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List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: August 29, 2012.

Steven Bradbury,

Director, Office of Pesticide Programs.

[FR Doc. 2012–21844 Filed 9–4–12; 8:45 am]

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 101

[WT Docket No. 10–153; RM–11602; FCC 12–87]

Facilitating the Use of Microwave for Wireless Backhaul and Other Uses and Providing Additional Flexibility To Broadcast Auxiliary Service and Operational Fixed Microwave Licensees

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Commission takes further steps to remove regulatory barriers and lowering costs for the wireless microwave backhaul facilities that are an important component of many mobile wireless networks. The steps we take will remove regulatory barriers that today limit the use of spectrum for wireless backhaul and other point-to-point and point-to-multipoint communications. This will also facilitate better use of Fixed Service (FS) spectrum and provide additional flexibility to enable FS licensees to reduce operational costs and facilitate the use of wireless backhaul in rural areas. By enabling more flexible and cost-effective microwave services, the Commission can help foster deployment of broadband infrastructure across America. In addition, a number of parties sought reconsideration of the *Backhaul Report and Order,* and we address those requests and deny reconsideration, for the most part.

DATES: Effective October 5, 2012.

The effective date for the Rural Microwave Flexibility Policy, which contains new or modified information collection requirements has not been approved by the Office of Management and Budget (OMB). The Commission will publish a document in the **Federal Register** announcing the effective date of that policy.

ADDRESSES: Federal Communications Commission, 445 12th Street SW., Washington, DC 20554. A copy of any comments on the Paperwork Reduction Act information collection requirements contained herein should be submitted to Judith B. Herman, Federal Communications Commission, Room 1–B441, 445 12th Street SW., Washington, DC 20554 or via the Internet at *Judith B. Herman@fcc.gov*.

FOR FURTHER INFORMATION CONTACT: John Schauble, Wireless Telecommunications Bureau, Broadband Division, at 202–418–0797 or by email to *John.Schauble@fcc.gov*. For additional information concerning Paperwork Reduction Act information collection requirements contained in this document, contact Judith B. Herman at (202) 418–0214, or via the Internet at *PRA@fcc.gov*.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's document, FCC 12–87, adopted and released on August 3, 2012. The full text of this document is available for inspection and copying during normal business hours in the FCC Reference Information Center, Room CY–A257, 445 12th Street SW., Washington, DC 20554. The complete text of the *Backhaul Second Report and Order, Order on Reconsideration, and Memorandum Opinion and Order* (*Backhaul 2nd R&O, OOR, and MO&O*) and related Commission documents may be purchased from the

Commission's duplicating contractor, Best Copy and Printing, Inc. (BCPI), Portals II, 445 12th Street SW., Room CY–B402, Washington, DC 20554, (202) 488–5300 or (800) 387–3160, contact BCPI at its Web site: *http://www.bcpiweb.com*. When ordering documents from BCPI, please provide the appropriate FCC document number, for example, FCC 12–87. The complete text of the *Backhaul 2nd R&O, OOR, and MO&O* is also available on the Commission's Web site at *http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-87A1.doc*. Alternative formats (computer diskette, large print, audio cassette, and Braille) are available by contacting Brian Millin at (202) 418–7426, TTY (202) 418–7365, or via email to *bmillin@fcc.gov*.

I. Introduction

1. In the *Backhaul 2nd R&O, OOR, and MO&O,* we take further steps to remove regulatory barriers and lower costs for the wireless microwave backhaul facilities that are an important component of many mobile wireless networks. Broadband is indispensable to our digital economy, and wireless technology is an increasingly important source of broadband connectivity. Microwave backhaul facilities are often used to transmit data between cell sites, or between cell sites and network backbones. Service providers' use of microwave links as an alternative to traditional copper circuits and fiber optic links has been increasing. Microwave is a particularly important high-capacity backhaul solution in certain rural and remote locations.

2. In this *Backhaul 2nd R&O, OOR, and MO&O,* we continue our efforts to increase flexibility in the use of microwave services licensed under our part 101 rules. The steps we take will remove regulatory barriers that today limit the use of spectrum for wireless backhaul and other point-to-point and point-to-multipoint communications. We also take actions that will reduce costs of deploying wireless backhaul in rural areas. By enabling more flexible and cost-effective microwave services, the Commission can help foster deployment of broadband infrastructure across America.

II. Background

3. On August 9, 2011, the Commission made additional spectrum available for Fixed Service (FS) use and provided additional flexibility to enable FS licensees to reduce operational costs, facilitating the use of wireless backhaul in rural areas. Specifically, in the *R&O,* the Commission allowed FS to share the 6875–7125 MHz and 12700–13150 MHz bands currently used by the Broadcast Auxiliary Service (BAS) and the Cable Television Relay Service (CARS). In addition, the Commission eliminated the ''final link'' rule that prohibits broadcasters from using FS stations as the final radiofrequency (RF) link in the chain of distribution of program material to broadcast stations. The Commission also modified the part 101 minimum payload capacity rule to allow temporary operations below the minimum capacity under certain circumstances, enabling FS links—in particular long links in rural areas—to maintain critical communications during periods of fading.

4. In the companion *FNPRM,* the Commission sought comment on additional proposals to remove regulatory barriers and facilitate backhaul deployment. Specifically, the Commission sought comment on (1) Allowing smaller antennas in the 6, 18, and 23 GHz bands without materially increasing interference; (2) exempting licensees in non-congested areas from the efficiency standards and allowing other licensees to seek relief from these standards; (3) allowing microwave operators to create higher capacity links by licensing 60 and 80 megahertz channels in the 6 and 11 GHz microwave bands, respectively; (4) revising our rule that requires microwave stations that point near the geostationary arc to obtain a waiver to conform our rule to International Telecommunications Union (ITU) regulations; and (5) modifying the definition of payload capacity in our part 101 rules to account for Internet protocol radio systems.

5. Additionally, four parties filed petitions for reconsideration of the *R&O* and/or *MO&O:* Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS), the Fixed Wireless Communications Coalition (FWCC), Motorola Solutions, Inc./Cambium Networks (Cambium), and Wireless Communications Association International, Inc. (WCAI).

III. Second Report and Order

A. Smaller Antennas in the 6, 18, and 23 GHz Bands

6. We adopt, with minor variations, the *FNPRM's* proposal to allow smaller antennas in the 6, 18, and 23 GHz bands. The record demonstrates that smaller antennas can be accommodated without materially increasing the interference risk to other licensees. Clearwire cites ''technology advancements and more sophisticated band sharing techniques'' as developments that would allow us to loosen the Category B antenna standards without an increased risk of interference. Furthermore, a variety of operators who use microwave support the proposed standards. Under our rules, if smaller antennas would cause an interference conflict with another applicant or licensee, the applicant proposing the smaller antenna must upgrade its antenna. Allowing smaller antennas will facilitate wireless backhaul deployments in two ways. As discussed in greater detail below, smaller antennas allow significant cost savings because they are cheaper to manufacture, install, and maintain. Smaller antennas also allow existing towers to accommodate more antennas and allow installations at sites that would not otherwise be able to accommodate larger antennas. Indeed, there could be instances where allowing the use of smaller antennas may be critical in allowing the use of wireless backhaul by broadband operators.

7. We adopt Comsearch's proposal to implement the proposed standards as Category B2 and keep the existing standards as Category B1, allowing applicants to choose between those standards. That approach will maximize flexibility for applicants and allow existing licensees to keep their antennas. We also adopt FWCC's and Comsearch's proposal to slightly loosen the proposed antenna standards for the 18 GHz band. No party argued that the revised standards would raise any interference concerns in any of the relevant bands.

8. We do not adopt Comsearch's proposal to adopt a power limit on licensees using smaller antennas. Adopting a power limit may artificially limit path length because path length is directly related to the EIRP. A particular path will require operation at the same EIRP whether the operator uses a Category A antenna or a Category B antenna. When EIRP is equivalent, a Category B antenna will radiate more energy in the side lobes than a Category A antenna. In areas where another operator is not in proximity, for example, rural and other uncongested areas, the extra side lobe radiation will not cause any additional interference. In those areas, a licensee can use a smaller and cheaper antenna without harming other FS operators. If we were to restrict power across the board, there may be instances where operators may not be able to realize the full benefits of smaller antennas. We find that our existing rules are sufficient to protect against the potential for increased side lobe radiation. If interference occurs, the rules require the licensee to upgrade its

antenna if the upgrade would mitigate the interference.

