

REPORT AND RECOMMENDATIONS

To The

LOS ANGELES COUNTY

METROPOLITAN TRANSPORTATION AUTHORITY

Regarding

DEVELOPMENT OF TELECOMMUNICATIONS

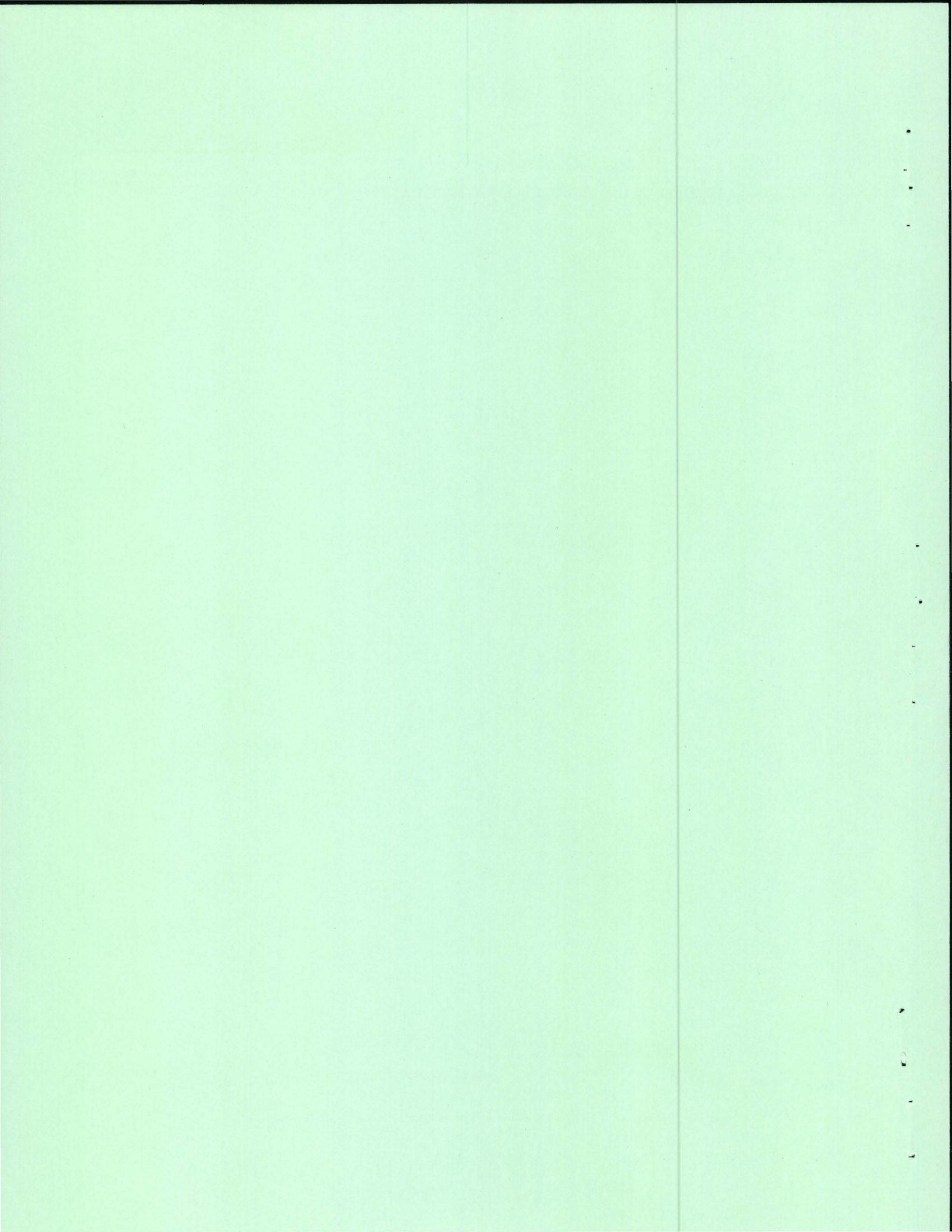
PROPERTIES AND RIGHTS-OF-WAY

Prepared by

KINGSTON COLE & ASSOCIATES

June 29, 1998

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1. Chart with Comparative Rates Received by Other Agencies
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I. EXECUTIVE SUMMARY

The information services marketplace—or the movement of our essential means of communicating with each other—is in a state of rapid and exciting growth. The Internet (and the Next Generation Internet), the confluence of computers, entertainment media and telecommunications technologies and applications are all manifestations of this phenomenon that we now hear and read about daily.

While most of the activity has been in the private sector, public agencies, particularly those with valuable rights-of-way, have become more involved in creating the evolving national telecommunications infrastructure. In the last ten years, an increasing number of transit and other government agencies have created joint development opportunities for themselves that involved partnership arrangements with the industry. Major legal and regulatory decisions, including deregulation of the industry and the U.S. Telecommunications Act of 1996, have propelled these activities.

The Los Angeles County Metropolitan Transportation Authority (MTA) has been actively involved in joint development activities since 1993. In the most recent Call for Projects, two proposals were received. The more serious offer, from MFSNT, did not conform to the requisites established in the Call. Moreover, financial stability questions, imprecise revenue assumptions and projections and problematic legal terms and conditions further diminished the appeal of MFSNT's proposal.

We conducted an analysis of other government agencies activities throughout the United States—focusing on other transit agencies and the revenues and in kind contributions their programs are receiving. We also conducted an investigation of vendor interest in the MTA's various rights-of-way. The results:

- More than sufficient examples of success for any proposed program; and,
- Five to six telecommunications carriers, primarily the newer ones created over the last three years, would be interested in business arrangements with the Authority.

Based on these findings, Kingston Cole & Associates makes the following recommendations. The MTA should:

- Reject the two non conforming proposals to the Call for Projects
- Develop its own fiber optic licensing program that focuses on revenue producing relationships with the industry in this sequence:

1. Development of existing and available duct space (Blue, Red and Green Lines)

2. Development of various rights-of-way through unimproved land (Green Line and Blue Line extension to Pasadena)

- Seek additional joint development opportunities with other public agencies, including Metrolink, Caltrans, Metropolitan Water District and the cities of Los Angeles, Pasadena, Burbank, etc.
 - This includes taking reasonable advantage of existing contractual arrangements with existing duct space users to develop mutually remunerative arrangements

We believe that the already-enacted joint development policies of the MTA comprise sufficient intent and direction to establish this program. Day-to-day management of the program should be handled by Real Estate staff; with policy development and overall coordination handled by Regional Transportation Planning & Development. Any effort that involves so many public policy considerations and the political implications of a competitive and entrepreneurial industry must also enjoy the highest level of MTA management support.

Lastly, we believe the recommended program has the ability to generate substantial revenues for the MTA. While a full analysis of the various rights-of-way, the facilities that are located within them and the contractual arrangements between the MTA and a number of other agencies (e. g., Caltrans, City of Los Angeles, Metrolink) may have a substantial effect on a final estimate, we believe revenues in the amount of \$2 million per year can be realized within two years. Within five years, a potential revenue stream of \$4 million is also a reasonable expectation.

II. INTRODUCTION

A. Scope of the Report

Kingston Cole & Associates (KC&A) was tasked to perform three functions by the Los Angeles County Metropolitan Transportation Authority. These tasks include:

- Conduct a market survey of various government agencies throughout the United States to determine their various activities, rates, plans, etc., for collecting revenues from the telecommunications industry for deployment of fiber optic cabling in the respective agencies' rights-of-way (ROW);
- Analyze legal and regulatory conditions to determine what impediments, rules, regulations, etc. would effect a fiber optic (and wireless site) development program;
- Analyze the Metropolitan Fiber Systems Network Technologies (MFSNT) proposal submitted to the MTA to determine whether the agency should enter into negotiations with that company, i.e., develop a public/private partnership arrangement.

KC& A was also tasked to provide recommendations regarding all these findings, including analysis of alternative approaches to the above mentioned arrangement with MFSNT. This report deals primarily with revenue opportunities with the wireline (a generic term that includes copper wire, coaxial cable and fiber optics-based facilities) industry, i. e., usually the fiber optic conduit systems along government agency own longitudinal rights-of-way (ROW) that are occupied by various commercial carriers in multiduct conduit arrangements.

We have also included analysis of the wireless site development market as an additional revenue producing opportunity. Whether that avenue should be pursued by the MTA is, however, a subject for future, substantive discussions.

B. Overview of the Telecommunications Industry

A primary finding of the Government Agency Survey (Section III., below) was that almost all public agencies contacted were actively seeking to negotiate revenue producing deals with private industry, albeit with varying degrees of expertise and success. Most negotiations or transactions discussed were of the rudimentary, leasing type for a fixed amount. Several agencies, however, have sought more complex, revenue sharing arrangements that involve shared risk--and greater potential rewards for both the public and private partners.

Our interviews revealed rates for conduit space rental as high as \$10.50 per linear foot per year for major "choke points" that control access between Manhattan and its adjoining boroughs (New York Metropolitan Transit Authority). Several agencies with existing dark fiber within their rights-of-

way (ROW) are either contemplating (e. g., Metropolitan Boston Transit Authority [MBTA]), or actually leasing (e. g., Washington, D. C. Metropolitan Transit Authority [WMATA]) their dark fibers to telecommunications carriers. Only one government agency contacted was actually leasing dark fiber to private companies; the City of Burbank was leasing dark fibers to various movie studios located along its various ROW. Only one municipality, the City of Anaheim, has developed a public/private partnership with a duly certificated (by the California Public Utilities Commission [CPUC]) competitive local exchange carrier (CLEC), Spectranet International (now known as First World), to offer competitive telecommunications services over city-owned fiber that is operated by Spectranet. The city shares in the gross revenues of the partnership.

Bandwidth (The industry term for the capacity of a medium, such as fiber optics, to carry bits of information) appears to be driving an explosive demand from carriers throughout the country for more conduit space and larger fiber optic cables filled with more fibers. Leasing of conduit space (in which a carrier places as many fiber strands as it wishes) was the standard arrangement for most agencies only three years ago. Carriers now demand to put more fiber than ever in their conduit space. A 144 strand cable was the normal order two years ago; two conduits with 216 strands in each is now becoming the norm. The Bay Area Rapid Transit District's (BART's) fiber optic system, once thought to be more than sufficient for market demand, is now almost filled to capacity—and negotiations for an enlarged system are expected to begin this summer.

Leasing fiber strands, either individually or in groups (standard arrangement is 12 strands in a sheath within a larger [e. g., 12 sheaths in a 144 strand cable] cable arrangement) is the newest method of satisfying this demand. As they have become more sophisticated in understanding and negotiating arrangements, some agencies have emulated the private sector in marketing strands or sheaths to carriers. One or two agencies are contemplating leasing dark fiber strands to private parties, e. g., the movie studios that have large bandwidth needs to review and edit film on a real time basis. This is the last theoretical step before a public agency actually enters the telecommunications business—something only a few small towns in the Southeast and Midwest have even contemplated.

During the two years since the passage of the U. S. Telecommunications Act of 1998, competition has indeed accelerated in two major areas: 1.) provision of high speed data services, delivered primarily through fiber optic and satellite systems; and, 2.) growth in the wireless marketplace. The former is occurring primarily because high speed data traffic is growing almost ten times faster than voice traffic. The Internet, growing almost 100% every 100 days, is one of the major reasons for the data explosion. As discussed in the next section, the demand for bandwidth, or higher and greater capacity in fiber optic systems to carry more and more information, is increasing at almost exponential speed.

The wireless marketplace is growing because of Federal Communications Commission (FCC) mandated competition. That is, the FCC has license radio spectrum to new companies that are in turn building new networks and offering wireless services to the public.

III. THE TELECOMMUNICATIONS INDUSTRY TODAY

A. The Major Technologies

1. Fiber Optics:

One medium of transmission, fiber optics, has become the predominant means of carrying data and voice communications over the last decade. In simplest form, fiber optic cable is made of very fine strands of glass, thinner than human hair. In an ordinary telephone conversation using fiber optics, speech is electronically broken up into tiny bits. Each bit triggers an extremely brief burst of light that moves at the speed of light along the glass fiber, or filament. At the other end, the light is turned back into speech. This method of transmission provides a much clearer sound than does copper wire, which basically relies on electrical pulses. But the real value of fiber optic cable is its huge capacity. Each slender glass thread can handle many more bits of information than a much thicker copper cable.

That capacity becomes important when moving vast amounts of data between computers. And for the future of the Information Age, only fiber optic cable is practical for handling the huge number of bits involved in transmitting two-way, televised phone conversations, known as videoconferencing. Another high capacity application that is expected to occur in the next two to three years is high definition television (HDTV), discussed in more detail below.

Construction of the fiber optic information super highway (Now inelegantly referred to as the "National Information Infrastructure.") is a national priority. Vice President Gore became the point man in 1993 for the Clinton Administration on this issue. He and a medley of telecommunications experts pronounced the "Super Data Highway" as essential to America's future competitiveness in the world markets. The first segments of the U. S. effort were assembled at five experimental sites in the United States during the late 1980's. Spearheading the initial effort was Dr. Robert E. Kahn, who spent almost seven years cobbling together a consortium of major corporations, government agencies and educational institutions to create the essential infrastructure in 1991.

The U. S. Department of Defense provided much needed funding during the initial stages; believing that such an electronic pathway would be necessary in future national emergencies. As the Cold War's threat diminished, civilian interest in this unique structure began to grow. The universities and various national laboratories and think tanks were the initial users of the network system. In the last four years, commercial uses and management of this system, now known generically as the Internet, have radically changed the way that Americans (and many others throughout the world) think, communicate and exist in the Information Age.

2. The Next Generation Internet

In the last two years in particular, the Internet has become increasingly congested and crowded. Anticipating this gridlock, the Department of Defense and some of the same original Internet providers are now seeking to construct the Next Generation Internet (NGI), a pure optical network that moves data at exponentially higher speeds. The Defense Department's research arm, DARPA (Defense Applied Research Planning Administration), has provided the preponderance of funding to date for these efforts. Major corporations and educational institutions, including Intel, Microsoft, Sun Micro Systems, U.C. Berkeley and Cal Polytechnic are keenly interested in a much more robust Internet. They are all active participants in this effort with the Lawrence Livermore National Laboratory (LLNL), the "brains" behind much of the research on the West Coast.

This Bay Area version of the NGI needs a fiber optic system around the Bay to allow the high speed LLNL computers to test various new technologies and applications—for the federal government as well as commercial purposes. Pacific Bell and Sprint have been providing their fiber networks for almost two years. They are now withdrawing from the program. BART is now conducting formal discussions with the Lab and their NGI managing partner, Nortel, to contribute four of the District's own strands for a three years period to replace approximately 50% of the Pacific Bell fiber.

The purpose of the Lab's version of the NGI is not just to build a bigger, faster Internet. It is to develop a "test track," using state-of-the-art fiber optics and equipment, that will produce new and commercially viable applications and technologies. That is why Intel, Hughes, Microsoft and others are contributing their staffs and expertise to the effort. Researchers from UC Berkeley, Ames Research and Stanford are also participating. They all want the real time, pragmatic benefits of the "test track" research and development.

In the private sector, the entire telecommunications industry is moving at breakneck speed to create an even larger, more commercial "Interactive Network," that will allow consumers to communicate directly with retailers, order and receive movies and actually participate in TV game shows. The mergers and acquisitions of the past five years, e. g., Worldcom's pending merger with MCI and the consolidations of the Regional Bell Operating Companies (RBOCs), also known as "Baby Bells," from seven regional companies to four (and probably fewer in the near future) telecommunications behemoths may be mere precursors to future transactions in the global telecommunications marketplace.

Information and data are not citizens of any particular country. The global telecommunications marketplace therefore knows no borders for capital formation and ownership.

3. Cellular and Personal Communications Services (PCS) Technologies:

a. Cellular Service

Cellular telephone service was the first wave of the so-called "wireless" technologies to be introduced to the U. S. market place in the early 1980's (in the 1970's in Europe). Essentially, every cellular service area is divided into multiple "cells". Each cell is served by its own low-powered radio transmitter and receiver that connects the user's cellular telephone to the local telephone network. When a person talks on a cellular phone, radio waves are sent to the cell site. As a cellular customer moves from cell to cell, sophisticated electronic switching equipment transfers, or "hands off" the call to another nearby cell site with a stronger signal. Since the "hand off" takes only a fraction of a second, the conversation is generally not interrupted.

b. Personal Communications Services (PCS)

Personal Communications Services comprise the newest set of digital technologies now poised to enter the United States market place. The concept, or vision, for PCS is one of ubiquity: To allow everyone to be able to send and receive calls without wires--any time and any where. Essentially, PCS promises to provide new wireless telephone services that will be delivered via miniaturized transmission equipment and much smaller and more affordable hand held receivers. The only real difference between cellular and PCS signals is that the latter are transmitted at a higher frequency and lower power than the former. For now, PCS phones are somewhat cheaper than cellular ones. But as the cellular industry switches to digital technology, the price differences will soon be erased.

The Federal Communications Commission (FCC) is now concluding a series of auctions of various segments of the radio spectrum to permit PCS systems to operate. More than \$60 billion have been paid for these licenses throughout the United States to date.

4. Fiber Optics and Wireless Technologies: The Connection

A two inch in diameter fiber optic cable (comprising as many as 216 strands of fiber) is capable of carrying over 500,000 simultaneous conversations. It also lasts longer, requires less maintenance and provides much better acoustics than its copper wire counterparts. Because of all these perceived benefits, the major, traditional telecommunications companies, e. g., AT&T, MCI, SPRINT and the "Baby Bells", are migrating to fiber optic systems as quickly as their capital budgets and business plans permits.

For the same reasons, the next generation of telecommunications technologies are moving toward fiber optic systems as well. The cellular carriers and newly approved PCS providers have expressed interest in building, or leasing access, on fiber optic networks. They often will lease/license four to six strands of fiber in a system to tie their various networks together and provide seamless service to their customers. While not the same type of customer as wireline

carriers, they are an important part of the marketplace demand for fiber optic transmission facilities.

B. Future Technologies and Fiber Optic Bandwidth Requirements

High Definition Television (HDTV) is the most advanced commercial application that should be fully implemented within the next five years. The FCC has mandated that the major networks (CBS, NBC, etc.) must provide this type of service in the next two years, albeit not on a full scale, commercial basis. Moreover, television sets capable of delivering HDTV signals (the image is four to six times more precise than current television signals) will be prohibitively expensive, e. g., \$2000 per unit, for the next two to three years.

