7, one respondent suggested removing the phrase "as necessary" in connection with adjusting operations to avoid or mitigate impacts on species of management concern and their habitats.

*Response.* The Agency agrees and has revised section 77.4, paragraph 8 in the final directives to state: "Use results from multi-year monitoring to adjust operations to mitigate or eliminate impacts on species of management concern and their habitats, while still achieving the energy production objectives for the facility."

#### 77.5—Site Restoration Upon Discontinuation of the Authorized Use

*Comment.* One respondent suggested setting specific timelines for site

restoration. Another respondent stated that wind energy applicants should be required to establish a standard for evaluation of site restoration. This respondent stated that the standard could be based on selection of a point of reference within the project area for each vegetation type, the typical vegetation description for each soil type in a soil survey, or another agreed-upon standard.

*Response.* The Agency does not believe it would be appropriate to set specific timelines or standards for site restoration, since the timelines and standards may vary depending on site-specific circumstances.

*Comment.* One respondent stated that proposed section 77.5, paragraph 1, should include additional guidance on decommissioning and that decommissioning should be considered when assessing the environmental impact of a proposed wind energy use. Another respondent stated that proposed section 77.5 should state more clearly that decommissioning and full reclamation of sites are required after removal of wind energy facilities and that the environmental analysis for wind energy uses should clearly iterate their impacts and any necessary mitigation. One respondent noted that if species are disturbed, they will avoid the entire area, not just their habitats within the area, and that the Forest Service should require habitat mitigation based on more than the area of the disturbed footprint. Another respondent stated that the Forest Service should require not only decommissioning of access roads, but also returning the roads to their pre-project state.

*Response.* The Agency has replaced the reference to decommissioning roads in paragraph 1 with a reference to returning roads to their pre-project state, since roads may exist in the project area before wind energy facilities are built. In that case, decommissioning would not be appropriate. Roads that were built for the project would be decommissioned. The other provisions in section 77.5 regarding removal of authorized facilities, re-establishment of predevelopment vegetation cover, use of certified weed-free materials, and conducting other site restoration activities required by the plan of development and the permit provide adequate environmental protection.

*Comment.* Some respondents stated that while it is virtually impossible to return developed land to pre-existing conditions, wind energy developers should be required to submit removal and reclamation plans with their proposals, including complete

information about the proper location and width of roads and the footprint of underground electrical cables. These respondents stated that if a wind energy proponent cannot fully restore the proposed site when the use terminates, the Forest Service may want to consider the site unsuitable for wind energy development.

*Response.* Both sections 73.22, paragraph 10, in the proposed directives and 73.32, paragraph 10, in the final directives require an applicant's plan of development to include a reclamation plan. In the final directives, the Agency enhanced this provision by providing for removal of foundations, roads, and associated infrastructure; providing for invasive species control; and specifying that re-vegetation should involve use of native species. In recognition of the difficulty of restoring a wind energy site to its original condition, the final directives provide for restoration of the project area upon termination of the authorized use.

#### *Response to Comments on FSH 2609.13, Chapter 80*

*Comment.* One respondent noted that wind energy facilities on NFS lands offer a unique research opportunity for learning how wildlife interacts with wind energy facilities. This respondent stated that this type of research opportunity is not necessarily available on private lands, where owners can control access to their facilities and to the data generated. This respondent suggested that the Agency include a provision in wind energy permits allowing access to wind energy sites by government, university, and other wildlife researchers and providing for public access to the data generated from the research.

*Response.* The Forest Service agrees that it is important to obtain information on the interaction of wildlife with wind energy facilities, both for research and adaptive management so that impacts to wildlife can be reduced. Consequently, the Forest Service has developed guidelines (FSH 2609.13, chapter 80) for pre- and post-construction monitoring of wildlife at wind energy facilities.

In addition, Forest Service regulations at 36 CFR 251.55(b) provide that the Agency has the right to require common use of NFS lands covered by a special use permit or to authorize others to use those lands in any way that is not inconsistent with the holder's rights and privileges after consultation with all parties and agencies involved. Under this provision, after consultation with the holder, the authorized officer may allow access to wind energy facilities for research purposes, provided that the

access is not inconsistent with the holder's rights and privileges under the permit.

#### *80.4—Responsibilities*

*Comment.* Several respondents requested that the Forest Service obtain direct involvement from FWS and State wildlife agencies in developing and reviewing wind facility monitoring plans.

*Response.* The final handbook ensures that this will take place by adding interagency involvement to the responsibilities of the authorized officer. Similar language was also added to FSH 2609.13, section 81, "Monitoring Plans."

*Comment.* Some respondents requested that any data underlying the permit holder's monitoring reports be given to the Forest Service to be used for independent validation of monitoring reports and summaries and that this information be provided to the public for review and comment.

*Response.* The Agency believes that requiring summaries of the results of monitoring are sufficient for purposes of annual reporting to the authorized officer under the operating plan. Section 75.21, paragraph 6c, in the final directives also provides for use of the annual report as appropriate to revise the next annual operating plan, including adding provisions to mitigate adverse effects on species of management concern. The authorized officer may request the underlying data, if needed. Monitoring reports, operating plans and land use authorizations are public documents, not protected under the Privacy Act or eligible for one of the Freedom of Information Act exemptions.