9. We find that permitting smaller antennas in the 6, 18 and 23 GHz bands will benefit operators and consumers alike and that these benefits outweigh any potential costs. Our actions today will enable these spectrum bands to be used more intensively for wireless backhaul, public safety, and other critical uses. Even for a single link, which consists of two transmitters and two antennas, the cost savings from allowing smaller antennas can be substantial. Savings in installation costs for the link would likely be over $2,000 for two antennas. MetroPCS estimates that if a smaller antenna eliminates the need for wind loading studies or structural changes to a tower, the cost savings could run ''into the tens of thousands, if not hundreds of thousands, of dollars.'' There would also be savings in operational costs. For example, if an operator using a 6 GHz link is able to use 3-foot antennas instead of 6-foot antennas, its site rental costs could decrease by $7,200 each year. There are also additional cost savings noted by FiberTower and others. When those cost savings are multiplied by the thousands of links that are authorized in the 6 GHz band each year, even if a relatively small percentage of authorized links could use smaller antennas, there could be many instances where operators could recognize cost savings. While the cost savings in the 18 and 23 GHz bands would be smaller, since there is less difference in the size of antennas, there would still be cost savings. On the other hand, there is some risk that a carrier taking advantage of these new rules may have to upgrade to a Category A antenna later. We believe that in many cases, this potential cost will be discovered and avoided in the coordination process. We also note that licensees are not required to use smaller antennas.

B. Updating Efficiency Standards

10. To promote efficient frequency use for various channel sizes in certain part 101 frequency bands, § 101.141(a)(3) of the Commission's rules requires FS operators to establish minimum payload capacities (in terms of megabits per second) and minimum traffic loading payloads (as a percentage of payload capacity). That rule lists a ''minimum payload capacity'' for various nominal channel bandwidths. The term ''payload capacity'' is not defined. The same rule also defines ''typical utilization'' of the required payload capacity for each channel bandwidth as multiples of the number of voice circuits a channel can accommodate.

11. The *FNPRM* sought comment on changes to modernize the payload capacity rule, particularly on a proposal made by Comsearch to de-emphasize the legacy voice-based data rates and instead emphasize a consistent efficiency requirement in terms of bits-per-second-per-Hertz (''bps/Hz''). Comsearch also asked the Commission to define ''payload capacity'' as ''the bit rate available for transmission of data over a radiocommunication system, excluding overhead data generated by the system.'' Comsearch argued that, while the examples based on voice-based data rates were typical when the rule was written, they are becoming outdated as systems support other interfaces such as the Internet Protocol. Comsearch also argued that the rule should be changed because the bandwidth efficiency requirements vary (from 2.46 to 4.47 bps/Hz) based on channel bandwidth, rather than having a uniform requirement for all channel bandwidths. Comsearch asked the Commission to obtain input from equipment manufacturers and other interested parties to develop an appropriate efficiency rate in terms of bits-per-second-per-Hertz.

12. The *FNPRM* asked whether the Commission should adopt Comsearch's definition of payload capacity, adopt an alternative definition or leave the term undefined. The *FNPRM* asked commenters to identify advantages and disadvantages to defining the efficiency requirement in terms of bits-per-second-per-Hertz or in terms of some other metric. It sought input on an appropriate benchmark value to use in the event the agency decided to define the efficiency requirement in terms of bits-per-second-per-Hertz. The Commission further inquired whether the value should be the same across all frequency bands and across urban as well as rural areas. It also asked for comments on whether there is any need to consider how the definition should be applied to legacy systems, *i.e.,* whether there would be a need to grandfather equipment that is currently installed or equipment that is currently on the market.

13. FWCC had originally recommended adoption of the efficiency requirements using bits/second/Hertz values adopted by Industry Canada, with appropriate adjustments for bands where Canada does not have FS services. Comsearch supported those standards. FWCC subsequently proposed an adjustment that would continue to express the standards based on bits/second/Hertz but tighten the standards for certain channel bandwidths in the 11 GHz and 13 GHz bands.

14. First, we convert the current voice-circuit based efficiency standards to bit/second/Hertz standards using standards recently proposed by FWCC. Commenters generally support the idea of replacing our existing payload capacity requirements with efficiency requirement expressed in terms of bits-per-second-per-Hertz. We have reviewed the most recent standards proposed by FWCC, and find that they closely approximate what our current rules require and are otherwise appropriate. This action will allow our payload capacity requirements to reflect modern technologies. Furthermore, if we allow new channel bandwidths in microwave bands, a bit/second/Hertz standard will automatically accommodate new channel bandwidths.

15. FWCC and Comsearch support the proposed definition of payload capacity as consistent with industry practice. We adopt the proposed definition because it is useful to define that term in our rules and the proposed definition is appropriate.

16. A second and related issue is the definition of ''throughput'' for purposes of the efficiency standards. The definition is important because FS operators use a variety of network configurations, and using an unnecessarily restrictive definition of throughput can prevent operators from using some of those network configurations. We consider two proposals offered by commenters and adopt an approach that meets both of their objectives.

17. Clearwire supports the idea of adjusting the minimum payload requirements to account for the increased capacity that would be available with wider bandwidth channels. It expresses concern, however, that simply establishing a bits/second/Hertz standard may not be appropriate for modern network topologies. Clearwire uses an Ethernet-based microwave mesh that relies on a ring topology to provide 99.999 percent network availability by providing redundant link diversity from every cell site location. Normally, a ring is split in half with traffic travelling clockwise on one half and counterclockwise on the other half. If a radio fails on a link, the traffic is aggregated and re-routed around the failed/downed link. Because each link must be designed to carry enough data to accommodate failures elsewhere in the system, the links must be designed to be less than fully loaded during normal operation. Clearwire proposes that the Commission require

applicants to designate each of its links with respect to its generic network topology. For example, a link would be certified as either a ring, mesh, or other resilient network path (links), or as a linear (nonresilient) network topology path. If the link were part of a ring, mesh, or other resilient network topology, the applicant would have to identify the link as either a ''traffic bearing link'' or a ''management/resiliency link.'' Under Clearwire's proposal, ''management/resiliency links'' would be exempt from the efficiency standards, while other links would have to comply with the applicable standards.

18. FWCC recommends a different approach. FWCC asks that we drop the voice circuit designations in § 101.141(a)(6) and (7) of the Commission's rules, which define ''loading'' for purposes of existing rules, and replace them with a new § 101.141(a)(6) to read as follows: ''Digital systems using bandwidths of 10 megahertz or larger will be considered 50% loaded when at least 50% of their total payload capacity is being used.''

19. We believe the objectives behind the Clearwire and FWCC proposals can be met through a simpler approach. Therefore, we update our existing traffic loading requirements, which are not expressed in terms of actual data throughput but in terms of the capacities of multiplexers attached to the transmitters. The definition we adopt today will ensure the efficient use of spectrum while allowing operators to use network configurations with redundant links in order to maintain continuity of service if a link fails. While we update our definition to take into account current technologies, the definition we adopt uses an approach that is consistent with our current rule.

20. To harmonize the proposals and respond to concerns expressed by Comsearch, FWCC, Clearwire and other commenters, we replace § 101.141(a)(6) and (7) with the following new § 101.141(a)(6) to read as follows: ''Digital systems using bandwidths of 10 MHz or larger will be considered 50 percent loaded when at least 50 percent of their total capacity is being used. For purposes of this subsection, a Fixed Service channel is being used if it is attached to a communications system that is capable of providing data to it at a rate that is sufficient to occupy at least 50 percent of the payload capacity of the Fixed Service channel, after header compression is applied.''

21. This definition should ensure that FS systems will be designed to carry the amount of data that is likely to be transmitted over them after IP radio systems remove extraneous header data, to the extent licensees use transmission systems that remove such data. It should also accommodate the needs of operators that deploy FS links in ring topologies, where excess capacity is needed to ensure network reliability.

C. Rural Microwave Flexibility Policy

22. In the *FNPRM,* the Commission sought comment on exempting licensees from complying with the efficiency standards if the environment was sufficiently noncongested to allow the use of antennas meeting performance Standard B. The Commission noted that Sprint Nextel Corporation, Cielo Networks, and Aviat Networks contended that providing relief from efficiency standards in rural areas could reduce the costs of deployments and allow for more microwave backhaul in rural areas. The Commission suggested that relaxing efficiency standards might substantially increase possible path lengths and thereby dramatically improve the business case for deploying microwave backhaul facilities in certain rural areas. The Commission noted that general relief may not be appropriate in congested areas because lowering efficiency standards could result in inefficient use of spectrum. In congested areas requiring use of antennas meeting performance Standard A, the Commission sought comment on allowing applicants to obtain relief from the efficiency standards if they show that: (1) The efficiency standards prevent the deployment of the requested link for economic or technical reasons; (2) the applicant does not have any reasonable alternatives (*e.g.,* use of different frequency bands, use of fiber); and (3) relaxing the efficiency standards would result in tangible and specific public interest benefits.

23. We adopt a new policy, the Rural Microwave Flexibility Policy, designed to provide operators relief, through our waiver process, from the efficiency standards that may not be necessary in noncongested rural areas. Granting licensees in noncongested areas relief from these efficiency standards can facilitate the use of microwave backhaul in rural areas by allowing substantial cost savings in deployment. Indeed, granting relief from the efficiency standards could allow the use of microwave in areas where such use would not be economically feasible under the current rules. In adopting this policy, we take into consideration concerns raised by commenters and institute a series of criteria to ensure that relief is appropriately tailored. If experience with this Policy suggests that a rule change is warranted in the future, we will reconsider that possibility at the appropriate time.

