

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FCC 95-426

Amendment to the Commission's Rules) WT Docket No. 95-157
Regarding a Plan for Sharing) RM-8643
the Costs of Microwave Relocation)

NOTICE OF PROPOSED RULE MAKING

Adopted: October 12, 1995

Released: October 13, 1995

Comment Date: November 30, 1995

Reply Comment Date: December 21, 1995

By the Commission:

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I. INTRODUCTION

1. By this *Notice*, we propose to adopt a plan for sharing the costs of relocating microwave facilities currently operating in the 1850 to 1990 MHz ("2 GHz") band, which has been allocated for use by broadband Personal Communications Services ("PCS"). Our proposal, which is based on a Petition for Rulemaking filed by Pacific Bell Mobile Services,¹ as modified by the Personal Communications Industry Association (hereinafter referred to as the "PCIA consensus proposal"), would establish a mechanism whereby PCS licensees that incur costs to relocate microwave links would receive reimbursement for a portion of those costs from other PCS licensees that also benefit from the resulting clearance of the spectrum. We seek comment on the desirability of establishing a cost-sharing mechanism for microwave relocation and on the specifics of this proposal.

2. In addition to cost-sharing issues, we seek comment on whether to clarify certain other aspects of the microwave relocation rules adopted in our *Emerging Technologies* docket, ET Docket No. 92-9. Specifically, we seek comment on:

- (1) whether to clarify the definition of "good faith" negotiations during the mandatory negotiation period;
- (2) whether to clarify the definition of "comparable" facilities, which must be provided to microwave incumbents by PCS licensees;
- (3) whether to clarify our rules that grant relocated microwave licensees a twelve month trial period to ensure that their new facilities are indeed comparable;
- (4) whether to continue granting any 2 GHz microwave applications on a primary basis during the relocation process; and
- (5) whether to place a time limit on a PCS licensee's obligation to provide comparable facilities.

3. In seeking comment on these issues, we observe at the outset that the existing relocation procedures for microwave incumbents adopted in the *Emerging Technologies* docket were the product of extensive comment and deliberation prior to the initial licensing of PCS. We emphasize that our intent is not to reopen that proceeding here, because we

¹ *Petition for Rulemaking of Pacific Bell Mobile Services*, RM-8643 (filed May 5, 1995) ("PacBell Petition"); see *Public Notice*, Report No. 2073 (May 16, 1995).

believe that the general approach to relocation in our existing rules is sound and equitable.² Nevertheless, we believe that the cost-sharing proposal presented below is an important modification that will promote the equitable relocation of microwave systems and the rapid deployment of PCS. We also note that the PacBell Petition addresses only cost-sharing for PCS licensees operating in the 2 GHz band. We therefore seek comment on whether cost-sharing and other rule clarifications adopted in this proceeding should apply to other emerging technology services (e.g., 2.110 - 2.150 and 2.160 - 2.200 GHz) that have not yet been licensed.

4. Furthermore, as of the adoption date of this *Notice*, the Commission will continue to accept microwave applications for primary status in the 2 GHz band, however, the Commission will process only minor modifications that would not add to the relocation costs of PCS licensees. Thus, the Commission will grant primary status applications for the following limited number of minor technical changes: decreases in power, minor changes in antenna height, minor coordinate corrections (up to two seconds), reductions in authorized bandwidths, minor changes in structure heights, changes in ground elevation (but preserving centerline height), and changes in equipment. Any other modifications will be permitted only on a secondary basis, unless a special showing of need justifies primary status and the incumbent is able to establish that the modification would not add to the relocation costs of PCS licensees.

II. BACKGROUND

A. Existing Relocation Procedures

5. In the *First Report and Order and Third Notice of Proposed Rule Making* in ET Docket No. 92-9, we reallocated the 1850-1990, 2110-2150, and 2160-2200 MHz bands from private and common carrier fixed microwave services to emerging technology services.³ We also established procedures for 2 GHz microwave incumbents to be cleared off of emerging technology spectrum and relocated to available frequencies in higher bands. The *ET First Report and Order* set forth a regulatory framework that encourages incumbents to negotiate voluntary relocation agreements with emerging technology licensees or manufacturers of unlicensed devices when frequencies used by the incumbent are needed to

² We note that the U.S. House of Representatives has recommended that the voluntary negotiation period established by the *Third Report and Order* in ET Docket 92-9 be shortened from two years to one year. See Recommendations of the House Committee on Commerce Pursuant to the Concurrent Resolution on the Budget for Fiscal Year 1996 (agreed to by voice vote on September 13, 1995).

³ Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, ET Docket No. 92-9, *First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886 (1992) ("*ET First Report and Order*").

implement the emerging technology. The *ET First Report and Order* also stated that, should voluntary relocation negotiations fail, the emerging technology licensee could request mandatory relocation of the existing facility, provided that the emerging technology service provider pays the cost of relocating the incumbent to a comparable facility.⁴

6. In our 1993 *Third Report and Order* in ET Docket No. 92-9,⁵ as modified on reconsideration by our 1994 *Memorandum Opinion and Order*,⁶ we established additional details of the transition plan to enable emerging technology providers to relocate incumbent facilities to other spectrum. The relocation process now in effect consists of two periods that must expire before an emerging technology licensee may proceed to request involuntary relocation. The first is a fixed two year period for voluntary negotiations (three years for public safety incumbents, *e.g.*, police, fire, and emergency medical⁷), commencing with our acceptance of applications for emerging technology services.⁸ During the initial voluntary phase, emerging technology providers and microwave licensees may negotiate any mutually acceptable relocation agreement. Our rules do not require microwave incumbents to meet or negotiate with emerging technology licensees during this period; rather, negotiations are strictly voluntary and are not defined by any parameters. Thus, an emerging technology licensee may choose to offer premium payments or superior facilities as an incentive to the incumbent to relocate quickly.

7. If no agreement is reached during the voluntary negotiation period, the emerging technology licensee may initiate a one-year mandatory negotiation period -- or two-year mandatory period if the incumbent is a public safety licensee -- during which the parties are required to negotiate in good faith.⁹ Should the parties fail to reach an agreement during the mandatory negotiation period, the emerging technology provider may request involuntary

⁴ *Id.* at ¶ 24.

⁵ Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, ET Docket No. 92-9, *Third Report and Order and Memorandum Opinion and Order*, 8 FCC Rcd 6589 (1993) ("*ET Third Report and Order*").

⁶ Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, ET Docket No. 92-9, *Memorandum Opinion and Order*, 9 FCC Rcd 1943 (1994) ("*ET Memorandum Opinion and Order*").

⁷ The class of public safety incumbents that are eligible for a three year voluntary period are defined in *ET Memorandum Opinion and Order*, 9 FCC Rcd 1943 at ¶¶ 36-41.

⁸ 47 C.F.R. §§ 21.50(b), 22.50(b), 94.59(b), and 94.59(f) (1994).

⁹ *ET Third Report and Order*, 8 FCC Rcd 6589 at ¶ 15; *see also* 94.59(f). Note that the parties may negotiate any mutually agreeable relocation plan at any time during the voluntary and mandatory negotiation process.

relocation of the existing facility and, in such a case, the emerging technology provider is only required to:

- (1) Guarantee payment of all costs of relocating the incumbent to a comparable facility. Relocation costs include all engineering, equipment, site costs and FCC fees, as well as any reasonable additional costs.
- 2) Complete all activities necessary for placing the new facilities into operation, including engineering and frequency coordination.
- 3) Build and test the new microwave (or alternative) system.¹⁰

Once the new facilities are available and comparability has been determined, the Commission will amend the operation license of the fixed microwave operator to secondary status.¹¹

8. Section 94.59 of the Commission's rules requires that emerging technology licensees provide incumbent microwave licensees with "comparable facilities."¹² We stated in the *ET Third Report and Order* that if any disputes over comparability were brought to the Commission for resolution, we would make a determination based on whether the facilities are "equal to or superior to existing facilities." As part of that determination, we stated that we would consider, *inter alia*, system reliability, capability, speed, bandwidth, throughput, overall efficiency, bands authorized for such services, and interference protection.¹³

9. After relocation, the microwave incumbent is entitled to a one-year trial period to determine whether the facilities are indeed comparable. If the relocated incumbent can demonstrate that the new facilities are not comparable to the former facilities, the emerging technology licensee must remedy the defects or pay to relocate the microwave licensee back to its former or an equivalent 2 GHz frequency.¹⁴

¹⁰ *Id.* at ¶ 5.

¹¹ 47 C.F.R. § 94.59(c).

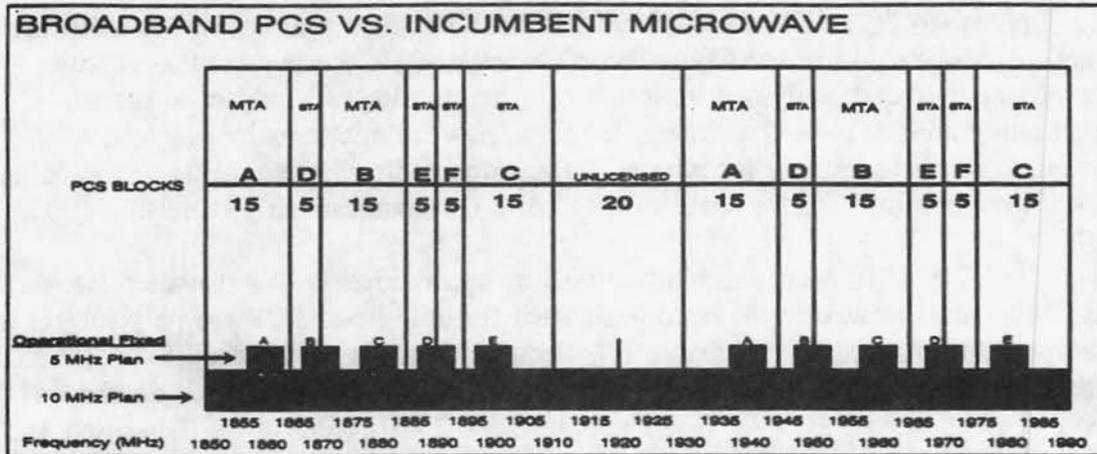
¹² 47 C.F.R. § 94.59.

¹³ *ET Third Report and Order*, 8 FCC Rcd 6589 at ¶ 36.

¹⁴ 47 C.F.R. § 94.59(e).

B. Current Status of Microwave Relocation in the 2 GHz PCS Band

10. In the *Memorandum Opinion and Order* in GEN Docket No. 90-314,¹⁵ the 1850-1990 MHz band was reallocated to licensed and unlicensed PCS as follows:



11. Licensed PCS. The 1850-1910 and 1930-1990 MHz bands were reallocated for licensed PCS operations in six blocks: the A, B, and C blocks are each 30 MHz and the D, E, and F blocks are each 10 MHz. Three A block pioneer preference licenses were awarded in December 1994. From December 1994 to March 1995, the Commission held auctions for the remaining licenses on the A and B blocks. The Commission awarded A and B block licenses to the winners of the auction in June 1995. The C block auction is currently scheduled to begin on December 11, 1995.¹⁶ Specific dates for the D, E, and F block auctions have not been determined.

12. As of 1994, there were approximately 8,846 private microwave licenses issued in the 1850-1990 MHz band, mostly to local governments, petroleum companies, utilities, and railroads. In April 1995, the Wireless Telecommunications Bureau ("Bureau") issued a public notice announcing April 5, 1995 as the start date of the voluntary negotiation period

¹⁵ Amendment of the Commission's Rules to Establish New Personal Communications Services, GEN Docket No. 90-314, *Memorandum Opinion and Order*, 9 FCC Rcd 5947.

¹⁶ *Public Notice*, FCC Sets Auction Date of December 11, 1995 for 495 BTA Licenses in the C Block for Personal Communications Services in the 2 GHz Band, rel. Sept. 29, 1995.

for microwave incumbents operating in the A and B blocks.¹⁷ The Bureau also stated that negotiation periods for the C, D, E, and F blocks would be announced by future public notices. Since the A and B block licenses were granted, numerous PCS licensees have begun relocation negotiations with microwave incumbents. For non-public safety incumbents in these blocks, the voluntary negotiation period will end April 4, 1997; for public safety incumbents, it will end April 4, 1998.

13. Unlicensed PCS. The 1910-1930 MHz band has been reallocated for unlicensed PCS devices. Under Part 15 of the Commission's rules, users of certain communications equipment may operate that equipment in this band without a license, subject to certain coordination requirements, as well as interference and power limitations.¹⁸ Potential operators plan to use the spectrum for wireless PBX equipment, wireless messaging systems, wireless local area networks, and a broad range of data communications products.