*Comment.* One respondent suggested that the party responsible for monitoring should have experience in experimental design and analysis.

*Response.* This recommendation was not included under "Responsibilities," as proposed by the respondent, but FSH 2609.13, section 81, now states that monitoring plans must be developed "in consultation with an individual who has expertise in sampling design."

#### *80.6—References*

*Comment.* Respondents suggested numerous additional references to include in the References section. Specifically, several respondents recommended that the Forest Service incorporate and reference California's Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development.

*Response.* Generally speaking, Forest Service handbooks are not intended to

serve as a comprehensive source of literature on a specific topic. Therefore, only literature actually referenced in the handbook has been included. However, the final list of references has been augmented to include some of the literature referenced by respondents. The Forest Service agrees that California's guidelines are well-written and contain useful guidance for monitoring. However, many other States have wind energy guidelines. Rather than single out the guidelines of one State, the handbook encourages coordination with the applicable State agency in which the project is located.

#### *81—Monitoring Plans*

*Comment.* Respondents indicated that the draft handbook was not clear in the amount of monitoring required for site testing and feasibility permits as opposed to permits for construction and operation of a wind energy facility.

*Response.* To clarify that monitoring is a requirement associated with permits for construction and operation of a wind energy facility, as opposed to site testing and feasibility permits, the introductory sentence now reads, "The monitoring plan will describe all pre- and post-construction monitoring conducted under a permit for construction and operation of a wind energy facility."

*Comment.* Some respondents expressed concern that too many monitoring decisions were left to the authorized officer and permit holders. Additionally, several respondents suggested changing the word "should" to "shall" in several places throughout chapter 80 to distinguish monitoring requirements from discretionary actions of the authorized officer.

*Response.* The final directives impose requirements in several key places with respect to wildlife monitoring, such as in connection with components of monitoring plans; the number of years for pre- and post-construction monitoring, which may be extended, if needed; and involvement of FWS and State wildlife agencies in development and review of monitoring plans.

*Comment.* Although many respondents supported using an interagency committee for formulating a monitoring plan, some respondents believed that this would be a time-consuming and unnecessary step.

*Response.* The Agency believes that involvement from FWS, State agencies, and other sources of wildlife expertise is necessary for producing a monitoring plan that is scientifically sound as well as practical to implement.

*Comment.* Several respondents suggested that monitoring plans contain thresholds that would indicate the point



at which further mitigation or changes in management would be initiated.

*Response.* In FSH 2609.13, section 81, the concept of a trigger point has been added as part of the requirement of plan objectives. However, sections 82.1, 82.2 and 84 state that the amount and degree of changes in permit operation will be limited to those that are practical and feasible.

*Comment.* Some respondents believed that the handbook should include authority to shut down wind turbines on a seasonal basis or remove them from the facility if they cause unacceptable mortality to wildlife.

*Response.* This recommendation has not been included in the final directives because shutting down or removing wind turbines after a facility is in place is not an operating model that the Forest Service wishes to follow. Rather, the Forest Service prefers to build mitigation and careful planning into the pre-construction phase and is therefore requiring 2 years of pre-construction monitoring and close attention to siting considerations to avoid wind turbine placements where unacceptable mortality might occur. See FSH 2609.13, section 84, "Adaptive Management," for responses to similar comments.

*Comment.* Some respondents commented that monitoring after construction takes place is too late because ecological damage will have already occurred.

*Response.* Post-construction monitoring is a necessary step in adaptive management to detect desired and undesired effects as soon as possible and to minimize undesired effects through changes in operation to the extent possible. Additionally, post-construction monitoring provides useful information for design and operation of future wind energy facilities so that appropriate mitigation can be included in future projects (sec. 84).

#### 82—Monitoring Objectives

*Comment.* Several respondents expressed concern that the monitoring objectives were focused solely on species abundance or mortality and not on other aspects, such as habitat fragmentation, behavioral avoidance of developed areas, and noise issues.

*Response.* The final direction in FSH 2609.13, section 82, clarifies the linkage between species abundance, presence and activity levels and the suite of environmental factors that potentially affect these factors. As indicated in this section, monitoring of species abundance, presence, and activity levels also needs to include measuring the appropriate environmental factors that are likely to change as a consequence of

the wind energy facility. For example, a documented increase in habitat fragmentation associated with the facility could result in reduced abundance or lack of presence of a target species.

*Comment.* One respondent requested that Objective 1 be reworded to read, "Monitoring changes in wildlife presence caused by the establishment of a wind energy facility" rather than "monitoring changes before and after the establishment of a wind energy facility."

*Response.* The Forest Service has concluded that the current wording is more appropriate because it implies that other environmental data should be included in the monitoring design.

*Comment.* Some respondents commented that federally protected species, such as bald and gold eagles and migratory birds, should be included in all monitoring plans.

*Response.* The Forest Service has concluded that these species should be monitored if there are risks to these species, as determined from the best available science and from surveys conducted under a site testing and feasibility permit. As stated in the response to comments on section 81, the authorized officer will identify which species or groups of species are most in need of monitoring.

#### 82.1—Monitoring Wildlife Presence, Abundance, and Activity Levels

*Comment.* Section 82.1 does not consistently use presence, abundance, and activity levels throughout, so it is difficult to tell when all three measures are being discussed.