24. Exempting licensees from the efficiency standards in noncongested areas can reduce the cost of deploying microwave backhaul facilities and substantially increase possible path lengths, thereby spurring deployment of broadband in rural areas. The benefits of relaxing efficiency standards in rural areas could be considerable. For example, in 2010, Sprint, FiberTower, and the Rural Telecommunications Group estimated the cost of deploying and operating a 6 GHz link covering 100 miles and requiring four different relay towers would be over $3 million. Additionally, FWCC has demonstrated that allowing a 6 GHz licensee to vary its modulation between 256 Quadrature Amplitude Modulation (a throughput of 208 Mbps) and Quadrature Phase Shift Keying (a throughput of 45 Mbps, about one-fifth of the throughput of 256 QAM) could extend the usable length of a link from 24.56 kilometers to 66.45 kilometers, because the lower throughput allows the operator to maintain reliability over a longer distance.

25. An increase in usable path length would allow some operators to replace multiple paths with single paths. For each intermediate relay station that could be eliminated, the operator would save the cost of a transmitter, antenna, and site rental for that relay site. If one uses the $3 million cost estimate provided by Sprint, FiberTower, and the Rural Telecommunications Group, and assumes that each station contributes equally to the overall cost of the link (two end stations and four intermediate relay stations), the cost of each intermediate relay station would be approximately $500,000. A review of our licensing data shows that there are over 22,000 stations in the 6 GHz and 11 GHz bands that currently use Category B antennas that would potentially be eligible for such relief. Moreover, there may be many more sites where microwave service is not yet deployed because of the prohibitive cost of multiple hops. In these cases, a more flexible policy could spur increased broadband ''middle mile'' deployment.

26. Even if an intermediate relay station cannot be eliminated, providing relief from the minimum payload capacity rule can result in cost savings. Allowing use of lower data rates could allow licensees to use less expensive transmitters and lower power, both of which would result in cost savings. Under the revised minimum capacity requirements that we are adopting in this order, for example, a transmitter operating with a bandwidth of five

megahertz in congested areas must have a minimum capacity of 22 megabits per second (Mbits/s). By looking to publicly available sources of equipment pricing, it appears that an operator could realize significant cost savings.

27. Several commenters express concerns about the proposal in the *FNPRM* for an exemption from the efficiency standards. Comsearch believes that the Commission's actions in allowing use of adaptive modulation and allowing the use of smaller antennas in microwave bands provide sufficient cost savings such that relief from the efficiency standards would be unnecessary. FWCC believes that granting relief from the efficiency standards could ''lock in'' inefficient usage if an area subsequently becomes congested. Comsearch and FWCC believe that basing relief from the efficiency standards on the use of a Category B antenna could provide operators with incentives to use less efficient Category B antennas and lower capacity radio equipment and may punish applicants who have other reasons for using Category A antennas. As an alternative, Comsearch and FWCC propose granting relief from the traffic loading requirements in noncongested areas. FiberTower and US Cellular also support granting relief from the traffic loading requirements. FWCC also proposes a set of conditions for areas eligible for relaxed rural efficiency rules. These conditions are designed to ensure that such deployments do not occur in areas that may become congested, thereby protecting against the ''lock in'' problem.

28. We recognize commenters' concerns about the impact of providing relief from efficiency standards in rural areas, but we find there is a better approach than the alternatives presented. FWCC and Comsearch are concerned that providing relief from the minimum payload capacity requirements will provide incentives for licensees to use Category B antennas, which can increase interference. We do not agree with FWCC and Comsearch that allowing adaptive modulation and smaller antennas can be a substitute for relief from efficiency standards, because granting appropriate relief from the efficiency standards can result in much greater cost savings in rural areas. We disagree with those commenters who suggest that granting relief from the traffic loading standards would be an adequate substitute for granting relief from the minimum payload capacity requirements. If we merely provided relief from the traffic loading requirements, FS operators would have to build links that were fully capable of meeting the minimum payload capacity requirements. Denying permission to reduce payload capacities in such areas would all but eliminate any cost savings that would otherwise be made possible by reducing loading percentages alone, because most of the savings associated with granting relief from the efficiency standards would result from reduced up front equipment costs, as opposed to operating costs.

29. Given the concerns presented in the record, we opt to implement our proposal as a policy, listing specific criteria under which we will favorably consider waivers of the efficiency standards, as opposed to a blanket rule exempting licensees from those criteria. This approach responds to the concerns raised by Comsearch and FWCC. More specifically, the policy will not ''lock in'' inefficient usage because licensees will be required to upgrade facilities to use Category A antennas and comply with the efficiency standards if needed to accommodate new FS applicants (or to avoid interference). Furthermore, the criteria we establish will ensure that relief is limited to areas where the use of lower capacity radio equipment will be appropriate. This policy will provide a meaningful opportunity for relief for rural operators. Adopting relief as waiver policy will allow us to consider individual circumstances and to gain more information on when relief from the efficiency standards would be appropriate. As we gain more experience with such waiver filings, we may consider refining the criteria or codifying the policy as a Commission rule.

30. Specifically, we adopt a Rural Microwave Flexibility Policy and direct the Wireless Telecommunications Bureau (''Bureau'') to favorably consider waivers of the payload capacity requirements if the applicants demonstrate compliance with the following criteria:

- The interference environment would allow the applicant to use a less stringent Category B antenna (although the applicant could choose to use a higher performance Category A antenna);
- The applicant specifically acknowledges its duty to upgrade to a Category A antenna and come into compliance with the applicable efficiency standard if necessary to resolve an interference conflict with a current or future microwave link pursuant to § 101.115(c);
- The applicant uses equipment that is capable of readily being upgraded to comply with the applicable payload capacity requirement, and provide a certification in its application that its equipment complies with this requirement;
- Each end of the link is located in a rural area (county or equivalent having population density of 100 persons per square mile or less);
- Each end of the link is in a county with a low density of links in the 4, 6, 11, 18, and 23 GHz bands;
- Neither end of the link is contained within a recognized antenna farm; and
- The applicant describes its proposed service and explains how relief from the efficiency standards will facilitate providing that service (*e.g.,* by eliminating the need for an intermediate hop) as well as the steps needed to come into compliance should an interference conflict emerge.

31. By establishing our Rural Microwave Flexibility Policy, we do not intend to restrict licensees' ability to obtain such relief under §§ 1.925 and 1.3 of our rules. We direct the Bureau to carefully consider requests for waiver of the efficiency standards filed under the general waiver standard, consistent with the Commission's duty to take a ''hard look'' at applications for waiver and consider all relevant factors when determining if a grant of relief is warranted. The Bureau should not reject a waiver showing under the general waiver standard merely because the applicant has not shown all of the factors listed above. We would anticipate that as an applicant demonstrated compliance with more of the factors listed above, that an applicant would be more likely to have made the requisite showing in support of a waiver. We also direct the Bureau to consider other factors in support of a waiver request, if appropriate.

32. We agree with Comsearch and FWCC that licensees who could use Category B antennas but choose to use Category A antennas should not be foreclosed from seeking waiver relief under the waiver policy we establish today because of their voluntary decision to use a higher performance antenna. Accordingly, we clarify that licensees who could use Category B antennas are eligible for relief from the minimum payload capacity requirements, even if they choose to use a Category A antenna, so long as they meet all of the criteria specified in the Rural Microwave Flexibility Policy we adopt today.

33. Our action today will provide major benefits to FS operators in rural areas. Providing relief from the efficiency standards may allow longer path links, which can eliminate the need for intermediate relay stations. As noted above, the cost of operating an intermediate relay station can be up to

$500,000. Furthermore, providing relief from efficiency standards can also allow the use of less expensive transmitters and lower power. In theory, there are two types of costs that could result from today's action. First, a licensee who took advantage of the relief today could later be required to upgrade and comply with the efficiency standards. Second, the presence of a lower efficiency system using a Category B antenna could make it more difficult for other operators to share the spectrum in the same area. Under our rules, however, the decision to use a Category B antenna is voluntary, and existing operators must upgrade their antennas to Category A antennas if necessary to resolve interference conflicts. Accordingly, we anticipate that any costs will be outweighed by the benefits of our action.

D. Allowing Wider Channels in 6 GHz and 11 GHz Bands

34. The *FNPRM* invited comments on FWCC's request that the Commission allow FS operators to combine adjacent channels in the 5925–6425 MHz (Lower 6 GHz band) and 10700–11700 GHz band (11 GHz band), respectively, to form 60 and 80 megahertz wide channels, where the maximum authorized channel bandwidths at present are 30 and 40 megahertz, respectively. The *FNPRM* acknowledged that the proposal had the potential to allow backhaul operators to handle more capacity and offer faster data rates but noted that the record on this issue was otherwise quite limited.