14. The 1910-1930 MHz band is occupied by approximately 400 private microwave links. The incumbents located in the band designated for unlicensed PCS are only subject to a one-year mandatory negotiation mechanism.¹⁹ Because there are no licensed PCS providers in this band to negotiate relocation agreements, the Commission has designated an industry organization, the Unlicensed PCS Ad Hoc Committee for 2 GHz Microwave Transition and Management ("UTAM"), to coordinate relocation in the unlicensed band.²⁰ The UTAM relocation plan, which was approved by the Commission in April 1995, calls for UTAM to spend approximately \$67 million to relocate microwave links in the 1910-1930 MHz band, at an estimated cost of \$200,000 per link.²¹ UTAM will raise these funds by collecting a mandatory \$20 fee for each unit from manufacturers of unlicensed PCS equipment as a condition of obtaining FCC certification. Once the 1910-1930 MHz band is clear, or there is little risk of interference to the remaining incumbents, and UTAM has recovered its relocation costs, UTAM's coordination role will end and it will be dissolved.

¹⁷ *Public Notice*, DA 95-872, Wireless Bureau Announces Initiation of Voluntary Negotiation Period for A and B Block PCS Licensees and 2 GHz Incumbent Microwave Licensees (Apr. 19, 1995).

¹⁸ See 47 C.F.R. §§ 15.301-15.323 (1994).

¹⁹ *ET Third Report and Order*, 8 FCC Rcd 6589 at ¶ 23.

²⁰ See Amendment of the Commission's Rules to Establish New Personal Communications Services, *Fourth Memorandum Opinion and Order*, GEN Docket No. 90-314, 10 FCC Rcd 7955, 7957 (1995).

²¹ *Id.* at ¶ 8.

C. Distributing Relocation Costs Among PCS Licensees

15. Because of the pattern of use of the 1850-1990 MHz band by microwave incumbents, the relocation burden on each PCS licensee is not necessarily limited to microwave links within its spectrum block and licensing area. Some spectrum blocks assigned to microwave incumbents overlap with one or more PCS blocks. Also, incumbents' receivers may be susceptible to adjacent or co-channel interference from PCS licensees in more than one PCS spectrum block. In order to clear a particular spectrum block for unrestricted PCS use, a PCS licensee may be required to relocate links in other licensing areas or on other spectrum blocks that would otherwise cause or receive interference. For example, a microwave link located partially in Block A, partially in Block D, and adjacent to Block B, may cause interference to or receive interference from PCS licensees that are licensed in each of those blocks. Thus, several PCS licensees could benefit from the relocation of a single link. In addition, because most 2 GHz microwave licensees operate multi-link systems, PCS licensees may be required to relocate links that do not directly encumber their own spectrum or service area in order to obtain the microwave incumbent's voluntary consent to relocate.

16. The need for PCS licensees to clear microwave links that encumber spectrum outside of their own licensing areas and spectrum blocks creates a potential "free rider" problem, because subsequent licensees on those blocks also benefit from such band-clearing efforts. In addition, unless cost-sharing is adopted, PCS licensees may engage in relocation that is not cost-effective if viewed from an industry-wide perspective. For example, a link that encumbers two PCS blocks may not be moved if the cost is greater than the benefit to any single licensee, even though the joint benefit that two or more licensees would receive exceeds the cost of relocating the link. Also, even if the benefit to a single PCS licensee exceeds the cost of relocation, that licensee might not relocate the link if the licensee thought that, by waiting, some or all of the cost would be paid by others. These problems now exist with A and B block licensees, who are entering into negotiations with microwave incumbents, and might be required to clear a significant number of links on other licensees' spectrum blocks. This would provide the other licensees with a potential windfall. In addition, UTAM expects that licensed PCS providers will be required to relocate links in the unlicensed band which are paired with links in licensed PCS spectrum.

17. In 1994, PCIA requested that the Commission adopt a cost-sharing mechanism that would enable PCS licensees that relocate microwave incumbents to recoup a portion of their costs from other licensees that benefit from the relocation.²² In its petition, PCIA

²² See PCIA Petition for Partial Reconsideration, GEN Docket No. 90-314 (filed July 25, 1994), at 5-7.

advocated three basic principles of a cost-sharing plan: (1) the cost sharing obligation should be predicated on a finding that the PCS licensee's operations would have caused interference to a microwave system's link path but for the relocation of that system; (2) when multiple PCS licensees benefit from relocation, individual PCS licensees should be required to pay a *pro rata* share only of the documented, direct costs of relocation (*i.e.*, reimbursement would be limited to the cost of providing comparable facilities and any premium payments would be excluded); and (3) a payment obligation should not arise until the time interference would have been caused.²³ In the *Third Memorandum Opinion and Order* in GEN Docket No. 90-314, the Commission stated that eliminating the "free rider" element of microwave relocation was attractive in theory, but concluded that PCIA's proposal was not sufficiently developed.²⁴

D. Pacific Bell Petition for Rulemaking

18. On May 5, 1995, PacBell filed a Petition for Rulemaking that proposed a detailed cost-sharing plan in which PCS licensees on all blocks, licensed and unlicensed, would share in the cost of relocating microwave stations. Under PacBell's proposed plan, a PCS licensee that negotiates a relocation agreement with a microwave incumbent outside of its own licensing area or spectrum block would "inherit" the interference protection rights of the incumbent, as if the relocated link were still in place. If a subsequent PCS licensee sought to operate a facility that infringed on these interference rights, *i.e.*, that would have caused interference to the link if it had not been relocated, the subsequent licensee would be required to compensate the first PCS licensee under a prescribed formula.

19. On May 16, 1995, we requested comment on PacBell's proposal.²⁵ Initial comments were due on June 15, 1995 and replies were due June 30, 1995. We received twelve comments and eleven reply comments.²⁶ As discussed below, most commenters -- both PCS licensees and incumbent microwave licensees -- support the cost-sharing concept, although the comments reflect some differences regarding the details of PacBell's proposal.

²³ *Id.*

²⁴ Amendment of the Commission's Rules to Establish New Personal Communications Services, *Third Memorandum Opinion and Order*, GEN Docket No. 90-314, 9 FCC Rcd 6908 at ¶ 39-41.

²⁵ *Public Notice*, Report No. 2073 (rel. May 16, 1995).

²⁶ See Appendix B for a list of commenters, dates the comments were filed, and short-form citations.

III. NOTICE OF PROPOSED RULE MAKING

A. Cost-Sharing Proposal

1. Overview

20. Under PacBell's proposed plan, PCS licensees would be deemed to purchase "interference rights" from incumbent microwave licensees with whom they negotiate relocation agreements. Subsequent PCS licensees that would have caused harmful interference to relocated links would be required to reimburse the holder of the interference rights for a *pro rata* share of its "direct" relocation costs, *i.e.*, the actual cost of relocating microwave facilities as opposed to any premium that the PCS licensee might pay to the incumbent as an incentive to move during the voluntary negotiation period. The *pro rata* share that each new PCS provider pays would be calculated based on a formula that takes into account the number of licensees that have previously contributed to paying the relocation cost of the link. The formula also depreciates the required reimbursement amount based on the initial PCS licensee's ten-year license term, so that licensees that enter the market earlier pay a larger share than those who enter the market later. Finally, PacBell proposes that a \$600,000 cap per link be placed on the amount eligible for reimbursement. Any relocation expenses incurred above the \$600,000 per link limit would be absorbed by the PCS licensee that relocates the links (hereinafter referred to as the "PCS relocater").

21. A and B block PCS licensees overwhelmingly support the adoption of a cost-sharing plan to eliminate the "free rider" problem. In response to PacBell's petition, PCIA has submitted a proposal that combines the basic principles from the original PCIA cost-sharing plan (submitted to the Commission in 1994) with the specifics of PacBell's plan. PCIA's plan, which has received broad support from the PCS industry, is substantially similar to the PacBell proposal but differs from it in several respects. First, PCIA's plan more narrowly defines the direct costs that would be eligible for reimbursement.²⁷ Second, whereas PacBell's plan required cost sharing for both adjacent and co-channel interference, PCIA suggests limiting cost sharing to co-channel interference only.²⁸ Third, PCIA argues that PacBell's proposed \$600,000 cap on reimbursement is too high, and suggests instead a cap of \$250,000 per link, plus \$150,000 for situations where it is necessary to build a new tower.²⁹ In the interest of industry consensus, PacBell stated in its reply comments that it supports PCIA's modifications.³⁰ UTAM also generally supports PCIA's consensus

²⁷ PCIA Comments at 14-17.

²⁸ *Id.* at 10-11.

²⁹ *Id.* at 15-16.

³⁰ PacBell Comments at 1.

proposal.³¹

22. Most microwave incumbents support adoption of a cost-sharing plan, because they believe that it will encourage the relocation of entire microwave systems rather than individual links. Some microwave incumbents support the concept of a cost-sharing formula, but oppose specific parts of the proposal, *e.g.*, the reimbursement cap.³² Others oppose the plan altogether, arguing that it is too early in the relocation process to do anything that may alter the outcome of voluntary negotiations.³³ The Utilities Telecommunications Council ("UTC") supports the plan in general, but states that other means of consideration, such as non-cash transactions, need to be factored into the plan.³⁴

23. We tentatively conclude that the public interest is served by requiring PCS licensees that benefit from the relocation of a microwave link to contribute to the costs of that relocation. Under our current rules, the PCS relocater has no right to reimbursement if a PCS licensee relocates a microwave link that encumbers another PCS licensee's authorized frequencies or is located in another licensee's territory. Thus, any form of cost-sharing that occurs must be voluntarily negotiated. Although affected PCS entities may be able to identify each other and negotiate a joint relocation agreement, in many cases parties benefitting from a relocation may not be in a position to reach such an agreement before one of the parties must move the link for its own business reasons. In particular, prior to the licensing of the C, D, E, and F Blocks, informal cost sharing of relocation expenses that benefit these blocks is impossible because the licensees for these blocks are unknown. As a result, existing PCS licensees may be hesitant to move links unilaterally without some assurance that future competitors who benefit from the relocation will pay a share of the cost.

24. We believe that adoption of a mandatory cost-sharing plan would significantly enhance the speed of relocation by reducing the "free rider" problem and creating incentives for PCS licensees to negotiate system-wide relocation agreements with microwave incumbents. This would in turn result in faster deployment of PCS and delivery of service to the public. We also tentatively conclude that the cost-sharing plan submitted by PCIA, with a few modifications, offers a practical and equitable approach to allocating the costs of relocation. The mechanics of the plan are set forth in more detail below. We seek comment on the advantages and disadvantages of adopting mandatory cost-sharing and on the specifics of our proposal.

³¹ See UTAM Reply at 2.

³² See, *e.g.*, The City of San Diego Comments at 7, Metropolitan Comments at 3-5, Southwestern Bell Comments at 3, and UTC Comments at 5-6.

³³ See, *e.g.*, Duncan, Weinberg Comments at 6; Keller and Heckman Reply at 7.

³⁴ UTC Comments at 6.

2. Mechanics of the Cost-Sharing Plan

a. The Cost-Sharing Formula.

25. **Background.** Under PCIA's consensus plan, PCS licensees would be entitled to reimbursement based on a cost-sharing formula. The formula is derived by amortizing the cost of relocating a particular microwave link over a ten-year period. As PCS licensees enter the market, their share of relocation costs is adjusted to reflect the total number of PCS licensees that benefit and the relative time of market entry. The proposed formula is:

$$R_N = \frac{C}{N} \times \frac{[120 - (T_N - T_1)]}{120}$$

- R equals the amount of reimbursement.
C equals the amount paid to relocate the link.
N equals the next PCS licensee that would interfere with the link. (The PCS relocater is denominated as $N = 1$. After the link is relocated, the next PCS provider that would interfere would be 2, and so on.)
 T_N equals T_1 plus the number of months that have passed since the relocater obtained its reimbursement rights.
 T_1 equals the month that the first PCS licensee obtained rights to reimbursement (as denoted by the numerical abbreviation for each month, *i.e.*, March = 3).

26. The following is an example of how the formula would work: In January 1996, PCS Licensee A pays \$210,000 to relocate microwave Link X. Thus, $C = \$210,000$.³⁵ Licensee A thereby obtains the reimbursement rights³⁶ to the relocated link as of January 1996, so $T_1 = 1$. In January 1997, PCS Licensee B places facilities into operation that infringe upon Licensee A's reimbursement rights.³⁷ As a result, $T_N = T_1 + 12$ months, or 13. Because Licensee B is the second PCS provider to commence operations that benefit from the relocation of Link X, N now equals 2. The calculation of Licensee B's reimbursement payment is as follows:

$$R_2 = \frac{210,000}{2} \times \frac{[120 - (13 - 1)]}{120} = \$94,500$$

³⁵ This example assumes that Licensee A did not pay any relocation premium, so that the full \$210,000 reflects actual relocation costs.

³⁶ "Reimbursement rights" are discussed in Section III(A)(3)(a), *infra*.

³⁷ This determination is made based on whether licensee B's facilities would have interfered with link X if it were still in place. See discussion on interference standard in Section III(A)(3)(b), *infra*.

Thus, Licensee B pays \$94,500 to Licensee A, while Licensee A remains unreimbursed for \$115,500 of its original cost. The \$21,000 difference is due to the depreciation factor in the formula, and reflects the fact that Licensee A benefited from the relocation of Link X a year before Licensee B.