*Response.* For consistency, the final handbook direction refers to wildlife presence, abundance, and activity levels throughout this section. The choice of which attributes to monitor depends on the species' use of the site (breeding, migration and dispersal) and whether it is frequently or rarely detected, as described in the third paragraph of this section.

*Comment.* Some respondents commented that monitoring requirements did not include certain species, such as State listed species, management indicator species, or Forest Service sensitive species.

*Response.* The definition for species of management concern in FSH 2709.11, chapter 70, includes all of the groups of species that respondents mentioned. Therefore, all direction pertaining to species of management concern in FSH 2709.11, chapters 70 and 80, applies to all the management classes listed in the definition.

*Comment.* One respondent stated that the Forest Service needs to define what is meant by a "significant" change in the presence or abundance of any species of management concern.

*Response.* As mentioned in the response to comments on section 81, the final directives include a requirement for establishing a trigger point as part of the monitoring objective for each species or group of species. In section 82.1, the term "significant change" has been replaced with "is approaching or has reached an undesired management threshold identified in the objective of the species' monitoring design" (FSH 2609.13, section 82.1).

*Comment.* Respondents were either supportive or critical of the Before-After-Control-Impact (BACI) design as a recommended approach for pre- and post-construction monitoring. Some respondents applauded the Forest Service for recommending this design, whereas others believed it was not appropriate in many circumstances associated with wind energy facilities.

*Response.* The Forest Service believes that it is in the best interest of all parties, including the permit holder, to use the BACI design whenever possible to help distinguish wildlife changes due to the wind energy facility from changes due to other environmental factors. For example, a decline in species abundance that is only measured at the site of the facility would tend to be attributed entirely to the facility, whereas a similar decline on a control site could indicate other factors at work. Although the handbook does not require the use of BACI as a monitoring design, it is recommended because it is a standard tool for monitoring wildlife populations in response to management actions.

*Comment.* Respondents were mixed in their support of 2 years of pre-construction monitoring and 3 years of post-construction monitoring. Some respondents applauded these timeframes and suggested long-term monitoring, whereas other respondents suggested that these timeframes were excessive and were not needed in situations with minimal environmental concerns.

*Response.* The final directives maintain the desire of 2 years of pre-construction monitoring because a period of 2 years is the minimum time needed to measure some of the natural variation in environmental conditions so that all changes are not attributed entirely to the wind energy facility. This approach is beneficial to the permit holder as well as to the authorized officer. However, the final directives reduce the post-construction monitoring



to a minimum of 2 years, which still allows for some measure of natural variation while acknowledging that some sites may not have significant environmental issues requiring longer monitoring periods. The final directives provide that 3 years of monitoring are needed if significant risks to any species of management concern have been identified or if a permit has been modified in response to outcomes from the first 2 years of monitoring (FSH 2609.13, sec. 82.1).

*Comment.* One respondent stated that this section should reference Federal laws, such as the ESA, MBTA, and the Bald and Golden Eagle Protection Act.

*Response.* None of these acts require monitoring. Therefore, they are outside of the scope of these directives. However, these acts and other legislation affecting Forest Service management are cited in FSH 2709.11, chapter 70, "Wind Energy Uses."

#### 82.2—Monitoring Mortality

*Comment.* One respondent suggested using a more precise monitoring objective for monitoring mortality.

*Response.* This suggestion has been incorporated into the final directives: "The objective of post-construction mortality monitoring is to estimate the approximate annual number of collision fatalities of birds and bats on a per-turbine or per-megawatt basis." The final directives states, "and to estimate the influence of physical and biological factors such as season, weather, topography, wind speed and turbine cut-in speed on mortality rates."

*Comment.* Several respondents requested that "should" be changed to "shall" and "encourage" to "required" in this section.

*Response.* The Forest Service has carefully evaluated use of these terms and has changed the wording as appropriate to clarify what is actually required as opposed to encouraged. Adjusting for scavenging rates and individual detection rates is required because it is not possible to interpret mortality results without these adjustments. The time intervals between mortality sampling and the amount of area searched depend on local factors and are worded with more flexibility.

*Comment.* A respondent commented that dog-handler teams should be used instead of human searchers.

*Response.* The final directives do not include this requirement, but state that dogs provide higher searching efficiency than human searchers and provides a reference for using this method.

*Comment.* Several individuals commented on specifics of conducting mortality searches. One respondent

suggested that mortality searches should extend a fixed distance beyond the rotor-swept radius. A respondent also suggested that a correlation factor needs to be added if there is a forested canopy within the radius of the rotor-sweep area because it is possible that bats and small birds will be caught in the branches and not fall to the ground. One respondent stated that the guidance is vague for determining when a subset of wind turbines rather than all wind turbines would be sampled for carcasses.

*Response.* Topography and wind speed have local effects on carcass location, so the final directives state that preliminary tests may be needed to determine the optimal search distance for local conditions. A correction factor for forested canopy was not incorporated into the final directives because this level of detail needs to be addressed locally. The final directives clarify that when a wind energy facility contains 20 or fewer wind turbines, mortality searches will be conducted at all wind turbines unless otherwise directed by the authorized officer. For facilities with more than 20 wind turbines, a random sample of all wind turbines will be selected for mortality searches.

