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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

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| In the Matter of              | ) |                    |
|                               | ) |                    |
| Redevelopment of Spectrum to  | ) | ET Docket No. 92-9 |
| Encourage Innovation in the   | ) |                    |
| Use of New Telecommunications | ) |                    |
| Technologies                  | ) |                    |

TO: The Commission

COMMENTS OF TIME WARNER TELECOMMUNICATIONS INC.

Time Warner Telecommunications Inc. ("TWT"), by its attorneys, hereby submits its comments in response to the Notice of Proposed Rule Making adopted by the Federal Communications Commission ("FCC" or "Commission") in the above-captioned rulemaking proceeding.

**I. INTRODUCTION AND SUMMARY OF COMMENTS**

On February 7, 1992, in response to numerous requests for the allocation of spectrum for new technologies and services, the Commission released a Notice of Proposed Rule Making which proposed the designation of radiofrequency spectrum for emerging technologies.<sup>1/</sup> Based on a study conducted by its staff, the FCC proposed that 220 MHz of spectrum between 1.85 and 2.20 GHz should be reallocated to emerging technologies and that current users of this band -- private and common carrier fixed microwave

1/ Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, Notice of Proposed Rule Making, 7 FCC Rcd 1542 (1992) ("NPRM").

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operations -- should be reaccommodated in higher frequency bands.<sup>2/</sup> While specific bands were not proposed for personal communications services ("PCS") in the NPRM, the Commission stated that it expects PCS to make the first use of the emerging technologies band and that it intends to initiate a rulemaking on PCS in the near future.<sup>3/</sup> The Commission proposed a reaccommodation plan for existing users of the 1.85-2.20 GHz band, which will allow them to continue occupying these frequencies on a co-primary basis for a fixed period of years after which these users would be accorded secondary status. During the fixed transition period, however, proponents of new services could negotiate financial arrangements with existing users through which the incumbents could recover their relocation costs and the proponents of new services could gain earlier access to the spectrum.<sup>4/</sup> The Commission also briefly described several alternative plans, including a phased spectrum implementation approach, under which blocks of frequencies would be made available at specified intervals, and a plan to permit existing users to operate on a co-primary basis indefinitely while negotiations for reimbursement of reaccommodation costs by proponents of new services are undertaken.<sup>5/</sup> Regardless of the

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<sup>2/</sup> Id., ¶ 1. The specific frequencies proposed to be reallocated are the 1.85-1.99, 2.11-2.15, and 2.16-2.20 GHz bands. Id., ¶ 19.

<sup>3/</sup> Id., ¶ 29.

<sup>4/</sup> Id., ¶ 22-26.

<sup>5/</sup> Id., ¶ 27.

specific reaccommodation plan adopted, the FCC proposed to make available all fixed microwave bands above 3 GHz for fixed microwave operations currently licensed in the 1.85-2.20 GHz band.<sup>6/</sup>

TWT, a subsidiary of Time Warner Inc. ("Time Warner"), was established in 1991 to research, develop, and implement new communications technologies and services. Time Warner, an innovator in the field of communications technology, has been and continues to be the industry leader in applying fiber optic technology to cable television. Time Warner has received experimental authority for PCS testing using various frequency bands at locations in and around New York, New York; Cincinnati, Ohio; Columbus, Ohio; and St. Petersburg, Florida. Its experiments to date have examined the suitability of frequencies in the 1.85 to 2.20 GHz band (and other frequency bands) for wireless services and have tested system designs that integrate its state-of-the-art cable facilities with PCS technology to both reduce the costs of introducing PCS service to the public and use the available spectrum most efficiently. Based on its experimental work to date, TWT supports the Commission's proposal to reallocate 220 MHz of spectrum between 1.85 and 2.20 GHz to emerging telecommunications technologies, including PCS, and to establish a regulatory framework that will provide for the reaccommodation of current users of this spectrum.

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<sup>6/</sup> Id., ¶ 20.