Telecommunications prognosticators, however, all agree that increased bandwidth (more capacity) will be required to deliver HDTV's signals to Americans' homes and offices. Only fiber optic cable, with its almost unlimited capacity really fills the bill.

Whether the market demand for more capacity or bandwidth drives the market--or HDTV is product without a demand will, of course, be determined in the marketplace. Nevertheless, billions of dollars are being gambled by the broadcast industry on the efficacy and success of HDTV. Once the bandwidth problem is solved, however, more applications, including full motion interactive video, will almost certainly become more commonplace. The "Information Super Data Highway" is expected to grow and evolve at an almost exponential scale over the next decade.

IV. EVALUATING RIGHTS-OF-WAY

A. Evaluation Techniques and Categories

All clients, whether they are government agencies, public utilities, private companies or individuals, want to know what their rights-of-way are worth. The answers are often not simple, linear responses.

Transactions involving fiber optics and rights-of-way are now occurring in myriad ways. While "annual per linear foot dollars" remains the industry standard measurement, private parties are offering government agencies different types of "in kind" compensation as well; including dark and lighted fiber at various speeds and rates. Government agencies are also adding surplus duct space to existing construction projects (New Jersey DOT and Massachusetts DOT) for leasing purposes. And private companies are putting "dark" fiber (inert, unlighted fiber reserved for future lighting) in existing or planned conduit space. All these factors affect the eventual value of the underlying rights of way--and the benefits of any bargain to both parties.

The first measurement of value is as basic to fiber optics as it is to any real estate building project: What is the total cost of construction? The total cost of constructing fiber optic systems varies extensively, based on terrain conditions. For example, burying cable in rural farmland is less expensive than digging through rock or crossing rivers and streams. Construction expenses also increase as more populated areas are encountered. Aerial transmission facilities (poles or attachments to existing structures such as bridges) are considerably less expensive to construct, albeit much less secure in inclement weather, than underground conduit facilities.

The comparative cost to a carrier of competing ROW offered by railroads, other government agencies and the local Bell operating company must also be included in the final analysis, since it is the overall construction savings for the private party that determines the ultimate value of the deal to both parties in a public/private partnership agreement.

Using these factors and our existing data base of comparative agreements negotiated in other parts of the country, ranges and categories (by type of facilities in the ROW) of average costs can be calculated. These are baseline amounts that carriers are generally willing to pay to ROW owners.

Carriers' costs are in turn ROW owners revenues. The data below are were developed on a generic, national basis, without reference to MTA's specific routes and dedicated right of way. They are revenues (carriers' costs) that a typical lessor could expect to receive for use of its rights of way, on an annualized basis:

Category 1: Aerial Transmission on Existing Poles (per cable):

- Rural Areas: \$2,500 to \$3,750 per mile
- Exurban/Suburban Areas: \$4,000 to \$4,750 per mile
- Urban Areas: \$5,000 to \$10,000 per mile

Category 2: Existing Conduit Space (per duct space):

- Rural Areas: \$1,500 to \$2,500 per mile
- Exurban/Suburban Areas: \$3,000 to \$6,000 per mile
- Major Metropolitan Areas: \$25,000 to \$40,000 per mile

Category 3: Dark Fiber in Existing Conduit (per fiber strand):

- In Conduit: \$1,800 to \$2,100 per mile
- On Aerial Attachment: \$1,000 to \$1,500 per mile

These estimates provide an admittedly broad gauge perspective. They do not include any evaluation of the undeveloped land because of the wide fluctuations in the costs of construction, i. e., a minimal street cut in a small town can cost \$10,000 per mile; directional boring through solid rock can cost as much as \$1 million per mile

These data do establish a foundation for MTA personnel to evaluate the relative values of all possible construction scenarios, and future offers (whether actual cash value or "in kind" values) *vis`a vis* the agencies available dedicated rights of way. No analysis is complete, however, without a determination of the value of actual operational, or lighted fiber.

B. The Value of Lighted Fiber

Selling telecommunications services, or moving high speed data through fully operational lighted fiber networks, is the ultimate commercial valuation. Only a few government agencies have chosen to enter this market, e. g., Amtrak's Northeastern Corridor extension sells lighted fiber access to various carriers. Several government agencies, however, have received lighted fiber services from a carrier in lieu of revenues from a carrier. Section V. describes such activities in some detail. The fair market value of lighted fiber is therefore always of significance to government agencies—whether they decide to enter the telecommunications business or accept "in kind" services from a carrier.

Calculation of lighted fiber's fair market value requires some comparative cost analysis. If possible, we recommend that MTA review its current tariffed rates from Pacific Bell, AT&T, et. al. for lighted fiber, at the various OC (Optical Carrier: a rate of bit [8 bits equals 1 byte, the amount of computer data needed to make approximately one letter in the alphabet] speed, e. g., OC-48 equals a speed of 2600 million bits per second) speeds to determine the cost of general service to the transit agency. Most such documents are kept under a seal of confidentiality that would exclude consultants.

We are able, however, to provide some background information and assumptions, that will give MTA staff a point of reference, i. e., analogous rates charged in this area by AT&T, MCI and US Sprint.

Rates for DS-3 (A Digital Service[DS] bit speed of approximately 4.5 million bits per second) service are typically based on airline miles between end offices and are comprised of two elements--a fixed rate, and a mileage sensitive charge. MCI usually provides the same service at a five (5) percent discount to AT&T. US Sprint's rates are two (2) to three (3) percent less than MCI's. The companies' offer substantial discounts for longer commitments of time, e. g., a five (5) year commitment to either AT&T or MCI's DS-3 service will enjoy almost a 25% discount rate *vis`a vis* an annual commitment. These carriers also offer further discounts for minimum monthly revenue commitments.

The following is a calculation of value, based on an MCI OC-3 (15 million bits per second) tariffed rate in California. In a non-urban area in California for a distance of 50 miles for 12 fibers the value is estimated at almost \$170,000: The carrier-designated fixed rate (\$5700) is

added to the multiple of the mileage (50) and the mileage rate (\$166). The result is multiplied by 12 months, for an annual value of \$168,000.

Calculation: $\$5700 + [50 \times \$166] \times 12 = \$168,000$

As the example indicates, a lighted fiber filament provided by any carrier to a public agency is always a valuable commodity. That \$170,000 in service is provided on a single fiber strand in a 144 strand cable. Some strands are admittedly kept as spares, i. e., back up or redundancy, in case of breakage. Assuming that 132 strands (12 strands held in reserve) are provided to customers in a 144 strand cable, the \$170,000 per strand produces \$22.4 million in annual revenue to a carrier. By comparison, the maximum annual revenues obtainable for same fifty mile of ROW for the other categories is:

Aerial Transmission (Urban Area/No limit on number of strands): \$500,000
Conduit Space (Urban Area/No limit on number of strands): \$2 million
Dark Fiber (132 strands): \$13.86 million

While the dark fiber estimate appears comparable, \$13,86 million versus \$22.4 million, it really is not. Dark fiber is only that; inert fiber that is used by another party. Lighted fiber has many more possibilities. For instance, rates more than double as faster speeds and applications are provided to customers. Since the top end commercial speeds are now approximating OC-196 (several thousand times faster than the OC-3 speeds used in this example), revenues for lighted fiber services are commensurately higher.

These evaluation should not create an inference that we are recommending that the MTA enter the telecommunications business. This is an industry characterized by dramatic deregulation, cut throat competition and change at every level: traits that are inimical to all government agencies. Nevertheless, a full understanding of the full gamut of fiber optic options is important to an agency no matter what type of arrangement or program an agency adopts or creates.

V. GOVERNMENT AGENCIES' SURVEY FINDINGS

This section details our findings to date concerning the rates and other considerations conveyed to other public agencies by private industry members. In order to provide context, the survey effort also attempted to determine future efforts, tactics and strategies being developed by these agencies, i. e., critical areas of activity within these agencies, rather than just a recitation of rates. California agencies were chosen as the first category, because of the immediate relevancy, and not surprising unique approaches of the Golden State's various cities and other government agencies. Other transit agencies were interviewed because their rates are directly relevant to MTA's efforts. Other significant and interesting examples of innovation are included in their separate category to provide a more comprehensive picture of fiber optic

leasing activities on a national basis. Finally, three of the "Baby Bells" rates for conduit space rental are examined to demonstrate what every ROW owner's "competition" is doing in the marketplace.

A. California

1. City of Anaheim

The City of Anaheim issued an RFP in May of 1995 for development of approximately 50 miles of ROW with a private partner. Eighteen expressions of interest were received. Spectranet International, a start up firm seeking to compete in the local exchange market as a competitive local exchange carrier, was selected for exclusive negotiations approximately six months later.

The negotiations lasted almost eighteen months. Kingston Cole & Associates assisted the City of Anaheim in negotiations of a public/private partnership arrangement with Spectranet International that is the first of its kind for a large, municipally-owned utility and city. On February 25, 1997 the Anaheim City Council approved a final contract that will provide the following revenues and services to the city's 300,000 businesses and residents within the next four to six years. Specific terms and conditions of the agreement include:

- Anaheim will receive \$6 million in revenues as rent payments from Spectranet (spread of a 30 year period), and,
- The city will receive 5% of gross revenues, or \$1 million per year, whichever is greater, and,
- Anaheim will receive additional revenue percentages for public access and economic development activities, and,
- All major municipally-owned buildings, including schools and libraries, will be connected to the Spectranet network, at either no charge (on network buildings) or the lowest government rate (off network facilities), and,
- The city will receive monies to fund World Wide Web Access, Interactive Community Bulletin Boards and user-friendly Access Stations for all Anaheim citizens.

In exchange for these features and amenities, Spectranet will receive 60 of the city's 96 strands of fiber that are in Anaheim's municipally-owned electrical utility system. The company will offer advanced telecommunications services to the business customers (and residential customers as early as 2002) as a CLEC duly certificated by the California Public Utilities Commission.

2. City of Burbank

The City of Burbank is a chartered municipality that owns and operates its own power and electric utility. Burbank is not only selling dark fiber now, but is entertaining the idea of selling switched capacity. At the present time, however, the lit fiber alternative does not appear to be as lucrative. The two key areas of major ongoing interest for Burbank are: (1) Dark fiber and, (2) Active marketing of dark or lighted fiber to the HDTV market as that technology comes on line. Our interviewee (The Deputy Director of Public Works, Mr. Fred Fletcher) views the public/private partnership model as a "relay race" in which the city carries a certain amount of traffic for a carrier or private company--and then hands off the signal to another provider for completion. He views Burbank as a strategic piece in an evolving fiber broadband mosaic that serves a global entertainment network.

The fiber network that the city has built consists of a 12 mile loop of dark fiber that runs from Olive Avenue to the Airport and back, linking downtown Burbank and the city's various multi media/communications centers. They currently have four contracts for dark fiber, two with Disney, one with Warner Brothers, and one with ICG.

The city is charging an average of \$175 per fiber mile per month (FMM) for a five year contract. Longer term contracts, e. g., 15 years for ICG, are for \$135 FMM. Mr. Fletcher's pricing methodology begins by taking a T-1 rate (A standard transmission rate of 1.5 megabits per second) of \$.10 per FFM (Fiber Foot per Month). This rate was determined on the basis of some market analysis of a typical application for Disney, for which that company was paying \$330 FMM plus mileage for an inexpensive (not Pacific Bell or GTE) T-1. He found that \$.05 per FFM was too low and \$.25 per FFM was too high, and ended up with \$.10 per FFM, or \$528.00 per FMM, for a dark fiber strand.

Using this as a baseline, and after ascertaining the city's costs to build, he arrived at the rate of \$175 per fiber mile per month for dark fiber. His strategy was to offer this price for dark fiber that was close enough to a T-1 rate for potential users to be able to make the association without having to clearly advertise it. The minimum bill is \$100 per fiber per month.

The only other market research the city used was provided by Resource Management International (RMI) a 400 person engineering firm out of Sacramento that does a lot work for electric utilities. They bought Gencom, the firm that designed the 270 mile fiber link in Austin, Texas connecting various government agencies and the University. Burbank used this design as a rough model.

Current revenues for the city of Burbank from the dark fiber are about \$275,000.00 a year, with \$200,000.00 in backlog. The city invested approximately \$1 million in construction costs to install the dark fiber. The city installed 96 strands around the loop, reinforced with 144

more between the Media center and downtown Burbank. They plan to increase the path to the Airport as well. They will lease a one strand minimum. 32 strands are available for lease right now. Our contact believes, for arbitrary marketing reasons (He says the law of supply and demand) that it is better to have a queue, or some pent up demand, for services.

The city of Burbank is a Charter city which gives it immunity from State or CPUC regulations. The city is not selling conduit space or selling telecom services, just dark fiber. Furthermore, revenues are not tied to volume (usage). Mr. Fletcher believes the combination of these factors keep the city out of the actual telecommunications business. Moreover, the city only allows its own electric utility staff personnel to enter the manholes for maintenance. This requirement was a deal killer for TCG. This is a nonnegotiable item for the city for safety reasons: Last year two manholes blew up.

MFS and GTE have also backed away from agreements due to the "Dilbert factor" per our interviewee. MFS would not consider the advantage of defrayed construction costs. GTE only wanted capacity to connect the new Dreamworks building through Burbank. They would have paid Burbank \$8,400K a month to go 4 miles down Olive Street plus a connection fee of \$12,000.00. However, GTE wanted title to the fiber. The city declined to provide title, so GTE approached the city Manger, who gave them permission to build down and around their cable only for Dreamworks. They ran 200 of their own strands at a cost of hundreds of thousands of dollars.

This municipality serves one of the most high speed data-intensive industries in the world: The entertainment/communications conglomerates that operate within its municipal boundaries. Disney is a case in point. The company was Burbank's first client: it needed capacity for high speed video for animation, utilizing HIPPI (high speed parallel processing). Disney is currently using old Silicon Graphics workstations for this application; but is upgrading to a new, higher speed version (from 80 Megabytes to 1 Gigabits, 8 K bits per second) that will require even more bandwidth. Disney is now leasing 4 strands at \$100,000 a year, with options for more.

Warner Brothers is deploying ATM using Nortel equipment. They are looking at point-to-point service among various facilities within the city limits. ICG has a 15 year agreement with an option to terminate their agreement with a 50% liquidated penalty clause for one year.

The city's fiber loop has also drawn the attention of Hollynet, a concept and foundation that is part of the University of Southern California's (USC) Entertainment Technology Center (ETC) that is supported by Steven Spielberg and others who champion the high speed delivery of applications, such as HIPPI, for the entertainment industry around the globe. Hollynet has an ongoing interest in working with the fiber network providers such as the city of Burbank, GTE, Pacific Bell, IBM and others. Similar municipalities, such as the city of Anaheim,

evinced no interest in working with Hollynet. Burbank, however, has maintained a dialogue with Spielberg and friends.

There are two other organizations involved in the Hollynet information exchange. One is the Entertainment Network, a major global telecom company. Michael Wu, a former Los Angeles City Council person, is involved in backing this effort for HIPPI applications with financing by Nortel. They are proposing a Burbank backbone (OC48 SONET with OC12 ATM) to link uncompressed digital video. Ostensibly competing with the Entertainment Network is an alliance formed recently comprising Vive, Pacific Bell and Nortel along a similar route; but with no HIPPI, just Asynchronous Transfer Mode (ATM), the standard high speed "platform" for much of the telecommunications industry. This new alliance is as yet unnamed. This latter group is apparently in the process of developing strategies to meet the soon-to-be-immense bandwidth requirements of high definition television.

Burbank's other key area of interest is therefore to develop a public/private partnership in the HDTV market. The companies most involved in the deployment of high quality video imaging are GTE and JPL. While the city does not fit in yet, they hope to get involved. Dr. David Benson, formerly of Hollynet, and now with IBM, proposed last year to set up a plan to take government research labs into this area. JPL has already developed a system of up links to satellites and fiber optic cabling to transmit data for Sony and GTE between the U. S. and Japan.

3. City of Long Beach

This city has created a unique public/private partnership arrangement with a privately held electrical service company, City Power & Light (CPL). CPL has a 25 year contract to replace 35,000 of Long Beach's older, high pressure street lights with newer technology, energy saving, low pressure sodium light fixtures. The replacement project has a 3-year time frame and is 60% complete, as of the date of this report. The total cost is estimated at \$20 million; paid for by CPL.

The City receives the benefit of the bargain in two significant ways: 1.) By privatizing the maintenance function with CPL, budgetary savings occur; 2.) Rates for electricity are dramatically lowered because Southern California Edison has a much lower tariff rate for the wiring connections used in the new light fixtures (PG&E does not have a comparable tariff, according to our interviewee). Again, this budget item is deducted from the City's budget. CPL makes its money by receiving 50% of the estimated savings from the City's operating budget.

Both Long Beach and CPL are attempting to market the city-owned conduit system that lies underneath the street lamp system. The municipality has 72 strands of fiber in one innerduct; as well as capacity in three other innerducts within its conduit system. CPL indicated there is

not sufficient interest in the industry in the conduit for two reasons: (1) The competitive local exchange carriers (CLECs), such as Metropolitan Fiber and TCG, can legally go up on the city's (or public utility's) utility poles at a rate of approximately \$1.50 per foot per year; and, (2) Long Beach does not have the large, high speed data-intensive companies that might be willing to negotiate separate dark fiber arrangements. An unfortunate comparison to Burbank was noted by the interviewee.

4. Peninsula Joint Powers Board (the CalTrain or JPB)

This agency operates approximately 55 miles of train down the peninsula between San Francisco and San Jose. The CalTrain is subject to national easement contracts between Southern Pacific Transportation Co (SPT) and its successors in interest including Sprint and Qwest. Despite this handicap, the Board hired Kingston Cole & Associates as their consultant to conduct a market survey and induce interest from the fiber optics industry to further develop the agency's rights of way. The effort includes seeking PCS and cellular companies to locate their cell sites on the JPB's ROW. Substantial interest from all three industries has been expressed.

In January, 1996 MCIMetro and the JPB agreed to a rate of \$1.50 per linear foot per year for approximately 12 miles of JPB right of way. A cost of living adjustment, adjustable every five years, was also agreed to by the parties. Brooks Fiber Company, the apparent successor to MCIMetro's efforts to construct local fiber optic loops (MCIMetro was effectively disbanded by MCI in February, 1996) is currently negotiating for an extension of the MCIMetro system for another five miles: the rate Brooks is willing to pay is \$1.80 per linear foot per year with a cost of living adjustment of not less than 3% per year.