35. Commenters generally support FWCC's proposal, primarily on the ground that smart phones and other mobile devices are generating increased data demands for cellular backhaul. Comsearch and US Cellular advise proceeding cautiously because the conventional approach to assigning channels of 30 megahertz bandwidth in the 6 GHz band and of 30 or 40 megahertz in the 11 GHz band has been to follow an adjacent-channel alternating-polarization (''ACAP'') plan. Comsearch states that this kind of cross-polarization is worth up to a 35 dB reduction in interference when compared with the amount of interference that a signal on the same polarization would cause. If we allow 60 or 80 megahertz channels to be assigned on a single license, it becomes harder to maintain the ACAP licensing plan, particularly when the wider channels are overlaid on existing 30 or 40 megahertz channels. Ultimately, however, in light of the potential cost savings, Comsearch supports allowing wider channels in the 6 and 11 GHz bands ''subject to appropriate safeguards.''

36. In response to FWCC's petition for rulemaking, NSMA suggested that the Commission should consider: (1) ''Requiring a showing of necessity and availability for applications planning use of more than one or two 60/80 MHz wide channels on any one path''; (2) designating certain slots as ''preferred'' slots for wider bandwidth channels (*e.g.,* starting at one of the band edges, so all licensees would first attempt use of these channels on the same frequencies); (3) adjusting the minimum payload requirements to account for the higher capacity capabilities of the wider bandwidth channels; and (4) adopting methods to better assure high utilization with more tightly drawn regulations. The *FNPRM* sought comment on NSMA's suggestion.

37. We find that allowing 60 megahertz and 80 megahertz channels in the 6 GHz and 11 GHz bands, respectively, would serve the public interest by allowing backhaul operators to handle more capacity and offer faster data rates. In light of the explosive growth in demand for broadband services, we believe it is important to provide operators with the capability to offer faster services wherever possible. Allowing wider channels can also result in more efficient spectrum utilization.

38. The only concern, which was raised by Comsearch and US Cellular, was whether wider channels would be consistent with assigning channels using ACAP. Neither of those parties opposes allowing wider channels, however, so long as appropriate safeguards are instituted against warehousing and inefficient use of spectrum. Commenting parties support the conditions suggested by NSMA. After reviewing the conditions, we will adopt NSMA's suggestion that wideband channels be assigned by preference to the highest available channels in the relevant bands, except where such a choice would impede the efficiency of local frequency coordination efforts. We also adopt today a broader revision of our payload efficiency rules to apply uniform bits-per-second-per-Hertz requirements across multiple bands and bandwidths. Together, we believe those actions will ensure that the 6 and 11 GHz bands are used efficiently while allowing licensees to benefit from wider channels.

E. Geostationary Orbital Intersections

39. To protect receivers on geostationary satellites from the potential for interference from FS transmitters, § 101.145 of the Commission's rules requires a waiver filing for: (1) FS transmitters in the 2655–2690 MHz and 5925–7075 MHz bands with an antenna aimed within 2° of the geostationary arc; and (2) FS transmitters in the 12700–13250 MHz range with an antenna aimed within 1.5° of the geostationary arc. To be approved, a waiver request must show, among other factors, that the transmitter EIRP is below listed limits. In contrast, Article 21 of the ITU Radio Regulations places the 2° restriction on the pointing azimuth of antennas of FS transmitters in the 1–10 GHz band only if the EIRP is greater than 35 dBW, and the 1.5° restriction on the azimuth of antennas in the 10–15 GHz band only if the EIRP is greater than 45 dBW.

40. The *FNPRM* sought comment on a Comsearch proposal to amend § 101.145 of the Commission's rules to require a waiver filing for FS facilities pointing near the geostationary arc only if the EIRP is greater than the values listed in the ITU Radio Regulations. Comsearch contends that the existing, more restrictive requirement in § 101.145 primarily protects satellites located over Europe, Africa, or the Atlantic or Pacific Oceans. Comsearch further believes that, because the ITU has determined that FS transmitters with EIRPs below the values listed in Article 21 are unlikely to cause interference to geostationary satellites, amending the Commission's rules would improve the administrative efficiency of licensing FS links for backhaul without any corresponding harm.

41. We adopt the proposal to require that a waiver filing be necessary for FS facilities pointing near the geostationary arc only if the FS station's EIRP is greater than the values listed in the ITU Radio Regulations. As noted in the *FNPRM,* this action can facilitate microwave deployments by allowing affected licensees to deploy more quickly, explaining that the Commission's rules provide many applicants with conditional authority to begin service immediately, without waiting for final approval from the Commission, once they complete frequency coordination, with the stipulation that they must take their stations down if the Commission later rejects their applications. The change will harmonize the Commission's regulations with international regulations, and as explained further below, can apparently do so without creating any increased risk of interference to satellite services. That rule change will limit the circumstances in which applicants will have go through the burden and expense of

filing waiver requests and the associated waiver fee.

42. We do not change the requirement that FS facilities protect previously authorized satellite facilities. Nor do we limit the right of satellite licensees to file petitions to deny or informal objections against FS facilities that they believe would cause interference to their facilities. The only change from the viewpoint of satellite providers is that FS operators proposing power below the limits contained in ITU regulations will now be able to operate pursuant to conditional authority.

43. Sirius XM Radio, Inc. (Sirius XM) is the only commenter to oppose the proposed change. Sirius XM operates feeder links in the 7025–7075 MHz band to uplink its digital radio transmissions to its satellites. It also has telemetry, tracking and control links in that band. Sirius XM expresses concern that, even if no single FS transmitter were to interfere with one of its satellites under the proposed rule change, several FS transmitters together might do so. On that basis, Sirius XM urges the Commission to establish a numeric limit on the aggregate amount of interference that FS transmitters impinge upon the geostationary satellite arc. In reply, Comsearch provides a detailed technical analysis demonstrating that it would be extremely rare for terrestrial microwave antennas in this country to be directed towards either of Sirius XM's satellite positions.

44. Comsearch's showing that there are currently only three microwave antennas in this country pointed toward one of Sirius XM's satellites demonstrates that the aggregate incremental effect of such multiple exposures is likely to be quite low. While the Commission is prepared to consider showings based on aggregate interference in appropriate circumstances, we decline to adopt Sirius XM's proposal at this time.

45. We find that reducing the circumstances under which FS operators must seek waivers when pointing towards the geostationary arc will produce substantial benefits. Each private FS applicant must pay an application fee of $180 when seeking a waiver. In 2011, we granted 275 applications requesting a waiver of § 101.145 of the Commission's rules where the EIRP was below the limits contained in the ITU Radio Regulations and the applicant had to pay a waiver fee. The total application costs associated with those waivers would be $49,500. Furthermore, each applicant must prepare a waiver exhibit at additional expense. Furthermore, every time a waiver is requested, the applicant cannot commence service until the waiver and applications are granted. While the cost of such delays cannot be quantified based on this record, it is apparent that such delays may be costly to FS providers and their customers. On the other hand, we find that the potential for increased interference or other costs would be minimal from this action. Accordingly, we find that the benefits of the Commission's actions outweigh the costs.

IV. Order on Reconsideration

A. Making 6875–7125 MHz and 12700–13150 MHz Available for Part 101 FS Operations

1. *Allowing FS Operations in Areas Where BAS Operates on Adjacent Channels*

46. In the *R&O,* the Commission authorized FS use of the 6875–7125 MHz and 12700–13150 MHz bands in areas where television pickup licenses are not authorized in those bands. The Commission prohibited FS paths from crossing the service areas of TV pickup authorizations in order to avoid interference. FWCC asks the Commission to limit the exclusion of FS from vacant 13 GHz channels in areas served by BAS and CARS to co-channel operations. In other words, under FWCC's proposal, FS could be licensed in areas where BAS and CARS have operations so long as the FS operations are not on the same channels as any licensed BAS or CARS stations.

47. The National Association of Broadcasters (NAB) and the Society of Broadcast Engineers, Inc. (SBE) contend that the ''introduction of new wireless backhaul operations would be incompatible with effective, unpredictable itinerant newsgathering and news reporting, and it would disserve the public if ENG services at the scene of breaking news were undermined by interference concerns caused by the presence of nearby wireless backhaul operations.'' NAB and SBE are also concerned that it would not be feasible to mix the formal coordination process used by FS applicants with the more informal coordination process used by broadcasters, because FS applicants do not have the same incentives as broadcasters to accommodate the needs of TV pick-up operations.

48. We decline to adopt FWCC's proposal to permit FS operations in channels adjacent to BAS/CARS operations at this time, for three reasons. First, as a technical matter, microwave signals that are being transmitted on adjacent channels can interfere with each other under some circumstances and, for that reason, require frequency coordination. Second, as discussed in the *R&O,* BAS operators are motivated to coordinate spectrum with each other rapidly and cooperatively because they engage in similar activities, such as covering breaking news events, and share a common motivation to ensure that spectrum continues to be made available for such activities on short notice. Allowing FS applicants into areas where BAS is authorized would necessitate a more formal coordination process, which we do not believe is compatible with the dynamic and rapidly changing nature of electronic newsgathering (ENG) operations. Finally, § 74.24 of the Commission's rules allows BAS licensees to engage in short-term operations on unlicensed BAS channels for as many as 720 hours annually per frequency. Therefore, in some locations, BAS operators could be making extensive short-term use of unlicensed BAS channels in the geographic areas where they have BAS licenses for other channels. Allowing FS operations to use these frequencies could result in interference and disruption to these operations.