While TWT does not rule out the possibility that it might be technically feasible to consider other frequency bands for PCS at a later date, it strongly believes, for reasons discussed below, that the 1.85-1.99 GHz band should be allocated immediately for PCS.<sup>7/</sup> Expeditious action is important to ensure that PCS service providers in the United States are able to compete with foreign service providers whose countries are moving aggressively to allocate PCS spectrum. For the same competitive reasons, the FCC also should ensure that the domestic PCS allocation is compatible with international allocations.

TWT believes that, while it is feasible for emerging technologies to share the 1.85-2.20 GHz band with fixed microwave operations during a limited period of time following the introduction of new services, to accommodate the long-term growth projected for PCS, some portion of existing users in the emerging technologies band will have to relocate to other bands. TWT recognizes that incumbent users provide important services to the American public and must have access to reliable and cost-effective communications systems. Therefore, any reaccommodation

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<sup>7/</sup> Since the release of the NPRM, PCS proponents have focused on this block of frequencies within the proposed emerging technologies band, which would appear to be best suited for immediate implementation of PCS. The 1.85-1.99 frequency band appears best suited for rapid introduction of PCS because, among other reasons, this band has lower facility density than the other two bands (i.e., 2.11-2.15 and 2.16-2.20 GHz) under consideration. See Office of Engineering and Technology, Federal Communications Commission, Creating New Technology Bands for Emerging Telecommunications Technology at 8 (TS 92-1) (1992). TWT therefore believes that this band should be specifically allocated to PCS, which has an immediate need for spectrum.

plan providing for a transition to alternative frequencies or communications media must ensure suitable reliability and must treat these users fairly. At the same time, the transition plan must be efficient and fair to proponents of new services.

Other than immediate band-clearing, which TWT does not advocate, there are at least two basic and alternative approaches to reaccommodation that would create the incentives needed to ensure a fair, efficient, and timely transition. First, as proposed by the Commission, existing users can be given a fixed period of time in which to relocate, after which their right to use spectrum in the emerging technologies band becomes secondary to emerging technology uses. During the fixed transition period, however, proponents of new services who need spectrum occupied by fixed microwave users could negotiate voluntary cost-based compensation agreements with such users to relocate to alternative frequencies. Alternatively, the Commission could grandfather existing microwave users indefinitely and authorize proponents of new services to negotiate with existing users for their reasonable relocation costs when and as the need for spectrum arises. Under this alternative, existing licensees would be required either to accept a legitimate offer from the new service provider to compensate the existing user for the reasonable costs of relocating to a higher band of comparable quality or other communications medium or to accept secondary status.

**II. TWT SUPPORTS THE COMMISSION'S PROPOSAL TO REALLOCATE THE 1.85-2.20 GHz BAND TO EMERGING TECHNOLOGIES, INCLUDING PCS**

- A. Because PCS Is a Critically Important New Service With Worldwide Consumer Appeal, the United States Cannot Afford to Delay Allocating Spectrum to PCS Until Spectrum Outside the 1.85-2.20 GHz Band Becomes Available or Technically Feasible for Use**

PCS is an important telecommunications development that will revolutionize the way both individuals and businesses communicate with each other. PCS will make it possible to exchange information with a level of speed and flexibility that until recently was not thought possible, and businesses throughout the world soon will depend on PCS to function competitively. Recognizing the central role PCS will play in our telecommunications future, industry analysts have projected that PCS revenues for basic voice services will reach \$30 billion to \$40 billion within ten years and that there will be 60 million PCS subscribers within that time period.<sup>8/</sup>

The importance of PCS and the vast global market that will exist for PCS products and services have been generally recognized, and countries throughout the world have moved quickly to position themselves to compete successfully in this market. The European Community ("EC"), for example, has issued a directive requiring the allocation of spectrum in the 2 GHz band to PCS-type services and has begun developing technical standards for PCS that are expected to be completed by the end of this

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<sup>8/</sup> See Arthur D. Little, Inc., En Banc Hearing on Wireless Personal Communications, Federal Communications Commission, Gen. Docket No. 90-314 (Dec. 5, 1991).