*Comment.* Some respondents commented on additional aspects of mortality monitoring, such as depositing carcasses in research repositories and collecting tissue for subsequent DNA analyses.

*Response.* The final handbook states, "The monitoring plan must provide details on documenting and mapping the location of carcasses; procedures for collecting all or a proportion of carcasses; the name of the repository or academic collection where carcasses will be sent; and proper handling of tissue for potential future analyses of DNA."

*Comment.* Some responses addressed the need to notify FWS if carcasses of bald or golden eagles or other migratory birds were found. One respondent suggested that the permit holder notify the authorized officer when an anomalous or unusually high mortality event takes place involving any species or combination of species.

*Response.* The final directives state that FWS will be notified "within 24 hours" rather than "promptly" when the carcass of a bald or golden eagle is found. The final directives further state, "Carcasses of other migratory bird species must be reported to the authorized officer and FWS by the next business day, and other species should be reported in progress reports to the authorized officer at intervals specified

in the monitoring plan." The Forest Service added a statement that the permit holder will promptly notify the authorized officer when an anomalous or unusually high mortality event takes place involving any species or combination of species.

#### 82.3—Other Monitoring

*Comment.* The proposed directives stated that monitoring "may also include other species that are of management concern or of substantial public interest," but respondents commented that "substantial public interest" was not defined.

*Response.* The final directives eliminate this phrase from section 82.3 because the definition of species of management concern in FSH 2709.11, chapter 70, includes "species of high public interest." These species will be locally identified during the environmental analysis of proposed wind energy facilities. In addition, section was eliminated because the language was in conflict with section 82.2, paragraph 8.

#### 83—Monitoring Tools and Evolving Technology

The Forest Service did not receive any public comments on this section. The term "evolving technology" was added to the title of section 83 in recognition that current methods of monitoring might be replaced by improved methods.

#### 84—Adaptive Management

*Comment.* Several respondents expressed concern that monitoring results might lead to changes in operations that could be economically unrealistic. Some respondents requested that the full range of possible mitigation measures be established when a permit is issued. Respondents focused their concerns on removal of wind turbines or seasonal shutting down of wind turbine operations, since these were seen as the only methods to reduce impacts.

*Response.* The Forest Service recognizes the costs of changing wind turbine location and operation once a facility is in place. Therefore, the Agency has emphasized site surveys, careful attention to siting requirements, and 2 years of pre-construction monitoring to avoid after-the-fact mitigation. Moreover, language has been added throughout chapter 80 that any modifications to the permit should be within limits that are practical and feasible.

There are numerous forms of mitigation and changes in facility operation that are economically feasible after a wind energy facility is operating,

such as closure of secondary roads that inhibit terrestrial animal movements; reseeding of areas that have converted to invasive species; changes in lighting around buildings; and construction of retaining walls to curtail observed soil erosion. Permit holders could be required to modify certain operations such as changing wind turbine cut-in speed or observing seasonal shut-downs if these measures would significantly reduce bird or bat mortality during specific migration periods. However, it is unlikely that the full range of possible mitigation could be established when a permit is issued.

*Comment.* One respondent expressed concern that if a permit holder disagreed with revocation of a permit, there would be no appeal process.

*Response.* Forest Service appeal regulations at 36 CFR 251.60(a)(2)(ii) and the terms of special use authorizations provide for administrative review of decisions to revoke a special use authorization.

*Comment.* One respondent stated that merely ensuring that facilities do not have long-term unacceptable impacts on wildlife is too vague and the standard is too low.

*Response.* In section 84, this statement was replaced with the following: "The purpose of monitoring wildlife at wind energy facilities is to detect both desired and undesired effects as soon as possible and to minimize undesired effects through changes in operation to the extent possible."

*Comment.* One respondent suggested that periodic reviews (e.g., at 5-year intervals) be required during the term of the permit.

*Response.* Section 75.1, paragraph 6, in the final directives requires submission of a monitoring plan as a prerequisite to issuance of a permit for construction and operation of a wind energy facility and lists examples of terms that may need to be addressed or included in the monitoring plan. In particular, paragraph 6c lists as a possible requirement submission by the holder to the authorized officer of an annual report summarizing the results of all monitoring data and use of the annual report as appropriate to revise the next annual operating plan, including adding provisions to mitigate adverse effects on species of management concern. However, FSH 2709.11 contains provisions for periodic reviews and requires annual operating plans as part of all special use permits.

#### 85—Exhibits

*Comment.* Some respondents suggested that thermal imagery and

radio telemetry techniques be added as useful tools. Some respondents also recommended that the reference to spotlighting and use of ceilometers be eliminated because they are not particularly useful tools.

*Response.* The final directives do not contain any reference to ceilometers or spotlighting. However, rather than add more methods to this exhibit, the final directives reference two publications that contain numerous methods for detecting diurnal and nocturnal presence of wildlife species (Anderson, *et al.*, 1999 and Kunz, *et al.*, 2007).