2. Protection Criteria for BAS Stations

49. In comments filed during an earlier phase of this proceeding, EIBASS asked the Commission to prohibit newcomer Private Operational Fixed Service (POFS) stations in the 7 and 13 GHz bands from degrading the noise threshold of any existing electronic newsgathering-receive only (ENG–RO) site by more than 0.5 dB, citing as precedent the Commission's decision to apply that standard to Department of Defense uplinks when determining whether or not they are providing adequate protection to ENG–RO sites in the 2 GHz band. The *R&O* acknowledged that EIBASS's proposal might be an appropriate standard for evaluating a proposed FS facility but declined to adopt it as a rule, explaining that, in lieu of mandating specific interference criteria in our rules, we expect applicants and licensees to work out interference issues in the frequency coordination process. In a petition for partial reconsideration of the R&O, EIBASS now reiterates its request, arguing that a vague frequency coordination benchmark does neither the incumbent nor the newcomer any favor, because of the uncertainty it generates.

50. EIBASS's proposal is unnecessary because we are upholding the Commission's prior decision to prohibit the paths of FS stations operating in the 7 and 13 GHz bands from crossing the

service areas of TV pickup authorizations. The transmission paths of part 101 FS stations are fixed. That makes it possible for FS applicants to provide licensees and other applicants with detailed notifications that include proposed transmission azimuths, among other technical parameters, and to allow the other affected parties 30 days to respond. Although our rules provide for the Commission to resolve any differences that the parties are unable to resolve by reasoned discussions with each other, it is hardly ever necessary for the Commission to intervene in the frequency coordination process among parties that are subject to our part 101 coordination procedures. The chances that the affected parties would reach an impasse seem particularly remote under these circumstances, where FS paths are barred from crossing any of the geographic areas where ENG–RO stations are licensed. Further, there is no evidence in the record that EIBASS's proposal would reduce the costs associated with the coordination process. For those reasons, we remain confident that the existing frequency coordination procedures will ensure that part 101 FS operators will not interfere with ENG–RO operations in the 6875–7125 MHz and 12700–13150 MHz bands. We therefore decline to adopt EIBASS's proposal.

3. Efficiency Standards for 13 GHz Band

51. FWCC notes that the *R&O* did not specify a minimum throughput for the 13 GHz frequencies newly authorized for Fixed Service use. FWCC recommends that we set the same throughput requirements for 13 GHz as apply to the 11 GHz band, and that we augment those requirements to include capacity and loading requirements for transmitters using channel bandwidths of 12.5 megahertz.

52. Section 101.141(a)(3) of our rules applies minimum payload capacities to digital microwave transmitters operating in the 11 GHz band, depending upon their bandwidths. We agree with FWCC that the same standards should be applied to the 13 GHz band. Our decision above adopting the proposal in the *FNPRM* to apply uniform bits-per-second-per-Hertz requirements to all frequencies between 10,550 MHz and 13,150 MHz includes the frequencies in FWCC's request, and thus renders the request moot.

4. Allowing 50 Megahertz Channels in the 7 GHz Band

53. The *R&O* retained the 25 megahertz bandwidth limit that presently applies to the 7 GHz band because of the limited amount of spectrum available in that band, but it raised the maximum permissible bandwidth in the 13 GHz band to 50 megahertz. Cambium Networks (Cambium) urges that we also allow the 7 GHz band to accommodate 50 megahertz bandwidths. The NAB and SBE oppose this proposal on the ground that it would reduce the number of available channels for new ENG use. Cambium counters the broadcasters' concern by citing the *R&O's* observation that BAS and CARS operations have not been expanding geographically in recent years, with only one new BAS TV pickup license granted in the 7 GHz and 13 GHz bands in the past two years.

54. We deny the Cambium Petition because the benefits of allowing 50 megahertz channels in the 7 GHz band appear to be quite limited and because operators needing wider channels have alternatives. If we allowed 50 megahertz channels in the 7 GHz band, there would only be two channel pairs available in the 7 GHz band. Allowing 50 megahertz channels could limit the availability of FS spectrum for other operators who need narrower channels. Furthermore, operators who need 50 megahertz or wider channels have alternative options available. Today, we are allowing 60 megahertz channels in the 6 GHz band and 80 megahertz channels in the 11 GHz band. For shorter paths, 50 megahertz channels are available in the 18 GHz and 23 GHz bands. Under those circumstances, we believe the better use of the 7 GHz band would be to accommodate narrower band operations. We therefore deny the Cambium Petition.

B. Elimination of the Final Link Rule

55. The ''final link rule'' prohibited broadcasters from using part 101 stations as the final radiofrequency (RF) link in the chain of distribution of program material to broadcast stations. Concurrent with the Commission's decision to allow FS to share in the 7 and 13 GHz BAS and CARS bands, the *R&O* eliminated the final link rule. In doing so, the Commission noted that FS licensees were not objecting to elimination of the rule so long as FS were granted access to BAS and CARS spectrum in the 7 and 13 GHz bands.

56. In a petition for reconsideration, FWCC argues that the final link rule should only be eliminated in areas where the Fixed Service can use the 7 or 13 GHz bands. FWCC argues that a key rationale for the change was ''sharing of spectrum the other way''—i.e., a *quid pro quo* for opening the 7 and 13 GHz BAS/CARS bands for use by part 101 FS operators—but that excluding FS operators from geographic areas where BAS and CARS operations are licensed leaves FS with very limited access to those bands. The NAB and SBE oppose FWCC's petition, arguing that the convergence of digital video with digital data transmission has eliminated any technological reasons for broadcasters to maintain facilities to carry program material to transmitter sites that are separate from microwave transmission systems that handle other kinds of data. Reinstating the final link rule would therefore result in a duplication of facilities that would otherwise be unnecessary, they contend.

57. In the *R&O,* the Commission found that there would be significant benefits and no costs to eliminating the final link rule. It noted that no commenter had identified any cognizable harm that would result from eliminating the rule and concluded that, with increasing adoption of digital technologies, the final link rule had become an outdated regulation that imposed unnecessary, duplicative costs on broadcasters. That conclusion is consistent with one of the fundamental purposes of this proceeding: removing regulatory barriers that limit the use of spectrum for wireless backhaul and other point-to-point and point-to-multipoint communications.

58. The Commission's action maximized the ability of both FS operators and broadcasters to use the 7 and 13 GHz bands. While it is true that the Commission did not make those bands available for FS use everywhere, that decision was based on the fact that fixed links and ENG operations are different and difficult to coordinate with each other. In contrast, there is no technical reason why broadcasters, cable operators and part 101 FS operators cannot share the same spectrum when transmitting microwave signals between fixed locations.

59. The Commission's actions maximized the amount of spectrum available to both FS licensees and broadcasters. Furthermore, FWCC does not allege any harm from eliminating the final link rule; and therefore, the Commission's conclusion that there would be significant benefits and no costs to eliminate the final link rule remains unchanged. We therefore deny FWCC's Petition on this issue.

C. Upper Microwave Substantial Service Policies

60. In reply comments to the *NOI,* NSMA argued that in determining whether 24 GHz, 39 GHz, and Local Multipoint Distribution Service (LMDS) licensees have offered substantial service, the Commission fails to positively consider ''basic and

important steps that lead to successful band utilization.'' It gives the following examples of such activity: (1) Spending significant resources producing Requests for Proposals (RFPs) to develop equipment in its band; (2) utilizing the Secondary Markets rules to offer spectrum leases throughout the license area; (3) submitting proposals to carrier, government, or enterprise customers that rely on utilizing the wide-area license; and/or (4) building several links, but not yet meeting the safe harbor criterion (typically four links per million of population). NSMA asked the Commission to ''track and credit'' such activities.

61. The Commission rejected NSMA's request in the *MO&O.* The Commission concluded that NSMA's arguments ignored one of the Commission's overriding purposes of buildout requirements: providing ''a clear and expeditious accounting of spectrum use by licensees to ensure that service is indeed being provided to the public.'' It approved the Wireless Telecommunications Bureau rejection of substantial service showings based on preparatory activities of the type described by NSMA where there is no actual service being provided to the public. It noted that safe harbors are merely one means of demonstrating substantial service, and that given an appropriate showing, a level of service that does not meet a safe harbor may still constitute substantial service. It also emphasized that all substantial service showings that do not meet an established safe harbor would be evaluated on a case-by-case basis.

62. In a petition for reconsideration of the *MO&O,* the Wireless Communications Association International, Inc. (WCAI) challenges the Commission's decision to address that issue in this proceeding. WCAI argues that the Commission's consideration of this issue violates the Administrative Procedure Act because the issue was not raised in the *NPRM.* WCAI believes substantial service rules and policies relating to wireless backhaul should be addressed in the broader proceeding seeking to harmonize renewal standards for wireless radio services (WT Docket No. 10–112) that is currently pending.