year.<sup>9/</sup> Thirty-two European delegations to the recently concluded 1992 World Administrative Radio Conference ("WARC") were united in their support of a unified allocation of spectrum to future public land mobile telecommunications systems ("FPLMTS"), which incorporates PCS systems.<sup>10/</sup> This unified position will help to ensure that European companies are positioned to take advantage of the PCS market worldwide. In addition, Japan, which last year took a common position with Europe on FPLMTS,<sup>11/</sup> has allocated 100 MHz of spectrum in the 2 GHz band to emerging technologies and may allocate as much as another 400 MHz in this frequency band to new mobile services and emerging technologies.<sup>12/</sup>

The United States cannot afford to fall behind its global competitors in the race to develop PCS products and services. The FCC correctly recognizes that the lack of authorized spectrum for PCS is a significant disincentive to U.S. companies to develop and fund new technologies.<sup>13/</sup> Without the prompt establishment of sufficient and suitable spectrum for PCS, U.S. companies will not have the certainty and incentive needed

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<sup>9/</sup> Council Directive 91/287, art. 2, 1991 O.J. (L 144), 45, 46; Council Recommendation 91/288, 1991 O.J. (L 144), 47.

<sup>10/</sup> See Communications Week at 5 (Feb. 10, 1992).

<sup>11/</sup> See Financial Times (March 12, 1992).

<sup>12/</sup> See Letter from Alfred C. Sikes, James H. Quello, Sherrie P. Marshall, Andrew C. Barrett, and Ervin S. Duggan to Honorable Ernest F. Hollings (April 20, 1992).

<sup>13/</sup> NPRM, ¶ 7.

to devote substantial resources to the development of PCS products and services. With a U.S. PCS market that is estimated to serve as many as 60 million people by the end of the decade, it is apparent that U.S. entry into the global PCS marketplace will be dictated first and foremost by the FCC's allocation of spectrum for and authorization of a domestic PCS service. Therefore, if the United States does not move quickly to enable U.S. companies to provide PCS domestically by authorizing the necessary spectrum and establishing rules for new PCS service, U.S. companies will lose the opportunity to establish themselves as major players in the world PCS market and may effectively be foreclosed from this market. Such a result would be detrimental to the United States' position as a world leader in both the technological and economic spheres. It is therefore imperative that suitable and sufficient spectrum be made available for PCS without delay.

**B. It Is Imperative that Spectrum Be Allocated to Emerging Technologies in the United States in the Same Frequency Band as the Rest of the World In Order for U.S. Companies to Compete Effectively**

The Commission should adopt its proposal to reallocate the 1.85-2.20 GHz band to emerging technologies, including PCS, because it is important for the PCS frequency bands allocated domestically to be consistent with those being assigned to PCS by other countries throughout the world. An inconsistent U.S. allocation could result in higher equipment costs domestically and could impair the U.S. PCS equipment industry's ability to

achieve its significant export potential. Domestic manufacturers will consider the U.S. market as the primary market for their products and may not achieve the economies of scale required to manufacture a secondary line of equipment conforming to a different international allocation for export markets. In order to compete effectively, therefore, U.S. companies must be able to offer equipment and services that are consistent with worldwide PCS allocations.

Frequency allocations for PCS throughout the world have centered on the 2 GHz band. In March of this year, WARC allocated the 1.70 to 2.69 GHz band to mobile services on a primary basis and identified the 18.885 to 2.025 GHz and 2.11 to 2.20 GHz bands for FPLMTS.<sup>14/</sup> As already noted, thirty-two European countries supported this allocation, and the EC and Japan have taken important first steps to implement the use of this band for PCS. The United States' allocation of spectrum for PCS must be compatible with these allocations in order for U.S. companies to compete effectively in the world PCS market. Furthermore, if the U.S. allocation of spectrum is to be fully compatible with the WARC allocation in the long term, the spectrum allocated to PCS generally must be available for the exclusive use of PCS.