An RFP was issued in August, 1997. One proposal was received, from MFSNT. The company purports to be the "facilitator and negotiator" for four companies seeking access to the JPB rights-of-way, including: IXC, ELI, Nextlink and GST. As of the date of this report, negotiations between MFSNT and the JPB are ongoing; and therefore confidential.

5. BART

In 1994, BART negotiated one of the first fiber optic public/private partnership arrangements for a public agency in the United States. The final agreement created a unique "Teleystem" comprised of several elements, including:

- Purchase by BART of approximately \$44 million in telecommunications improvements (48 strands of fiber in an exclusive duct; new 800 Mghz trunked radio system, SONET electronics and integration of the entire system by MFSNT)

- Creation of a revenue sharing arrangement (91% for BART; 9% for MFSNT) for the remaining innerducts in the non exclusive, commercial fiber optic system
- Projected income from this project is \$3.5 million by 1999; rising in two years to \$5 million. BART's portion of the income is used to pay for the \$44 million in capital improvements via a capitalized lease arrangement.

BART's rates for carriers are as follows:

- \$5 per linear foot per year for the Trans Bay Tube (between San Francisco and Oakland)
- \$3.50 per linear foot per year for the lines running through San Francisco and Oakland
- \$1.80 per linear foot per year for the remaining sections of ROW

These rates may vary according to conduit access, number of fibers desired by a carrier, etc. All projected revenue estimates have been exceeded by actuals, as of the date of this report. Kingston Cole & Associates is the consultant to BART for this project.

B. Other Transit Agencies

1. Metropolitan Atlanta Rapid Transit Authority (MARTA)

This agency's activities to date have been mixed. A number of competitive access providers (CLECs) have negotiated individual deals for access into various segments of MARTA's 45 plus miles of conduit throughout the ROW. No CLEC, however, was interested in developing the entire system; each wanted various sections only. The result is a mix: One time entry fees of as much as \$10,000 per mile have been paid; in kind fiber (18 strands) has been received in lieu of monies; and the average annual per linear foot charge, where applicable, has been \$3 per foot with an annual cost of living adjustment of 4%. Lump sum payments at the front end of the process have been discouraged by MARTA officials. All leases are on a non-exclusive basis to ensure fair treatment of all fiber optic industry members.

MARTA is now contemplating pulling fiber throughout its system that will in turn be marketed to the industry, i. e., leasing dark fiber. The transit agency plans to place 72 strands in existing conduit throughout the system; including 13 additional miles of extensions of the MARTA system. Excess fibers would be eligible for leasing arrangements, again on a non-exclusive, first come, first serve basis. Officials believe they can charge as much as \$2500 (\$208 per month) per linear foot per year per strand--but provided no justifications or rationale for such a rate.

MARTA personnel are convinced of the value of their ROW to the industry. This ROW is considered a profit center that must be developed in an intelligent fashion.

2. Dallas Rapid Transit Authority (DART)

DART negotiated a large transaction with Qwest Communications over two years ago. That deal allowed Qwest to install their own conduit within an abandoned oil company pipeline within the Authority's ROW. The company purchased an option to install along various segments of the pipeline and pay only for those sections where actual conduit is installed. DART is still exploring usage of the pipeline for its own use.

DART personnel is receiving monies up front for each amendment to the original contract, i. e., the net present value of the lease option over a thirty year period. The calculation is an average rate of \$6,500 per mile per year for four two inch conduits.

DART has also negotiated some arrangements with other carriers for shorter distances, e. g, a three mile stretch with Worldcom for an unspecified amount. DART internal staff believe they have missed the window of opportunity for dark fiber in their new transit-related construction effort. They are not doing much currently to solicit industry interest, commenting that they will ". . . Take whatever they can get" for the Authority's 136 miles of ROW. No attempts have been made to assess real market interest in any meaningful manner; nor is one planned in the near term future.

3. Southeastern Pennsylvania Rapid Transit Authority (SEPTA)

This agency is currently negotiating a contractual arrangement with a broker/agent to represent SEPTA in active negotiations with all telecommunications industry segments—both wireline and wireless carriers. We were therefore unable to ascertain any details of those negotiations because attorneys for both sides indicated they were at a critical stage and therefore confidential.

SEPTA negotiated a public/private partnership arrangement with MFSNT in 1989. The following rate-specific information was negotiated between the parties in that arrangement:

- A top rate for conduit space rental is \$7.70 per linear foot per year for a section in downtown Philadelphia.
 - ◆ This section is also subject to a "usage fee" of one quarter of one percent of all usage through this section.
- Rates for outlying areas (suburban and exurban) are approximately \$2.00 per linear foot per year.

The parties began feuding almost from the moment the contracts were executed. A clause requiring good faith negotiations after five years resulted in an impasse that exists today.

MFSNT has always argued that its rates (and the "usage fee") should be reduced, since the company paid too much in 1989. SEPTA has always argued for at least a cost of living adjustment (COLA) to existing rates. A stalemate has been the only result of these "good faith" negotiations. SEPTA moved in 1996 to develop a new partnership arrangement with the private sector—the still-to-be-finalized agent/broker contract. Kingston Cole & Associates was the consulting firm to SEPTA during the 1994-1995 time period.

4. Washington, D. C. Metropolitan Transit Authority (WMATA)

WMATA personnel (Real Estate Department) indicated that a major increase in negotiations is now taking place for his agency. Annual revenues from fiber optic leases and licenses are at the \$1.7 million level now, with several expressions of interest from carriers. Current conduit occupants include MFS, MCI and TCG. Chesapeake and Potomac, the Bell Atlantic subsidiary, has also leased space in WMATA's conduit at a rate of \$2.50 per foot, per another 1987 agreement.

More importantly, WMATA is actively leasing dark fiber which it owns in either its own conduit system--or in conduit space operated by the carriers. Rates for these fiber are: \$132 per strand per month per mile, (or \$.025 per strand per month per foot).

Since initial negotiations began with the industry in 1997, WMATA has always attempted to obtain dark fiber as part of their overall negotiating strategy. ICC, or Metropolitan Fiber, a small, start up CLEC, signed a deal in 1991 that gives the company the use of 144 strands of fiber for ten years. At the end of that time, the fiber will revert to WMATA.

WMATA also installed twenty strands of its own fiber in 1992, as part of a modernization effort. These are the strands that are available at the rates (\$132 per strand per month per mile) mentioned above. MCI has installed a 216 strand cable along approximately 200,000 feet of ROW; WMATA receives a fee of approximately \$1.30 to \$1.75 per linear foot per year, depending on location. The agency also received 8 strands of dark fiber that it may use in any way, including leasing the strands to an MCI competitor. This is a 20 year contract with no reversion of MCI's other (208) fibers to WMATA. The agency is providing service to the U.S. Veterans' Administration at undisclosed rates over several of their fibers.

5. New York Metropolitan Transit Authority (MTA)

This transit agency now receives the highest rates for conduit space rentals of any agency in the United States. These rates are for East River crossings; they are \$13.50 for tunnel access from bulkhead to bulkhead in one crossing.

Other rates for the subway transit agency include: \$9.50 for another tunnel crossing lease that was signed several years ago and that will not terminate for another five years; \$3.65 per

linear foot per year for underground conduit space within the Manhattan financial Authority; \$2.75 per linear foot per year for sections of ROW in upper Manhattan. The reason that these latter rates are low is the alliterative ROW available to all carriers via the Empire City Subway system--an almost defunct independent authority responsible for maintaining city streets--that continues to subsist by leasing its ROW to various parties. Empire depresses rates for all potential public agencies throughout the New York City area.

This agency has no plans to market dark fiber. The New York Subway is semi-autonomous only. Its organizational structure must in turn report to the Metropolitan Transit Commission (MTC), the umbrella agency that dictates policy development. According to sources at both the MTA and MTC, the question of dark fiber leasing has become so politicized, no solution or strategy is possible. All parties believe any attempt to upset this status quo with an active dark fiber marketing campaign would be met by vociferous objection by the resident Baby Bells, Bell Atlantic/Nynex.

6. New Jersey Transit District (NJTD)

The Transit Authority serves significant sections of New Jersey with a variety of services and modes of transportation. NJTD has a number of employees dedicated to revenue generating projects. These include personnel in the real estate and right of way departments. Both offices are well set up to showcase available revenue opportunities to private parties interested in NJTD's rights of way.

New Jersey Transit has negotiated a number of fiber optic revenue sharing arrangements that meet or exceed presumed market rates. The numbers would be higher if competitive access providers, the most active segment of the industry now seeking right of way, did not have the alternative of using the New Jersey Department of Transportation's (NJDOT's) public roads. New Jersey statutes allow public utilities this type of access at minimal cost, e. g., access and supervisorial fees by the appropriate state agency.

NJDOT is now in the process of raising its encroachment and access fees to levels high enough to recover their true processing and supervisorial costs. The result will be cross elasticity with other state agencies, including NJ Transit. NJTD revenue sharing transactions will inevitably rise to higher levels when carriers have fewer low cost alternatives; particularly in the densely populated northern counties of the state.

In the 1980's, NJTD executed a number of deals with SPRINT, AT&T, MCI and others that involved lump sum payments and/or annual payments. Lump sums received varied from as little as \$48,000 (from MCI for a number of latitudinal crossings) to a maximum of \$1,089,500 from AT&T for 22 miles of right of way in the northern part of the State. Ten major fiber optic transactions have generated lump sum payments of \$3.9 million and multi-

year income of an additional \$3.6 million. Average payments per mile have increased from \$2,000 per year in the early 1980's to \$6,300 per year in 1998.

NJTD has also negotiated a series of master license agreements with the wireless carriers. The model approach, developed by Kingston Cole & Associates for NJDOT, has been used as boilerplate by NJTD. Slightly different rates were achieved by this agency. Please note our Attachment to this report for more details regarding public/private partnership arrangements with the wireless industry.

7. Metropolitan Boston Transit Authority (MBTA)

This agency privatized its real estate department in 1996-1997. The staff now consists of one former, 20-year MBTA employee and his secretary. A private firm is managing the fiber optic rates, terms and conditions for the agency.

MBTA negotiated a number of fiber optics companies now occupying its rights of way under non exclusive license agreements dating back to 1988. MBTA issued an RFP for non-exclusive licenses along its ROW in 1988. The agency was successful in its efforts, receiving a variety of rates for different ROW segments. The per-linear-foot rates ranged from approximately \$.98 (outer exurban routes) to \$5.50 (high end Boston downtown). These fees were for each duct space with more than one occupant therefore creating a multiplier effect (E.g., if 4 ducts are filled in the \$5.50 route, the payment to the MBTA was \$2.13 x 4 for a total of \$22.00 per-linear-foot.).

The rate bands, or MBTA zones, are on a per linear foot per year basis as follows:

Zone 1:	\$5.50	Urban Boston (Downtown)
Zone 2:	3.00	Other Metropolitan areas (Harvard, Airport, Rte. 28, etc.)
Zone 3:	2.50	Suburban areas (Outer edge of Route 28, etc.)
Zone 4:	1.50	Exurban, residential areas (light business only)
Zone 5:	.98	Rural (rates are negotiated on a case-by-case basis)

Additional terms include: average of 25 year terms for contracts and average annual cost of living adjustment of 3%.

MBTA's 1988 RFP for fiber optic development was considered a resounding success at the time of award. It has, however, caused problems since then. Chief among these problems is the lack of capacity now available for new entrants into the system. The major telecommunications companies, e. g., MCI and SPRINT absorbed most of the existing capacity space in the first five years after the system was built. Now, CLECs such as MFS are requesting space, and MCI and SPRINT have also renewed discussions for the same.

MBTA's telecommunications manager also believes the 1988 rates were too high for the carriers; they sought other options for a number of years. He believes the MBTA rates are good now (in 1998), hence the demand for conduit space and resulting problems. MBTA does not currently plan to market any dark fiber. The interviewee was, however, intrigued about any plans MTA may have to do the same. We will continue to discuss the options with MBTA personnel on as needed basis.

C. Other Government Agencies

1. The Port Authority of New York & New Jersey

The Port is currently receiving some of the highest revenues from fiber optic carriers in the country today--in the Holland Tunnel and Lincoln Tunnels. These routes generate revenues at rates of \$8.00 per foot per year. There are, however, no escalation rights due to a trade out of a number (unspecified to our interviewer) of fibers from MFS to the Authority.

A similar deal was struck for the Holland Tunnel with National Fiber Network (NFN). A \$8.00 rate was achieved in these negotiations, with an annual escalator clause of the consumer price index for the greater New York area.

Lastly, MFS negotiated a rate of \$2.00 per linear foot per year with PATH. The agency, however, received 12 strands of fiber for its own dedicated use. PATH estimates an annual savings of \$2.7 million to \$3.8 million in its telecommunications budget from the use of this dedicated system.

2. New York Throughway Authority

The New York Throughway Authority issued an RFP in October, 1994 to build a fiber optics network along its 640 miles of ROW. The Throughway received only two bids (SPRINT and MFSNT). MFSNT was selected for final negotiations, which were completed in October of 1995. We are in the process of obtaining more information concerning the final results of this public/private partnership agreement.

According to published reports, the Throughway will receive 20% of the gross revenues from the subleasing arrangements of this multi-duct system for the first 15 years of this transaction. During the last 5 years of this 20 year agreement, the Throughway will receive 50% of the gross. The project is valued by MFSNT as \$55 million of improvements along the ROW. The Authority allegedly will also have cost savings of \$1 to \$2 million per year in its overall telecommunications bill.

3.. The Electronic Toll Collection (ETC) Consortium

The New Jersey Turnpike Authority (NJTA), acting as the lead agency for a consortium of affected agencies, issued an RFP for development of the participating toll roads ROW with electronic toll collection equipment (transponders, readers, gate wiring, etc.) in March, 1996. The consortium members include: The Turnpike, the New Jersey Department of Transportation (NJDOT), the New Jersey Highway Authority (NJHA, also known as the Parkway), the South Jersey Transportation Authority (SJTA), the Port Authority of New York & New Jersey (the Port) and the Delaware Department of Transportation (DelDOT). Each agency agreed to make all of its toll lanes, and any associated roadways, compatible for a system of electronic toll collecting equipment that will allow motorists to traverse the members' ROW on a non-stop, convenient basis.

Proposals were submitted by two bidding groups, each lead by: (1) Lockheed IMS and (2) MFSNT in conjunction with Chase Manhattan Bank. In January, 1997 the MFSNT/Chase group was awarded a contract. Litigation and several protests were filed by the Lockheed IMS group. Resolution of these disputes is expected within the next month.

Underlying all of the ETC equipment is a fiber optic network system. MFSNT in fact proposed not only a fully operational fiber optic system to the Consortium, they also proposed an underlying commercial system, much like BART's, that will defray the estimated \$500 million in costs for the ETC equipment. MFSNT proposed conduit rental as well as dark fiber rentals for the project.

The commercial rental program has just begun. Personnel were unwilling to divulge actual rates; claiming they were still being developed and therefore were confidential. Government agency personnel indicated that they had received comparable rates from BART and NYSTA only; and had asked for additional information from MFSNT before actually agreeing to contract rates with carriers.

4. New Jersey Highway Authority (NJHA)

NJHA, the agency that operates the New Jersey Parkway toll road, is the preeminent New Jersey Authority in terms of negotiating concessions, licenses and leases with third parties. This Authority has developed revenue sharing arrangements with private companies for everything from traffic reports to tourist information centers to gas station/motorist service centers. All transactions appear to be for top dollar when compared to other New Jersey authorities or any other government authority in the eastern United States.

In the telecommunications areas, specifically fiber optics leases and cellular site location agreements, the staff of the NJHA have created innovative contractual arrangements that have created revenues. More importantly, the Authority has obtained non-monetary contributions, e.

g., spare conduit space, that enabled negotiators to transact even better deals at later dates with different operators.

Rates for fiber optic agreements are the highest in the state; and compare favorably with New York locations. Wherever possible, NJHA has negotiated for empty conduit space and/or dark fiber in the same conduit space. This approach provides for more revenues for the Authority from the next entrant into any multi-party conduit system, or conduit arrangement.

Representative rates for sections of NJHA right of way range from as little as \$2,975 (from AT&T, involving 15.7 miles of ROW in the southern party of New Jersey in 1987) to as much as \$10,750 (from AT&T also, involving 10.9 miles of ROW in the northern part of New Jersey in 1994) per annum.

The most recent transaction was concluded in May, 1997 with Worldcom. That company offered \$2.5 million as a one time initial payment, \$100,000 annual rent and 16 strands of dark fiber to the Throughway. An annual COLA is also included. This offer was accepted with only one proviso concerning the dark fiber: The NJHA may not lease any strands to another CLEC. In fact, the agency is planning to lease four strands to the New Jersey Department of Transportation and twelve strands to an unnamed cable television company in the near future.

It must be pointed out that the NJHA has procurement rules and regulations that allow competitive negotiations without any requirements for issuance of Requests for Proposals or other formal bid documents. NJHA Real Estate Department officials have a reputation for fairness and tough minded negotiations. They maintain an active data base with comparative rates for other transit agencies throughout the country. All negotiated deals do receive a public hearing, however, as the NJHA Board of Directors must approve all staff recommendations.

Lastly, NJHA terms and conditions for cellular tower locations set the standard for the entire three state area. A high of \$48,000 annual rental fee for a site in the northern part of New Jersey, as well as other concessions, has been obtained by the NJHA negotiators.

5. Summary Chart

Attachment 1 comprises a summary of various government agencies' data for comparison purposes.

D. Various "Baby Bells"

1. Pacific Bell

Pacific Bell makes no representations concerning the availability of conduit capacity in its ducts. No current inventory of duct space is maintained by this public utility. Rather, an interested party, usually a CLEC, must pay for the engineering hours expended (at \$100 per hour) for the

research to be done to determine if space is in fact available. If it is not available, the CLEC still must pay the engineering costs.

Assuming the space is available, Pacific Bell then charges a per linear foot amount, according to the following rate bands; payable semi annually to the utility:

<u>RATE BAND</u>	<u>ANNUAL CHARGE</u>
-A (large metropolitan Area)	\$6.34 per linear foot
-B (Smaller " ")	3.28 " "
-C (Suburban Area)	1.98 " "
-D (Exurban/Country Area)	1.48 " "

No other non-recurring charges are paid by the CLEC; other than the front end engineering charges. The final contractual arrangement between the parties is filed with the California Public Utilities Commission, as required by that administrative body's rules and regulations. The CPUC is evaluating these rates as a part of its compliance with the U. S. Telecommunications Act of 1996 (see discussion in Section VII, Legal and Regulatory Consideration, below).