63. WCAI argues that standards currently applicable to fixed point-to-point services, which require a certain number of links based on population, do not in fact promote service to the public because it requires operators to either build uneconomic links in the absence of demand for backhaul services or lose their licenses. According to WCAI, the standards create ''substantial investor uncertainty about the amount of capital required to preserve a license in the millimeter wave bands.'' WCAI asks the Commission to adopt an ''offer-based'' standard that would ''require only that an area-wide millimeter wave band licensee offer FP2P service or spectrum leases on commercially reasonable terms and conditions to commercial or government fixed or mobile telephony/broadband service providers or to the licensee's internal network planners.'' FWCC and Mary J. Kuiken support WCAI's Petition.

64. WCAI has filed its substantial service proposal for wireless backhaul in WT Docket No. 10–112 and we will consider it in that proceeding, consistent with WCAI's request. The *Memorandum Opinion and Order* merely explained the Commission's decision not to initiate a rulemaking to address NSMA's substantial service proposal that NSMA presented in reply comments filed in response to the *NOI,* and thus did not violate the notice-and-comment requirements of the APA, which are applicable to rulemaking proceedings, or prejudice our consideration of substantial service issues in WT Docket No. 10–112. The Commission's decision to dispose of NSMA's request also was appropriate because many LMDS and 39 GHz licensees were facing a June 1, 2012 deadline for providing substantial service. The Commission's response to NSMA's petition thus restated the applicable rules and policies in advance of that deadline and allowed licensees to plan accordingly. In explaining its decision, we note that the *MO&O* accurately stated the Commission's current policy, and we direct the Bureau to apply that policy to the June 1, 2012 substantial service filings made by LMDS and 39 GHz licensees. We also agree with the observation in the *MO&O* that any substantial service standard must provide ''a clear and expeditious accounting of spectrum use by licensees to ensure that service is indeed being provided to the public.'' Our action today is without prejudice to subsequent consideration of these issues in WT Docket No. 10–112.

V. Memorandum Opinion and Order

65. In this *MO&O,* we address various other proposals and issues that we believe are best considered in other contexts or do not require Commission consideration and therefore will not be considered in this proceeding at this time.

66. FWCC asks that the Commission authorize smaller antennas in the 71–76 and 81–86 GHz bands. We decline to initiate a rulemaking because we do not believe that FWCC has provided sufficient information to justify further action at this time in the context of this proceeding. The current antenna specifications for those bands were adopted after a detailed discussion of the tradeoffs involved. FWCC has not provided sufficient information to demonstrate that smaller antennas could be allowed without increasing interference. Our action today is without prejudice to consideration of a more detailed submission on this issue.

67. EIBASS, which supports the *R&O's* requirement that BAS licensees in the 7 and 13 GHz bands register their fixed receive sites, asks various questions about the effective date and other aspects of the requirement. Staff from the Bureau has met with broadcasters to discuss implementation of that requirement. We do not see the need for Commission intervention at this time, but we direct the Bureau to continue working with broadcasters on implementing the registration requirement.

68. Comsearch and FWCC ask the Commission to streamline application processing when applicants intend to use adaptive modulation by allowing adaptive modulation frequencies to be filed as a single row, as opposed to requiring each combination of modulation, capacity, bandwidth, and transmitter power to be licensed individually. No rule change is required to implement this change, and Bureau staff has started the process of modifying the Universal Licensing System to allow this change.

69. Comsearch and FWCC ask that the Commission eliminate the provision in the rules that allows operation of low power, limited coverage systems in the 23 GHz band because the rules are allegedly unnecessary and allow the use of inefficient antennas. According to Comsearch, that provision was used in the past for low cost analog video systems for purposes such as surveillance. Comsearch describes such systems as ''outmoded'' and claims to be unaware of any current usage of such systems. The frequencies in question are particularly important and most used in the 23 GHz band because they are available for conditional authority under § 101.31(b) of the Commission's rules. Clearwire also asks the Commission to allow licensees to aggregate channels in the 18 GHz and 23 GHz bands to allow 80 megahertz, 100 megahertz, 120 megahertz, or 150 megahertz channels.

70. We believe these requests should be considered together with other filings relating to the 23 GHz band and therefore defer consideration of them.

FWCC has filed a petition for reconsideration of the Commission's order authorizing conditional authority for additional channels in the 23 GHz band which raises the issue of authorizing low power systems on those additional channels. FWCC has also filed a petition for rulemaking asking that conditional authority be authorized throughout the 23 GHz band and seeking changes to the mechanism for coordinating operation with the National Telecommunications and Information Administration (NTIA). In light of the common issues raised by each of those pleadings, we believe those requests should be considered together, in consultation with NTIA. We therefore defer consideration of these requests.

71. We recognize that there are other pending matters and proceedings relating to wireless backhaul that are not addressed in this item. Those matters and proceedings include: (1) A petition for rulemaking asking that the 7125–8500 MHz band be allocated for non-federal use and allotted for FS use, (2) a request made in this proceeding to revise the Commission's policy of allowing a satellite earth station to coordinate for the full 360-degree azimuth range of the earth station even when it is communicating with only one satellite in a limited segment of the band, and (3) a petition for rulemaking asking that the Commission establish service rules for FS use in the 42–42.5 GHz band. We defer consideration of these issues and will address them separately or in future orders in this proceeding.

VI. Procedural Matters

Paperwork Reduction Analysis:

72. This document contains an information collection requirement subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104–13. It will be submitted to the Office of Management and Budget (OMB) for review under section 3507 of the PRA. Prior to submission to OMB, the Commission will publish a notice in the **Federal Register** seeking public comment on the modified information collection requirement. In addition, that notice will also seek comment on how the Commission might ''further reduce the information collection burden for small business concerns with fewer than 25 employees'' pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, see 44 U.S.C. 3506(c)(4). The information collection contained in this order will not go into effect until OMB approves the collection. We will publish a notice in the **Federal Register** announcing the effective date of the information collection.

Final Regulatory Flexibility Analysis of the Report and Order

73. As required by the Regulatory Flexibility Act of 1980, as amended (RFA), we incorporated an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in the *Notice of Proposed Rulemaking (NPRM).* No comments were filed addressing the IRFA. Because we amend the rules in this *Second Report and Order,* we have included this Final Regulatory Flexibility Analysis (FRFA). This present FRFA conforms to the RFA.

A. Need for, and Objectives of, the Proposed Rules

74. In this *Second Report and Order,* we make four changes to our rules involving microwave stations. These changes are described in further detail below. First, we allow the use of smaller antennas in the 5925–6875 MHz band (6 GHz band), 17700–18300 MHz and 19300–19700 MHz bands (18 GHz band), and 21200–23600 MHz band (23 GHz band) fixed service (FS) bands. Second, we add a definition of ''payload capacity'' to our rules, and update our capacity and loading requirements to bits/second/Hertz standards reflect the increasing use of interfaces such as Internet Protocol. Third, we widen the permissible maximum channel size in the 5925–6425 GHz Band (Lower 6 GHz Band) (to allow 60 megahertz channels) and in the 10700–11700 MHz band (11 GHz Band) (to allow 80 megahertz channels) to allow faster data rates. Finally, we propose to revise the criteria under which microwave stations that are pointing in the direction of geostationary satellites must seek a waiver prior to operating to expedite service.

75. With respect to the first proposal, § 101.115(b) of the Commission's rules establishes directional antenna standards designed to maximize the use of microwave spectrum while avoiding interference between operators. The rule on its face does not mandate a specific size of antenna. Rather, it specifies certain technical parameters—maximum beamwidth, minimum antenna gain, and minimum radiation suppression—that, depending on the state of technology at any point in time, directly affect the size of a compliant antenna. Smaller antennas have several advantages. They cost less to manufacture and distribute, are less expensive to install because they weigh less and need less structural support, and cost less to maintain because they are less subject to wind load and other destructive forces. In addition, the modest weight of small antennas makes them practical for installation at sites incapable of supporting large dishes, including many rooftops, electrical transmission towers, water towers, monopoles and other radio towers. Smaller antennas raise fewer aesthetic objections, thereby permitting easier compliance with local zoning and homeowner association rules and generating fewer objections. On the other hand, smaller antennas have increased potential to cause interference because smaller antennas result in more radiofrequency energy being transmitted in directions away from the actual point-to-point link. We conclude that we can allow smaller antennas in the 6, 18 and 23 GHz bands without producing harmful interference.

76. Second, we add a definition of ''payload capacity'' to our rules, and update our capacity and loading standards to take into account the increasing use of interfaces such as Internet Protocol. Currently, § 101.141(a)(3) of the Commission's rules lists a ''minimum payload capacity'' for various nominal channel bandwidths. The same rule also defines ''typical utilization'' of the required payload capacity for each channel bandwidth as multiples of the number of voice circuits a channel can accommodate. These definitions are becoming outdated as systems support interfaces such as Internet Protocol. Accordingly, we update our rules to add a definition of payload capacity. We also revise our efficiency requirements to define those requirements in terms of bits-per-second-per-Hertz (''bps/Hz'') across all bands. Such changes could make our rules clearer and would be consistent with modern digital technologies.