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<sup>14/</sup> Final Acts of the World Administrative Radio Conference 1992, Preliminary Text, Addendum + Corrigendum at 17 (March 3, 1992).

**C. The 1.85-2.20 GHz Band Is Currently the Most Appropriate Spectrum for Emerging Technologies From a Technical Standpoint**

TWT believes that the 1.85-2.20 GHz band, which the Commission has identified for allocation to emerging technologies, is the most appropriate band for that use, given the existing constraints on and competing demands for radiofrequency spectrum. The choice of the 1.85-2.20 GHz band for emerging technologies was based on the following factors: (1) its suitability for the manufacture of inexpensive, state-of-the-art equipment for new mobile services; (2) the amount of spectrum available in the 1.85-2.20 GHz band; (3) the immediate availability for reallocation of this non-government spectrum; (4) the present technical or economic infeasibility of other spectrum for emerging technologies; and (5) the ability to reaccommodate existing fixed microwave operations in alternative frequency bands with a minimum of cost and disruption.

These frequencies are especially well suited for PCS systems. While advances in technology may make other bands suitable for reallocation to PCS in the future, it is not currently feasible, either technically or economically, for PCS to use portions of non-government spectrum other than the 2 GHz band. State-of-the-art PCS equipment generally limits operation to frequencies under 3 GHz, and spectrum below 1 GHz generally is too crowded.

**III. THE COMMISSION SHOULD ADOPT A TRANSITION PLAN WHICH CREATES INCENTIVES FOR A FAIR AND EFFICIENT REACCOMMODATION OF INCUMBENT USERS OF THE 1.85-2.20 GHz BAND**

Because the United States is competing against countries which are pursuing aggressive allocation approaches, such as band clearing, the Commission cannot afford to indulge in measures that will unduly delay U.S. companies' entry into the world PCS market or hinder their ability to compete in that market. In order for PCS and other emerging technologies to grow and develop competitively, sufficient spectrum must be made available to them as the demand for such services grows.

While it may be feasible for emerging technologies, including PCS, to share the 1.85-2.20 GHz band with fixed microwave users during a limited period of time following the introduction of new services, TWT believes that some portion of existing users will have to relocate to other bands to accommodate the long-term growth projected for PCS and other new services.<sup>15/</sup> As discussed below, any transition plan must be sufficiently flexible to address special user requirements, such as the unique needs of public safety licensees. Nevertheless, as a general matter, the Commission's proposal to relocate incumbent

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<sup>15/</sup> In an effort to minimize the cost and disruption involved in relocating fixed facilities to higher frequencies, various innovative sharing techniques and technologies have been proposed. Nevertheless, based on TWT's analysis of the many spectrum studies, its understanding of the performance characteristics of installed microwave equipment, and the demand expected for PCS services, TWT believes that it will not be possible for both services to co-exist indefinitely in all areas. Studies purporting to substantiate other conclusions may be based on overly optimistic and/or technically faulty assumptions.

users to frequencies above 3 GHz is sound from a technical and economic standpoint. TWT recognizes that these users provide important services to the American public, however, and agrees that their need for reliable and economical communications systems must be accommodated. Therefore, any reaccommodation plan must ensure suitable reliability of the alternative frequencies and must treat these users fairly. At the same time, the reaccommodation plan should foster incentives that will promote speed and efficiency in the transition and guard against unfair windfalls to existing users. These goals can be achieved through the implementation of one of the two basic and alternative accommodation plans described below.

**A. Frequencies Above 3 GHz Are Suitable for Existing Fixed Microwave Users**

The Commission's plan to reaccommodate fixed microwave users to higher frequency bands is generally sound, both from a technical and economic standpoint. The private and common carrier fixed microwave operators using the 1.85-2.20 GHz band can be reaccommodated in higher frequency bands with minimal disruption because the higher bands are authorized for similar services and can support signal propagation over similar path lengths. The relocation of fixed microwave operators to the higher frequency bands will not be difficult, as demonstrated by various studies, including a comprehensive analysis conducted by TWT of the distribution of fixed microwave systems operating between 1.85 and 1.99 GHz in the New York City area. This study shows that all of the fixed microwave users in this highly

congested area can be accommodated on systems with equivalent or superior performance in the 6 GHz band. Thus, TWT believes that the Commission's plan to shift incumbent microwave users can be accomplished in virtually all regions of the country.<sup>16/</sup> The focus of the Commission's attention, therefore, should be on the adoption of a plan that assures incumbent users of access to reliable communications systems, while minimizing costs and