2. Bell Atlantic of Pennsylvania

This Bell Atlantic subsidiary offers access into its available conduit on a tariffed basis. The offering is on a two tier basis, comprising the following rates:

- Urban Areas \$5.45 per foot per year
- Suburban Areas 3.95 " " " "

If the prospective customer provides its own innerduct sleeving that essentially compartmentalizes the duct space, the rates are correspondingly lower:

- Urban Areas \$3.25 per foot per year
- Suburban Areas 1.95 " " " "

In discussions with two cable TV companies, we received some additional feedback: These companies find the BA of Pennsylvania rates to be so high, they will only contract with the utility as a "last resort." When asked for specifics, these companies responded that they will only use BA conduit for short routes, latitudinal crossings (bridges, etc.) and passage through other "choke points" that offer no other possible route.

3. Bell Atlantic (BA) of New Jersey

This Bell Atlantic subsidiary charges \$5.00 per linear foot per year for space within any of its existing conduit in the State of New Jersey. Non-recurring charges, i. e., one time charges to

determine whether there is available space in the conduit, are paid in addition to the annual per linear foot fee.

Bell Atlantic takes the position that right of way for fiber optic development represents a non-existent market. The carrier's representatives take the public position that, since they have all the right of way they currently need (Received gratis via easements from pre-Divestiture days as a monopoly public utility.), the so-called "Public Network" is well served and adequate for everyone's telecommunications needs for the foreseeable future.

VI. VENDORS' SURVEY FINDINGS

A. Introduction

This section is necessarily brief and general in nature. With two proposals under consideration by the MTA, detailed discussions with any one of the interested carriers could have complicated the competitive bid process. More specifically, MFSNT is already the marketing agent for BART, the ETC Consortium and other government agencies to numerous carriers. Their proposal to the MTA would presumably involve many of the same carriers. We therefore adopted a generalized interview approach, without specifics as to geographic areas and/or specific Southern California agencies.

We did not contact the traditional carriers, e. g., Pacific Bell, AT&T, Sprint, MCI and Worldcom. The assumption was that their networks are already established in the second largest metropolitan area in the United States. That is not to say that these companies may not have some interest in specific segments of Los Angeles MTA's rights-of-way in the future.

The concentration was on the newer carriers seeking a presence in the Los Angeles area that either have no facilities—or a need to increase their sales efforts with more conduit space or fiber. Overall, the results were favorable; given the limitations of the survey.

There is intense interest on the part of several carriers to expand their networks in the Los Angeles area. The number of CLECs has grown tremendously since the passage of the U. S. Telecommunications Act two years ago. For every consolidation or purchase of a carrier in this time period, two new market entrants seem to appear. As described in Section III., above, demand for bandwidth and expanding applications are so well suited to transportation through fiber optic systems. The result is unprecedented demand—and a seller's market for government agencies in major metropolitan areas. The following section offers the details regarding the specific companies contacted

B. Results of the Survey

1. Intelcom Group Inc. (ICG)

Evaluation: Minimal Interest

This CLEC, headquartered in Denver, Colorado, is certainly in an acquisition mode. In 1997, they executed a major sharing arrangement with Southern California Edison (SCE). ICG will construct several hundred miles of fiber optic duct system along SCE's ROW; placing fiber in the system that will be jointly used by both parties. SCE receives revenues, service (lighted fiber) and dark fiber as remuneration. ICG's Los Angeles area network becomes a reality in a relatively short period of time.

This company is always interested in possible expansion, on a route-by-route basis. Given the huge build out with SCE, it is doubtful whether any large scale leasing with the MTA would take place.

2. IXC Communications

Evaluation: Medium-High Interest

Formerly known as a purely regional carrier (known as CTI, based in Austin, Texas), IXC Communications has been moving forward at a torrid pace; raising capital and building fiber optic rings throughout the country. The company has been mentioned as a serious bidder for MCI's Internet operation, should the latter company be forced to sell that facility to satisfy European and American regulators in the MCI/Worldcom merger.

IXC personnel are now completing negotiations with BART for access into that agency's ROW. They also are one of four parties interested in the Peninsula Joint Powers Board's ROW. Although the company has already built out considerably in the Los Angeles area, we believe IXC could be a major bidder for selected portions of MTA's rights-of-way.

3. Metromedia Fiber Networks

Evaluation: High Interest

MFN is owned by John Kluge, the billionaire owner of Metromedia Company. MFN is his newly created (in 1997) fiber optic construction/service company that is dedicated to providing for high bandwidth users. His company is specifically targeting investment brokerage houses, such as Dean Witter, Morgan, etc. MFN interconnects their various offices with fiber optics, thereby bypassing the local exchange carriers. The company is expanding rapidly.

MFN personnel are scheduled to meet with us on June 25th to discuss possible access to various clients' ROW. Any access in the Los Angeles area is of critical significance to this company because they have almost no facilities, as of this date.

4. GST Telecom

Evaluation: High Interest

This is a regional, West Coast company (headquarters are in Vancouver, WA) that has been expanding rapidly in the last four years. The company's original marketing strategy was to construct networks in suburbs immediately adjacent to major metropolitan areas. The thought was to construct fiber optic rings, make interconnection agreements with other carriers and then allow for long term growth to reap even higher rewards. During the last two years, however, the company has received massive infusions of new capital and sought creative partnership agreements (GST is a major participant in the Next Generation Internet project. See Section III, above.).

The company is interested in any available conduit that fits with its existing and proposed network build out. GST has just begun its construction effort in the Los Angeles area; having chosen to make its presence felt more in the Northwest and the Bay Area.

5. Nextlink

Evaluation: Medium Interest

This company's major financial backer is Craig McCaw, the billionaire who created Cellular One and then sold that company to AT&T. Mr. McCaw has also re-entered the wireless competitive arena; buying a major stake in Nextel.

Nextlink is actively seeking conduit and fiber throughout the country. Los Angeles was chosen as one of their first major areas for development of a fiber optic ring system. They have therefore already achieved substantial presence in the LA market. Much of that presence was achieved through bartering with other carriers for conduit space or fiber. Barter is a time honored, major way of doing business for CLECs; they will trade conduit space or fiber in one city for space or fiber with one another. These non-cash transactions are mutually beneficial; although they do raise issues with company balance sheets and the Internal Revenue Service

Nextlink's interest in MTA ROW will be limited by these barter arrangements. Barter, however, is often an expeditious way for a CLEC to enter a market. Once minimal service can be provided to customers, a company will then seek to construct a more robust network that allows for many more customers. It is in that second phase, now just beginning for Nextlink, that the MTA's rights-of-way will be of most interest.

6. Williams Communications Solution

Evaluation: Unknown

This company was absorbed by Worldcom, the fourth largest long distance carriers that is now attempting to also absorb MCI. Williams signed a three year "non compete clause" with Worldcom that has just expired. The company is now actively seeking to re-enter the marketplace, using every means possible to access major metropolitan areas. Since the

company is still in its early organizational stages, we have been unable to contact anyone specifically regarding interest in Los Angeles MTA facilities. Given Los Angeles demographics, however, we believe this firm will be a prime candidate for possible leasing/licensing arrangements.

7. Teleport Communications Group (TCG)

Evaluation: Low Interest

This firm, along with MFSNT, was one of the first entrants into the metropolitan area "bypass" fiber markets. Originally owned by Merrill Lynch, they were recently acquired by a consortium of cable companies (TCI, the largest U.S. cable TV company, Cox Broadcasting and two smaller cable TV providers). TCI is one of their owners, and works closely with them in the planning and provision of fiber capacity. TCG, however, serves a very different market (business customers--not residential cable TV customers), and has its own fiber deployment plans that may, or may not, involve TCI.

This company has already developed a substantial fiber optic ring system throughout the Los Angeles area. TCG officials indicated no interest in MTA right-of-way, other than possible segments that would compliment their existing networks.

8. Level 3

Evaluation: High Interest

This firm was created by MFS's former owners, Kiewit Construction. Kiewit risked three billion in capital to create MFS in the early 1980's; and then sold the package (it included UUNET, one of the largest Internet providers) to Worldcom in 1996 for approximately \$12 billion. Many of MFS's key personnel left the company at that time—but have indicated a desire to re-enter the marketplace. Level 3, headquartered in Denver, is that effort.

We have had problems locating key personnel for an accurate evaluation of this company's interest. Nevertheless, we believe Level 3 is now embarking on one of the most ambitious fiber optic ring construction efforts in the United States. We therefore rate them as having a high level of interest, subject to confirmation.

VII. LEGAL AND REGULATORY CONSIDERATIONS

A. Introduction

This section focuses on the legal and regulatory conditions effecting the wireline industry. Attachment 1 comprises an in-depth analysis of the same conditions that effect the wireless industry. To view each sector in isolation is myopic, however, if for no other reason than they are both dealt with in considerable detail in the U. S. Telecommunications Act of 1998. Moreover, there are too many cross

elasticities between markets (on the supply as well as demand sides), interlocking corporate managements and directorships and other commonalities.

Most importantly, the different approaches of the competitive wireline and wireless carriers to the issues of competition and regulatory issues have heavily influenced the way in which each segment pays for access to a government agency's ROW and properties.

CLECs are the leading new carriers in the wireline segment of the telecommunications industry. They include companies such as Metropolitan Fiber Systems (MFS), ICG, TCG, etc. These are also the new "public utilities" that are moving through city streets and other public agency ROW in search of new customers. These companies develop high speed fiber optic rings in major urban areas. Their only customers are large companies and government agencies with high speed data (e. g., computer to computer) needs. They also have no business plan to offer any service to the general public.

CLECs will coexist peacefully in the same fiber optic conduit system (albeit usually in separate compartments, or innerducts) along the same ROW with traditional long distance carriers (AT&T, MCI, et. al.) as well as cable television companies and others. The reason is that they are not true competitors. The CLECs' competitors are the Regional Bell Operating companies (RBOCs or "Baby Bells"). A CLEC will work cooperatively with a long distance carrier to take all the business of a large client away from an RBOC.

All of these wireline carriers are therefore willing to pay a government agency for access into either an agency's dedicated ROW or existing duct system. MCI's recent interest, as well as the proposals, albeit vague, from Spectranet and MFSNT, substantiate this market interest. CLECs will often agree to some type of sharing agreement (consortium approach or selecting one firm to construct, maintain and market the ROW) that can provide a transit agency with revenues and the possibility of other, "in kind" services. The types of "in kind" services, based on our experience with the industry that are typically offered include:

- Empty duct space
- Dark (inoperative, unlit) fiber
- Build outs to specified the agency locations
- Electronics to "light up" the fiber (e. g., SONET system, etc.)
- Services and expertise to maintain a cooperative system.

All of these "in kind" considerations must be evaluated in terms of their fair market value. During negotiations, either singly or jointly with several CLECs, we recommend determining the actual cash value of the ROW—and then determining comparable values for trade offs.

B. Deregulation of the Telecommunications Industry

The entire thrust of telecommunications policy in the United States over the last fifteen years has been to deregulate all markets, products and services. Competitive forces have been unleashed in both the wireline and wireless industries. The list of watershed events is long and consistent:

- Federal Communications Commission (FCC) allows MCI to compete with the Bell System (1974)
- Non Bell System equipment allowed to interconnect (1976)
- Break up of the Bell System (1984)
- FCC establishes competition (duopoly) in wireless industry (1985)
- FCC auctions of wireless frequencies begin (1994)
- Congress passes the Omnibus U. S. Telecommunications Act (1996)

As competition has increased, the demand for access to public agencies' rights-of-way has increased tremendously. Existing telecommunications carriers have taken their access to ROW for granted because they were allowed to trench and construct facilities as unique "public utilities" that enjoyed monopoly status. New market entrants in the wireline industry have filed for certification to do business in most states as "public utilities" despite the fact that they patently are not. Public utility commissions, including the California Public Utilities Commission were caught up in the deregulatory avalanche. They chose to ignore the clear cut distinction between competitive carrier service and monopoly public utility service.

The result has been antiquated regulatory policy that severely impacts the ability of public agencies to market their assets to the telecommunications industry at anything resembling the real value of their rights-of-way. Cities are beginning to respond vigorously to all the street cuts and tower construction now. Other agencies, particularly departments of transportation and transit agencies, have often excluded all wireline carriers from their ROW, rather than allow all of them to have access. These policies are based on safety considerations as well as the lack of any fair market value for increasingly valuable assets.

C. U. S. Telecommunications Act of 1996

1. Overview

Restraints on industry competition imposed by the FCC and state public utility commissions have ostensibly been removed and replaced with a deregulation policy, as embodied in the U. S. Telecommunications Act of 1996 (Act). Despite the broad scope of this legislation, it is still far from

clear whether the country will in fact have full scale competition in the near future. The Regional Bell Operating Companies (RBOCs), also known as the "Baby Bells," have objected vociferously to every ruling made by the FCC; and effectively tied up all major deregulation efforts in litigation. Best estimates are for a three to five year delay in full implementation of the Act.

The 1996 Act remains, however, the most significant impetus for all reform at the national, state and local levels. The California Public Utilities Commission (CPUC) is engaged in numerous proceedings to implement provisions of that act for California. Those hearings, as well as pertinent historical CPUC Code sections affecting local and municipal governments' rights and duties are also described later in this section of this report.

The U. S. Telecommunications Act of 1996 now comprises over two hundred pages of statutes and more than one thousand pages of rules and procedures that have been adopted since its promulgation. There are, however, only a few key sections that should be considered of major interest to the Los Angeles MTA. They are:

1. Section 253: Removal of Barriers to Competitive Entry: FCC Powers of Preemption and Governments' Powers to Offer Their Rights-of-Way for Reasonable Rates

Section 253 authorizes the FCC to actually preempt local ordinances (and state statutes) that impermissibly impede the provisions of the Telecommunications Act. Subsection (a) provides that no government or local statute, regulation or other requirement may prohibit, or have the effect of prohibiting, the provision of interstate or intrastate telecommunications services. Subsection (b) provides that nothing in this Section affects the authority of a government agency to impose on a competitively neutral basis (and consistent with Section 254 regarding Universal Service requirements) requirements to protect the public safety and welfare, ensure the continued quality of telecommunications services and safeguard the rights of consumers.

Section 253 therefore authorizes continuing local and municipal regulation, but cautions that any regulations may not have the effect of prohibiting the provision of telecommunications services within their respective jurisdictions. Subsection (d) provides the enforcement power of the section, expressly providing the FCC with authority to preempt government and local laws. It reads as follows:

"(d) Preemption. If, after notice and an opportunity for public comment, the Commission determines that a government or local government has permitted or imposed a statute, regulation or legal requirement that violates subsection (a) or (b), the Commission shall preempt the enforcement of such statute, regulation or legal requirement to the extent necessary to correct such violation or inconsistency."

The last subsection of 253, (c), permits local governments to manage public rights-of-way and to require fair and reasonable compensation from telecommunications providers on a competitively neutral and non discriminatory basis for the use of their public rights-of-way. This critical section recognizes that local governments can control antenna sites (or presumably fiber optic systems)

without federal interference. The only other restriction on compensation from the telecommunications industry is that the compensation must be "publicly disclosed by such government"; presumably bowing to maximum public disclosure requirements and statutes that apply almost ubiquitously to all government agencies.

Section 253 contemplates that government and local regulations can be preempted on a case-by-case basis. However, local authorities have been creating an increasing number of obstacles to the industry as the number of cell sites and antennas has grown. As already noted, at least 10 applications are on file with the FCC to completely preempt local government obstructionism.

The most recent case was the attempt by the city of Flint, Michigan to impose a franchise fee (gross receipts tax) on CLECs trying to place fiber optic conduit through municipal streets. The FCC, after due deliberation, did not exercise its power to preempt the city in this area. While the franchise fee may eventually be imposed, the CLECs are now litigating the matter; claiming that the fee is an abridgement of the Commerce Clause of the U. S. Constitution.

Another still pending matter is the decision by the Minnesota Department of Transportation (MinnDOT) to award 1000 miles of its ROW to their private business partner, ICS Corporation on an exclusive basis. Another 2000 plus miles were awarded on a non-exclusive basis, i. e., ICS must share conduit space with either carrier. Several of the CLECs have petitioned the FCC to intervene and revoke ICS's exclusivity, claiming that the MinnDOT grant is violative of Section 253. MinnDOT and ICS have responded that other carriers may lease dark fiber (but not duct space) in the exclusive ROW section on an equal and nondiscriminatory basis; and that, therefore, the CLEC claims are without merit. The FCC has not issued a final ruling on this matter, as of June, 1998.

2. Section 271 (B): The Competitive Checklist Requirements for the Bell Operating Companies (RBOC's) to Enter the Long Distance Market

This section comprises the requirements necessary for the RBOCs to enter the long distance market. This strategic objective--competing with AT&T, MCI, Sprint and others--is the oft stated number one priority of the Baby Bells. The checklist of requirements is aimed at ensuring that viable competition exists in the local service telephone market; the market in which the RBOC's still have 97% of the business in their territories.

Only after each RBOC has fully satisfied the requirements of the checklist will that company be allowed to provide long distance service. The checklist comprises fourteen different rules, including: requiring the Baby Bells to offer rivals access to their data bases of customer information; allow a neutral party to handle administration of new telephone numbers; and to provide dialing "parity" so that customers who use other local telephone companies can make calls without having to dial multi-digit, unwieldy "access" codes.

This section appears to have no immediate relevance to any government agency's current situation, i. e., marketing its rights-of-way to the commercial wireline industry. Nevertheless, it is important to

know and understand the number one business strategy of the resident RBOC (Pacific Bell) and what the company must do to achieve that objective. Several "Baby Bells" have applied in the last few months to the FCC for permission to offer long distance service; claiming that they have met the checklist requirements. All applications to date have been denied by the FCC. One of the carriers, SBC (now the parent of Pacific Bell) has even begun litigation against the FCC; claiming, and winning, a suit in a Texas federal district court. Given that the case was brought in SBC's headquarters state, most legal experts believe this ruling will be overturned on appeal.

D. State and Local Issues

1. CPUC Activities

The California Public Utilities Commission has been holding almost continuous hearings and formal dockets to deregulate the government telecommunications market since 1993. These myriad proceedings are in line with the overall deregulatory effort throughout the U. S. The Commission is currently in the midst of a number of proceedings designed to implement the intrastate provisions of the U. S. Telecommunications Act of 1996.