#### Response to Comments on the Regulatory Certification for the Proposed Directives

*Comment.* One respondent commented that formulation of a wind energy program and attendant policies and procedures clearly fits the definition of a major Federal action and has the potential to significantly affect the quality of the human environment. This respondent contended that the Forest Service had violated NEPA in proposing the wind energy directives without accompanying environmental analysis in a PEIS. The respondent believed that the Agency's blanket assumption that wind energy projects will not require an EA or EIS would establish a dangerous foundation for widespread development on NFS lands.

*Response.* Neither a PEIS, EIS, or EA is required for issuance of the wind energy directives. The formulation of a wind energy program and attendant policies and procedures fits the Forest Service's categorical exclusion for rules, regulations, or policies to establish Servicewide administrative procedures, program processes, or instructions (36 CFR 220.6(d)(2)), and there are no extraordinary circumstances that would require documentation in an EA, EIS, or PEIS.

The final directives establish guidance for Forest Service employees on siting wind energy facilities, evaluating a variety of resource concerns, and addressing issues specifically associated with wind energy facilities in the special use permitting process. Specifically, the final directives address the processing of proposals and applications for and issuance of two types of wind energy permits: (1) Site testing and feasibility permits for the collection of data on the wind resource and (2) permits for construction and operation of a wind energy facility. The final directives also address competitive interest in wind energy uses, land use fees for wind energy permits, and potential impacts of proposed wind energy facilities on wildlife, scenery,

cultural and heritage resources, and national security. The final directives do not compel approval or denial of wind energy permits. Each proposed wind energy use will be assessed to determine the level of environmental analysis and documentation that is required.

*Comment.* With respect to the certification regarding civil justice reform in the proposed directives, one respondent stated that the proposed directives would conflict with State and local laws and regulations, that the conflict must be addressed, and that the views of citizens should be given full consideration in siting wind energy projects on NFS lands within their State.

*Response.* Under Executive Order (E.O.) 12988 on civil justice reform, Agencies promulgating rules or issuing directives through public notice and comment must address whether the proposed and final rules or directives are intended to preempt conflicting State and local laws and regulations; whether the rules or directives will be given retroactive effect; and whether administrative proceedings will be required before parties can file suit in court challenging the rules or directives. The Agency does not anticipate that the final directives will conflict with State or local law. Nevertheless, to ensure national consistency, the regulatory certifications for the final directives provide that they will preempt all State and local laws and regulations that conflict with the final directives or that impede their full implementation.

Each proposed wind energy use on NFS lands will be subject to NEPA. If an EA or EIS is required, the Forest Service will seek public input as required by NEPA.

*Comment.* One respondent objected to the conclusion in the certification regarding energy effects of the proposed directives that they could have a positive, rather than a negative, effect on the supply, distribution, and use of energy. This respondent stated that the environmental costs of siting wind energy facilities on the ridge tops of mountains in the mid-Atlantic region outweigh the benefits derived from additional energy supplied.

*Response.* The Agency believes that implementation of these directives could have a positive effect on the supply, distribution, and use of energy to the extent the directives facilitate development of a renewable energy source.

### 3. Summary of Revisions to the Proposed Directives

The Agency has made nonsubstantive changes to the proposed directives for

clarity and has renumbered FSH 2709.11, sections 70.1 through 77.5.

In addition, the Agency has made the following substantive changes to the proposed directives:

**70.2—Objectives.** Clarified the objectives of the wind energy directives.

**70.5—Definitions.** Removed the definition for “adaptive management” because the term is not used in chapter 70. Revised the definitions for “cultural resource,” “site plan,” and “species of management concern.” Added a definition for “historic property.”

**70.6—References.** Added references.

**71—Site Testing and Feasibility Permits.** Revised paragraph 1 to clarify the term of and option to extend site testing and feasibility permits.

**72.1—Pre-Proposal Meetings.** Revised paragraph 2g to provide for discussion of the need to coordinate with affected State agencies.

**72.21e—Historic Properties and Cultural Considerations.** Added this section.

**72.31a—General Considerations (72.21, Siting Considerations, in the final directives).** Revised the second sentence of paragraph 2 (the last sentence in the first paragraph in 72.21 in the final directives) to clarify that it applies to wind energy facilities.

Removed paragraphs 4a through 4d as duplicative. Removed paragraph 7a.

**72.31b—Recreational and Scenery Considerations (72.21a in the final directives).** Clarified paragraph 2b.

**72.31d—Public Access Considerations (72.21c in the final directives).** Revised to add more guidance regarding management of NFS roads and NFS trails.

**72.31e—Wildlife, Fish, and Rare Plant Considerations (72.21d, Species of Management Concern, in the final directives).** Clarified and narrowed the scope of paragraphs 1 and 2.

**73.11a—Wildlife, Fish, and Rare Plant Considerations (73.4a, Species of Management Concern, in the final directives).** Expanded and strengthened considerations regarding species of management concern associated with wind energy uses at the application stage. Revised to clarify that the provision applies only to applications for permits for construction and operation of a wind energy facility.

**73.11b—Scenery Management (73.4b in the final directives).** Revised and expanded paragraph 1. Qualified paragraph 7 (paragraph 4 in the final directives). Added a paragraph regarding consideration of SIOs in location, design, and construction of the power line connecting a wind energy project to the energy grid. Expanded and strengthened considerations regarding

species of management concern associated with wind energy uses at the application stage. Revised to clarify that the provision applies only to applications for permits for construction and operation of a wind energy facility.