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<sup>16/</sup> See Supplement to Request for Pioneer's Preference, Appendix D, filed by Time Warner Telecommunications Inc. (May 4, 1992). Moreover, as already noted and as the Commission has recognized, there are non-microwave alternatives for many of the fixed microwave services, such as fiber, cable, and satellite communications. NPRM, ¶ 17 & n.17.

In addition, based on its New York City study, TWT believes that the FCC could significantly ease the transition process for 2 GHz private fixed users by using a classic tool of common carrier microwave operations -- coordination rights. Historically, common carrier microwave operators were allowed to preserve their right of access to additional frequencies through the coordination process. Typically, a carrier would license only the first two or three channels needed for immediate operation of a particular microwave link, but would coordinate all of the channels that might ultimately be used on that link. Thus, the operator had "coordination rights" to all of the channels and other microwave applicants were required to protect these "coordination rights" as if they were licensed operations, even though in some cases operation on the channels would not commence immediately. See Revision of Part 21 of the Commission's Rules, Report and Order, 2 FCC Rcd 5713, 5715 (1987).

There are two reasons why TWT believes that the Commission should consider permitting existing 2 GHz private fixed users to have coordination rights to links in the higher microwave bands proposed for their use. First, granting coordination rights would allow the planning for the ultimate migration of existing users in metropolitan areas to be accomplished at one time, thereby improving the prospects for an economical migration. Second, coordination rights would allow for a more orderly migration over a number of years, rather than creating a "land rush" atmosphere where all existing users attempt to re-engineer the existing links in the higher bands immediately out of fear that they may be precluded from doing so later.

disruption to these users, facilitating an efficient and timely transition, and avoiding unfair windfalls for the incumbent users. Either of the two alternatives described below, if implemented properly, could accomplish these objectives.

**B. A Fixed Transition Period, If Implemented Properly, Could Fairly and Efficiently Make Spectrum Available for PCS**

TWT believes that a transition plan that permits existing users to continue to operate on a co-primary basis for a predetermined period of time could fairly and efficiently make spectrum available for PCS services in the emerging technologies band as the demand for such services grows. During this transition period, providers of new services and incumbent users could voluntarily negotiate agreements to compensate the existing users for the reasonable costs of their reaccommodation to other frequencies or to alternative transmission media. At the end of the transition period, fixed microwave users would be accorded secondary status, but could continue operating in the 2 GHz band until the spectrum was needed by PCS or other new service providers. TWT recognizes that in rare instances it simply may not be possible for an existing user to relocate to other frequency bands, in which case these users should be accorded permanent co-primary status in the 2 GHz band.<sup>17/</sup> In addition, TWT believes that, under this plan, existing public safety licensees can and should be accorded permanent co-primary status

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<sup>17/</sup> The standards for determining the infeasibility of relocating should be stringent, however, so that the exception does not swallow the rule.

in this band. Unlike the band-clearing approach being employed by some countries to make spectrum available immediately for PCS services, this transition proposal is fair and equitable to existing users, while encouraging them to relocate sooner rather than later, thus freeing up spectrum for PCS expeditiously.

If the Commission adopts this type of transition proposal and permits existing microwave operators to retain co-primary status with new service providers during a fixed period of time, this period should not be so long as to impede the growth of emerging technologies. While the Commission has found that a ten-year transition period would allow for a complete amortization of 2 GHz equipment,<sup>18/</sup> a shorter period would offer existing users a greater incentive to accept reasonable offers to relocate and could thereby facilitate the inauguration of PCS services. At the end of this period, the license status of existing users would revert to secondary. As a consequence, absent private agreement, these licensees would have to accept all levels of interference from PCS users and would not be permitted to cause interference.