27. In January 1998, Licensee C places a system in service that would have caused interference to Link X. Because Licensee C is the third licensee to benefit from the relocation of Link X, N now increases to 3. Licensee C pays \$56,000 under the formula as follows:

$$R_3 = \frac{210,000}{3} \times \frac{[120 - (25-1)]}{120} = \$ 56,000$$

The \$56,000 payment is divided equally between Licensees A and B. Thus, the net payment by Licensee A is now reduced by \$28,000 to \$87,500 and the net payment by Licensee B is similarly reduced to \$66,500. Licensee C's share is lower than either because of the additional year of depreciation that has occurred before Licensee C entered the market. The formula can be applied in the same manner to subsequent PCS licensees that interfere with Link X.

28. Most commenters support adoption of the proposed formula.³⁸ The only criticism comes from UTC, which is concerned that the formula is too inflexible and does not recognize or account for negotiations that consist of non-cash transactions, *e.g.*, agreements relating to the exchange of PCS service for voluntary relocation or interconnection of PCS base stations.³⁹ UTC suggests that parties be permitted to negotiate their own reimbursement figure using the formula as a guideline.⁴⁰

29. Discussion. We tentatively conclude that the above formula provides an effective and straightforward means of determining a subsequent licensee's reimbursement obligation. Although UTC has objected to it as inflexible, we believe that a relatively simple formula is essential to make cost-sharing administratively feasible, particularly in light of the number of links that will require relocation and the number of PCS licensees potentially involved. We believe the proposed formula strikes an appropriate balance between equitable allocation of relocation costs and administrative feasibility. We also emphasize that PCS licensees would

³⁸ See, *e.g.*, API Comments at 6-7; BellSouth Comments at 2; PCIA Comments at 1; Sprint Comments at 1-2; AAR Reply at 1-2; Southwestern Bell Reply at 10; UTAM Reply at 2.

³⁹ UTC Comments at 6-8.

⁴⁰ *Id.* at 8.

remain free to negotiate alternative cost-sharing terms under our proposal.⁴¹ We request comment on the proposed formula and any alternatives. We also seek comment on the logistics of applying the formula (*e.g.*, whether fractions should be rounded up or down).

30. One difference between PacBell's original proposal and PCIA's proposed formula is the " T_1 " variable, which represents the date from which depreciation begins. PacBell proposes to calculate depreciation from the date that the PCS relocater acquires its interference rights,⁴² whereas PCIA proposes to begin depreciation on the date that the PCS relocater places its system in service.⁴³ We tentatively conclude that T_1 should be based on the date that the PCS relocater acquires its reimbursement rights (as discussed *infra* in Section III(A)(3)), because that date will be registered with the clearinghouse (discussed *infra* in Section III(A)(5)) and easy to confirm. The date that the PCS relocater places its system in service would be more difficult to confirm, because the PCS relocater may place its system in operation without providing notification or seeking advance clearance. Moreover, the possibility exists that the PCS relocater would place its system in operation *after* a subsequent PCS licensee has started service (*i.e.*, as a result of delays in construction or technical problems). If so, the subsequent licensee would pay more than the PCS relocater under PCIA's proposed formula.

31. We agree with commenters who argue that the initial PCS relocater should always be required to pay the largest share of the expenses as an incentive to negotiate the lowest possible relocation costs, and we therefore prefer PacBell's original proposal to PCIA's alternative. We also seek comment, however, on whether the T_1 variable should be based on a uniform fixed date for all PCS licensees. For example, we could start depreciation for purposes of all agreements in the month that the voluntary negotiation period began for the A and B block licensees (April 1995) or the month that the A and B block licenses were granted (June 1995). One advantage of calculating depreciation based on a uniform date is that future licensees would be better able to estimate their potential relocation costs. The formula would also be easier to apply from an administrative perspective.

32. Full Reimbursement. PCS licensees are likely to be more willing to relocate an entire system, rather than singling out links that interfere solely with their own operations, if they receive the right to recoup some or all of the expenses associated with relocating non-interfering links. As the microwave licensees contend, and we concur, providing an incentive to move entire microwave systems (and thereby enabling a seamless transition to the new frequency) is a major benefit of adopting a cost-sharing plan. To encourage system-wide relocations, PCIA proposes that a PCS licensee who relocates a microwave link that is not operational in either its licensed frequency band (*e.g.*, A block, B block) or its service

⁴¹ PacBell proposed such flexibility in its Petition as well. See PacBell Petition at 10.

⁴² PacBell Petition at 8.

⁴³ PCIA Comments at 15.

area (e.g., MTA, BTA) should be entitled to 100 percent reimbursement of the costs of relocating that link.⁴⁴ Thus, the first PCS licensee to provide service either on the frequency band or in the market where the link is located, would be required to reimburse the PCS relocater for 100 percent of its relocation costs, up to the reimbursement cap.⁴⁵ The PCS licensee providing service would then become the full "owner" of the right to be reimbursed, and therefore would become the PCS relocater for cost-sharing purposes.

33. We tentatively agree with PCIA that, under some scenarios, PCS relocators should be entitled to full reimbursement, up to the cap, for relocating non-interfering links. Under PCIA's proposal, the PCS relocater would receive full reimbursement if it relocates links that are (1) fully outside of its market area, or (2) fully outside of its licensed frequency band, whether or not the links would have caused interference to or received interference from the PCS relocater's system. We tentatively agree with PCIA that a PCS relocater should be entitled to full reimbursement for relocating links with both endpoints outside of its licensed service area, subject to the reimbursement cap. Such links are unlikely to interfere with the relocater's system, and are easy to identify for purposes of administering the cost-sharing plan.

34. We seek comment on the second aspect of PCIA's full reimbursement proposal, which would also entitle a PCS relocater to reimbursement for relocating links that are outside of its licensed frequency block. Specifically, we request comment on whether a PCS licensee should receive 100 percent reimbursement (up to the cap) for relocating a link that is inside of its market area and outside of its frequency block, even if the link would have caused adjacent-channel interference to its own PCS system.⁴⁶ If so, the PCS licensee would be relocating the link for its own benefit *and* receiving full reimbursement, up to the cap. Alternatively, we seek comment on whether a PCS licensee should be entitled to full reimbursement (up to the cap) if it relocates a link outside of its frequency block that also would have been non-interfering. If we were to differentiate between the last two alternatives, would disputes arise over whether or not the link actually would have been non-interfering? Assuming we only allow full reimbursement, up to the cap, for links with both endpoints outside of the PCS relocater's market area, reimbursement would be as follows:

⁴⁴ *Id.* at 16.

⁴⁵ The "reimbursement cap" is discussed in Section III(A)(2)(d), *infra*.

⁴⁶ The instances in which a PCS licensee would need to relocate links that cause adjacent channel interference are likely to be quite numerous.

| | Fully Within Relocator's Block | Partly Within Relocator's Block | Outside of Relocator's Block |
|---|---|---|---|
| Both endpoints inside Relocator's MTA/BTA | No reimbursement | <i>Pro rata</i> reimbursement | <i>Pro rata</i> reimbursement |
| One endpoint inside Relocator's MTA/BTA | <i>Pro rata</i> reimbursement | <i>Pro rata</i> reimbursement | <i>Pro rata</i> reimbursement |
| No endpoints inside Relocator's MTA/BTA | 100 percent reimbursement (up to the cap) | 100 percent reimbursement (up to the cap) | 100 percent reimbursement (up to the cap) |

We request comment on our proposal and any alternatives.

35. Expenses Already Incurred. As a related matter, we tentatively conclude that PCS licensees should be permitted to seek reimbursement for any relocation costs incurred after the voluntary negotiation period began for A and B block licensees on April 5, 1995. Once the new rules are effective and a clearinghouse is established, receipts from expenses already incurred would be submitted for accounting purposes. This would allow those PCS licensees, which have already relocated or are in the process of relocating microwave systems, to receive the same reimbursement benefit as other PCS licensees that relocate microwave systems after any rule change. We seek comment on this proposal.

b. Compensable Costs

36. Background. The factor "C" in the proposed cost-sharing formula equals the amount actually paid to relocate the link. Thus, we must determine which costs will be included in the calculation, and whether some types of costs will be considered nonreimbursable. Relocation costs can be divided roughly into two categories: (1) the actual cost of relocating a microwave incumbent to comparable facilities (the definition of "comparable facilities" is discussed in further detail in Section III(B)(2), *infra*), and (2) payments above the cost of providing comparable facilities, also referred to as "premium payments." In its original proposal, PacBell advocated not separating out direct costs of relocation from premium payments, in order to avoid controversial determinations.⁴⁷ PCIA, on the other hand, asserts that only actual relocation costs should be eligible for

⁴⁷ PacBell Petition at 6.

reimbursement.⁴⁸ Most commenters agree that later market entrants should be required to contribute only to the actual cost of relocation.⁴⁹

37. Discussion. We tentatively conclude that premium payments should not be reimbursable, because such payments are likely to be paid by PCS licensees to accelerate relocation so that they can be the first licensee in the market area to offer PCS services. We do not believe later market entrants should be required to contribute to premium payments, because they have not received the corresponding advantage of being first to market. We therefore propose to limit the calculation of reimbursable costs under the formula to actual relocation costs. Actual relocation costs would include such items as: radio terminal equipment (TX and/or RX - antenna, necessary feed lines, MUX/Modems); towers and/or modifications; back-up power equipment; monitoring or control equipment; engineering costs (design/path survey); installation; systems testing; FCC filing costs; site acquisition and civil works; zoning costs; training; disposal of old equipment; test equipment (vendor required); spare equipment; project management; prior coordination notification under Section 21.100(d) of the Commission's rules; site lease renegotiation; required antenna upgrades for interference control; power plant upgrade (if required); electrical grounding systems; Heating Ventilation and Air Conditioning (HVAC) (if required); alternate transport equipment; and leased facilities. We request comment on this proposal, and on any additional types of costs that commenters believe should be eligible for reimbursement. We also request comment on whether failure to allow recovery of premium payments will inhibit relocation during the voluntary period, because some licensees will be receiving the benefit of early relocation without contributing to the premium payments associated with relocating the link on an expedited basis. Is there an easily administered policy that would permit the recovery of premium payments only during the voluntary period? For example, should we allow premium costs to be included in the cost-sharing equation, but subject them to an accelerated depreciation schedule that reduces them to zero at the end of the voluntary period?

c. Length of Obligation

38. Background. As noted above, the proposed formula is based on a ten year depreciation period.⁵⁰ Thus, if a subsequent licensee places a system in service ten years after the depreciation clock begins (*see* discussion in Section III(A)(2)(a), *supra*), that subsequent licensee would owe nothing under the proposed formula. Under the PacBell proposal, however, the ten-year period would differ for each link based on the timing of the relocation agreement. Some commenters argue that cost-sharing obligations for all PCS

⁴⁸ PCIA Comments at 15-16; PCIA Reply at 6.

⁴⁹ *See, e.g.*, BellSouth Comments at 2; McCaw Reply at 2-3; Southwestern Bell Reply at 2; UTAM Reply at 2.

⁵⁰ *See* PacBell Petition at 8.

licensees should end after a uniform fixed period.⁵¹ Southwestern Bell suggests a cut-off of five years after relocation.⁵² PCIA proposes that all obligations sunset ten years after the last PCS license is awarded by the Commission.⁵³ BellSouth argues against any cut-off date, stating that PacBell's proposed system adequately addresses concerns about the length of cost-sharing obligations.⁵⁴ In its reply comments, PacBell asserts that the rule should be effective for 10 years, which coincides with the ten-year depreciation period and the term of the license.⁵⁵

39. Discussion. We tentatively conclude that the cost-sharing plan should sunset for all PCS licensees ten years after the date that voluntary negotiations commenced for A and B block licensees, which means that cost-sharing would cease on April 4, 2005. We believe that it is important to set a date certain on which the clearinghouse will be dissolved, and adopt a cost-sharing plan with the fewest possible variables so that it will be easy to administer. We also believe that this time period is sufficient for all licensees (including those in the C, D, E, and F blocks, which will be licensed in the near future) to complete most relocation agreements. This ten-year period also roughly coincides with the initial PCS license terms and the ten-year depreciation period under the proposed formula. To the extent that some obligations would have extended beyond this date under the formula (*e.g.*, because depreciation started a few years into the negotiation period), we believe that the limited benefit that licensees would receive is outweighed by the cost of maintaining a clearinghouse beyond the ten-year period.⁵⁶ We also believe that the vast majority of links will need to be relocated before the ten year sunset date in order for PCS licensees to meet their coverage requirements. We seek comment on this proposal.

⁵¹ See, *e.g.*, City of San Diego Comments at 6-7; PCIA Comments at 15; PacBell Reply at 5.

⁵² Southwestern Bell Comments at 5.

⁵³ PCIA Comments at 11.

⁵⁴ BellSouth Reply at 5, n. 12.