Pacific Bell has made several filings with the CPUC in support of its 271 (entrance into the long distance market) application. A formal application is expected sometime in July, 1998.

The CPUC is currently studying ROW issues in a separate proceeding. The issue also arises as one of the "checklist" items for RBOC compliance under Section 271 (b) of the U. S. Telecommunications Act, i. e., the Baby Bell must provide "Nondiscriminatory access to the poles, ducts, conduits and right-of-way owned or controlled by the Bell operating company at just and reasonable rates in accordance with the requirements of section 224 (an older section of the 1934 Telecommunications Act that prescribes rates and other terms and conditions for access to these facilities.). All the major carriers, as well as the power and electric companies (Their facilities and ROW are affected also.) have filed briefs in this proceeding.

Our discussions with CPUC legal staff indicated that the CPUC is seeking to comply with the specific language and intent of the 1996 Telecommunications Act, i. e., a determination of what rates and treatment Pacific Bell must afford to its competitors for access to its public utility ROW. Other ROW issues were purposefully ignored in order to husband scarce staff resources and expedite the multitudinous issues requiring CPUC hearings under the Telecom Act.

2. CPUC Code Section 7901

CPUC staff indicated that the larger ROW issue, the continuing application of Section 7901 of the CPUC Code (The right of a public utility to access government agency ROW without paying fair market value) is not at issue now. They firmly believe that the concept of a public utility in a deregulated marketplace is an antiquated one—although there is little they can do about this problem.

Public utilities were few in number twenty years ago; and carefully regulated. Deregulation of the industry at the national level has caused chaos at the local level. Any company that desires the designation a "public utility" at the state level must be granted that status with little or no interference by a state agency, per the national agenda of industry deregulation. Thus, where there were 30 plus telecommunications public utilities in 1980 (including 22 small, independent telephone companies), there are now more than 200. These new market entrants include pay telephone companies, CLECs, long distance companies and alarm companies. According to CPUC Code Section 7901, they all have the right to excavate city streets and place their facilities therein only for a minor fee.

Section 7901 arguably has a chilling effect on opening up California's rights-of-way for competitive development, either wireless or wireline. Since Section 253 (c) clearly permits a government to charge non discriminatory and reasonable fees for access to its ROW, the FCC could be asked to preempt Section 7901 and allow the Government of California and its agencies to open their respective ROW for full scale deployment of wireless and wireline applications.

The League of California Cities, and its individual members, are contemplating an analogous strategy. Too many municipalities have had their streets and ROW severely diminished and eroded by telecommunications companies trenching activities. Larger cities are enacting "street cutting ordinances" that charge these companies, whether they claim to be public utilities or not, fees to recover the long term costs of the construction work.

3. Exceptions to 7901: Transit Agencies' "Dedicated" ROW

Having said all that about CPUC Code Section 7901 and the clear thrust of deregulation, it is important to note that transit agencies such as the MTA can almost universally claim exception for the code section's provision. The MTA's longitudinal ROW is "dedicated"; that is, it is primarily reserved for a special use, the transportation of its riders throughout the system. We have only had one, half hearted attempt (by a law firm representing a cable television company) to claim 7901 access within a dedicated right of way. Despite pleas and threats by the law firm, the claim was summarily dismissed by the client's attorneys. The so-called "public utility" was reminded that they always have other recourse—the local streets and roadway.

4. Other MTA-Specific Legal Issues

a. Exclusivity

Since the MTA maintains dedicated ROW that is not subject to CPUC Section 7901 restrictions, the U. S. Telecommunications Act of 1996 comprises the primary conditions for any type of leasing program—whether the agency or a private, third party runs that program. That is, the MTA must charge reasonable, non discriminatory rates for use of its ROW.

Granting any type of exclusive arrangement to a carrier or third party is usually where a government agency runs afoul of the "reasonable, non discriminatory rates" test. As an example, Minnesota's Department of Transportation (MinnDOT) recently granted an exclusive use of 1000 miles of its

Interstate ROW to the agency's "private partner", ICS. This carrier will lease dark fiber to other carriers over that same route; and will construct another 2000 miles of conduit for non discriminatory access by all carriers. Nevertheless, MinnDOT's characterization of the 1000 mile exclusive arrangement has resulted in a series of protests being filed by carriers with the FCC. The legal wrangling over this issue is now in its sixth month, with no end in sight.

b. Contract/Scope of Work issues

Should the MTA choose to develop its own program, the agency must ensure that the various carriers comply with all safety procedures and other procedures. Moreover, the agency must protect itself, primarily through appropriate contract language, from any liability associated with carriers' loss of service (due to either the actions of the carrier or the MTA). Other risk management issues that each agency handles in its own inimitable manner include; indemnification, non payment of fees, assignment clauses, etc. Rather than providing an detailed analysis of the pros and cons of each legal issue, Attachment 3 is provided.

It is a standard User Agreement, employed by another client, BART, that includes all basic terms and conditions, and the duties and obligations, for the public agency and a third party user; as well as BART's "private partner" MFSNT. BART has now executed more than five of User Agreements. Each carrier has negotiated for some changes and amendments that were unique to that carriers. Nevertheless, the vast majority of terms and conditions were satisfactory to all parties.

VIII. ANALYSIS OF MFSNT

A. MFSNT Background

MFSNT is a company undergoing a profound series of changes. This section details our findings and conclusions, based on personal experience with our clients and interviews/discussions with personnel in the industry and other government agencies. This information is intentionally candid and straight forward—and not always complimentary to MFSNT. Given its sensitive nature, we ask that distribution of this information be strictly limited to those personnel who will either advise or make decisions regarding the proposed MFSNT relationship with the MTA.

1. Multiple Sales of MFSNT

The company was sold several weeks ago (for the third time in two years) to Able Telecommunications by its parent corporation, Worldcom. As originally created by Kiewit Construction, MFS was a dynamic company with a great deal of integrity (a Kiewit prerequisite) that created different and innovative partnership arrangements. Over the last four or five years, however, the company seems to have lost its perspective and direction.

We have already provided Authority personnel with financial analyses of Able Telecommunications. We believe the company is thinly capitalized (price/earnings ratio is an

astronomical 226 to 1). Moreover, much of the company's work has been performed off shore, in South America. It is very difficult, despite financial analysts' recommendations, to obtain a comprehensive understanding of whether Able and/or MFSNT will be able to perform to the more demanding specifications and work requirements of major U. S. public agencies.

2. Upper Management Upheaval

After the announcement of Able Telecommunications' purchase of MFSNT, the President of the latter company, Kevin Moersch, sent a reassuring letter to all clients, customers and related personnel (e. g., consultants, including Kingston Cole & Associates). Two days later, Mr. Moersch resigned from the company. The other pivotal figure at MFSNT, the Chief Financial Officer, had already resigned in the previous year. We believe the dearth of upper level management expertise and continuity at this critical time, despite Mr. Moersch's representations, will have serious implications for MFSNT as well as Able Telecommunications. We recommend caution and appropriate, protective contract language (e. g., performance bonds) in all dealings until this issue is resolved.

3. Other Agencies' Experiences with MFSNT

This section comprises our findings, based on individual interviews, regarding MFSNT's conduct in negotiations and their contract performance once final agreements are executed. As the examples demonstrate, the company displays a consistent pattern of:

- Offering generalized terms and conditions in proposals
- Protracted and tortuous negotiations over specific terms and conditions of contracts
- Limited (some agency would say non existent) flexibility in dealing with change orders and other modifications after contracts have been executed
- A willingness to litigate or terminate contracts if solutions are not found

The agencies interviewed, and the results of these discussions are:

a. Los Angeles MTA

Per our discussions with staff, MFSNT was recently released from a contract to construct a wide area network (WAN) for the MTA. It is our understanding that MTA Staff were not satisfied with either the quality of work or the caliber of MFSNT personnel involved in the work effort. As re-enforced by the examples below, this level of dissatisfaction is by no means unique to the Agency.

b. Bay Area Rapid Transit Authority (BART)

This relationship, the cornerstone of MFSNT's effort to be the "partner of choice" for the public sector has definitely gone sour in the last year. The company has done a poor job of design, Kingston Cole & Associates

engineering and meeting construction schedules for integration of BART's 800 Mghz trunked radio system with the SONET based fiber optic system. MFSNT touted itself as the "System Integrator", i. e., the entity with the unique skills that could bring all the elements together into one functioning, state-of-the art telecommunications system for the Authority's own use—and create a financing package and revenue stream to pay for it all.

What went wrong? The most qualified personnel departed as MFSNT diverted them to other construction jobs. New, lesser qualified personnel replaced them, causing coordination and scheduling problems. Instead of accommodating and adjusting, the company became more contentious and litigious. While the fault was by no means solely MFSNT, BART finally reached the conclusion that its "System Integrator" was simply not capable of performing the complex functions necessary to implement the system.

c. State of Iowa

Iowa hired MFSNT to put in a fiber optic system to connect all the state's educational facilities in 1993. Six years later, the system has been offered back to the private sector—with no takers as yet. The system was over engineered, too expensive and not built to meet the needs of the citizens of Iowa.

d. Utah Dept. of Transportation (UDOT)

MFSNT negotiated with UDOT for almost two years to construct a fiber optic system that would serve the department's needs and provide capacity for the upcoming Winter Olympics. Negotiations broke down permanently about two months ago. UDOT cited the intransigence of MFSNT in failing to offer fair market value, either in terms of revenues or in kind services, as the major reasons for the failure of the negotiations.

e. East Coast Electronic Toll Collection Consortium

This project, to provide non stop automated traffic conditions to the motoring public between New York City and the Delaware border, was negotiated by a consortium of agencies (the three New Jersey toll roads, the New Jersey Department of Transportation, the Port Authority of New York and New Jersey and the Delaware Department of Transportation) and MFSNT with Chase Bank. A final relationship was only realized in February, 1998, after more than two years of difficult negotiations. Consortium members stated that MFSNT personnel were incredibly difficult in negotiations; prolonging the process almost to the point of termination for lack of good faith.

f. State of Washington

MFSNT was instrumental in passage of a "Public/Private Partnership Act" that enabled the Department of Transportation to accept up to seven unsolicited proposals from the industry for

innovative projects. MFSNT then proposed a number of electronic toll roads and bridges, with their firm as prime contractors and system integrators.

Local citizens in the Seattle areas raised a firestorm of opposition to the proposals, primarily based on the fact that the State did not have any toll roads and did not want any. MFSNT was specifically named in the ensuing controversy; leaving the state after the citizenry engineered substantial amendments to the Act that effectively halted any commercial efforts or proposals.

g. SEPTA (Southeast Pennsylvania Transit Authority)

This transit agency executed an historic agreement with MFS in 1989 to construct a fiber optic conduit system underneath metropolitan Philadelphia. The company agreed to pay \$7 per linear foot as well as a percentage of gross revenues (1/4 of one per cent) for a closed end portion of the ROW. The parties agreed to re-negotiate after the first five years of the agreement.

From the inception of the agreement, MFS claimed that they had been coerced into paying too much for the ROW. When the time arrived for re-negotiating (the standard was mutual good faith) MFS essentially took the position that a rate reduction was the only acceptable option. MFS further refused to market, or allow SEPTA to market, excess duct space in the system to other interested parties. The parties have been stuck at this impasse for more than four years, despite the efforts of parties (including Kingston Cole & Associates) to find common ground. SEPTA was finally forced to issue an RFP for an agent/broker to market its ROW (and wireless cell sites) to the industry. Final negotiations with the selected party have not been completed, as of the date of this report.

h. Illinois Agencies

MFSNT has been publicly touting new public/private partnership arrangements, still in negotiations, with the Illinois Toll Authority (ITA) and the Chicago Transit Authority (CTA). Although ITA executed an agreement with MFSNT in February to construct a \$28 million system, the agency is having difficulty accepting MFSNT's representations regarding the fair market value of their ROW. Since ITA will receive 85% of revenues for its \$28 million investment—a major funding source for the project—the agency is very concerned that it receive top dollar.

CTA' negotiations with MFSNT to construct a smaller fiber optic system in downtown Chicago are in abeyance while the parties resolve major issues involving the agency's fee title rights in its various ROW. Nevertheless, this agency's personnel have been communicating with their brethren at the ITA. They share mutual concerns regarding fair market value and the ability of MFSNT to perform as a "System Integrator." They have also encountered the same intransigent negotiating style

i. Peninsula Joint Powers Board (JPB)

This transit agency operates a commuter train line between San Jose and San Francisco. An RFP (developed with Kingston Cole & Associates as consultants) was issued in the summer of 1997 that encouraged the fiber optic carriers to bid in a cooperative fashion to develop the JPB's ROW. MFSNT enlisted four companies (IXC, GST Telecom, ELI and NextLink) to bid as a consortium, with MFSNT to act as negotiator and construction company for all parties.

These negotiations, instituted in November, 1997 are ongoing and therefore not subject to disclosure of substantive elements in this report. Final resolution may occur as soon as July, 1998. At that time a separate report, if allowed by the client, will be produced for the Los Angeles MTA.

4. Conclusions

On the basis of the above noted consistent pattern of conduct, we believe this is a company that has developed an allegiance to the private sector that belies their public posture as a "partner" for public sector agencies. Certainly, their conduct toward the MTA, i. e., offering general terms in conditions in a proposal that essentially does not conform to the prerequisites of the MTA's RFP, is consistent with this pattern. There is no reason to expect that the other characteristics noted in section III. A. 3., above will not occur if substantive negotiations are opened. Combining these unpleasant prospects with the financial uncertainty and management discontinuity also noted are reasons enough to urge caution to the MTA.

Bought and sold three times in the last four years, this is a company that clearly has lost its original sense of direction. Top personnel have departed the company (Many have formed new companies, e. g., GST and Level 3), leaving behind less experienced personnel that are unfamiliar with previous commitments and ways of doing business.

B. Analysis of MFSNT Proposal

MFSNT's proposal was one of two (the other was from Spectranet, now known as First World) submitted to the Los Angeles MTS for joint development of the agency's ROW. The terms and conditions are certainly not responsive to many of the requirements of the RFP (e. g., the demand for 12 fibers or 25% of all fiber placed in a duct space, whichever, is greater). The proposal is therefore arguably non compliant with the Call for Projects on its face. These types of competitive bid documents, however, are traditionally accorded more leeway in terms of compliance than more stringent Invitations to Bid (ITBs).

As mentioned in the previous section in several instances, MFSNT has a propensity for making generalized proposals. Unfortunately, the following negotiations tend to be very protracted and often tortuous. The other tendency that we have discerned in MFSNT's negotiating style is their very

narrow interpretation of contract language—and the contentious conduct to force litigation if the other side does not agree.

We discerned the same pattern in the interview of Mr. Davidson, conducted in May of 1998. He was primarily concerned in entering formal negotiations as soon as possible. Mr. Davidson was vague on several points:

- **Construction costs:** These are the heart of MFSNT's proposal, yet details are extremely sparse. The proposal speaks of \$32.2 million in costs. Yet Mr. Davidson indicated that this was only a "ballpark number" subject to revision at a later date. Since the MTA does not even begin to realize any return on its investment of ROW until all these costs are covered, this should not be a subject of conjecture. Furthermore, the proposed Development Agreement terms and conditions for construction, maintenance and repair of the system are vague as to eventual costs—and very specific as to limitations on MFSNT's quality of performance.
- **Revenues:** The revenue projected on page 1 of MFSNT's proposal are supported by the company's previous experiences at BART and NYSTA, according to Mr. Davidson. He did not choose to describe how those two clients are similar, or dissimilar, from the MTA project. Nor did Mr. Davidson making any allowances for existing facilities (e. g., the existing conduit along the Green Line). He apparently had made no inquiries as to existing duct space. When queried as to whether such facilities might change his bid, his response was, "We will always discuss such possibilities."

Existing duct space always enhances the value of a client's ROW. BART charges rental fees based on the availability of duct space in an existing system. BART and MFSNT both paid for creation of that Telesystem—and are extracting commensurately more revenues because of their investments. The MTA should expect the same type of treatment—and proposal—for existing assets that it places in a sharing arrangement.

- **Financing:** MFSNT reserves to itself the selection of any financing of this project. Mr. Davidson was vague during the interview regarding the company, reputation, etc. of any potential firm selected for this activity. The cost of money, and the MTA's ability to constrain, adjust or terminate (e. g., a take out of any financing by the MTA through bonds, etc., at a later date) is a critical factor in any public/private partnership arrangement.
- **Personnel:** No reassurances were provided to the MTA regarding the skills or experience levels of personnel who would be involved in this project. "Competent" appears to be the controlling trait, e.g., Section 4.2 of the Development Agreement specifies a "competent manager", for personnel. Moreover, only vague standards for performance are promised by proposer, e.g., "MFS shall prosecute the work in a prompt and diligent manner, so as to promote the general progress of the work (Section 4.1, *infra*.) Given the company's past performance at the MTA, as well as other examples noted in the previous section, MTA personnel can look forward to a fractious negotiation to define these terms. We believe this is an optimum scenario.

- **Legal Issues:** There were several areas in MFSNT's proposal that dealt with legal issues, e. g., HAZMAT conditions, indemnification, title, risk of loss and warranties that we believe favor the company unduly. We defer to MTA legal counsel as to all specifics; and limit our analysis to one of overall impression.

In our experience, the reconciliation of these terms with those that will be acceptable to the Authority, will be an extremely arduous process. This proposed contract is, if anything, the most egregious example of such contract language that we have encountered from this company to date.

- **Term:** MFSNT is seeking a five year term for this agreement. This time frame is very short for any type of public/private partnership arrangement. When questioned, Mr. Davidson indicated that he believed that this was to the MTA's benefit: They may be interested in some other type of arrangement after five years.

We do not concur. These types of relationships take a significant period of time to develop and mature. The normal term for a fiber optic lease or license with a carrier is a minimum of twenty years. Older deals were often in perpetuity—or 99 years. The more appropriate arrangement is for a public agency to have a twenty year relationship with a "private partner", subject to specific termination clauses for non-performance, forfeiture, bankruptcy, etc.

C. Analysis of the MTA's Rights-of-Way

The following is a brief analysis of the potential of the MTA's rights-of-way. It is limited because the scope of this project has been focused primarily on analysis of the industry, specific industry interest and MFSNT's proposal. Nevertheless, we believe the Authority has considerable assets that will be of interest to various carriers (See Section VI., above).