**C. Indefinite Grandfathering of Existing Users Coupled with Reasonable Reaccommodation Plans Could Also Make Spectrum Available for PCS Fairly and Efficiently**

The incentives for a fair, efficient, and timely relocation of existing users created under the plan described above could also be developed using an alternative scheme. Under this approach, all currently licensed 2 GHz fixed microwave users

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<sup>18/</sup> NPRM, ¶ 24.

would be grandfathered indefinitely until a PCS service provider presents a plan that will accommodate the microwave licensee's needs and offers appropriate reimbursement of relocation costs. When presented with such a plan, the incumbent would be required either to relocate in a timely fashion or to accept secondary status.<sup>19/</sup> If there is no demand for the spectrum, however, the incumbent user would not be required to relocate.<sup>20/</sup> This system will ensure that incumbent users will not be harmed financially by relocation.

TWT believes that the terms of compensation should be decided initially by mutual agreement of the parties to the negotiation. However, it is important to ensure that incumbent users of the 2 GHz band are not permitted to recover windfall payments, or indeed more than the reasonable costs of their relocation, from new service providers. Therefore, any negotiation process adopted by the Commission -- whether in connection with a fixed or an indefinite transition period -- should preclude fixed microwave users from recovering more than

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<sup>19/</sup> See NPRM, ¶¶ 22-27. This alternative is analogous to the procedures adopted by the Commission for the involuntary migration of ITFS point-to-point operators where the ITFS spectrum is needed by an MDS operator. See Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands, Report and Order, 5 FCC Rcd 6410 (1990), Second Report and Order, 6 FCC Rcd 6792 (1991).

<sup>20/</sup> Under this approach, there is no need to accord any category of fixed microwave users permanent co-primary status because any fixed user who must be relocated will receive just and reasonable compensation, even if the relocation occurs many years after PCS services are introduced.

reasonable relocation costs through negotiations with new service providers.<sup>21/</sup>

#### IV. CONCLUSION

TWT supports the Commission's plan to reallocate frequencies in the 1.85-2.20 GHz band to emerging technologies and to reaccommodate incumbent users of this band through a negotiation process. TWT recognizes that existing users of this spectrum provide important services to the American public and must have access to reliable and cost-effective communications systems. Therefore, any reaccommodation plan providing for a transition to alternative frequencies or communications media must ensure comparable reliability and must treat these users fairly. At the same time, the transition must be efficient and fair to proponents of new services. TWT believes that a negotiation process, permitting new users to reimburse existing users for the reasonable costs of their relocation during a transition period, will create the necessary incentives to achieve these objectives. This negotiation process can be coupled with a fixed transition period, after which incumbent users are accorded secondary status in the 2 GHz band. However, any transition period adopted by the FCC should not be so long

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<sup>21/</sup> The Commission's statement that it intends to adopt a reaccommodation plan that will be "the most advantageous" for existing 2 GHz users, NPRM, ¶ 22, raises the concern that the Commission might adopt a plan that encourages these users to make unreasonable demands when negotiating with new service providers. TWT believes that it is important to ensure that such demands do not distort what otherwise could be an orderly and equitable reaccommodation process.

that it impedes the development of emerging technologies. Alternatively, existing users can be grandfathered indefinitely, as long as they are required to relocate (or accept secondary status) if and when they receive a reaccommodation request that offers suitable reliability and appropriate reimbursement. Either of these approaches will make spectrum needed for emerging technologies available on an expeditious basis by providing existing users with an incentive to negotiate in good faith the terms of their relocation.

Respectfully submitted,

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Dated: June 8, 1992

**CERTIFICATE OF SERVICE**

I, Rachel Barksdale, a secretary with Akin, Gump, Hauer & Feld, L.L.P., hereby certify that a copy of the foregoing "Comments of Time Warner Telecommunications Inc." was served by hand, this 8th day of June, 1992, upon each of the following:

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