⁵⁵ PacBell Reply at 5.

⁵⁶ The cost of relocation would be subject to the same formula, regardless of when a link is relocated.

d. Reimbursement Cap

40. Background. In its comments, PCIA advocates a \$250,000 cap on the reimbursement amount that a PCS licensee may obtain from subsequent licensees for the relocation of an individual microwave link.⁵⁷ PCIA also proposes a supplemental cap of \$150,000 for situations in which a new tower is required.⁵⁸ Although PacBell originally proposed a cap of \$600,000 in its petition, it now supports the PCIA proposal, as do most other PCS licensees.⁵⁹ PCS licensees argue that the proposed cap is necessary because it provides an incentive for PCS licensees conducting negotiations to control relocation costs.⁶⁰ The cap also protects the interests of subsequent licensees that have had no input into the negotiations.⁶¹ They assert that the cap will lower administrative costs by minimizing disagreements between PCS licensees over the reasonableness of relocation costs.⁶² Finally, supporters of the cap also emphasize that the cap would not limit the amount that PCS licensees may pay to microwave incumbents to relocate their facilities.⁶³

41. Microwave incumbents oppose the imposition of a reimbursement cap. These commenters argue that the cap would place an artificial ceiling on the price of relocating a link or would otherwise create a disincentive to enter into voluntary negotiations.⁶⁴ Some commenters also assert that a reimbursement cap would provide a "subsidy" to PCS licensees and may force microwave incumbents to bear some of the cost of relocation themselves.⁶⁵ Microwave incumbents also dispute whether relocation costs will average \$250,000. For support, AAR cites a 1992 study by the Federal Communications Commission Office of Engineering and Technology ("OET") which concluded that some relocation costs could be as high as \$814,000, depending on the number of links required to cover the distance of a 2

⁵⁷ PCIA Comments at 16.

⁵⁸ *Id.*

⁵⁹ PacBell Reply at 1; *see also* BellSouth Comments at 2-3; Sprint Comments at 4; McCaw Reply at 2-3; Southwestern Bell Reply at 8.

⁶⁰ *See, e.g.*, PCIA Comments at 16; McCaw Reply at 3; Southwestern Bell Reply at 7.

⁶¹ *See* PCIA Comments at 16.

⁶² *Id.*

⁶³ *See, e.g.*, PacBell Reply at 2; PCIA Reply at 4-5.

⁶⁴ *See, e.g.*, API Comments at 6; City of San Diego Comments at 7; UTC Comments at 5-6.

⁶⁵ *See, e.g.*, AAR Comments at 5-6.

GHz link when the facility converts to a higher frequency.⁶⁶

42. Discussion. We tentatively conclude that a cap on the amount subject to reimbursement under the cost-sharing formula is appropriate, because it protects future PCS licensees -- who have no opportunity to participate in the negotiations -- from being required to contribute to excessive relocation expenses. In addition, a reimbursement cap would enable participants in future PCS auctions to assess the value of a license more accurately, because these applicants would be able to determine in advance the maximum amount they may be required to contribute towards relocation costs. We also tentatively agree with PCIA that a cap will not force microwave licensees to contribute to the cost of their own relocation. First, as PCIA points out, the cap does not limit payments to microwave incumbents. Second, our rules provide that microwave incumbents must receive comparable facilities, regardless of their cost.⁶⁷ Third, the cap is unlikely to affect premium payments if we adopt the proposed cost-sharing plan, because premium payments would not qualify for reimbursement anyway. Finally, with or without a cap in place, we anticipate that PCS licensees will have ample incentive to negotiate reasonable terms with microwave incumbents in order to clear their spectrum quickly. We request comment on this tentative conclusion.

43. If a cap is imposed, we believe the amount should be sufficient to cover the average cost of relocating a link. While this may require the initial PCS relocater to bear more of the cost in cases where relocation expenses are unusually high, setting the cap at a higher level could shift the burden unfairly to subsequent licensees in many more cases. We tentatively conclude that a \$250,000 per link cap (plus \$150,000 if a tower is required) is appropriate. This amount has the consensus support of PCS commenters as an accurate approximation of the likely cost of relocating most microwave stations. We also believe this amount is consistent with the study conducted by the FCC Office of Engineering and Technology ("OET") cited by AAR.⁶⁸ OET's estimate of \$800,000 to relocate a link assumed that four links would be required at the higher frequency to cover the same distance. In the 6 GHz band, however, where most relocation will occur, the same study indicates path lengths are likely to be similar to those in the 2 GHz band.⁶⁹ Thus, applying OET's methodology, relocation costs should average approximately \$132,000 to \$215,000,

⁶⁶ AAR Comments at 7.

⁶⁷ See 47 C.F.R. § 94.59.

⁶⁸ AAR Comments at 7.

⁶⁹ See FCC Office of Engineering and Technology, *Creating New Technology Bands for Emerging Telecommunications Technology*, OET/TS 92-1 at 18.

except in unusual instances where more than one link is required.⁷⁰ Similarly, UTAM has estimated that relocation costs will average \$200,000 per link to cover the same distance or an existing single link.⁷¹ We request comment on this proposal.

3. Cost-Sharing Obligation

a. Creation of Reimbursement Rights

44. Background. Under our current rules, microwave licensees (1) receive the right to operate over a particular channel or channels, and (2) are entitled to interference protection.⁷² The PCIA consensus plan proposes that the Commission allow the microwave licensee's interference protection rights to be "severed" from its transmission rights so that the interference rights can be transferred to the PCS licensee that relocates the facility.⁷³ Upon notification that an agreement has been reached and the transfer has been made, PCIA proposes that the FCC database would register the PCS relocater as the holder of the interference rights.⁷⁴ Because the transmitting rights would not be transferred, the microwave incumbent would retain them under its existing authorization until such time as the relocation actually occurs. When a subsequent PCS licensee later begins the required

⁷⁰ Cost estimates in the OET study for relocation, even to frequencies just above 3 GHz, range from \$125,000 to \$150,000 for transmitters, receivers, and replacement antennas; \$300 to \$3,500 for frequency coordination; \$3,000 to \$30,000 for 3-meter high performance antennas necessary in some situations such as highly congested areas; and \$1,000 to \$20,000 for structural improvements to support the increased loading of such antennas. OET Study at 32-33. Thus, AAR estimates that the cost to relocate the average link would range from \$125,300 to 203,500 in 1992 dollars. AAR Comments at 7, n. 14. Adjusting for inflation, the range in 1994 dollars would be approximately \$132,000 to \$215,000.

⁷¹ See Amendment of the Commission's Rules to Establish New Personal Communications Services, GEN Docket No. 90-314, *Fourth Memorandum Opinion and Order*, 10 FCC Rcd 7955, 7957 (1995).

⁷² See, e.g., 47 C.F.R. § 94.63. Section 94.63 of the Commission's Rules defines the interference criteria for private fixed microwave licensees and establishes an obligation not to interfere and a right to not be interfered with.

⁷³ PCIA Comments at 11. This concept was originally proposed to the Commission by Columbia Spectrum Management in 1994 when PCIA first suggested that we adopt a cost-sharing plan. See Columbia Spectrum Management *ex parte* filing, GEN Docket No. 90-314 (filed Jan. 12, 1994).

⁷⁴ PCIA Comments at 18.

prior coordination notice (PCN) process,⁷⁵ that licensee would be informed of its obligation to reimburse the holder of the link's interference rights if the PCN process determines that the subsequent licensee's system would have caused interference to the original link.

45. Supporters of the plan agree that the creation of transferable rights is a necessary element of the cost-sharing proposal. API, BellSouth, CTIA, the City of San Diego, McCaw, PCIA, Sprint, and UTC all support the concept of transferrable interference rights. Keller and Heckman, a law firm that represents numerous microwave incumbents, agrees that interference rights are an important concept, but argues that such rights already exist under Commission rules. Therefore, it urges the Commission simply to clarify previous rulemakings to establish that such rights may be transferred, instead of initiating a rulemaking proceeding.⁷⁶

46. Discussion. We tentatively agree that the PCS relocater should obtain some form of rights for which it would be entitled to reimbursement. We seek comment on how such rights should be created procedurally. We propose that, once a PCS licensee and a microwave incumbent have signed an agreement that provides for the relocation of a specified number of microwave links, the parties would submit the relocation agreement to a clearinghouse (discussed in detail in Section III(A)(5)). On the date that the relocation agreement is submitted, the clearinghouse would replace the name of the microwave incumbent with the name of the PCS relocater in a database maintained for the purpose of determining reimbursement.⁷⁷ As of that date, the PCS relocater would become the holder of "reimbursement rights" for all links covered by the relocation agreement. When a subsequent PCS licensee begins the required PCN process, that licensee would also contact the clearinghouse to determine whether any PCS relocaters hold reimbursement rights for the channel over which it intends to transmit.

47. We tentatively conclude that the creation of reimbursement rights -- which are separate, distinct, and unaffiliated with the underlying microwave license -- are preferable to the concept of transferring the incumbent's "interference" rights as proposed by PCIA. First, reimbursement rights would be able to co-exist with an active microwave

⁷⁵ Section 21.100(d) of the Commission's rules requires that proposed frequency usage be prior coordinated with existing users in the area and other applicants with previously filed applications, whose facilities could affect or be affected by the new proposal in terms of frequency interference or restricted ultimate system capacity. See 47 C.F.R. § 21.100(d).

⁷⁶ Keller and Heckman Reply at 5 (stating that, under the Administrative Procedure Act, 5 U.S.C. § 553(b)(3)(A), a notice and comment rule making is not necessary for the Commission to issue interpretive rules).

⁷⁷ The cost-sharing database would be similar to the database maintained by the Commission for the purposes of determining interference. In fact, it may be preferable to combine or link the two databases so that only one search needs to be conducted.

authorization, which means that the microwave licensee would retain its right not to be interfered with as long as it continues to operate. We believe that it is important for the microwave incumbent to retain all of its rights under its original authorization until its new system is in place. Second, any transfer of rights relating to a license (even if only partial rights are being transferred) would require Commission approval under Section 310(d) of the Communications Act, as amended. Thus, under PCIA's proposal, the microwave incumbent would be required to request permission from the Commission to transfer its interference rights to a PCS licensee. The PCS licensee could not obtain the interference rights until the Commission has acted. We believe that such a procedure would be time consuming and administratively cumbersome. Third, the interference rights would have to exist independently from the microwave license, so that they would not be cancelled at the same time the microwave incumbent returns its 2 GHz license to the Commission. We seek comment on the creation of reimbursement rights.

48. Another alternative would be for the microwave licensee to assign its microwave license to the PCS licensee under Section 94.47 of the Commission's rules, as part of a relocation agreement.⁷⁸ The assignment would require Commission approval, but would effectively transfer the incumbent's entire license to the PCS licensee. The difficulty with this approach is that under Section 94.53, the microwave license must be cancelled if the facility has been non-operational for a year. Because the PCS licensee would not operate a microwave system, a mechanism would be required that enables the PCS licensee to exercise its rights after the microwave facility has become non-operational.

49. We are uncertain whether either of these procedural alternatives precisely fits the needs of the proposed cost-sharing plan. We believe that under any scenario, some form of reimbursement rights should be conferred on the PCS relocater, so that the PCS relocater is able to enforce its rights and collect reimbursement from subsequent licensees. We also believe that any rights obtained by the PCS relocater should be separate from the rights of the incumbent licensee, so that (1) the incumbent may continue to operate under its existing authorization during the relocation process, and (2) the microwave license may be transferred, cancelled, or returned to the Commission at any time without affecting the rights held by the PCS relocater for cost-sharing purposes. We seek comment on the above options and any alternatives.

b. Definition of Interference

50. To ascertain whether subsequent licensees are obligated to make a payment under the proposed plan, we must decide (1) what standard will be used to determine interference, and (2) what type of interference (*e.g.*, co-channel versus adjacent channel) triggers a cost-sharing obligation.

⁷⁸ See 47 C.F.R. § 94.47.

51. Interference Standard. The PCIA consensus plan proposes to use the criteria set forth in the TIA Telecommunications Systems Bulletin 10-F, "Interference Criteria for Microwave Systems," May 1994, or some other industry-accepted standard, to determine whether interference has occurred.⁷⁹ Commenters generally support the use of TIA Bulletin 10-F for determining potential interference as a basis for cost-sharing between PCS providers.⁸⁰ They argue that the Bulletin 10-F sets out a clear standard for determining interference, and thus determining if a second PCS licensee benefits from a relocation paid for by an earlier PCS licensee. Cox, on the other hand, alleges that TIA Bulletin 10-F contains only interference standards for microwave-to-microwave interference, and that the standards do not lend themselves directly to assessing PCS-to-microwave interference.⁸¹ Southwestern Bell agrees with Cox and also alleges that TIA Bulletin 10-F does not directly address adjacent channel interference or differences in terrain.⁸² TIA responds to these allegations and states that TIA Bulletin 10-F was developed to be used as the industry standard for determining PCS-to-microwave interference, and that Bulletin 10-F addresses all applicable problems and criteria, including those mentioned by Cox and Southwestern Bell.⁸³

52. We tentatively conclude that the TIA Bulletin 10-F is an appropriate standard for determining interference for purposes of the cost-sharing plan. We agree with TIA that the TIA Bulletin was developed to determine PCS-to-microwave interference as well as microwave-to-microwave interference. Additionally, TIA Bulletin 10-F is already the standard used to determine PCS-to-microwave interference.⁸⁴ We also note, however, that the procedures set forth in TIA Bulletin 10-F permit the use of different propagation models and allow alternative technical parameters to be employed. Therefore, TIA Bulletin 10-F may not provide a clear standard for determining interference in some situations. We seek comment on whether our application of Bulletin 10-F⁸⁵ should be limited in scope for

⁷⁹ PCIA Comments at 18.