- **MCI Proposal:** MCI approached the MTA, expressing interest in leasing empty conduit along the Blue Line between downtown Los Angeles and Long Beach. Discussions were terminated because MCI was only able to propose a trade of fiber (space in MTA's conduit for space in MCI's conduit at another location), rather than negotiate a revenue arrangement of interest to MTA. Given the timing of the offer, in September of 1997, we also believe the pending merger of MCI with Worldcom was also a factor in the cessation of negotiations. In any case, a *bona fide*, unsolicited proposal from a major telecommunications firm should be viewed with optimism. It is definite proof that, although there may be differences of opinion, the ROW in question has quantifiable value.
- **Pacific Pipelines Easement:** This agreement provides concrete numbers substantiating value of the MTA's rights-of-way. The fees and equipment are split with the City of Los Angeles. Nevertheless, in one area the parties receive more than \$7.63 per linear foot per year (over .63 if a mile). In another section, the annual rate is \$3.70 per foot for 21.48 miles. Instead of a periodic

COLA, the parties have agreed to re-negotiate rates every five years. Moreover, there appears to be an additional 2 inch duct that could be marketed to the industry, subject to an agreement by the parties. Each of the parties has imposed conditional uses on the other parties—all of which could be re-negotiated to all parties' mutual satisfaction.

- **Blue Line:** There are four 2 inch conduits and hundreds of handholds (access points) to this system along the Blue Line. This run to Long Beach should be readily marketable to CLECs in need of access from Metro Center to Long Beach. Possible interconnections with existing systems (e. g., Anaheim and First World's network) should also be pursued. As indicated in the previous section, existing conduit infrastructure is of greater value than unimproved land (80% of all capital costs for fiber optic company are involved in actually digging the trench, receiving necessary approvals, etc.).
- **Red Line:** This line has approximately four miles of train service, between Union Station and Wilshire and Western Boulevards. An extension, from the latter point to North Hollywood, will be completed by the year 2000. The Red Line system is engineered with a metal shelf under a concrete walkway. While we have not physically walked the ROW, standard construction techniques generally permit laying fiber optic conduit along this metal shelf area.

The area that would be served by this potential telecommunications conduit is a major source of development in the Los Angeles area: Hollywood, Universal City, etc. As fiber optic facilities close the gap to the various movie studios and their subcontractors and consultants, the value of the interconnectivity grows exponentially. Section V.A.'s discussion regarding activities in Burbank is a case in point.

- **Pasadena Blue Line:** The extension of the Blue Line to Pasadena, still in the planning stages, may be another opportunity for the MTA. That opportunity would be based on negotiating a sharing arrangement with the City of Pasadena. That municipality is now in the process of deploying a fiber optic cable system to support its municipal electric activities. A portion of that system will be available for commercial development and partnership sharing arrangements. Pasadena personnel were interviewed regarding the feasibility of a sharing arrangement with the MTA. They indicated that any arrangement that would enhance their project, i. e., a connection to downtown Los Angeles, is of major interest. Pasadena's access to the Jet Propulsion Laboratory, Cal Tech and major firms such as Parsons Brinkerhoff's headquarters, make any discussion of Pasadena as a partner a worthwhile effort.

The fact that there are no transit facilities along the Pasadena Blue Line is not particularly determinative. Fiber optic conduit can be placed in the ROW if the market demand exists for the Pasadena/Downtown Los Angeles connection. Any agreement with carriers would simply have a re-location clause, determining the relative duties of the parties, should the transit facility be constructed at a later date. The key factors will be the sharing arrangement between the city and the MTA—and the market demand for the route.

- **Green Line:** This ROW is owned by Caltrans, with the MTA enjoying right of use. It is all elevated, primarily over the Century Freeway. A sharing arrangement with Caltrans (District 7) will be necessary before implementing any type of program.

Caltrans has recently been changing its policy toward fiber optic development of its ROW; in line with national policies developed by the American Association of State Highway and Transportation Officers (AASHTO). Prior to this shift, the agency categorically opposed any development other than road construction of its ROW.

Kingston Cole & Associates assisted BART during 1993/1994 in developing a sharing arrangement between those two agencies. In that arrangement, Caltrans received 4 strands of dark fiber throughout the common ROW, exit points in all major BART stations and a share of revenues once the initial debt to purchase BART's Telesystem (fiber, trunked radio system, SONET electronics, etc.) is extinguished.

Because these types of mutual assistance pacts involve large public policy issues, we recommend that top level MTA management be involved at the beginning stages of negotiations with Caltrans. We would be glad to discuss the details of this arrangement in greater detail.

- **Metrolink ROW:** These properties, owned by the MTA with train service operated by Metrolink, comprise another set of opportunities for any lease/licensing program. There are additional facilities available via ROW owned by SANBAG. In both areas, the MTA will have to negotiate sharing arrangements. Again, we believe top level management should be involved from the beginning, to ensure acceptance and full development of all opportunities. As noted in the BART/Caltrans transaction, consideration may include revenues, dark fiber or other in kind contributions from one agency to the other.

MTA personnel have indicated that spare duct space exists in several sections of this ROW—and major improvement for an MTA-developed program, if true. It should be noted that MFSNT proposal speaks of the LA-Redlands Corridor (54 miles in length) as a potential source of revenue from both dark fiber (\$10.7 million in total revenues) and conduit rentals (\$8.42 million). Given all the various possible attributes of this ROW, carrier interest should be determined and a physical inspection of the Green Line should occur before any actual marketing to the telecommunications industry.

- **Other Undeveloped ROW:** This report analyzes only the various ROW and issues that can be made available to the industry within a relatively short time frame, i.e., those with existing duct space, room to lay cable, etc. The other criterion was one of marketability, that is, which sites will the industry be most likely to want to develop, e.g., the Pasadena Blue Line with all its large businesses, the Jet Propulsion Laboratory, etc., in that area.

That does not mean that the MTA cannot develop other areas of unimproved ROW. There are several hundred miles more of ROW that have potential for any program. The building blocks for

the development of these properties will, however, be the revenue stream, sharing arrangements with other agencies and relationships that will be created with the industry in the initial stages of a lease/license program.

IX. RECOMMENDATIONS

Based on the findings and analysis contained in this report, Kingston Cole & Associates proffers the following recommendations for review and consideration by the Los Angeles MTA:

1. Reject the MFSNT Proposal

This is a company that is now in the midst of tremendous turmoil. The proposal itself is vague, ambiguous and lacks any real substantive commitment by MFSNT. At the very least, the MTA could expect three to six months of rancorous negotiations with this company before closure. Certainly the company is really not putting itself at risk. Its proposal very clearly indicates that no construction will take place until actual market interest is ascertained.

We believe that interest already exists. MFSNT's *modus operandi* in similar projects and proposals has been to recover all its construction costs, margins and much of the intrinsic value of the ROW (which is the government agency's commitment and risk) before ever sharing with a public partner. Given the company's minimal commitment of five years, the possibility that the MTA would receive next to nothing for a lengthy period of time is considerable.

We also note all the other inconsistencies described in Section VIII.B., above. In summary, the MFSNT proposal offers so many uncertainties and negative terms and conditions as to be almost devoid of value—real or speculative—to the MTA.

As a procedural matter, we also recommend that First World (the other proposer) also receive a notice that the MTA is no longer considering them.

2. Develop and Implement a Fiber Optic Licensing Program

a. Legal Authority

The original Call for Projects created the fiber optic program. It has been seeking definition and purpose ever since. From a legal/competitive bid perspective, both responses were non conforming.

We submit that the marketplace for developing such a relationship has already spoken, more than once. Rejection of the MFSNT proposal is merely a logical extension of that program. Therefore, yet another competitive bid process is not necessary. The MTA's needs to develop its own program in which ROW will be licensed in a fair and nondiscriminatory manner to all carriers on a nonexclusive basis. Given these impartial criteria, no competitive bid process is required: everyone is treated the same.

There appears to be more than sufficient authority, as well as precedent, for the MTA to proceed in this fashion. We believe that sufficient authority and enabling language exists for the MTA to commence a fiber optic licensing program (A license is a non-real property right, acceptable to the industry, that devolves less than a lease or easement does to a carrier.). The Joint Development Committee for the MTA and the LACTC adopted policy guidelines that would serve this recommended program well. Section 30634 of the State Public Utilities Code confers the authority:

“Joint Development’ includes, but is not limited to, agreements with any person, firm, corporation, association, organization or any other entity, public or private, to develop or to engage in the planning, financing or construction of district facilities or development projects adjacent, or physically or functionally related, to district facilities.”

There are a number of policies covered by this broad gauge enactment language. Public/private partnership arrangements are clearly solicited. Fees are also permitted and encouraged; as are the fair market issues of investment risk, financial return and asset security (risk management.) for the MTA.

b. Real and Perceived Limitations of the Program

Several transit authorities conduct fiber optic leasing programs, e. g., BART, MBTA, WMATA. Most are highly remunerative—if the agency is able to respond to market conditions and can offer ROW at fair market value prices. The major limitations are defined in the U.S. Telecommunications Act of 1996; that is, carriers must be treated in a fair and nondiscriminatory manner.

These agencies have also created their programs in different ways. BART chose to develop a partnership arrangement. WMATA simply declared itself in the leasing business. MBTA outsourced its efforts to former employees without a competitive bid process.

If MFSNT’s proposal is rejected, we do not advocate issuing another Call for Projects. The MTA has solicited proposals more than once.

c. Action Steps

We believe the telecommunications industry is intensely interested in the MTA’s ROW. Certainly, the MCI proposal supports this approach, as well as our vendor survey. The appropriate action plan is to establish the licensing program. The following steps are necessary precursors to actual marketing of the ROW:

- **Planning Phase:**

1. Identify all those elements of the system that are of maximum, medium and low interest to the industry. Concentrate marketing efforts initially on only those of maximum interest.

2. Establish a range of values for the various ROW. While rates can be changed, depending upon market conditions, other available routes, etc., an agency must take the first steps to give the industry fair and affordable prices for its ROW. Section X., Business Plan, provides an initial assessment of what we believe those rates may be.
3. A full scale analysis of all available telecommunications assets (duct, raceways, etc.) should be conducted. This will be the "inventory" for the program.
4. Develop a process, and upper management support, for negotiating mutual assistance pacts with other agencies, including but not limited to Caltrans, Metrolink and the cities of Los Angeles and Pasadena.
 - The Joint Development policies described above should serve as a template for this process.
5. Develop a coordinated team approach to the processing/negotiating of fiber optic agreements. This includes staff from various departments to analyze and determine track time, legal issues, financial implications, etc. for the program. The Business Plan, Section X., below, describes a number of the issues and interactions necessary for this step.

Implementation Phase

1. Establish the program
 - Formally reject MFSNT and First World proposals
 - Announce program to Industry
 - Provide the "inventory", e. g., maps, data, etc. regarding available ROW to the industry
2. Market ROW with existing facilities and with the maximum assessed value to the industry
 - Market other ROW in descending order of priority, i. e., less value, no existing facilities
3. Be prepared to negotiate and execute multi faceted arrangements, e. g., conduit space in one segment of a ROW; dark fiber strands in another.
4. Finalize all mutual assistance pacts with public agencies on an as-needed basis, i.e., the pact should be driven by the industry demand—not the other way around.
5. Assure continuing support of the program, from all levels of MTA management, by allocating a portion of revenues received to fully support staff requirements and other expenses.

X. BUSINESS PLAN

The recommended program is a realistic, affordable and quickly attainable one. It has costs and potential revenues that must be evaluated by higher management before a final decision to proceed can occur. The following comprises our analysis of the key components of such a program, including costs, key staff roles, negotiating strategies and potential revenues.

A. Costs

1. Real Estate Department Management

Implementation of a coherent set of strategies for development of the MTA's ROW licensing program is a straightforward process. Many of these action steps have been noted in the previous section. Based on the experience of other transit districts, we recommend that the program be managed, on a daily basis, as part of the Real Estate Department for several reasons.

- Joint development projects in other transit districts are the traditional bailiwicks of real estate personnel.
- The general background of personnel, their skill levels and the "culture" of Real Estate Departments are more entrepreneurial than, for instance, Operations or Engineering Departments.
- Real estate personnel negotiate leases and other conveyances with the private sector on a regular basis; they are more accustomed to demands, mannerisms and other characteristics of the commercial marketplace than other transit agency counterparts.

2. Overall Coordination

While day-to-day management should be the purview of Real Estate personnel, there are a number of areas that require higher level management and coordination for this type of program to succeed. We project the fiber optic licensing program will result in revenues to the MTA of more than \$2 million per year. The possibility of one time offers from carriers of several millions is also a distinct possibility, given industry trends. Lastly, developing, negotiating and maintaining long term relationships with other large agencies, cities and other "public partners" requires a thorough understanding of joint development and other public policies as well as sophisticated political judgment and experience.

We therefore recommend that overall coordination for the program be vested in Regional Transportation Planning & Development, where the requisite skills most likely will be found. Cooperation and coordination with other departments, including Legal staff, Operations and Engineering personnel (particularly for their approval processes for track allocation time) will also be required functions under this overall coordination role.

3. Top Level Management Support

This program will not succeed without top level management support. Public/private partnership arrangements such as the proposed licensing program are high profile projects that can enhance an agency's reputation—and make money for them. They are also programs that do not fit within a traditional government agency's methods of operation: they cause uncertainty and unrest to standard thinking processes.

Mid level management attitudes are therefore often threatened by these programs. Inter departmental jealousies and "turf" issues can quickly tarnish these entrepreneurial efforts—simply because they are different. Only top level support that understands the overall benefits, political benefits and vision of such programs can save them. If executive support cannot be elicited and maintained, it is better for all parties—the agency, the industry and the potential other public agencies—to resist completely the impulse to establish the program.

4. MTA Staff Cost Estimates

Estimates of annual personnel year (PY) costs are as follows:

- Real Estate Personnel: 1 middle level manager on a full time basis (1 PY)
- Regional Transportation Planning & Development: one quarter of a middle level manager (1/4 PY)
- Legal Support: One third of an attorney's time for one half year; incidental time thereafter (1/3 PY)
- Operations and Engineering support: Miscellaneous personnel time (1/2 PY)
- Auditing and accounting functions: Incidental personnel time only (1/10 PY)

5. Staff Functions and Accountability

a. Program Management:

Real Estate personnel will be charged with day-to-day management and coordination as well taking the lead in all negotiations with the carriers and other interested parties. Regional Transportation Planning & Development staff will oversee the project and interface with Legal, Operations, Engineering and Accounting personnel.

b. Operations and Engineering:

These personnel must be involved from the inception of the program. Initial functions will include analysis and approval of track allocation time and supervisory functions. Traditionally, the fiber optic licensee will cover reasonable front end administrative expenses if existing duct space is the subject of negotiations. With unimproved land transactions, these track-associated costs become a major point of negotiations, i. e., carriers are dubious of claims for large numbers of personnel to supervise their work efforts.

Operations personnel will also be involved with ongoing supervision of maintenance and repair functions by licensee(s) once a project is completed. The one half PY noted above factors in these costs on an ongoing basis.

c. Legal Personnel:

One attorney should be selected to work exclusively with the project. Using multiple attorneys will necessarily create "learning curve" problems because of the unique characteristics of fiber optic licensing programs. On the other hand, key documents, e. g., the actual licenses themselves, are relatively streamlined documents. While each carrier will have idiosyncratic contract requirements, the general terms and conditions that protect a transit agency are relatively straightforward. During the first one half year, as the attorney is processing the first series of licenses, the work will be the most time consuming. After that period, the legal terms and conditions become standard in their application.

B. Revenues

1. Strategies

As indicated in the previous section, we recommend that the Authority concentrate on developing its already existing duct space (Blue Red Line). This should be followed by any longitudinal ROW that allows ready placement of conduit with fiber cable, e. g., walkways, raceways, etc. Lastly, unimproved real estate (raw land with reasonably clear title) that will require construction should be considered for development. Since the MTA is not willing to risk any funds in construction, this last option will require finding a carrier with its own capital to invest.

2. Revenues Versus In Kind Offers

The last category, unimproved real estate, will provide the MTA with the greatest latitude in terms of accepting in kind contributions in lieu of cash revenues. Often, a carrier will offer fiber strands, an extra duct or fiber and/or duct space in another area. We recommend a flexible approach that best suits the needs of the Authority at the time of the proposed offer.

At the inception of the program, revenues should be paramount, per our discussions with staff. If the initial marketing effort (See the next section) reveals a plenitude of demand, the MTA may elect to receive duct space from the first carrier along a given stretch of ROW; and then market the same duct space to a second carrier for cash and dark fiber. If more than two carriers are interested in a specific route, the Authority may choose to negotiate with all three (or four) in a serial fashion. This approach will require maximum flexibility and negotiating skills. There is no reason to doubt that all three forms of remuneration, cash, duct space and dark fiber, cannot be achieved.

Dark fiber is an anomaly. It has a maximum value to the party that actually uses it. We have not ascertained any specific internal needs the Authority may have. Given the mandate to develop revenues, this has not been a priority. Leasing of dark fiber strands is therefore the second best use of this commodity. The Burbank example, with the described concomitant rates is the best approach to this type of leasing. That is, the marketing effort should expand from just licensing duct space to carriers to leasing dark fibers to carriers or businesses. This expansion cannot occur, however, until the market demand is ascertained and a reasonable revenue stream is developed.

b. Annual Revenues versus One Time Fees

The capital market is currently very much enamored of the telecommunications industry, particularly the new start ups such as MFN and Level 3. As a consequence, large amounts of capital has become available to these firms. They, in turn, are more apt to offer a one time payment to a potential licensor rather than annual fees with COLAs, etc.

Annual fees are generally paid over a twenty to thirty year term. Annual COLAs are rare; those at five years common. Some contracts allow the parties to re-negotiate the issue of fair market value every five or ten years. The Pacific Pipeline transaction envisions this approach with the MTA and the City of Los Angeles. As noted in Section V. B., above, SEPTA's experience with negotiations have not been favorable.

All of these factors must be considered by an agency if a large, one time fee is offered. That is, the licensor must look at the transaction from a comparative perspective of annualized payments. If annual payments are already being received, a one time fee is easily compared, using net present value analysis that incorporates the cost of money to the carrier over a given period of time (20 to 30 years) versus the same cost of money to the agency.

3. Marketing Efforts

We recommend that the marketing efforts initially focus on the newer CLECs. Specifically, we believe the carriers described in VI. should be contacted. They should be given a two to three page written description of all available MTA rights-of-way. Maps describing these same facilities, with as much detail as possible, should be provided. The four routes described in the

MFSNT proposal are an adequate initial guideline for development; although other areas and routes may also be of interest to carriers.