77. Third, we allow the use of wider channels in the Lower 6 GHz Band and 11 GHz Band. Specifically, we allow 60 megahertz channels in the Lower 6 GHz Band and 80 megahertz channels in the 11 GHz Band. That action will allow backhaul operators to handle more capacity and offer faster data rates.

78. Finally, we amend § 101.145 of the Commission's rules to limit the circumstances under which fixed service transmitters must obtain a waiver in order to point near the geostationary arc. Specifically, we propose to require a waiver only if the EIRP is greater than 35 dBW for the 5925–7075 MHz band and is greater than 45 dBW in the 12700–13250 MHz

band. Limiting the circumstances where a waiver is necessary will be beneficial. Once the frequency coordination process is completed, the Commission's rules provide many applicants with conditional authority to begin service immediately, without waiting for final approval from the Commission, and with the stipulation that they must take their stations down if the Commission later rejects their applications. Conditional authority is not available, however, to applicants that must request waivers of existing rules. Accordingly, limiting the circumstances under which a waiver is needed will allow more applicants to rapidly commence service. Furthermore, we conclude that such a change would be consistent with international regulations and can be made without any increased risk of interference to satellite services.

B. Legal Basis

79. The actions are authorized pursuant to sections 1, 2, 4(i), 7, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, and 333 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 157, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, and 333, and section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. 1302.

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply

80. The RFA directs agencies to provide a description of, and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules and policies, if adopted. The RFA generally defines the term ''small entity'' as having the same meaning as the terms ''small business,'' ''small organization,'' and ''small governmental jurisdiction.'' In addition, the term ''small business'' has the same meaning as the term ''small business concern'' under the Small Business Act. A ''small business concern'' is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.

81. *Small Businesses, Small Organizations, and Small Governmental Jurisdictions.* Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards. First, nationwide, there are a total of approximately 27.5 million small businesses, according to the SBA. In addition, a ''small organization'' is generally ''any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.'' Nationwide, as of 2007, there were approximately 1,621,315 small organizations. Finally, the term ''small governmental jurisdiction'' is defined generally as ''governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.'' Census Bureau data for 2011 indicate that there were 89,476 local governmental jurisdictions in the United States. We estimate that, of this total, as many as 88,506 entities may qualify as ''small governmental jurisdictions.'' Thus, we estimate that most governmental jurisdictions are small.

82. *Wireless Telecommunications Carriers (except satellite).* The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees. Census Bureau data for 2007, which now supersede data from the 2002 Census, show that there were 3,188 firms in this category that operated for the entire year. Of this total, 3,144 had employment of 999 or fewer, and 44 firms had employment of 1,000 employees or more. Thus under this category and the associated small business size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities that may be affected by our proposed action.

83. *Fixed Microwave Services.* Microwave services include common carrier, private-operational fixed, and broadcast auxiliary radio services. At present, there are approximately 31,549 common carrier fixed licensees and 89,633 private and public safety operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services. Microwave services include common carrier, private-operational fixed, and broadcast auxiliary radio services. They also include the Local Multipoint Distribution Service (LMDS), the Digital Electronic Message Service (DEMS), and the 24 GHz Service, where licensees can choose between common carrier and non-common carrier status. The Commission has not yet defined a small business with respect to microwave services. For purposes of the IRFA, the Commission will use the SBA's definition applicable to Wireless Telecommunications Carriers (except satellite)—*i.e.,* an entity with no more than 1,500 persons is considered small. For the category of Wireless Telecommunications Carriers (except Satellite), Census data for 2007, which supersede data contained in the 2002 Census, show that there were 1,383 firms that operated that year. Of those 1,383, 1,368 had fewer than 100 employees, and 15 firms had more than 100 employees. Thus under this category and the associated small business size standard, the majority of firms can be considered small. The Commission notes that the number of firms does not necessarily track the number of licensees. The Commission estimates that virtually all of the Fixed Microwave licensees (excluding broadcast auxiliary licensees) would qualify as small entities under the SBA definition.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

84. This *Report and Order* adopts no new reporting or recordkeeping requirements.

E. Steps Taken To Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

85. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.

86. The actions taken in the *Report and Order* would provide additional options to all licensees, including small entity licensees. Such actions will serve the public interest by allowing use of smaller antennas, allow the use of wider channels in the Lower 6 and 11 GHz bands, eliminate the need for unnecessary waivers, and update our minimum payload capacity rules to reflect current technology. The rules will therefore open up beneficial economic opportunities to a variety of spectrum users, including small businesses. Because the actions in the *Report and Order* will improve beneficial economic opportunities for all businesses, including small businesses, a detailed discussion of alternatives is not required.

87. With respect to the proposal to allow smaller antennas in the 6 GHz band, an alternative approach would be

to establish technical criteria that would allow the use of 4-foot antennas, as opposed to the 3-foot antennas proposed. Such an approach would reduce the cost savings FS licensees could realize. We conclude that limiting relief to 4-foot antennas is unnecessary to reduce the potential for interference.

Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rules

88. None.

VII. Ordering Clauses

89. It is further ordered that the rules adopted herein will become effective October 5, 2012. It is further ordered that the Rural Microwave Flexibility Policy, which contains new information collection requirements that require approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA), will become effective after the Commission publishes a notice in the **Federal Register** announcing such approval and the relevant effective date.

90. It is further ordered, pursuant to sections 1, 2, 4(i), 7, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, and 333 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 157, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, and 333, and section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. 1302, that this *Memorandum Opinion and Order* is hereby adopted.

91. It is further ordered, pursuant to sections 1, 2, 4(i), 7, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, 333, and 405 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 157, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, 333, and 405, and section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. 1302, that this *Order on Reconsideration* is hereby adopted.

92. It is further ordered that the Commission shall send a copy of this *Report and Order* to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

93. It is further ordered that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, shall send a copy of this *Second Report and Order, Order on Reconsideration, and Memorandum Opinion and Order,* including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in 47 CFR Part 101

Communications equipment, Radio, Reporting and recordkeeping requirements.

Federal Communications Commission.

Sheryl Todd,

Deputy Secretary.

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 101 as follows:

PART 101—FIXED MICROWAVE SERVICES

■ 1. The authority citation for part 101 continues to read as follows:

Authority: 47 U.S.C. 154, 303.

■ 2. Amend § 101.3 by adding the definition ''Payload Capacity'' to read as follows:

§ 101.3 Definitions.

* * * * *

Payload Capacity. The bit rate available for transmission of data over a radiocommunication system, excluding overhead data generated by the system.

* * * * *

■ 3. Amend § 101.109(c), in the table by revising the entries ''5,925 to 6,425'' and ''10,700 to 11,700'' to read as follows:

§ 101.109 Bandwidth.

* * * * *

(c) * * *

Frequency band (MHz)	Maximum authorized bandwidth (MHz)
* * * * *	
5,925 to 6,425	[1] 60
10,700 to 11,700	[1] 80
* * * * *	

[1] The maximum bandwidth that will be authorized for each particular frequency in this band is detailed in the appropriate frequency table in § 101.147. If contiguous channels are aggregated in the 928–928.85/952–952.85/956.25–956.45 MHz, the 928.85–929/959.85–960 MHz, or the 932–932.5/941–941.5 MHz bands, then the bandwidth may exceed that which is listed in the table.

* * * * *

■ 4. Amend § 101.115 by revising paragraph (b) introductory text and the entries ''5,925 to 6,425'', ''6,525 to 6,875'', ''6,875 to 7,075'', ''17,700 to 18,820'', ''18,920 to 19,700'', and ''21,200 to 23,600'' in the table in paragraph (b)(2) to read as follows:

§ 101.115 Directional antennas.