⁸⁰ See, e.g., Sprint Comments at 2, BellSouth Reply at 6-7; UTAM Reply at 5; UTC Reply at 6.

⁸¹ Cox Comments at 3.

⁸² Southwestern Bell Reply at 6; see also Cox Comments at 2-4.

⁸³ TIA Ex Parte Comments at 1-2.

⁸⁴ 47 C.F.R. § 24.237(a).

⁸⁵ TIA is currently working with representatives of the industry to develop Bulletin 10-G, which would modify the parameters of Bulletin 10-F. These new parameters and requirements may better represent PCS-to-microwave interference standards and could be utilized in applying the cost-sharing mechanism.

reimbursement purposes to the minimum coordination distance equations.⁸⁶ Under this approach, reimbursement would be required for all facilities within the calculated coordination zone from the PCS base station, rather than basing the requirement on the more complex and variable computations of potential interference. We tentatively conclude that use of these minimum coordination distance equations would simplify administration of the test for determining whether a cost-sharing obligation exists, and would reduce the number of disputes that may otherwise arise over whether interference would have occurred if the link were still operational. We request comment on whether any of the other standard equations of TIA Bulletin 10-F may be applied more easily for purposes of cost-sharing. We also seek comment on whether there is a more appropriate industry-accepted standard for determining interference.

53. As an additional matter, we note that incumbent microwave licensees generally employ receivers with "receiving bandwidths" that significantly exceed the authorized bandwidth of the associated transmitter. Accordingly, microwave receivers generally require protection over a frequency range twice as large as the transmission bandwidth (*i.e.*, a microwave station with a 5 MHz transmit bandwidth would require protection within a 10 MHz band to protect its corresponding receive station).⁸⁷ For purposes of determining a reimbursement obligation, however, we propose to consider only interference that occurs co-channel to the transmit and receive bandwidth of the incumbent microwave licensee. Thus, for reimbursement and cost-sharing purposes only, we propose that a 5 MHz bandwidth transmit microwave station would receive only 5 MHz protection for its receive stations (rather than the 10 MHz adjacent channel protection it would typically require to protect its receive station). Excluding adjacent channel interference for purposes of cost-sharing will serve to simplify administration of the cost-sharing plan by providing more certainty in determining when a reimbursement obligation exists. Also, it would reduce the number of receive stations that would be calculated to receive interference, thereby limiting the number of situations under which reimbursement is required. We seek comment on this proposal and any alternatives. Specifically, we request comment on whether adjacent channel interference (*i.e.*, 5 MHz transmit and 10 MHz receive protection) should be included for purposes of determining a reimbursement obligation.

54. Co-Channel Interference vs. Adjacent Channel Interference. PCIA's consensus proposal advocates that reimbursement be required only for co-channel microwave links having endpoints within a PCS licensee's authorized operating territory.⁸⁸ Co-channel links

⁸⁶ TIA Bulletin 10-F, Equations F-3-1 through F-3-5.

⁸⁷ That is, protection would be required within the 5 MHz transmit bandwidth plus an additional 2.5 MHz on either side of the transmit bandwidth for a total of 10 MHz reception sensitivity.

⁸⁸ PCIA Comments at 10.

are defined as those with an overlap of licensed occupied bandwidth.⁸⁹ PCIA argues that inclusion of other types of interference -- such as adjacent channel interference or co-channel interference to out-of-region links -- would vastly increase the complexity of the cost-sharing process. Although PacBell's original proposal imposed a cost-sharing obligation on those licensees that cause both adjacent channel and co-channel interference, PacBell now agrees with PCIA's modification to its plan.⁹⁰

55. We tentatively concur with PCIA's proposal that a two-part test should be adopted for determining whether reimbursement is required. Thus, a subsequent licensee would be required to reimburse the PCS relocater only if:

- (1) the subsequent PCS licensee's system would have caused co-channel interference to the link that was relocated; and
- (2) at least one endpoint of the former link was located within the subsequent PCS licensee's authorized market area (*e.g.*, MTA, BTA).

For example, assume a PCS licensee won the B Block license for MTA X. This PCS licensee relocates a 10 MHz microwave link operating in the B Block. The link has one endpoint in MTA X and one endpoint in neighboring MTA Y. Under our proposal, the B Block licensee in MTA Y would be required to reimburse the B Block licensee in MTA X according to the cost-sharing formula, if the PCS system in MTA Y would have caused co-channel interference to the relocated link. Whether or not interference would have occurred will be determined on the basis of the criteria set forth above.

56. We agree with PCIA that the administrative costs and burdens associated with including other types of interference outweigh any additional benefits that would be achieved. We seek comment on the types of interference that should trigger a cost-sharing obligation. Specifically, we request comment on (1) whether reimbursement should also be required if the link that is relocated would have caused adjacent-channel interference to the subsequent licensee, and (2) whether it would be difficult to determine if adjacent-channel interference would have occurred. What are the advantages and disadvantages of only requiring cost-sharing for co-channel interference?

⁸⁹ *Id.*

⁹⁰ PacBell Reply at 1.

4. Payment Issues

a. Timing

57. Background. PacBell proposes that a PCS licensee entering a previously-cleared band would be responsible for payment under the cost-sharing proposal at the time the PCS licensee initiates service on the link that has been relocated.⁹¹ PCIA supports this approach, contending that cost-sharing obligations should not attach until the licensee's operations actually "interfere" with the relocated link, *i.e.*, until the point when interference would have occurred if the original microwave system were still in place.⁹² Alternatively, BellSouth suggests that subsequent PCS licensees be required to submit their cost-sharing payments in full *prior* to commencing operations.⁹³ BellSouth argues that fulfillment of the cost-sharing obligation should be treated as part of the frequency coordination process, and that licensees should not be permitted to initiate service until their payments are made in full.⁹⁴

58. Discussion. We tentatively agree with PCIA's consensus proposal. Thus, a PCS licensee should be required to pay under the cost-sharing formula at the time that its operations would have caused interference with the relocated link. We also partially agree with BellSouth, that a PCS licensee's reimbursement obligation should be determined at the time frequency coordination is required, as discussed in more detail in Section III(A)(3), *supra*. Thus, we propose that PCS licensees contact the clearinghouse to determine reimbursement obligations prior to initiating service, although payment would not be due in full until the date that the PCS licensee commences commercial operations. We seek comment on these proposals. Should payment be due at the time the PCS licensee begins testing its system?

b. Eligibility for Installment Payments

59. Background. Under PacBell's proposal, PCS designated entities that are entitled to make auction payments in installments under our auction rules would also be allowed to pay their share of relocation costs in installments.⁹⁵ PCIA agrees with this proposal, and additionally proposes to allow UTAM to utilize installment payments, because UTAM will be

⁹¹ PacBell Petition at 8.

⁹² PCIA Comments at 10.

⁹³ BellSouth Reply at 8.

⁹⁴ *Id.*

⁹⁵ PacBell Petition at 10; *see also* BellSouth Reply at 8, n. 19.

funding relocation costs with fees that will be collected over time.⁹⁶ UTAM states that a deferred payment option is necessary because of the nature of UTAM's funding mechanism.⁹⁷

60. Under our auction rules, three different installment payment plans are currently available to C Block licensees. The first installment payment plan is available to applicants with gross revenues in excess of \$75 million but less than \$125 million.⁹⁸ This plan provides for the payment of interest based on the ten-year U.S. Treasury rate, plus 3.5 percent with payment of principal and interest amortized over the term of the license. The second installment plan is available to those applicants with gross revenues between \$40 and \$75 million.⁹⁹ This plan provides for the payment of interest equal to the ten-year Treasury rate plus 2.5 percent. The applicants eligible for this plan may pay interest only for one year with the principal and interest amortized over the remaining nine years of the license term. The third installment plan is available to small businesses with gross revenues under \$40 million.¹⁰⁰ Under the third plan, small businesses are permitted to pay for their licenses in installments at the rate for ten-year U.S. Treasury obligations applicable on the date the license is granted. Small businesses may make interest-only payments for the first six years, with payments of principal and interest amortized over the remaining four years of the license term.

61. Discussion. We tentatively conclude that PCS licensees that are allowed to pay for their licenses in installments under our designated entity rules should have the same option available to them with respect to payments under the cost-sharing formula. We also tentatively conclude that the installment payment option should be extended to UTAM, as proposed by PCIA. Allowing cost-sharing payments to be made in installments will significantly ease the burden of cost-sharing for these entities. We further propose that the specific terms of the installment payment mechanism, including the treatment of principal and interest, would be the same as those applicable to the licensee's auction payments described above. Thus, if a licensee is entitled to pay its winning bid in quarterly installments over ten years, with interest-only payments for the first year, it would pay relocation costs under the same formula. Because UTAM receives its funding in small increments over an extended period of time, we tentatively conclude that UTAM should qualify for the most favorable installment payment plan available to small businesses with gross revenues of \$40 million or less. UTAM would therefore be permitted to make its payments on the same terms as the C Block small businesses (*i.e.*, using installments, at a rate equal to ten-year U.S. Treasury

⁹⁶ PCIA Comments at 5.

⁹⁷ UTAM Reply at 3.

⁹⁸ 47 C.F.R. § 24.711(b)(1).

⁹⁹ 47 C.F.R. § 24.711(b)(2).

¹⁰⁰ 47 C.F.R. § 24.711(b)(3).

obligations applicable on the date the license is granted, and requiring that payments include interest only for the first six years with payments of principal and interest amortized over the remaining four years of the license term). We seek comment on this proposal. Specifically, we seek comment on whether the repayment schedules and interest rates that we adopted for repaying auction bids are appropriate for cost-sharing purposes.

5. Role of Clearinghouse

62. Background. PacBell recommends that a neutral clearinghouse be utilized to administer the cost-sharing proposal. PacBell suggests that the clearinghouse maintain all the cost and payment records related to the relocation of each link.¹⁰¹ The clearinghouse would later determine each PCS licensee's cost-sharing obligation.¹⁰² The majority of commenters support the establishment of a non-profit clearinghouse to collect relevant data and administer the cost-sharing system.¹⁰³ PCIA believes that the clearinghouse should be a non-profit industry organization funded by the PCS industry.¹⁰⁴ PCIA further suggests that the functions of the clearinghouse would include the collection of necessary information regarding when and where microwave facilities have been relocated, actual relocation costs incurred by PCS licensees, administration of the payment system, and participation in the resolution of disputes, such as existence of interference between PCS systems, adequacy of relocation documentation, and compliance with cost-sharing obligations under the proposal.¹⁰⁵ In its reply comments, PacBell agrees with this summary of the clearinghouse's functions.¹⁰⁶ BellSouth's proposal for the role of the clearinghouse is substantially similar.¹⁰⁷ However, UTC opposes the concept of a clearinghouse due to concerns about confidentiality.¹⁰⁸ UTC argues that the terms and conditions of negotiated relocations may involve strategic business information that the parties desire to keep confidential.¹⁰⁹

¹⁰¹ PacBell Petition at 8-10.

¹⁰² *Id.* at 10.

¹⁰³ *See, e.g.*, BellSouth Comments at 5; Sprint Comments at 6; UTAM Reply at 5.

¹⁰⁴ PCIA Comments at 5.

¹⁰⁵ *Id.* at 17-18.

¹⁰⁶ PacBell Reply at 6.

¹⁰⁷ BellSouth Reply at 6-8.

¹⁰⁸ UTC Comments at 9.

¹⁰⁹ *Id.*

63. Discussion. We tentatively conclude that if the proposed cost-sharing plan is adopted, it should be administered by an industry-supported clearinghouse. PCS licensees that seek reimbursement under the formula would be required to submit all applicable data, including contracts, to the clearinghouse, which would open a file for each relocation. The clearinghouse would then determine the amount of reimbursable costs to be paid by subsequent licensees pursuant to the terms of the cost-sharing plan. All Prior Coordination Notices would also be filed with the clearinghouse. The clearinghouse would then determine whether operation by the new PCS licensee would have caused interference to a relocated microwave facility, based on TIA Bulletin 10-F. If interference would have occurred, the clearinghouse would notify the new licensee of its reimbursement share under the formula.