The negotiating team should be assembled at the same time. The lead person will be the Real Estate Department manager. The selected attorney, as well as any consulting expertise, should also be designated to the team. Operations and Engineering personnel need not involve themselves in actual marketing efforts or negotiations. They must, however, be kept informed on an ongoing basis of all efforts. At the appropriate time, their expertise in pricing/allocating track time and other functions can be introduced to the process.

4. Actual Negotiations

For the existing duct space, negotiations should be fairly straightforward. CLECs will have specific amounts of cable (probably 216 strands per 1 and ½ inch cable) that need to be pulled through the existing duct system. Given a reasonable time for discussion of price, we estimate that four to six weeks will be needed to complete this type of negotiation.

If a carrier want to construct actual facilities along unimproved ROW, negotiations are more complicated. The issues of in kind services versus revenues often arises in these types of dealings. Since the carrier is expending considerably more capital, the issue of one time payments versus annual payments is also more likely to occur. Flexibility, comparing the offer to fair market value received by other agencies and understanding the needs of the CLEC are the major guidelines in this situation.

5. Estimated Revenues

MFSNT provided revenue estimates in their proposal in the amount of \$23.34 million for licensing of duct space and dark fiber. The MTA's share of this "Total potential net revenue" was estimated at \$11.69 million. The problems with their proposed numbers have already been described in section VIII. B., above.

MFSNT was not willing to invest any money until market demand was clearly established. The proposed approach here is almost identical with one key exception: The MTA is not willing to commit any monies to install dark fibers (MFSNT indicates that dark fiber would be installed in all four routes). This limits any revenue projections to duct space only. MFSNT's total innerduct revenue projection is still substantial, however. \$16.6 million—without a number for the Green Line-LAX segment—is still a significant amount.

MFSNT estimates one time fees of approximately \$52,000 per innerduct mile. This translates into \$10 per linear foot over a twenty year period. Depending upon the interest rate calculation, this number is equivalent to approximately \$1 per linear foot on an annualized basis. These are in fact fair estimations of value, in our opinion.

We therefore recommend that the number of \$1 per linear foot per year should be used as a baseline figure by the MTA for planning purposes. The major difference is that the MTA will be receiving all of the revenues from its program. MFSNT's approach would have left open ended the question of construction costs. Moreover, MFSNT would have received one half of the proposed program's revenues for the entire term of the various licenses; although their obligations and affirmative responsibilities would have effectively ended after five years (unless the parties agreed to some continuance).

A full scale analysis of all possible ROW and other issues that may affect revenues for the proposed program is not within the scope of this consulting contract. We have, however, detailed the steps and approaches necessary to produce that estimate. Several attachments, e. g., the User Agreement, will provide the MTA with additional aids in the estimation process. Based on the findings in this report, as well as our understanding of comparable revenues received by other agencies, we believe an annual revenue stream can be developed in less than two years (by end of second quarter, 2000) of approximately \$2 million. Over a five year period, this revenue stream could grow to \$4 million, if it receives proper support and encouragement.

XI. CONCLUSION

The Los Angeles MTA now has an opportunity to develop its own fiber optics licensing program. No time could be better than now. We recommend proceeding with this effort for the following reasons:

- Several other transit agencies have established similar programs that can be emulated; thereby precluding the guesswork and uncertainty of a pioneer effort. The template exists for success.
- Marketplace conditions are excellent. Demand for bandwidth, including the Internet and new fiber optics applications, is doubling almost every two years. Wall Street is enamored of all activities related to development of information services including the Internet and the convergence of the telecommunications, computer and entertainment industries. As a consequence, new CLECs with large amounts of capital are being created on a regular basis.
- Market demand for the MTA's various ROW has already been substantiated. The Pacific Pipeline transaction, the MCI offer and the two proposals proffered by MFSNT and Spectranet are flawed, but nevertheless compelling evidence, that the MTA should move forward. To do nothing in the face of this demand would be dereliction.
- No risk is involved in the proposed program. Simply put, the licensing program involves a finite commitment of staff resources, less than two PY's during the first year, to establish a revenue stream.

- The total revenue stream could be as high as \$16.6 million, if duct space and reasonable construction occurs in response to the program. On an annualized basis over a twenty year period, this translates to approximately \$1.5 million, depending upon the net present value calculation.

For all of the forgoing reasons we recommend that the MTA proceed with the development of its own program. Please do not hesitate to contact us with any questions or concerns regarding this report or its recommendations.



Submitted by: Kingston Cole
for Kingston Cole & Associates
June 29, 1998

ATTACHMENT 1

COMPARABLE TRANSIT AGENCY RATES

AGENCY	WHAT WAS LEASED	RATES	MISCELLANEOUS
MARTA	Segments of 45 mi. ROW	\$3.00/ft* +one time fees	Some in-kind, some one time lump fees; plans for leasing dark fiber-72 strands in existing conduit
DART	Segments of abandoned oil co. pipeline ROW w/ option to install more of 136 mile ROW	\$1.23/ft +one time fee	Original deal 3-4 years ago. Have missed window of opportunity for dark fiber
SEPTA	Conduit space in ROW in downtown Philadelphia	\$2.00 to \$7.70/ft	In final negotiations for agent/broker agreement for wireless and fiber development of all ROW
WMATA	Dark fiber & conduit	Dark Fiber: \$0.025 per strand/ft. Conduit: \$2.50/ft	Total annual revenues from fiber \$1.7 million
NY MTA	Conduit space for river crossings, tunnels	\$2.75/ft \$3.75/ft \$13.50/ft	Highest rate for East River crossing. Lowest rate for upper Manhattan where old Empire City Subway system has depressed entire market. Dark fiber too political.
NJTD	Conduit all over the State of New Jersey	\$1.20/ft +One time fees from \$49K to \$1,089K	10 agreements yielded \$3.9 million in lump sums payment plus annual income of \$3.6million
MBTA	Conduit space	\$.98 to \$5.50/ft plus COLA	Average 25 year contracts. No plans yet for dark fiber
BART	Conduit space Dark Fibers (12 per sheath)	\$1.85 to \$5.07/ft for conduit space; prorated premium for dark fiber	Capitalized lease pays for \$45 million in telecom equipment; \$3.1 million in income (6/98)

* Annual Rent

USER AGREEMENT

MFS Network Technologies, Inc., a Delaware corporation (hereafter "MFSNT") and _____, a _____ corporation (herein called "User") hereby agree as follows:

1. **Definitions.**

"BART" shall mean the San Francisco Bay Area Rapid Transit District.

"Communications Cable" shall mean optical fiber and other media reasonably acceptable to MFSNT for the high speed transmission of multiplexed broadband voice and data signals, including without limitation audio and video broadcast signals.

The "Conduit System" shall mean a conduit system within the rights-of-way owned by or granted to BART in and around the San Francisco/Oakland, California metropolitan area.

The "License Agreement" shall mean a certain License Agreement between BART, as licensor, and MFSNT, as licensee, pursuant to which BART granted to MFSNT the right to use and occupy portions of the BART rights-of-way for the operation of the Conduit System.

The "User Route" shall mean a conduit cell or the right to use a portion of the cable tray system within the Conduit System approximately _____ long. The location of the User Route within the Conduit System is shown generally on Exhibit 1 attached hereto.

The "User Term" shall mean the period which commences on the date this Agreement has been fully executed by User, BART and MFSNT and which ends on _____.

2. **User Rights.** Subject to the terms of this Agreement, MFSNT hereby agrees to maintain the User Route. The rights granted to User hereunder include, but are not limited to:

- a. the right to have one Communications Cable within one conduit cell along the User Route for the User Term;
- b. the right to have its Communications Cable inserted in the User Route by MFSNT at User's cost, subject to the approval of and on the terms specified by MFSNT; and
- c. the right to have the User Route modified to allow connection to other ducts or facilities to which User has access, at User's cost, subject to the approval of MFSNT and BART.

Nothing contained in this Agreement shall be construed to compel MFSNT to construct or extend any conduit or other facility. On termination of this Agreement, User shall be responsible for the cost of removing its Communications Cable from the User Route.

3. **Fees and Charges.** User agrees to pay the fees and charges as specified in this Agreement in accordance with the terms and conditions contained in Exhibit 2 (hereafter the "User Fee"). MFSNT shall issue invoices to User, and User shall remit payment of the User Fee to MFSNT. Nonpayment of any portion of the User Fee due under this Agreement shall constitute a default of this Agreement. The User Fee is due and payable within thirty (30) days after the date of MFSNT's invoice to User. Any invoiced amount, or portion thereof, for which payment has not been received within thirty (30) days after the date of the invoice shall be past due. Past due amounts shall bear interest at the rate of one and one quarter percent (1 1/4%) per month, compounded monthly, commencing with the date of the invoice.

4. **MFSNT Representations and Covenants.** MFSNT hereby represents to User that MFSNT and BART have entered into the License Agreement, pursuant to which BART granted rights to MFSNT concerning the Conduit System, and made certain representations and warranties with respect to the Conduit System. MFSNT expressly disclaims any further warranties or representations except as expressly set forth in this Agreement.

5. **Permitted Use.** User will use the User Route and the Communications Cable therein only for its own normal business purposes and will not lease, license or allow the use of the User Route or the Communications Cable installed or contained therein by any other party, or assign its rights to, or allow use of, the User Route, the Conduit System or the Communications Cable contained therein to any third party, nor shall User encumber, or allow the encumbrance of, the User Route, the Conduit System or the Communications Cable contained therein.

6. **Maintenance and Access.**

- a. MFSNT agrees to repair, constantly maintain, reinforce and otherwise preserve the User Route, in accordance with normal industry standards. Without limiting the generality of the foregoing and recognizing the importance to User in the conduct of User's business of the constant efficacy of the User Route, MFSNT hereby agrees to effect and perform at all times, all necessary, on-site repair and maintenance of the

User Route, effective commencement of which shall begin no later than ____ hours after MFSNT receives notification from anyone of failure, disrepair, impairment or other need for repair; PROVIDED, however, that in the event any of the User Rights are interrupted by earthquake or other such force majeure related event, repairs will be made as expeditiously as possible; and FURTHER PROVIDED that MFSNT's obligations to repair within the time specified above shall at all times be subject to and contingent upon BART allowing MFSNT to enter into the Conduit System to effect such repairs.

- b. BART and MFSNT or their agents shall have the right to alter the location of the User Route or the Conduit System. Such action shall be without liability to User for damage to the User Route or interference with the User Rights.

7. **User Authorities.** User shall be responsible for obtaining from the appropriate public and/or private authority any required authorization to operate its Communications Cable on public and/or private property before placement of any Communications Cable within the User Route. User shall submit to MFSNT and/or BART such evidence as may be required to demonstrate compliance with this paragraph 7.

8. **Assignment.**

- (a) MFSNT may assign all or any part of its rights under this Agreement to another party without the consent of User; upon such assignment, MFSNT hereby agrees to cause such assignee to contemporaneously therewith agree in writing to perform all of MFSNT's obligations under this Agreement, whereupon MFSNT shall be released from liability hereunder. User shall have the right to assign this Agreement only after obtaining the prior written consent of MFSNT and BART, which consent may be withheld or given in the sole discretion of MFSNT and BART.
- (b) In the event that the License Agreement between MFSNT and BART terminates or expires prior to the termination or expiration of this Agreement, MFSNT shall be deemed to have assigned all of its rights and duties hereunder to BART (or to BART's designee) effective as of the date of termination or expiration of the License Agreement. BART and User hereby expressly consent to said assignment by their approval and execution, respectively, of this Agreement.

9. **Title.** No use, whatever its duration, of the User Route or Conduit System or payment of the User Fee required under this Agreement shall create or vest in User any ownership or other property rights in the User Route or the Conduit System. Neither this Agreement nor any license granted hereunder shall constitute an assignment of any of the rights of MFSNT or BART to use the public or private property in or around the User Route.

10. **Indemnification by User.** User will indemnify and hold harmless MFSNT, and all officers, directors, employees, partners and agents of MFSNT from and against any and all claims, demands, costs, damages, losses, liabilities, joint and/or several, expenses of any nature (including reasonable attorneys', accountants', and experts' fees and disbursements), and judgments, fines, settlements and other amounts (herein collectively called "Damages") arising from any and all claims, demands, actions, suits or proceedings, civil, criminal, administrative or investigative (herein collectively called "Claims") relating to or arising out of User's actions or omissions related to this Agreement, including but not limited to:

- a. User's use of the User Route or the conduct or management of User's business with regard to the User Route or the connections thereto, except to the extent such Damages are caused by a default of the provisions hereof by MFSNT;
- b. any breach by User of any obligation or covenant under this Agreement;
- c. any failure of any representation or warranty made by User herein to be true in any material respect as of the date made or deemed made;
- d. any Claim by any customer of User relating to the provision by User of services to such customer through the User Route;
- e. any Claim of any third party resulting from the negligence or willful misconduct of User;
- f. any Claim arising directly or indirectly from the operation of User's communications facilities, including all taxes, and special charges by others;
- g. any Claim for infringement of copyright, patent or trademark with respect to the manufacture, use and operation of User's communications facilities or any service used by or provided by User;
- h. any Claim for unauthorized use of television broadcast programs and for unauthorized use of other program material;
- i. any Claim resulting from User's failure to obtain and/or continue in effect all

necessary permission to construct and maintain its facilities from any public authority and/or any property owner; and

j. any Claim for breach of any legal obligation by User.

11. **Interruption of User Service.** MFSNT shall have no obligation to User respecting any interruption of the User's rights in and to the User Route caused by an event of force majeure or other event beyond the reasonable control of MFSNT, nor shall MFSNT have any obligation for any other interruption or delay unless such interruption or delay is caused solely by the gross negligence of MFSNT. IN NO EVENT SHALL MFSNT BE LIABLE FOR SPECIAL, CONSEQUENTIAL, EXEMPLARY OR PUNITIVE DAMAGES AS A RESULT OF THE PERFORMANCE OR NONPERFORMANCE OF ITS OBLIGATIONS UNDER THIS AGREEMENT.

12. **Events of Default.** If the User defaults in the performance of any of its covenants, conditions, representations or warranties hereunder, and in the event that said default continues uncured for a period of 15 days after written notice of the default from MFSNT, then MFSNT may terminate this Agreement, and User shall immediately remove, on demand, all of its Communications Cable located within the Conduit System.

13. **Binding Effect.** This Agreement shall be binding upon, and shall inure to the benefit of, the parties hereto, their permitted successors and assigns.

14. **Governing Law.** This Agreement shall be governed by and interpreted pursuant to the laws of the State of California. MFSNT and User shall at all times observe and comply with, and the provisions of this Agreement are subject to, all laws, ordinances, and regulations which in any manner affect the rights and obligations of the parties hereto under this Agreement, so long as such laws, ordinances or regulations remain in effect.

15. **Entire Agreement.** This Agreement sets forth the entire agreement of the parties with respect to the subject matter hereof.

16. **Notice.** All notices or approvals required or permitted under the terms of this Agreement shall be in writing and shall be delivered either personally or by prepaid nationally-recognized commercial overnight delivery service which maintains evidence of receipt (such as Federal Express), addressed as follows:

If to MFSNT:

If to User:

or at such other address as the entity to which notice or approval is to be given may have communicated to the other party in writing in accordance herewith. Any such notice or approval shall be deemed to have been given when delivered if delivered personally or on the first business day after dispatch if sent by commercial overnight delivery service (such as Federal Express).

17. **Publicity.** Except as may be otherwise required by law, each party shall obtain the written consent of the other party prior to releasing any public announcements, press releases, sales brochures, advertising or other publicity materials relating specifically to this Agreement in which the name or logo of any other party is used; any such consent shall not be unreasonably withheld or unduly delayed.

18. **No Partnership.** The Parties acknowledge and agree that this Agreement does not create a partnership between, or a joint venture of, MFSNT and User. The performance by the parties of all duties and obligations hereunder shall be as independent contractors and not as agents of the other party, and no persons employed or utilized by a performing party shall be considered employees or agents of the other.

19. **Modification.** This Agreement may be amended, changed or otherwise modified only by written document which specifically refers to this paragraph 19 and which is executed by MFSNT, BART and User.

20. **Insurance.**

- a. User shall carry insurance including contractual liability coverage issued by an insurance carrier satisfactory to MFSNT to protect MFSNT from and against any and all claims, demands, causes of action, judgments, costs and attorneys' fees, expenses and liabilities of every kind and nature which may arise or result, directly or indirectly from or by reason of such loss, injury or damage as covered in Paragraph 10.
- b. User shall provide the insurance set forth below:
 - (i) commercial general liability insurance for bodily injury (including death) and

property damage which provides limits of not less than two million dollars (\$2,000,000) per occurrence and four million dollars (\$4,000,000) annual aggregate as respects products/completed operations if applicable;

- (ii) automobile liability insurance for bodily injury (including death) and property damage that provides total limits of not less than one million dollars (\$1,000,000) per occurrence to all owned, non-owned and hired vehicles;
- (iii) statutory workers' compensation and employers' liability insurance of not less than one million dollars (\$1,000,000) per occurrence applicable to employers' liability coverage for all employees engaged in services under this Agreement.

The policy shall include broad form all-states/other states coverage. Coverage shall be endorsed to include the insurer's waiver of subrogation in favor of MFSNT, its officers, representatives, agents and employees, a copy of which shall be provided to MFSNT.

- c. All insurance must be effective before MFSNT will allow User's Communications Cable to be installed in the Conduit System and shall remain in force until such communications media have been removed from the Conduit System.

MFS NETWORK TECHNOLOGIES, INC.
("MFSNT")

By: _____

Dated: _____

("User")

By: _____

Dated: _____

APPROVED AND CONSENTED TO:

SAN FRANCISCO BAY AREA RAPID TRANSIT
DISTRICT ("BART")

By: _____

Dated: _____

EXHIBIT 1

[User Route Location Map]

EXHIBIT 2
SCHEDULE OF FEES AND CHARGES

As used herein the term "User Fee" refers to any payments specified in this Exhibit 2 for occupancy or use of the User Route. The term "Charge" shall include all other payments required of User under this Agreement.