* * * * *

(b) Fixed stations (other than temporary fixed stations and DEMS nodal stations) operating at 932.5 MHz or higher must employ transmitting and receiving antennas (excluding second receiving antennas for operations such as space diversity) meeting the appropriate performance Standard A indicated below, except that in areas not subject to frequency congestion, antennas meeting performance Standard B may be used, subject to the requirements set forth in paragraph (d) of this section. For frequencies with a Standard B1 and a Standard B2, in order to comply with Standard B an antenna must fully meet either Standard B1 or Standard B2. Licensees shall comply with the antenna standards table shown in this paragraph in the following manner:

* * * * *

(2) * * *

Frequency	Category	Maximum beam-width to 3 dB points[1] (included angle in degrees)	Minimum antenna gain (dBi)	Minimum radiation suppression to angle in degrees from centerline of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	*140° to 180°*
* *		*	*		*		*		*	
5,925 to 6,425[5]	A	2.2	38	25	29	33	36	42	55	55
	B1	2.2	38	21	25	29	32	35	39	45
	B2	4.1	32	15	20	23	28	29	60	60

Frequency	Category	Maximum beam-width to 3 dB points[1] (included angle in degrees)	Minimum antenna gain (dBi)	Minimum radiation suppression to angle in degrees from centerline of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	*140° to 180°*
* *		*	*		*		*		*	
6,525 to 6,875[5]	A	2.2	38	25	29	33	36	42	55	55
	B1	2.2	38	21	25	29	32	35	39	45
	B2	4.1	32	15	20	23	28	29	60	60
6,875 to 7,075	A	2.2	38	25	29	33	36	42	55	55
	B1	2.2	38	21	25	29	32	35	39	45
	B2	4.1	32	15	20	23	28	29	60	60
* *		*	*		*		*		*	
17,700 to 18,820	A	2.2	38	25	29	33	36	42	55	55
	B1	2.2	38	20	24	28	32	35	36	36
	B2	3.3	33.5	18	22	29	31	35	55	55
18,920 to 19,700[10]	A	2.2	38	25	29	33	36	42	55	55
	B1	2.2	38	20	24	28	32	35	36	36
	B2	3.3	33.5	18	22	29	31	35	55	55
21,200 to 23,600[7, 11]	A	3.3	33.5	18	26	26	33	33	55	55
	B1	3.3	33.5	17	24	24	29	29	40	50
	B2	4.5	30.5	14	19	22	24	29	52	52
* *		*	*		*		*		*	

* * * * *

[5] These antenna standards apply to all point-to-point stations authorized after June 1, 1997. Existing licensees and pending applicants on that date are grandfathered and need not comply with these standards.

* * * * *

[7] Except for antennas between 140° and 180° authorized or pending on January 1, 1989, in the band 10,550 to 10,565 MHz for which minimum radiation suppression to angle (in degrees) from centerline of main beam is 36 decibels.

* * * * *

[10] DEMS User Station antennas in this band must meet performance Standard B and have a minimum antenna gain of 34 dBi. The maximum beamwidth requirement does not apply to DEMS User Stations. DEMS Nodal Stations need not comply with these standards. Stations authorized to operate in the 24,250–25,250 MHz band do not have to meet these standards, however, the Commission may require the use of higher performance antennas where interference problems can be resolved by the use of such antennas.

[11] Except as provided in § 101.147(s).

* * * * *

■ 5. Amend § 101.141 by revising paragraphs (a)(3), (a)(6), and (a)(7) to read as follows:

§ 101.141 Microwave modulation.

(a) * * *

(3)(i) Except as noted in paragraph (a)(7) of this section, the payload capacity of equipment shall meet the following minimum efficiency standards:

Frequency	Emission bandwidth ≤5 MHz	Emission bandwidth >5 MHz and ≤20 MHz	Emission bandwidth >20 MHz
3,700–10,550 MHz	2.4 bits/second/Hertz	4.4 bits/second/Hertz	4.4 bits/second/Hertz.
10,550–13,250 MHz	2.4 bits/second/Hertz	4.4 bits/second/Hertz	3.0 bits/second/Hertz.

(ii) Traffic loading payload shall exceed 50 percent of payload capacity within 30 months of licensing. During anomalous signal fading, licensees subject to the capacity and loading requirements may adjust to a modulation specified in their authorization if such modulation is necessary to allow licensees to maintain communications, even if the modulation will not comply with the capacity and loading requirements specified in this paragraph. Links that must comply with the capacity and loading requirements that use equipment capable of adjusting modulation must be designed using generally accepted multipath fading and rain fading models to meet the specified capacity and loading requirements at least 99.95% of the time, in the aggregate of both directions in a two-way link.

* * * * *

(6) Digital systems using bandwidths of 10 MHz or larger will be considered 50 percent loaded when at least 50 percent of their total capacity is being used. For purposes of this subsection, a Fixed Service channel is being used if it is attached to a communications system that is capable of providing data to it at a rate that is sufficient to occupy at least 50 percent of the payload capacity of the Fixed Service channel, after header compression is applied.

(7) Equipment placed in service after June 1, 1997 and prior to October 5, 2012 may comply with the provisions of § 101.141(a)(3) in effect as of the date the equipment was placed in service.

* * * * *

■ 6. Amend § 101.145 by revising paragraph (b) introductory text and paragraph (c) to read as follows:

§ 101.145 Interference to geo-stationary-satellites.

* * * * *

(b) *2655 to 2690 MHz and 5925 to 7075 MHz.* No directional transmitting antenna utilized by a fixed station operating in these bands with EIRP greater than 35 dBW may be aimed

within 2 degrees of the geostationary-satellite orbit, taking into account atmospheric refraction. However, exception may be made in unusual circumstances upon a showing that there is no reasonable alternative to the transmission path proposed. If there is no evidence that such exception would cause possible harmful interference to an authorized satellite system, said transmission path may be authorized on waiver basis where the maximum value of the equivalent isotropically radiated power (EIRP) does not exceed:

* * * * *

(c) *12.7 to 13.25 GHz.* No directional transmitting antenna utilized by a fixed station operating in this band with EIRP greater than 45 dBW may be aimed within 1.5 degrees of the geostationary-satellite orbit, taking into account atmospheric refraction.

* * * * *

■ 7. Amend § 101.147 by revising paragraph (i) introductory text, adding paragraph (i)(9), revising paragraph (o) introductory text, and adding paragraph (o)(8) to read as follows:

§ 101.147 Frequency assignments.

* * * * *

(i) *5,925 to 6,425 MHz.* 60 MHz authorized bandwidth.

* * * * *

(9) 60 MHz bandwidth channels: [1]

Transmit (receive) (MHz)	Receive (transmit) (MHz)
5964.97	6217.01
6024.27	6276.31
6083.57	6335.61
6142.87	6394.91

[1] The highest available channel should be selected, except where such a choice would impede the efficiency of local frequency co-ordination efforts.

* * * * *

(o) *10,700 to 11,700 MHz.* 80 MHz authorized bandwidth.

* * * * *

(8) 80 MHz bandwidth channels: [1]

Transmit (receive) (MHz)	Receive (transmit) (MHz)
10745	11235
10825	11315
10905	11395
10985	11475
11065	11555
11145	11635

[1] The highest available channel should normally be selected, except where such a choice would impede the efficiency of local frequency coordination efforts.

* * * * *

[FR Doc. 2012–21335 Filed 9–4–12; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2010–0049; 4500030113]

RIN 1018–AX89

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Arctostaphylos franciscana (Franciscan manzanita) Throughout Its Range

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), determine that *Arctostaphylos franciscana* (Franciscan manzanita) meets the definition of an endangered species under the Endangered Species Act of 1973, as amended (Act). This final rule implements the Federal protections provided by the Act for this species. We are simultaneously publishing a proposed rule to designate critical habitat for *Arctostaphylos franciscana* in a separate **Federal Register** notice.

DATES: This rule becomes effective October 5, 2012.

ADDRESSES: This final rule is available on the Internet at *http://www.regulations.gov* and at the Sacramento Fish and Wildlife Office. Comments and materials received, as well as supporting documentation used in the preparation of this rule, will be available for public inspection, by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 2800 Cottage, Room W–2605, Sacramento, CA 95825; 916–414–6600 (telephone); 916–414–6712 (facsimile).

FOR FURTHER INFORMATION CONTACT: Susan Moore, Field Supervisor, Sacramento Fish and Wildlife Office (see **ADDRESSES** section). If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. This is a final rule to list *Arctostaphylos franciscana* as an endangered species under the Endangered Species Act. Under the Act, if a species is determined to be an endangered or threatened species we are required to promptly publish in the **Federal Register** and make a determination on our proposal within one year. We were petitioned in 2010 to list *A. franciscana* as an endangered or threatened species. We determined in our 12-month finding that listing was warranted, and we proposed to list the species as an endangered species in September 2001. This final rule constitutes our final determination for this species as required by the Act.

The basis for our action. Under the Endangered Species Act, we are required to determine whether a species is endangered or threatened because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We reviewed all available scientific and commercial information pertaining to these factors in our status review of the species and determined that the species was limited to one plant remaining in the wild. We proposed that the species was endangered due to threats in the five factors, as follows. The primary threat to *Arctostaphylos franciscana* is from the present or threatened destruction, modification, or curtailment of the species' habitat or range. All original occupied habitat of the species has been lost, and its current range has been reduced to a single location that supports a single *A. franciscana* plant. Furthermore, limited suitable habitat remains available to support a viable population of the species. The remaining plant is vulnerable to overcollection or damage if visitors harvest cuttings or seeds. Sudden oak death, which is caused by the pathogen *Phytophthora cinnamomi,* and infections caused by other *Phytophthora* species are serious threats to *Arctostaphylos franciscana* because only one plant occurs in the wild and the diseases are easily spread. Predation is an ongoing but lesser threat. Additional threats include climate change, altered fire regime, soil compaction from visitor use, vandalism, loss of genetic diversity, loss of pollinators, stochastic events, effects of small population size, and hybridization. In the proposed rule, we considered these threats to be significant and ongoing, but we did not find that we had sufficient information