64. We believe an industry clearinghouse is preferable to having the cost-sharing plan administered by the Commission. First, administration of the plan by the Commission would be a significant drain on our administrative resources. Second, we believe that the PCS industry has the capability and the incentive to support an industry clearinghouse. We do not propose at this time to designate any particular organization as the clearinghouse, but seek comment on the criteria we should use for designating a clearinghouse, and on whether it should be an existing organization or a new entity created for this purpose. We also seek comment on how the clearinghouse would be funded. One possibility would be for PCS licensees who seek reimbursement under the cost-sharing plan to pay an administrative fee to the clearinghouse for each relocated link that is potentially compensable under the plan. We believe that any fees assessed should be tied to the actual administrative costs of operating the clearinghouse. We seek comment on the appropriate fee level, as well as on any possible alternative approaches to funding the clearinghouse.

65. We also seek comment regarding potential confidentiality issues with respect to information submitted to the clearinghouse. While we understand UTC's concerns regarding confidentiality, we believe that specific information regarding relocation costs will need to be available through the clearinghouse in order for parties to verify the accuracy of the clearinghouse's reimbursement calculations. We also believe an open flow of information is important to the smooth administration of the cost-sharing plan, which in turn is likely to facilitate productive negotiations between PCS licensees and microwave incumbents. Finally, we believe that confidentiality issues should be resolved by the PCS and microwave industries rather than by the Commission. We therefore seek comment on the extent to which our cost-sharing proposal can accommodate the confidentiality concerns of the parties.

6. Dispute Resolution Under the Cost-Sharing Plan

66. Background. To the extent that disputes arise over eligibility for microwave relocation cost reimbursement, specific costs to be reimbursed, and whether or not interference would have occurred between the relocated microwave link and a PCS system, PacBell proposes that PCS licensees be encouraged to use alternative dispute resolution

pursuant to Section 1.18 of the Commission's rules.¹¹⁰ PCIA states that the clearinghouse should preside over disputes involving licensees' cost-sharing obligations.¹¹¹ PCIA also suggests that parties be required to obtain independent appraisals of valuations in the context of disputes between PCS licensees and microwave incumbents.¹¹² Commission oversight would be confined to considering complaints concerning alleged failure to comply with cost-sharing obligations as part of the PCS license renewal process.¹¹³ However, BellSouth and Southwestern Bell believe the Commission should establish specific rules for the resolution of disputes under the cost-sharing plan, including the mandatory use of alternative dispute resolution.¹¹⁴

67. Discussion. We tentatively conclude that disputes arising out of the cost-sharing plan (*i.e.*, disputes over the amount of reimbursement required, etc.) should be brought, in the first instance, to the clearinghouse for resolution.¹¹⁵ To the extent that disputes cannot be resolved by the clearinghouse, we encourage parties to use expedited alternative dispute resolution procedures ("ADR"), such as binding arbitration, mediation, or other ADR techniques. We seek comment on this proposal and on any other mechanisms that would expedite resolution of these disputes, should they arise. We also seek comment on whether parties should be required to submit independent appraisals of valuations to the clearinghouse at the time such disputes are brought to the clearinghouse for resolution.¹¹⁶ In addition, as PCIA suggests, we seek comment on whether failure to comply with cost-sharing obligations should be taken into consideration by the Commission when deciding on renewal and/or transfer of control or assignment applications.

¹¹⁰ PacBell Petition at 11.

¹¹¹ PCIA Comments at 17-18.

¹¹² *Id.* at 19-20.

¹¹³ *Id.*

¹¹⁴ BellSouth Reply at 5; Southwestern Bell Reply, Exhibit 1 at 5.

¹¹⁵ Resolution of disputes between microwave incumbents and PCS licensees over relocation negotiations is discussed in Section III(B)(4), *infra*.

¹¹⁶ See related discussion, in Section III(B)(2) *infra*, on requiring independent cost estimates if disputes arise between microwave incumbents and PCS licensees.

B. Relocation Guidelines

1. Good Faith Requirement During Mandatory Negotiations

68. Background. The Commission has not established any parameters for negotiations that occur during the voluntary period, and thus PCS licensees are free to offer the microwave incumbents a variety of incentives to expedite relocation. If a relocation agreement is not reached during this period, the PCS licensee may initiate a mandatory negotiation period, during which the parties are required to negotiate in good faith.¹¹⁷

69. Discussion. We believe that additional clarification of the term "good faith" will facilitate negotiations and help reduce the number of disputes that may arise over varying interpretations of what constitutes good faith. We tentatively conclude that, for purposes of the mandatory period, an offer by a PCS licensee to replace a microwave incumbent's system with comparable facilities (defined in further detail in Section III(B)(2), *infra*) constitutes a "good faith" offer. Likewise, an incumbent that accepts such an offer presumably would be acting in good faith; whereas, failure to accept an offer of comparable facilities would create a rebuttable presumption that the incumbent is not acting in good faith. Comparable facilities, as explained below, would be limited to the actual costs associated with providing a replacement system, and would exclude any expenses (*e.g.*, consultant fees) incurred by the incumbent without securing the approval in advance from the PCS relocater. We believe that the time for expansive negotiation is during the voluntary period and that, by the time the parties have reached the mandatory negotiation period, only the bare essentials should be required. We seek comment on our proposal. We also seek comment on the appropriate penalty to impose on a licensee that does not act in good faith.

2. Comparable Facilities

70. Background. Our rules require PCS licensees to provide microwave incumbents with "comparable facilities" as a condition for involuntary relocation.¹¹⁸ In ET Docket No. 92-9, we declined to adopt a definition of comparable facilities, because we wanted to provide the parties with flexibility to negotiate mutually agreeable terms for determining comparability.¹¹⁹ We determined, however, that in any case brought to the Commission for resolution, we would require that comparable facilities be equal to or superior to existing facilities.¹²⁰ To determine comparability, we said that we would consider, *inter alia*, system

¹¹⁷ 47 C.F.R. § 94.59(b); *see also ET Third Report and Order*, 8 FCC Rcd 6589 at ¶ 15.

¹¹⁸ *See* 47 C.F.R. § 94.59(c)(3); *see also ET Third Report and Order*, 8 FCC Rcd 6589 at ¶ 5.

¹¹⁹ *ET Third Report and Order*, 8 FCC Rcd 6589 at ¶¶ 35-36.

¹²⁰ *Id.*

reliability, capability, speed, bandwidth, throughput, overall efficiency, bands authorized for such services, and interference protection.¹²¹ When deciding such disputes, we also stated that we would consider independent estimates by third parties not associated or otherwise affiliated with either the incumbent licensee or the new service provider.¹²² Independent estimates must include a specification for the comparable facility and a statement of the costs associated with providing that facility to the incumbent licensee.¹²³

71. In order to remove ambiguity and expedite negotiations, PCS licensees urge the Commission to adopt guidelines for the elements that constitute a "comparable facility." McCaw suggests that comparable facilities should be defined as those facilities that permit continued service at interference levels no greater than users experienced on the incumbent's original facilities.¹²⁴ Southwestern Bell maintains that a comparable system should have the following components: the existing channel capacity of the relocated path, the same reliability as the relocated path, the same growth potential in terms of ability to expand the capacity of that path in the new spectrum, and the ability for backup if the existing facility already provides redundancy.¹²⁵

72. Discussion. We continue to believe that the current negotiation process is the most appropriate means for determining comparability of the existing and replacement facilities. We believe that, in the vast majority of cases, this procedure provides parties with the necessary flexibility to negotiate terms for determining comparability that are mutually agreeable to all parties without the need for government intervention or mandate. Nonetheless, we recognize that because comparability is such a key concept of our rules, some clarification of the responsibilities and obligations of the parties with regard to comparability would be helpful. We believe that some additional clarification and specificity in this matter will facilitate negotiations and help reduce the number of disputes that could arise over reimbursement costs and the quality of new facilities. Accordingly, we propose to clarify the factors that we will use to determine when a facility is comparable, *i.e.*, equal to or superior to the fixed microwave facility it is replacing.

¹²¹ *Id.*

¹²² Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, ET Docket No. 92-9, *Second Memorandum Opinion and Order*, 9 FCC Rcd 7797, ¶ 30 (1994) ("*ET Second Memorandum Opinion and Order*"), *appeal pending sub nom. Assoc. of Public Safety Communications Officials Int'l, Inc. v. FCC*, No 95-1104 (D.C. Cir. filed Feb. 10, 1995).

¹²³ *Id.*

¹²⁴ McCaw Reply at 4.

¹²⁵ Southwestern Bell Reply at 3-7.

73. As indicated above, we previously stated that to determine comparability we will consider, *inter alia*, system reliability, capability, speed, bandwidth, throughput, overall efficiency, bands authorized for such services, and interference protection. We note, however, that many of these factors are inter-related and that equivalency in each and every one of these factors is not necessary for comparability. We therefore now propose to clarify that the three main factors we will use to determine when a facility is comparable are: *communications throughput*, *system reliability*, and *operating cost*. A replacement facility will be presumed comparable if the new system's communications throughput and reliability are equal to or greater than that of the system to be replaced, and the operating costs of the replacement system are equal to or less than those of the existing system. This will ensure that incumbent users will perceive no qualitative difference between the original and replacement facilities.

74. For the purpose of determining comparability, we propose to define communications throughput as the amount of information transferred within the system for a given amount of time. For digital systems this is measured in bits per second ("bps"), and for analog systems the throughput is measured by the number of voice and or data channels. We propose to define system reliability as the amount of time information is accurately transferred within the system. The reliability of a system is a function of equipment failures (*e.g.*, transmitters, feed lines, antennas, receivers, battery back-up power, etc.), the availability of the frequency channel due to propagation characteristic (*e.g.*, frequency, terrain, atmospheric conditions, radio-frequency noise, etc.), and equipment sensitivity.¹²⁶ For digital systems this would be measured by the percent of time the bit error rate ("ber") exceeds a desired value, and for analog transmissions this would be measured by the percent of time that the received carrier-to-noise ratio exceeds the receiver threshold.¹²⁷ We propose

¹²⁶ We propose to define comparable reliability as that equal to the overall reliability of the incumbent system, and we will not require the system designer to build the radio link portion of the system to a higher reliability than that of the other components of the system. For example, if an incumbent system had a radio link reliability of 99.9999, percent but an overall reliability of only 99.999 percent because of limited battery back-up power, we would only require that the new system have a radio link reliability of 99.999 percent to be considered comparable.

¹²⁷ Under this approach, for a replacement digital systems to be comparable, the data rate throughput must be equal to or greater than that of the incumbent system with an equal or greater reliability. For example, an incumbent system with a data rate of 10 Mbps with a bit error rate of .0001 would have to be replaced with a system of at least these rates to be comparable. For analog systems, an equivalent or greater number of voice or data channels with an equivalent or greater reliability would have to be provided to have a comparable facility. For example, an incumbent system that provided 24 voice channels with a reliability of 99.9999 percent would have to be replaced with a system of at least an equivalent number of channels and reliability.

to define operating cost as the cost to operate and maintain the microwave system. For the purpose of defining comparable systems, we propose to assume that the operating cost of all microwave systems are the same provided that they contain the same number of links. We also propose to consider facilities comparable in cases where the specific increased costs associated with the replacement facilities (*e.g.*, additional tower and associated radio equipment requirements, additional rents, or land acquisition costs) are paid by the party relocating the facility, or the existing microwave operator is fully compensated for those increased costs. We propose that any recurring costs be limited to a single ten-year license term. We seek comment on these definitions.

75. We recognize that comparable replacement facilities can be provided by "trading-off" system parameters. For example, communications throughput may be increased by using equipment with a more efficient modulation technique, and system reliability may be improved by using better equipment, by adding redundancy in system design (*e.g.*, multiple receive antennas) or by providing additional coding, such as forward error correction. Therefore, a system designer may take advantage of these system "trade-offs" to provide comparable facilities. We believe this flexibility in designing replacement facilities is necessary due to the many variables involved with the system design of each individual system. For example, in congested areas where there is a limited number of available channels, it may be necessary for the new system to use a smaller bandwidth than the incumbent system. In this example, it may be possible to obtain the same throughput with the same reliability even though a smaller bandwidth is used by using a more efficient modulation technique.

76. We also seek to clarify certain items that do not fall within the comparable facility requirement. For example, we propose to clarify that the obligation to provide comparable facilities under involuntary relocation requires a PCS licensee to pay the cost of relocating only the specific microwave links in the incumbent's system that must be moved to prevent harmful interference by the PCS licensee's system. While we expect that PCS licensees may voluntarily undertake to relocate entire microwave systems that include non-interfering links outside the PCS licensee's particular service area, we do not regard this as a requirement under involuntary relocation. With respect to those links that do cause interference, however, PCS licensees must provide incumbents with a seamless transition from the old facilities to the replacement facilities.¹²⁸ Thus, it may be both more efficient and more cost-effective in many instances for the parties to move all of the links in a system at once rather than to relocate them piecemeal. We seek comment on this analysis. We also tentatively conclude that comparable facilities would be limited to the actual costs associated with providing a replacement system (*e.g.*, equipment, engineering expenses). We propose to exclude extraneous expenses, such as fees for attorneys and consultants that are hired by the

¹²⁸ See 47 C.F.R. § 94.59; see also *ET First Report and Order*, 7 FCC Rcd 6886 at ¶ 24.

incumbent without the advance approval of the PCS relocater. We consider such extraneous expenses to be "premium payments" that are not reimbursable after the voluntary negotiation period has concluded. We seek comment on our proposal and any alternatives.