1. User Fees

a. General

- i. User Fees commence on the first day of the calendar month following the date that this Agreement is fully executed and approved or such other date as the parties hereto may agree. User Fees cease as of the final day of the calendar month in which the User Agreement terminates and/or expires.
- ii. User Fees shall be payable semi-annually in advance on the first day of January and July.
- iii. For the purpose of computing the total User Fees due hereunder, the User Fee shall be based upon the number of duct feet of conduit or linear feet of cable tray to be used by User, as agreed by User and MFSNT as of the first day of January and the first day of July each year. The first advance payment of the semi-annual User Fee for licenses issued under this Agreement shall include a proration from the day payment of the User Fee commences to the first regular semi-annual payment date.

b. Fees for the Conduit System

i. Per foot of duct or cable occupied in Segment _____: \$_____ per each six month period.

ii. For the purpose of computing the total fee due hereunder, the length of the User Route considered occupied shall be measured from the center to center of manholes, or from the center of a manhole to the end of User Route occupied by User's communications facilities.

iii. The total amount of duct or cable to be occupied by the User at the commencement hereof shall be _____ linear feet.

c. The fee per foot of duct or cable tray so occupied shall be adjusted on the fifth anniversary of the date on which the User Fees commence under paragraph 1(a)(i) of this Exhibit 2, and every five years thereafter, by multiplying the fee by a fraction in which the numerator in the [specify index] most recently published before the date of adjustment and the denominator is the [same index] most recently published prior to the execution hereof; provided, that such fraction shall not be less than 1.

2. Other Charges

a. Administrative Charge. Within five (5) business days after complete execution of this Agreement User shall pay MFSNT an administrative charge of \$10,000.00.

b. Miscellaneous Charges. All Charges for field survey, made-ready work, inspections, rearrangement of the facilities of BART or MFSNT, rearrangement or removal of User's facilities from the Conduit System and any and all other work performed for User or otherwise authorized under this Agreement, shall be based upon the full cost and expense to BART or MFSNT of such work or for having such work performed by an authorized representative of BART or MFSNT at then-current rates of BART or MFSNT.

**LOS ANGELES MTA
CONDUIT AVAILABILITY**

RAIL	LIMITS	LENGTH	DESCRIPTION	ISSUES
BLUE LINE	Downtown To Long Beach	22 miles	4 empty conduits	Conduit available for licensing
RED LINE	Union Station To Wilshire/Western	8 miles	Open Trench along right-of-way (ROW)	Constraints pulling fiber underground.
RED LINE	Wilshire/Western to No. Hollywood	14 miles in (5-99) 20 miles in (2000)	Open Trench along right-of-way (ROW)	Constraints pulling fiber underground; Segment 2B, Wilshire/Western to Hollywood/Vine, to open May, 1999; Segment 3, Union to No. Hollywood to open Mid 2000
GREEN LINE	Norwalk to El Segundo	15 miles (line length)	Spare Conduit Unknown	Requires partnership agreement with Caltrans
METROLINK	Los Angeles County ROW San Bernardino County ROW	138 miles 23 miles		Metrolink owned conduit in MTA ROW requires partnership agreement; Sandbag owned ROW in San Bernardino Co. maintained by MTA requires partnership agreement
UNDEVELOPED RIGHT-OF WAY	Various locations	Approx. 100 miles	Raw ROW--no conduit or improvements	Require lessee to install conduit and fiber

ANALYSIS OF THE WIRELESS INDUSTRY

A. Introduction

This is an industry in the midst of torrid growth. Experts now estimate that 10,000 sites per year will be developed nationally over the next five years to complete the transition from analog to digital for the more mature cellular service providers; as well as completely new Personal Communications Services [PCS] networks for the newer market entrants. Extended forecasts call for as many as 100,000 new sites by the year 2115, if all wireless systems now certificated by the Federal Communications Commission are completely constructed.

Partnership arrangements between wireless telecommunications carriers and the public sector for the placement of telecommunications equipment, including antennas on public property, can be beneficial for both parties. At the most basic business level, the wireless industry needs to construct tens of thousands of facilities, including roof top installations, lamp post installations, monopoles and lattice towers, over the next five to ten years. To accomplish this mammoth task, the industry needs to negotiate myriad contractual arrangements, including easements, leases and licenses with landowners.

Large landowners, if they can provide reasonable access and timely processing of applications, will be favored over one-at-a-time contractual agreements. Economies of scope and scale are extremely relevant; substantial decreases in paperwork, permit applications and legal expenses all argue for large scale arrangements between large land owners and the industry. The common denominator for these transactions, whether the landowner is public or private, is money—generally a substantial revenue stream that is calculated on large numbers of sites.

The public sector can realize substantial revenues for antenna sites because wireless telecommunications carriers—unlike the traditional wireline carriers—typically pay market value for sites. In addition, wireless antenna poles and towers built by private carriers (or their surrogates, the site location development companies) can be used by public agencies for their own telecommunications purposes.

The potential revenue flow to a public agency can be substantial. Individual antenna sites, particularly those being developed by the newer, state-of-the-art PCS carriers are small. The revenue per site may therefore not be significant. However, each PCS carrier needs many sites, and there are several different types of service and a number of competing carriers providing each service. Furthermore, since the older, more mature cellular carriers are now switching from analog to digital equipment (that can carry more calls), they, too, need more facilities placed more closely together to be able to provide improved, more reliable service to their customers.

Antenna sites on a government agency's properties can be an important alternative to sites on private property for several reasons. They can reduce the need to deal with many individual property owners. Government agencies may also be in a position to minimize some of the considerable expense and delay in the local approval process applicable to sites on private property. The difficulties, costs and delays in establishing sites on private property are very real, major concerns faced by the wireless service providers today. Thus, these carriers—particularly the new entrants who must build their networks from the ground up—have a real incentive to negotiate realistic, large scale contractual arrangements with transit and transportation agencies.

B. Wireless Competition

Wireless carriers are interested in providing service to an entirely different segment of the telecommunications market than their wireline counterparts. They want to sell to the general public--at least the ones who can pay the prevailing rates. Wireless operators must also have ubiquitous network infrastructures that do not have "holes" or "blind spots" where telephone service is lost or "dropped" by the service providers. That is why they require as much ROW as possible, as soon as possible--particularly for the newer, Personal Services Communications Carriers who are building their networks from scratch.

These carriers are also much more intense in their desire to compete with each other. They do not develop cooperative arrangements. If one is perceived to have an unfair competitive advantage, the others will immediately protest and file litigation. These latter considerations are why the question of accepting "in kind" consideration from the wireless industry is so much more problematic.

Simple items, e. g., the irrevocable right of a public agency to have space on any tower located on its premises is not discriminatory treatment because such a contract term (We advocate reserving this right in any agreement with wireless carriers.) offers no benefit to a particular carrier. Accepting service from one carrier, however, without benefit of a competitive bid process, would be construed by all competing carriers in that jurisdictional area as offering unfair benefit to one at the expense of the others.

There are numerous incompatibilities and differences between the carriers that would make any type of equitable arrangement (e. g., accepting the same amount of service from one carrier as another) almost impossible to manage. These carriers use different radio frequencies, employ different types of hardware and software and charge different prices for everything they provide. In short, they are true competitors. And, as discussed in the next section, the wireless industry has been accorded special treatment under the Telecommunications Act of 1996.

C. Regulatory and Legal Conditions for the Wireless Industry

1. National Level: Deregulation

Wireless industry participants, both new and old, and with few exceptions, have chosen to compete in the marketplace on a much more deregulated, pro competitive basis than their wireline counterparts. The FCC has declared this marketplace to be completely deregulated since its inception. State commissions imposed minimal rules in the 1980's, but have almost completely relinquished authority over wireless communications in the 1990's. The U. S. Telecommunications Act of 1996, discussed below, largely re-enforces this deregulation trend. This is therefore a much younger, more dynamic environment that does offer opportunities for public agencies to obtain fair market value for their various assets and properties.

The FCC intentionally designed into the first wireless arrangements a modicum of real competition. When the first licenses were granted in 1984, the FCC made sure there were two competing carriers in each major metropolitan area in the United States (European wireless services were already vigorously competitive--and had been since the 1970's.). The resident Bell System carrier was given one license (the A license) and an additional license was auctioned off to competing

carriers, including Cellular One, AT&T, etc. The Bell System carriers were required to establish separate subsidiaries for their wireless activities to ensure a truly deregulated marketplace.

Twelve years later, in 1995, the FCC auctioned more frequencies to create even more competition, known as the C and D Blocks (A block represents a portion of the radio spectrum that is regulated, and auctioned, by the FCC to various, competing wireless carriers. The D, E and F Blocks were auctioned in 1996 and 1997 with much less demand for licenses than expected; an indication that marketplace is probably becoming saturated with competition. Most of the most populous states therefore have at least three, and more likely four, competitors in their major metropolitan areas.

Outlying rural areas, however, are lucky to have service at all. The FCC licenses for these less populated sections went begging in the 1997 auction; selling for as little as one dollar for rural areas in Montana, North and South Dakota, etc.

In August of 1995, President Clinton demonstrated the commitment of the federal government to the wireless industry by issuing an executive order (60 FR 42023) mandating that federal buildings must provide access for wireless antennas. Rules and procedures have been developed to expedite this process. The Post Office (really a quasi federal agency), the Bureau of Land Management and the Department of the Interior have embarked upon major programs to lease their various buildings and properties to the industry; albeit with varying degrees of success (See our review of comparable federal and state agencies).

The newer carriers are in the midst of major network construction efforts, comprising tens of thousands of sites throughout the country. Since they are deregulated, proudly and insistently so, they are therefore much more likely to pay fair market value for leases and licenses on properties that support their facilities, including lattice towers, monopoles and other equipment. More importantly, the U. S. Telecommunications Act of 1996, discussed below, expressly allows state and local agencies to lease or license their properties and ROW to the industry for fair market value. This then is the major distinction--for public agencies--between wireless and wireline carriers.

The wireless carriers are also interested in providing service to an entirely different segment of the telecommunications market than their wireline counterparts. They want to sell to the general public--at least the ones who can pay the prevailing rates (European and Asian wireless rates are approximately one half of their American counterparts; customer penetration numbers are more than double.). Wireless operators must also have ubiquitous networks to provide service to the general public. That is why the newer carriers in particular require as much ROW as possible, as soon as possible to construct their networks. Large swaths of contiguous, connected ROW suit their needs.

These carriers are also much more intense in their desire to compete with each other. They do not develop cooperative arrangements. If one is perceived to have an unfair competitive advantage, the others will immediately protest and file litigation.

2. Wireless Deregulation in California

The California Public Utilities Commission (CPUC) has been taking a completely "hands off" approach to the wireless industry during the last few years. That was not always the pattern. In the mid 1980's Pacific Bell's allegedly separate subsidiary was investigated and fined repeatedly by the Commission for improprieties; primarily not returning to ratepayers the benefits derived from this unregulated unit. By the early 1990's, the condition had become so intolerable that Pacific Bell spun off this subsidiary, thereby creating Air Touch (now a national leader in wireless communications).

Pacific Telesis, however, changed its mind yet again when the FCC began to auction the PCS frequencies in 1995-1996. Pacific Bell Mobile Services (PBMS) became the new, unregulated subsidiary for the holding company, thereby affirming (at least in Telesis management minds) that this industry has vast potential for growth.

As described above, local jurisdiction is the source of constant turmoil between cities, transit agencies, etc., on one side and the carriers on the other. Local municipalities, particularly zoning boards and city councils that have fought specific tower sites in their city limits, have been sued by the industry. Legal theories that have been employed by the industry (often successfully) include:

- Arbitrary and capricious usage of zoning codes and restrictions
- Imposition of indefinite (and hence unreasonable) moratorium periods on all towers or facilities
- Denial of building permits for reasons not within the purview of the municipal agency, e.g., Electromagnetic Forces (or EMF's, discussed in the Technology and Engineering Issues section of this report, *infra*), a subject specifically preempted by the U.S. Telecommunications Act of 1996.

While the wireless carriers will litigate with a local authority, they will do so only as a last resort--and only after expenditure of considerable time and effort to accommodate local sensitivities. More often, the carriers will just seek a less controversial, alternative site. When they do litigate, however, the carriers have generally been successful. The lessons learned by local zoning authorities have therefore been, as infrequently as they may occur, painful and expensive.

California has been more successful regarding the issue of local control than other states. The League of California Cities adopted a model ordinance that is gaining adherents from both sides, at least in California. This ordinance defines the process steps necessary to obtain a permit by a carrier. Streamlined review and approval occur for relatively non-controversial sites, such as roadways and parking lots. Church steeples and school buildings are subject to more stringent restrictions and approval processes. This approach (available on the Internet) has been widely adopted in California.

II. U. S. Telecommunications Act of 1996

A. Section 704: Wireless Facilities Siting; Radio Frequency Emission Standards

The Federal Telecommunications Act of 1996 includes provisions specifically intended to assist wireless telecommunications carriers generally in building the infrastructure needed for the future. The statute also contains specific provisions that encourage placement of multiple antenna sites on various government agencies' properties and ROW.

Historically, local zoning and approval processes have governed wireless antenna sites and construction. The first cellular systems deployed their networks generally on private property, subject to that jurisdiction.

The Telecommunications Act continues that local or state government regulatory authority. However, it also imposes important limitations on this same authority. The paramount limitation is: state and local governments cannot unreasonably obstruct the building of antenna sites within their respective jurisdictions.

Section 704 of the 1996 Act amended Section 332(c) of the Communications Act of 1934 (47 U.S.C. 332[c]) by adding language which provides that the 1996 Act does not limit the authority of state and local governments to make decisions regarding the placement and construction of wireless facilities, except as provided in Section 704.

While Section 704 of the Act preserves state and local authority, it also imposes limits on the exercise of state and local authority over antenna siting and construction. Section 704 provides that: 1) State or local governments cannot unreasonably discriminate between providers; 2.) State or local governments cannot prohibit, or have the effect of prohibiting the provision of personal wireless services; 3.) State or local governments must act on a request to place or construct wireless service facilities within a reasonable time; 4.) State and local governments cannot deny applications unless they do so in writing and their decisions are supported by substantial evidence in a written record; 5.) State and local governments may not regulate the placement or construction of wireless service facilities based on the environmental effects of radio frequency emissions to the extent that these same facilities comply with FCC regulations regarding emissions, also known as electromagnetic frequency emissions (EMF's); and, 6.) Any person adversely affected by any local action or failure to act which is inconsistent with Section 704 may file a suit in any court of competent jurisdiction, or a petition with the FCC.

B. Section 253: Removal of Barriers to Competitive Entry: FCC Powers of Preemption and States' Powers to Offer Their Rights-of-Way for Reasonable Rates

While Section 704 is specific to the wireless industry, another section of the U.S. Telecommunications Act, Section 253, may have an even greater impact on both wireline and wireless communications services--depending upon how the FCC acts in the future to further its stated goals of encouraging deregulation. Section 253 authorizes the FCC to actually preempt state or local laws that impermissibly impede the provisions of the Telecommunications Act. Subsection (a) provides that no state or local statute, regulation or other requirement may prohibit, or have the effect of prohibiting, the provision of interstate or intrastate telecommunications services. Subsection (b) provides that nothing in this Section affects the authority of a state to impose on a

competitively neutral basis (and consistent with Section 254 regarding Universal Service requirements) requirements to protect the public safety and welfare, ensure the continued quality of telecommunications services and safeguard the rights of consumers.

Section 253 therefore authorizes continuing state and local regulation, but cautions that any regulations may not have the effect of prohibiting the provision of telecommunications services within their respective jurisdictions. Subsection (d) provides the enforcement power of the section, expressly providing the FCC with authority to preempt state and local laws. It reads as follows:

"(d) Preemption. If, after notice and an opportunity for public comment, the Commission determines that a state or local government has permitted or imposed a statute, regulation or legal requirement that violates subsection (a) or (b), the Commission shall preempt the enforcement of such statute, regulation or legal requirement to the extent necessary to correct such violation or inconsistency."

The last subsection of 253, (c), permits state or local governments to manage public ROW and to require fair and reasonable compensation from telecommunications providers on a competitively neutral and non discriminatory basis for the use of their public ROW. This critical section recognizes that states and local governments can control antenna sites (or presumably fiber optic systems) without federal interference. The only other restriction on compensation from the telecommunications industry is that the compensation must be "publicly disclosed by such government"; presumably bowing to maximum public disclosure requirements and statutes that apply almost ubiquitously to all government agencies.

Section 253 contemplates that state and local regulations can be preempted on a case-by-case basis. However, as noted in the previous section, local authorities have been creating an increasing number of obstacles to the industry as the number of cell sites and antennas has grown. The FCC's most recent response (May, 1998) has been to propose a set of informal rules, work shops, etc., that will be offered to industry members as well as local authorities. Initial reactions were unfavorable—from both sides. Outright preemption of local authorities does not appear to be a politically feasible solution at any time in the near future.

III. Recommendations

The Los Angeles MTA has not been the subject of an exceptional number of inquiries regarding leasing of cell sites. We do not believe that the agency should forego the opportunity to develop a program simply because the industry is not clamoring for sites. There are several possible reasons for this ostensible lack of demand.

MTA has been viewed as an agency in turmoil for several years. Additionally, cumbersome competitive bid processes are a fact of life at MTA as well as most other government agencies. Wireless industry members need a process that allows them to select a site and move through the approval process in a fairly rapid manner—generally six months from initial site selection to commencement of construction. Thus, the industry probably does not view MTA as a major candidate for site development.

Kingston Cole & Associates has pioneered the development and negotiation of master license agreements (MLAs) on behalf of government agencies with the industry. These documents

comprise all general terms and conditions that govern the respective parties conduct over the ten to twenty years of the public/private relationship. Individual site agreements (ISAs) that comprise specific terms and conditions for each site (e. g., access times, height of a tower, etc.) are then appended to the MLA. This approach has been successful for clients as diverse as: New Jersey Department of Transportation (now earning \$2.1 million in annual revenues); BART (revenues in excess of \$300,000 per year); the State of Michigan (a state-wide program will be in existence by the fall of 1998); and, Caltrans (program was earning almost \$3 million as of March, 1998).

Given these success stories and background of the industry, we recommend the following initial steps:

- Review with staff all possible sites for cell sites
 - ◆ This is in effect defining what the MTA's "inventory" is
- Review and discuss with KC&A our MLAs for other agencies
 - ◆ Resolve regulatory issues, i.e., whether competitive bid process is necessary
 - ◆ Determine suitability for MTA
- Conduct market survey to determine if actual industry interest exists
 - ◆ Develop estimate of potential revenues

After the above steps are completed, the MTA can make a decision to proceed with direct negotiations with the industry—the probable approach, assuming that the carriers are treated in a fair and nondiscriminatory manner.

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