**73.11c—Noise Management (73.4c in the final directives).** Revised paragraph 2 to provide for use of available noise-dampening technologies. Expanded and strengthened considerations regarding species of management concern associated with wind energy uses at the application stage. Revised to clarify that the provision applies only to applications for permits for construction and operation of a wind energy facility.

**73.11d—Lighting (73.4d in the final directives).** Clarified requirements regarding lighting for wind energy facilities. Expanded and strengthened considerations regarding species of management concern associated with wind energy uses at the application stage. Revised to clarify that the provision applies only to applications for permits for construction and operation of a wind energy facility.

**73.12—Public Outreach (73.5 in the final directives).** Revised to clarify that the provision applies only to applications for permits for construction and operation of a wind energy facility.

**73.21—Study Plan (73.31 in the final directives).** For clarity, revised the introductory paragraph and paragraphs 7 and 8.

**73.22—Plan of Development (73.32 in the final directives).** Revised paragraphs 5, 6, 7, 10, and 11.

**73.23—Site Plan (73.33 in the final directives).** Revised to require the authorized officer to consult with applicants during preparation of a site plan.

**74—Requirements for Processing Wind Energy Applications.** Added language regarding compliance with applicable law, including NEPA. Added section (sec. 74.1 in the final directives) requiring environmental analysis for wind energy applications to comply with the Agency’s NEPA procedures and to be commensurate with the activities proposed and potential effects anticipated.

**74.1—Effects on Species of Management Concern (73.4a in the final directives).** Revised to address more fully effects on wildlife from wind energy development and to clarify that the provision applies only to applications for permits for construction and operation of a wind energy facility.

**74.2—Applications Involving Lands under the Jurisdiction of Multiple Agencies.** Changed title to “Applications Involving Lands under the Jurisdiction of Multiple Federal

Agencies.” Added a statement that each agency must issue a land use authorization for the lands under that agency’s jurisdiction.

**74.4—Change in Ownership of an Applicant.** Revised to apply to change in control, as well as ownership, of an applicant and to clarify that the entity that acquires ownership or control has the option to file a new application.

**75.1—Site Testing and Feasibility Permits.** Removed paragraph 1, which addressed the need for a monitoring plan for site testing and feasibility permits. In paragraph 2, modified the reference to the Department of Energy’s National Wind Technology Center in Golden, Colorado.

In paragraph 3a, provided an exception to termination if a written justification for the delay in installation and operation of equipment is submitted and accepted by the authorized officer prior to the time specified for termination. Moved and expanded the provisions governing site testing and feasibility studies and moved the provisions regarding issuance of a wind energy facility to new section 75.11, entitled “Site Testing and Feasibility Studies.”

**75.13—Site Testing and Feasibility Permit Form.** Revised to require holders of these permits to obtain a construction and reclamation bond of at least \$2,000 per MET.

**75.21—Pre-Authorization Requirements.** Revised paragraph 4a (para. 5a in the final directives) to state that an operating plan must, rather than should, address minimizing hazards resulting from increased truck traffic. Revised paragraph 4b (para. 5b in the final directives) to require an annual inspection of METs and other authorized wind energy equipment and an annual report of the amount of energy provided by the authorized facility and where that energy is sold. Revised paragraph 5b (para. 6b in the final directives) by removing the reference to relocating wind energy facilities or staging areas. Removed proposed paragraph 5c because it is covered by proposed paragraph 5d (para. 6c in the final directives). Revised paragraph 5e (para. 6d in the final directives) to provide for avoiding harassment and disturbance of wildlife during fledging seasons.

**75.22—Authorization of Wind Energy Facilities.** Moved paragraph 2, which requires a construction bond, to section 75.21 to ensure that the bond will be obtained before the permit is issued. Revised the last paragraph to provide an exception to the termination provisions if a written justification for the delay is submitted and accepted by the

authorized officer prior to the time specified for termination and the authorized officer establishes a new timeframe for the required actions.

**76.1—Land Use Fees for Site Testing and Feasibility Permits.** In paragraph 1, increased the amount of the land use fee for each MET to \$600.

**77.4—Operational Requirements.** Revised paragraph 1 by replacing “yearly” with “as needed.” Clarified paragraph 2 regarding security lighting. Revised paragraph 7 regarding impacts on species of management concern and their habitats.

**80.4—Responsibilities.** Added interagency involvement to the responsibilities of the authorized officer.

**81—Monitoring Plans.** Clarified that monitoring is a requirement of construction and operation permits and not site testing and feasibility permits by amending introductory sentence. Added the concept of a trigger point for further mitigation as part of the requirement of plan objectives.

**82—Monitoring Objectives.** Clarified the linkage between species abundance, presence or activity level and the suite of environmental factors that potentially affect these measures.

**82.1—Monitoring Wildlife Presence, Abundance, and Activity Levels.** For consistency, referred to wildlife presence, abundance and activity levels throughout the section. Replaced the term “significant change” with “in approaching or has reached an undesired management threshold identified in the objective of the species’ monitoring design.” Reduced the post-construction monitoring to a minimum of 2 years, but indicated that 3 years of monitoring is needed if significant risks to any species of management concern have been identified or the permit has been modified in response to outcomes from the first 2 years of monitoring.