77. In assessing comparability, we also seek comment on how to account for technological disparities between old and new microwave equipment. In many cases, microwave incumbents may seek to replace old 2 GHz analog technology with new digital technology on the relocated channel. We encourage such agreements, but we do not regard PCS licensees as being required to replace existing analog with digital equipment when an acceptable analog solution exists. An acceptable analog replacement system would provide equivalent technical capability to the incumbent without sacrificing any of the parameters we adopt as guidelines for comparable facilities (*i.e.*, speed, capacity, etc.). If incumbents desire to obtain digital equipment that exceeds these parameters, they must bear the additional cost. Similarly, in situations where equivalent analog equipment is not available, we propose to define comparable facilities as the lowest-cost digital system that satisfies the technical requirements of our proposed guidelines and is readily available. Thus, the cost obligation of the PCS licensee would be the minimum cost the incumbent would incur if it sought to replace but not upgrade its system. We seek comment on these proposals and on any alternatives. We also seek comment on whether and how depreciation of equipment and facilities should be taken into account. For example, if analog equipment is unavailable to replace an existing analog system, should the PCS licensee be permitted to compensate the microwave incumbent only for the depreciated value of the old equipment? If the incumbent chooses to bear the additional cost of upgrading its system, how should comparability be assessed? Should the PCS licensee be required to remedy problems if the upgraded system does not function properly?

78. As stated above, we believe that a more concrete definition of comparability will facilitate negotiations between microwave incumbents and PCS licensees during the voluntary period, because both sides will be better informed about PCS licensees' minimum obligation under our rules. We seek comment on whether additional information about the value of an incumbent's current system and the anticipated cost of relocation would also help to facilitate negotiations. For example, we could require that two independent cost estimates -- prepared by third parties not associated or otherwise affiliated with either the incumbent licensee or the PCS provider -- be filed with the Commission by parties that have not reached an agreement within one year after the commencement of the voluntary negotiation period (April 4, 1996 for A and B block licensees). In the *ET Second Memorandum Opinion and Order*, we strongly urged microwave incumbents to obtain such estimates early in the negotiation process (1) to provide a benchmark for negotiations, and (2) to help reduce the number of disputes over comparability brought to the Commission to resolve.¹²⁹ We further stated that, if a dispute does arise, we expect the incumbent licensee to have obtained *bona fide* independent

¹²⁹ *ET Second Memorandum Opinion and Order*, 9 FCC Rcd 7797 at ¶ 29-31.

estimates of its relocation costs to present to the Commission for consideration.¹³⁰ We placed the responsibility for obtaining independent cost estimates on the microwave incumbent, because the incumbent is in the best position to describe the operating requirements for the new facility. We also stated, however, that the cost of obtaining the estimates would be considered part of the cost of relocation, and therefore would be recoverable from the new service provider.¹³¹ In order for the costs to be reimbursable, however, we tentatively conclude that the third party that prepares the independent cost estimate must be mutually acceptable to both the microwave incumbent and the PCS licensee. We seek comment on whether we should require the parties to submit such cost estimates during the voluntary negotiation period. We also seek comment on what procedures should be used if the microwave incumbent and the PCS licensee cannot agree on a third party to prepare the independent cost estimate. Would such a requirement facilitate negotiations?

3. Public Safety Certification

79. Background. As we have stated in the past, we are convinced that PCS service may be precluded or severely limited in some areas unless public safety licensees relocate.¹³² At the same time, we have remained cognizant that some public safety and emergency services warrant special protection.¹³³ Thus, we have provided this select group of licensees with a longer period during which to negotiate and arrange for relocation.¹³⁴ In the *ET Third Report and Order*, we clearly identified the select group of licensees that warrant special treatment for relocation purposes.¹³⁵ Our rules limit such special treatment to Part 94 facilities currently licensed on a primary basis under the eligibility requirements of Section 90.19, Police Radio Service; Section 90.21, Fire Radio Service; Section 90.27, Emergency Medical Radio Services; and Subpart C of Part 90, Special Emergency Radio Services, provided that the majority of communications carried on those facilities are used for police, fire, or emergency medical services operations involving safety of life and property.¹³⁶ PCIA has requested that we define a process to allow PCS licensees access to information essential to confirm that a microwave licensee's link (or links) qualifies for the extended transition period

¹³⁰ *Id.* at ¶ 29.

¹³¹ *Id.* at ¶ 30 and n. 44.

¹³² *ET Second Memorandum Opinion and Order*, 9 FCC Rcd 7797 at ¶ 20.

¹³³ *ET Third Report and Order*, 8 FCC Rcd 6589 at ¶ 50.

¹³⁴ *ET Memorandum Opinion and Order*, 9 FCC Rcd 1943 at ¶¶ 36-41.

¹³⁵ *ET Third Report and Order*, 8 FCC Rcd 6589 at ¶ 52.

¹³⁶ *Id.* at ¶ 52, as modified on reconsideration by *ET Memorandum Opinion and Order*, 9 FCC Rcd 1943.

reserved for emergency public safety uses.¹³⁷

80. Discussion. We agree with PCIA that PCS licensees should have a readily available means of confirming a microwave licensee's public safety status for purposes of our relocation rules. We therefore tentatively conclude that the public safety licensee must establish: (1) that it is eligible in the Police Radio, Fire Radio, or Emergency Medical, or Special Emergency Radio Services, (2) that it is a licensee in one or more of these services, and (3) demonstrate that the majority of communications carried on the facilities involve safety of life and property, before it may receive special treatment (*e.g.*, an extended voluntary negotiation period) under the Commission's rules. The public safety licensee must provide such documentation to the PCS licensee promptly upon request. If the incumbent fails to provide the PCS licensee with the requisite documentation, the PCS licensee may presume that special treatment is inapplicable to the incumbent. We seek comment on our proposal.

81. Although we have granted this select class of licensees special protection, we nevertheless urge public safety licensees to relocate as soon as possible. These licensees must relocate eventually and, to the extent feasible, we encourage them to relocate sooner rather than later. We do not intend for public agencies to delay deployment of PCS services if at all avoidable.

4. Disputes Between Microwave Incumbents and PCS Licensees

82. To the extent that disputes arise between microwave incumbents and PCS licensees over relocation negotiations (including disputes over the comparability of facilities and the requirement to negotiate in good faith), we stated in ET Docket No. 92-9¹³⁸ that parties are encouraged to use alternative dispute resolution techniques.¹³⁹ We emphasize again that resolution of such disputes entirely by our adjudication processes would be time consuming and costly to all parties. Therefore, we continue to encourage parties who are unable to voluntarily conclude relocation agreements to employ ADR techniques during both the voluntary and mandatory negotiation periods.

¹³⁷ PCIA Late-Filed Comments, Oct. 4, 1995.

¹³⁸ *ET Third Report and Order*, 8 FCC Rcd 6589 at ¶¶ 38-39; *ET Second Memorandum Opinion and Order*, 9 FCC Rcd 7797 at ¶ 28.

¹³⁹ *See Use of Alternative Dispute Resolution Procedures in Commission Proceedings and Proceedings in which the Commission is a Party*, 6 FCC Rcd 5669 (1991). Information regarding the use of alternative dispute resolution is available from the Commission's Designated ADR Specialist, ADR Program, Office of the General Counsel, Federal Communications Commission, 1919 M Street, N.W., Washington D.C. 20554.

C. Twelve-Month Trial Period

83. Background. Our existing rules provide a twelve-month period for relocated microwave incumbents to test their new facilities.¹⁴⁰ PCIA requests that the Commission clarify these rules to state that this twelve-month trial period begins when the incumbent starts using its new system.¹⁴¹ PCIA also asks the Commission to state that microwave licensees will be required to surrender their authorizations to the Commission at the end of the twelve-month trial period, and that the Commission will issue a public notice to inform all PCS licensees that the incumbent has been successfully relocated.¹⁴²

84. Discussion. The purpose of the twelve-month trial period is to ensure that microwave incumbents have a full opportunity to test their new systems under real-world operating conditions and to obtain redress from the PCS licensee if the new system does not perform comparably to the old system or pursuant to agreed-upon terms. We agree with PCIA that this period should run from the time that the microwave licensee commences operations on its new system, and we propose to clarify our rules accordingly. We seek comment on this proposal.

85. With respect to the surrender of microwave incumbents' licenses, we are unaware of any reason why a relocated microwave licensee would require its original 2 GHz license after it has successfully tested its new system. Therefore, we tentatively agree with PCIA that microwave licensees that have retained their 2 GHz authorizations during the twelve-month trial period should surrender them at the conclusion of that period. Moreover, we do not believe that microwave licensees are required to retain their 2 GHz licenses through the trial period in order to retain their rights to relocation and comparable facilities. Our rules provide that, if the new facility is found not to be comparable during the trial period, the PCS licensee must either cure the problem, restore the incumbent to its original frequency, or relocate it to an equivalent 2 GHz frequency. In our view, all of these rights reside with the incumbent as a function of our relocation rules, regardless of whether the incumbent has previously surrendered its license. We therefore propose to clarify our rules to indicate that a microwave licensee may surrender its license as part of a relocation agreement without prejudice to its rights under our relocation rules. We request comment on this proposal.

¹⁴⁰ 47 C.F.R. § 94.59(e).

¹⁴¹ PCIA Late-Filed Comments, July 13, 1995 at 2.

¹⁴² *Id.*

D. Licensing Issues

1. Interim Licensing

86. Background. PCIA urges the Commission to grant no additional microwave links primary status in the PCS band.¹⁴³ Under our existing rules, new 2 GHz fixed facilities are licensed only on a secondary basis.¹⁴⁴ However, licensees with existing 2 GHz fixed facilities licensed before January 2, 1992, are permitted to make modifications and minor extensions to their systems and retain their primary status.¹⁴⁵ Acceptable modifications include: changes in antenna azimuth, changes in antenna beamwidth, changes in channel loading, changes in emission, changes in station location, any change in ownership or control, increases in antenna height, increases in authorized power, any reduction in authorized frequencies, or addition of frequencies not in the 2 GHz band.¹⁴⁶ Major modifications or expansions of existing 2 GHz microwave facilities are permitted only on a secondary basis, unless a special showing of need is made that justifies primary status.¹⁴⁷ Primary status entitles a facility to interference protection from a PCS facility.¹⁴⁸

87. PCIA argues that any new links granted primary status will only increase the number of links that PCS providers must relocate and will thus delay the delivery of PCS to the public.¹⁴⁹ PCIA urges the Commission to grant microwave applications only on a non-primary basis, so that the growth and operability of existing systems will not be impeded.¹⁵⁰ Southwestern Bell alleges that, for a number of reasons, microwave licensees find it difficult to establish the primary status of their microwave paths and therefore difficult to establish their right to relocation benefits under Commission rules. Southwestern Bell therefore requests that the Commission establish clear rules to delineate those microwave paths that will

¹⁴³ See PCIA Late-Filed Comments, July 13, 1995, at 2.

¹⁴⁴ See, e.g., 47 C.F.R. § 94.63.

¹⁴⁵ "2 GHz Licensing Policy Statement," *Public Notice*, Mimeo No. 23115, May 14, 1992; see also *ET Third Report and Order*, 8 FCC Rcd 6589, 6611 (1993) at ¶ 53 - 55.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ See, e.g., 47 C.F.R. § 94.63.

¹⁴⁹ PCIA Ex Parte Comments, July 13, 1995, at 2.

¹⁵⁰ *Id.*

receive primary status in the future.¹⁵¹

88. Discussion. As a general matter, we agree with PCIA that allowing additional primary site grants in the 2 GHz band now that relocation negotiations are ongoing will unnecessarily impede negotiations and may add to the relocation obligations of PCS licensees.¹⁵² Nevertheless, we recognize that some minor technical changes to existing microwave facilities may be necessary for incumbents' continued operations. We do not believe, however, that these minor technical modifications will significantly increase the cost to a PCS licensee of relocating a particular link.