**82.2—Monitoring Mortality.** Established a more precise monitoring objective for mortality, *i.e.*, “The objective of post-construction mortality monitoring is to estimate the approximate annual number of collision fatalities of birds and bats on a per turbine or per megawatt basis.” Noted that dog handler teams provide a higher searching efficiency than human searches alone. Clarified that preliminary tests may be needed to determine the optimal search distance for local conditions. Clarified that when a facility contains 10 or fewer turbines, all turbines will be sampled, and when there are more than 10 turbines, 20 percent of the turbines will be sampled. Clarified that the monitoring plan must provide for details on documenting and mapping the location of carcasses,

collecting carcasses, name of the repository or academic collection where carcasses will be sent, and proper handling of tissue for possible future analyses of DNA. Clarified that FWS will be notified “within 24 hours” rather than “promptly” when the carcass of a bald or golden eagle is found; carcasses of migratory birds will be reported to the authorized officer and FWS the next business day; other species should be reported in progress reports or as specified in the monitoring plan; and the authorized officer will be promptly notified when an anomalous or unusually high mortality event occurs.

**82.3—Other Monitoring.** Removed this section which eliminated the phrase concerning species of substantial public interest, because these species are included in the definition of species of management concern in chapter 70 and monitoring language which was in conflict with section 82.1, paragraph 8.

**83—Monitoring Tools and Evolving Technology.** Added the term “evolving technology” to the title of section 83 in recognition of the fact that current methods of monitoring might be replaced by improved methods in the future.

**84—Adaptive Management.** Added language throughout this chapter that any modifications to the permit should be within limits that are practical and feasible. Replaced the statement that the purpose of monitoring is to ensure facilities do not have long-term unacceptable impacts on wildlife with the following statement: “The purpose of monitoring wildlife at wind energy facilities is to detect both desired and undesired effects as soon as possible, and to minimize undesired effects through changes in operation to the extent possible.”

#### **4. Regulatory Certifications for the Final Directives**

##### *Environmental Impacts*

Forest Service regulations at 36 CFR 220.6(d)(2) (73 FR 43096) exclude from documentation in an EA or EIS “rules, regulations, or policies to establish Servicewide administrative procedures, program processes, or instructions.” The Agency has concluded that the special use and wildlife monitoring directives fall within this category of actions and that no extraordinary circumstances exist which would require preparation of an EA or EIS.

##### *Regulatory Impact*

The final directives have been reviewed under USDA procedures and E.O. 12866 on regulatory planning and

review. The Office of Management and Budget (OMB) has determined that the final directives are significant for purposes of E.O. 12866. The final directives will not have an annual effect of \$100 million or more on the economy, nor will they adversely effect productivity, competition, jobs, the environment, public health and safety, or State or local governments. The final directives will not interfere with an action taken or planned by another agency, nor will they raise new legal or policy issues. Finally, the final directives will not alter the budgetary impact of entitlement, grant, user fee, or loan programs or the rights and obligations of beneficiaries of those programs. Accordingly, the final directives are not subject to OMB review under E.O. 12866.

In accordance with the Office of Management and Budget (OMB) Circular A-4, “Regulatory Analysis,” a cost/benefit analysis was conducted. The analysis compared the costs and benefits associated with the current condition of having Agency implementing procedures combined with Agency explanatory guidance in Forest Service Handbook (FSH) and the proposed condition of having implementing direction in regulation and explanatory guidance in FSH.

The wind energy directives have no direct economic effect on any entities or individuals beyond what is imposed under current regulations and directives, such as cost recovery associated with processing special use applications and monitoring special use authorizations under 36 CFR 251.58. The Agency anticipates that the wind energy directives will reduce costs by providing clear direction, enhancing consistency and efficiency in program administration.

Moreover, the Forest Service has considered the final directives in light of the Regulatory Flexibility Act (5 U.S.C. 602 *et seq.*). The Forest Service has determined that the final directives will not have a significant economic impact on a substantial number of small entities as defined by the Act, because the final directives will not impose recordkeeping requirements on them; will not affect their competitive position in relation to large entities; and will not affect their cash flow, liquidity, or ability to remain in the market. The final directives will have no direct effect on small businesses. The final directives merely clarify existing requirements that apply to processing special use proposals and applications and issuing permits for wind energy uses.

### *No Taking Implications*

The Agency has analyzed the final directives in accordance with the principles and criteria contained in E.O. 12630. The Agency has determined that the final directives do not pose the risk of a taking of private property.

### *Civil Justice Reform*

The Agency has reviewed the final directives under E.O. 12988 on civil justice reform. Upon adoption of the final directives, (1) All State and local laws and regulations that conflict with the final directives or that impede their full implementation will be preempted; (2) no retroactive effect will be given to the final directives; and (3) administrative proceedings will not be required before parties can file suit in court challenging their provisions.

### *Unfunded Mandates*

Pursuant to Title II of the Unfunded Mandates Reform Act of 1995, (2 U.S.C. 1531–1538), the Agency has assessed the effects of the final directives on State, local, and tribal governments and the private sector. The final directives will not compel the expenditure of \$100 million or more by any State, local, or tribal government or anyone in the private sector. Therefore, a statement under section 202 of the act is not required.

### *Federalism*

The Agency has considered the final directives under the requirements of E.O. 13132 on federalism and has determined that the final directives conform with the federalism principles set out in this Executive order; will not impose any compliance costs on the States; and will not have substantial direct effects on the States, the relationship between the Federal Government and the States, or the distribution of power and responsibilities among the various levels of government. Therefore, the Agency has determined that no further assessment of federalism implications is necessary.

### *Consultation and Coordination With Indian Tribal Governments*

In recognition of the unique government-to-government relationship with federally recognized Indian tribes, the Agency consulted with tribal officials in developing these final directives. In accordance with Executive Order 13175, entitled “Consultation and Coordination With Indian Tribal Governments,” and relevant policy and direction, the Agency has considered the concerns raised by tribes during the consultation process and has made

changes to the directives where appropriate in response to those concerns.

On August 25, 2010, the Deputy Chief for the National Forest System sent letters to the Regional Foresters, Station Directors, Area Director, IITF Director, Deputy Chiefs, and Washington Office Directors inviting them to conduct government-to-government consultation with federally recognized tribes on the proposed wind energy directives. The Forest Service considers tribal consultation as an ongoing, iterative process that, as applicable, encompasses development of proposed directives through issuance of final directives.

From late September 2010 to March 2011, Forest and Grassland Supervisors and District Rangers in each Region made contacts in person and in writing to the tribes within their area of jurisdiction. These Forest Service officials met with tribal leaders or their designees to discuss the proposed wind energy directives. The Agency received comments from tribes in the Northeast, Northern, and Pacific Northwest Regions. All comments received through March 2011 were considered in development of the final directives. Several of the comments are outside the scope of the proposed directives and will be addressed project by project, as appropriate, during development of a particular wind energy facility.

To date, the Agency has heard from tribal leaders that Forest Service activities associated with siting of wind energy facilities should consider the impacts on tribal traditional and cultural resources, uses, and areas, including sacred sites. The tribes also indicated that the Forest Service should assess the impacts of wind energy projects on treaty and reserved rights and the federal government’s trust responsibility. Several tribes emphasized a need to engage in tribal consultation early and continuously throughout the wind energy permitting process.

The Agency addressed the comments received through the tribal consultation process in development of the final directives. In response to the comments received from tribes, the final directives were changed as follows:

1. To strengthen Section 70.5, “Definitions,” the word “significant” was deleted from the term “cultural resource,” and a definition for “historic property” was added. Corresponding changes to the references to cultural resources were made in sections 72.21b and 73.32, paragraph 9.

2. In Section 72.1, “Pre-Proposal Meetings,” paragraph 2b was revised to reflect potential issues associated with

cultural resources, including sacred sites and other areas used for tribal traditional and cultural purposes, and treaty and reserved rights.

3. Section 72.1, paragraph 2g, specifies that the responsible official should use pre-proposal meetings to clarify expectations for coordination and consultation with tribal governments.

4. Section 73.5, “Public Outreach,” was revised to direct the authorized officer to “consult, as appropriate under relevant policy and direction, with affected tribes after an application for a wind energy project has been accepted, as part of the ongoing government-to-government consultation process.”

In addition, the USDA Office of Tribal Relations and the Forest Service are conducting a policy review concerning sacred sites and are consulting with tribes during this effort. The Forest Service has informed tribes of this initiative and how they can participate during the consultation meetings.

Pursuant to Executive Order 13175 of November 6, 2000, “Consultation and Coordination with Indian Tribal Governments,” the Agency has assessed the impact of the final directives on Indian tribal governments and has determined that the final directives do not significantly or uniquely affect communities of Indian tribal governments. The final directives merely provide a framework that guides the siting of wind energy facilities on NFS lands.

The Agency has also determined that these final directives do not impose substantial direct compliance costs on Indian tribal governments. The final directives do not mandate tribal participation. Instead, they provide guidance to authorized officers to consult with affected tribes once a wind energy application has been accepted and to consider potential impacts on cultural resources and tribal rights throughout the wind energy permitting process.

### *Energy Effects*

The Agency has reviewed the final directives under E.O. 13211 of May 18, 2001, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use.” The Agency has determined that the final directives do not constitute a significant energy action as defined in the E.O. To the contrary, the final directives could have a positive rather than a negative effect on the supply, distribution, and use of energy to the extent the final directives provide direction on processing proposals and applications and issuing special use permits for wind energy uses.

*Controlling Paperwork Burdens on the Public*

The final directives do not contain any recordkeeping or reporting requirements or other information collection requirements as defined in 5 CFR part 1320 that are not already required by law or not already approved for use. Accordingly, the review provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) and

its implementing regulations at 5 CFR part 1320 do not apply.

**5. Access to the Final Directives**

The Forest Service organizes its Directive System by alphanumeric codes and subject headings. The intended audience for this direction is Forest Service employees charged with issuing and administering wind energy permits. To view the full text of the final

directives, visit the Forest Service's Web site at <http://www.fs.fed.us/im/directives/>. The final directives and this **Federal Register** notice are also available electronically <http://www.fs.fed.us/specialuses/>.

Dated: July 28, 2011.

**Thomas L. Tidwell,**  
*Chief, Forest Service.*

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