89. To the extent practicable, we propose to continue applying the current rules governing primary and secondary status to modification and minor extension applications pending as of the adoption date of this *Notice*. While the rulemaking proceeding is pending, we will continue to accept applications for primary status, however we will process only minor modifications that would not add to the relocation costs of PCS licensees. Thus, we will grant primary status applications for the following limited number of technical changes: decreases in power, minor changes in antenna height, minor coordinate corrections (up to two seconds), reductions in authorized bandwidths, minor changes in structure heights, changes in ground elevation (but preserving centerline height), and changes in equipment.¹⁵³ Any other modifications will be permitted only on a secondary basis, unless a special showing of need justifies primary status *and* the incumbent is able to establish that the modification would not add to the relocation costs of PCS licensees.¹⁵⁴ In addition, we will carefully scrutinize any applications for transfer of control or assignment to establish that our microwave relocation procedures are not being abused, and that the public interest would be served by the grant. As of the adoption date of our new rules, we propose to grant all other modifications and extensions solely on a secondary basis (with the exception of the minor technical changes listed above). Secondary operations may not cause interference to operations authorized on a primary basis, and they are not protected from interference from primary operations.¹⁵⁵ We

¹⁵¹ See Southwestern Bell Reply, Exhibit 1 at 7-8.

¹⁵² As we stated in the *ET Third Report and Order*, our goals in reallocating 2 GHz for emerging technologies were to provide for reaccommodation of existing 2 GHz fixed operations in a manner that would be advantageous to the incumbent licensee, not disrupt those communications services, and foster introduction of new services and devices. 8 FCC Rcd 6589 at ¶ 4.

¹⁵³ This list of minor technical modifications is more limited than the acceptable modifications listed in *Public Notice*, Mimeo No. 23115, May 14, 1992.

¹⁵⁴ In light of the limited circumstances under which we will grant primary status, the Commission does not believe that it will receive mutually exclusive applications.

¹⁵⁵ See, e.g., 47 C.F.R. § 90.7.

believe that granting secondary site authorizations serves the public interest, because it balances existing licensees' need to expand their systems with the goal of minimizing the number of microwave links that PCS licensees must relocate. We seek comment on this proposal.

2. Secondary Status After Ten Years

90. The Commission's rules state that the Commission will amend the operation license of the fixed microwave operator to secondary status only if the emerging technology service entity provides the 2 GHz incumbent with comparable facilities.¹⁵⁶ We seek comment on whether there should be some time limit placed on the emerging technology provider's obligation to provide comparable facilities. For example, we gave private operational fixed microwave stations in the 12 GHz band five years to relocate their facilities, after which time they became secondary to the Direct Broadcast Satellite ("DBS") Service.¹⁵⁷ We tentatively conclude that microwave incumbents should not retain primary status indefinitely on spectrum licensed for emerging technology services. Thus, we propose that microwave incumbents that are still operating in the 1850 - 1990 MHz band on April 4, 2005, should be made secondary on that date. This date coincides with the date that the clearinghouse would be dissolved and provides adequate time for completion of microwave relocation. We seek comment on our proposal.

IV. CONCLUSION

91. We adopt this *Notice* to solicit public comment regarding the general desirability of establishing a cost-sharing mechanism for microwave relocation. We also solicit comment on whether to clarify or modify certain other aspects of the microwave relocation rules adopted in our *Emerging Technologies* docket, ET Docket No. 92-9.

V. PROCEDURAL MATTERS

A. Regulatory Flexibility Act

92. As required by Section 603 of the Regulatory Flexibility Act, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the expected impact on small entities of the proposals suggested in this document. The IRFA is set forth in Appendix A. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments on the rest of the *Notice*, but they

¹⁵⁶ 47 C.F.R. § 94.59(c).

¹⁵⁷ Establishment of a Spectrum Utilization Policy for the Fixed and Mobile Service' Use of Certain Bands Between 947 MHz and 40 GHz, *First Report and Order*, GEN Docket No. 82-334, 54 RR 2d 1001.

must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis. The Secretary shall send a copy of this *Notice*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act.¹⁵⁸

B. Ex Parte Rules - Non-Restricted Proceeding

93. This is a non-restricted notice and comment rulemaking proceeding. *Ex parte* presentations are permitted except during the Sunshine Agenda period, provided they are disclosed as provided in Commission rules.¹⁵⁹

C. Comment Period

94. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's rules, interested parties may file comments on or before **November 30, 1995**, and reply comments on or before **December 21, 1995**.¹⁶⁰ To file formally in this proceeding, you must file an original and four copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments, you must file an original plus nine copies. You should send comments and reply comments to Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the Reference Center of the Federal Communications Commission, Room 239, 1919 M Street, N.W., Washington, D.C. 20554. A copy of all comments should also be filed with the Commission's copy contractor, ITS, Inc., 2100 M Street, N.W., Suite 140, (202) 857-3800.

D. Authority

95. The proposed action is authorized under the Communications Act, Sections 4(i), 7, 303(c), 303(f), 303(g), 303(r), and 332, 47 U.S.C. §§ 154(i), 303(c), 303(f), 303(g), 303(r), 332, as amended.

¹⁵⁸ Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. § 601 *et seq.* (1981).

¹⁵⁹ *See generally* 47 C.F.R. §§ 1.1202, 1.1203, and 1.1206(a).

¹⁶⁰ *See* 47 C.F.R. §§ 1.415 and 1.419.

E. Ordering Clause

96. IT IS ORDERED THAT, as of the adoption date of this *Notice*, the Commission will continue to accept microwave applications for primary status in the 2 GHz band, however we will process only minor modifications that would not add to the relocation costs of PCS licensees, as described in Section III(D)(1), *supra*.¹⁶¹

F. Further Information

97. For further information concerning this proceeding, contact Linda Kinney, Legal Branch, Commercial Wireless Division, Wireless Telecommunications Bureau at (202) 418-0620.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

¹⁶¹ This constitutes a procedural change which is not subject to the notice and comment and 30-day effective date requirements of the Administrative Procedures Act (APA). See *Neighborhood TV Co., Inc. v. FCC*, 742 F.2d 629 (D.C. Cir. 1984); *Buckeye Cablevision, Inc. v. United States*, 438 F.2d 948 (6th Cir. 1971). In any event, good cause exists under 5 U.S.C. Section 553(b)(3)(B) and (d)(3), because additional primary site grants in the 2 GHz band will unnecessarily impede the purpose of the current relocation rules and any new relocation rules adopted in this proceeding.

APPENDIX A

INITIAL REGULATORY FLEXIBILITY ANALYSIS

As required by Section 603 of the Regulatory Flexibility Act, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the expected impact on small entities of the policies and rules proposed in this *Notice of Proposed Rule Making (Notice)*. Written public comments are requested on the IRFA.

Reason for Action: This rulemaking proceeding was initiated to secure comment on a proposal for sharing costs among broadband PCS licensees that will relocate 2 GHz point-to-point microwave licensees currently operating on the spectrum blocks allocated for PCS. This proposal would promote the efficient relocation of microwave licensees by encouraging PCS licensees to relocate entire microwave systems, rather than individual microwave links, thus bringing PCS services to the public in an efficient manner. We have also posed questions about the process of voluntary negotiations to date, proposed guidelines for the definition of comparable facilities, clarified some aspects of the twelve-month trial period after relocation, and have proposed licensing microwave facility modifications and additions on a secondary basis only after any cost-sharing proposal is adopted.

Objectives: Our objective is to require PCS licensees that benefit from the relocation of a microwave link to contribute to the costs of that relocation. A cost-sharing plan is necessary to enhance the speed of relocation and provide an incentive to PCS licensees to negotiate system-wide relocation agreements with microwave incumbents. This action would result in faster deployment of PCS and delivery of service to the public.

Legal Basis: The proposed action is authorized under the Communications Act, Sections 4(i), 7, 303(c), 303(f), 303(g), 303(r), and 332, 47 U.S.C. §§ 154(i), 303(c), 303(f), 303(g), 303(r), 332, as amended.

Reporting, Recordkeeping, and Other Compliance Requirements: Under the proposal contained in the *Notice*, PCS licensees that relocate microwave systems would be required to document the relocation costs paid and report them to a central clearinghouse. Later PCS market entrants would then be required to file Prior Coordination Notices with the clearinghouse and, if necessary, reimburse the initial relocating PCS licensee on a *pro rata* basis.

Federal Rules Which Overlap, Duplicate or Conflict With These Rules: None.

Description, Potential Impact, and Number of Small Entities Involved: This proposal would benefit small microwave incumbents by encouraging PCS licensees to relocate entire microwave systems, rather than individual links that interfere with the PCS licensee's operations. Microwave licensees would therefore begin operations on their new channels in

an expedited fashion. The 2 GHz fixed microwave bands support a number of industries that provide vital services to the public. We are committed to ensuring that the incumbents' services are not disrupted and that the economic impact of this proceeding on the incumbents is minimal. We must further take into consideration that not all of the incumbent licensees are large businesses, particularly in the bands above 2 GHz, and that many of the licensees are local government entities that are not funded through rate regulation. We believe that this proceeding would further our policy of encouraging voluntary agreements to relocate fixed microwave facilities to other bands during the two-year period. After evaluating comments filed in response to the *Notice*, the Commission will examine further the impact of all rule changes on small entities and set forth its findings in the Final Regulatory Flexibility Analysis.

Significant Alternatives Minimizing the Impact on Small Entities Consistent with the Stated Objectives: We have reduced burdens wherever possible. The regulatory burdens we have retained are necessary in order to ensure that the public receives the benefits of innovative new services in a prompt and efficient manner. We will continue to examine alternatives in the future with the objectives of eliminating unnecessary regulations and minimizing any significant economic impact on small entities.

IRFA Comments: We request written public comment on the foregoing Initial Regulatory Flexibility Analysis. Comments must have a separate and distinct heading designating them as responses to the IRFA and must be filed by the comment deadlines set forth in this *Notice*.

APPENDIX B

LIST OF PARTIES SUBMITTING COMMENTS

American Petroleum Institute (API Comments), June 15, 1995.
Association of American Railroads (AAR Comments), June 15, 1995.
BellSouth Corporation, BellSouth Telecommunications, BellSouth Enterprises, BellSouth Wireless, and BellSouth Personal Communications (BellSouth Comments), June 15, 1995.
City of San Diego (City of San Diego Comments), June 15, 1995.
Cox Enterprises (Cox Comments), June 15, 1995.
Cellular Telecommunications Industry Association (CTIA Comments), June 15, 1995.
Duncan, Weinberg, Miller and Pembroke (Duncan, Weinberg Comments), June 15, 1995.
Metropolitan Water District of Southern California (Metropolitan Comments), June 15, 1995.
Personal Communications Industry Association (PCIA Comments), June 15, 1995.
Southwestern Bell Mobile Systems (Southwestern Bell Comments), June 15, 1995.
Sprint Telecommunications Venture (Sprint Comments), June 15, 1995.
Utilities Telecommunications Council (UTC Comments), June 15, 1995.

LIST OF PARTIES SUBMITTING REPLY COMMENTS

Association of American Railroads (AAR Reply), June 30, 1995.
Association of Public Safety Communications Officials-International, Inc. (APCO Reply), June 30, 1995.
BellSouth Corporation, BellSouth Telecommunications, BellSouth Enterprises, BellSouth Wireless, and BellSouth Personal Communications (BellSouth Reply), June 30, 1995.
Cox Enterprises (Cox Reply), June 30, 1995.
Keller and Heckman (Keller and Heckman Reply), June 30, 1995.
McCaw Cellular Communications, Inc. (McCaw Reply), June 30, 1995.
Pacific Bell Mobile Services (PacBell Reply), June 30, 1995.
Personal Communications Industry Association (PCIA Reply), June 30, 1995.
Southwestern Bell Mobile Systems (Southwestern Bell Reply), June 30, 1995.
UTAM (UTAM Reply), June 30, 1995.
Utilities Telecommunications Council (UTC Reply), June 30, 1995

LIST OF LATE-FILED COMMENTS

BellSouth Corporation, BellSouth Telecommunications, BellSouth Enterprises, BellSouth Wireless, and BellSouth Personal Communications (BellSouth Late-Filed Comments), August 3, 1995.
Cellular Telecommunications Industry Association (CTIA Late-Filed Comments), July 11, 1995, September 22, 1995, and September 27, 1995 .
Keller and Heckman (Keller and Heckman Late-Filed Comments), August 16, 1995 and September 1, 1995.

Pacific Bell Mobile Services (PacBell Late-Filed Comments), August 8, 1995, and September 6, 1995.

Pacific Telesis Group (Pac-Tel Group Late-Filed Comments), September 11, 1995.

Personal Communications Industry Association (PCIA Late-Filed Comments), July 10, 1995, July 13, 1995, July 25, 1995, August 8, 1995, September 6, 1995, September 22, 1995, and October 4, 1995.

Telecommunications Industry Association (TIA Late-Filed Comments), July 21, 1995.

UTC, The Telecommunications Association (UTC Late-Filed Comments), July 19, 1995.

Letter from Jay Kitchen, President, PCIA, to Chairman Reed Hundt, April 29, 1995.

Letter from Jay Kitchen, President, PCIA, to Regina Keeney, Chief, Wireless Telecommunications Bureau, May 24, 1995.

Letter from Jay Kitchen, President, PCIA, to Mr. Caton, July 10, 1995.

Letter from William J. Post, Arizona Public Service Company, to Glen Groenhold, Manager, Wireless Co. LP, August 25, 1995.