Termination and Channel Mileage, is used from the POI to the end office (Type 1) or access tandem (Type 2A). A fixed Digital Trunk Termination charge is used to recover the cost of terminating the DS1 facility into a switch at the end office (Type 1) or access tandem (Type 2A). In addition, except for Florida and Louisiana, BellSouth imposes a fixed Control Access Register charge which BellSouth says is used to recover non-traffic sensitive costs in those offices. Finally, a fixed MOU rate is used, which in most of the states provides LATA-wide coverage for mobile-land calls.

### 6.4.4 Nynex

Different rate structures are used by Nynex for Type 1 and Type 2A connections. In addition, there is considerable variation in rate structures between the five different states for both types of connections. Figures 6.9 and 6.10 depict the rate structures in Massachusetts.

In four of the Nynex states (Maine, New Hampshire, New York, and Rhode Island), there is only a message unit charge for Type 1 instead of an MOU rate. In Massachusetts there is a combination of a per-message charge and MOU while Vermont strictly has an MOU rate. Except for New York, the message unit charges generally provide five minutes of conversation for one message unit. Consequently, in the majority of Nynex states, a rate anomaly results in that rates for Type 1 are cheaper than those for Type 2A for a typical two-minute wireless call.

In addition to the message or MOU charges for Type 1, there is a Digital Transport Facility charge which has fixed and mileage-sensitive components to recover the cost of the facility between the POI and the end office. There is also a Digital Port charge to recover the cost of the terminating equipment at the end office.

In New Hampshire, Massachusetts, Rhode Island, and Vermont various access elements are used to derive the Type 2A rates. In Maine and New York, a single MOU is quoted without any identification of the various rate elements. For those states using access rate elements, all of them use Local Switching and Local Transport Facility, and Local Transport Termination. New Hampshire, Massachusetts, and Vermont also include Carrier Common Line plus Vermont adds the Line Termination and Intercept elements. All of these charges are intended to recover the cost of the Connecting Facility so there is no separate facility charge for Type 2A circuits in Nynex.

### 6.4.5 Pacific Bell

Although the rates themselves are different, Pacific Bell uses similar rate structures for Type 1 and Type 2A. The rate structure includes facility charges and the usage rate includes both per-message as well as per-minute-of-use components. Pacific Bell also offers term pricing options that provides reduced usage rates if certain traffic volumes are exceeded over a three year period.

For Type 1 connections, the Connecting Facility extends from the POI to the end office providing the Type 1. The charge for the Connecting Facility includes Channel Termination and Channel Mileage elements. At the end office, there is a Circuit Termination charge as well as a Trunk Charge.

Two options are offered for Type 2A which are "bundled" and "unbundled." The difference is that the bundled option includes the digital facility whereas with the unbundled option, the digital facility is billed separately. The configuration in Figure 6.12 shows the unbundled option. The rate structure is the same as that for Type 1.

### 6.4.6 SBC Communications

Similar to BellSouth, SBC Communications uses an identical rate structure for both Type 1 and Type 2A connections that consists of a facility charge and an MOU charge. However, unlike most of BellSouth, SBC Communications has a lower rate for Type 2A than Type 1. In addition, SBC Communications provides a discounted facilities rate for two-way or terminating-only facilities in recognition of the fact that the wireless network is terminating a percentage of traffic on the wireless network.

The facilities charges for the Type 1 and Type 2A circuits that includes Channel Termination and Channel Mileage charges. For these connections, SBC Communications imposes only a single Channel Termination charge, which is a slight difference from the other LECs. The Channel Mileage charge has fixed and mileage-sensitive components. There are no trunk termination or facility termination charges.

Usage rates for SBC Communications are based on minutes-of-use. There is no identification of any access service elements in the rates that are quoted. Type 2A rates are typically about 20% cheaper than Type 1 rates.

### 6.4.7 U S WEST Communications

Different rate structures are used by U S WEST Communications for Type 1 and Type 2A but U S WEST Communications has been very successful in achieving almost identical rates and rate structures throughout its fourteen state territory. These different rates also result in Type 2A being cheaper than Type 1 connections.

As shown in Figure 6.15, the Type 1 connections include a DS1 Facility, DS1 Connectivity, and possibly DS1 Transport charges for the facility portion. There is no mileage charge if the SWC and end office are the same. If DS1 Transport charges apply,

there are fixed and mileage-sensitive components. End office rate elements include Digital Channel Termination, Transport Termination, and Switching. The Digital Channel Termination charge is the equivalent of a Trunk Termination charge in other jurisdictions. The Transport Termination and Switching charges are an MOU-based charge.

Charges for Type 2A connections by U S WEST Communications include a facility charge from the POI to the access tandem and then MOU-based Local Transport and End Office Switching elements from the access tandem to the end office terminating the call. The DS1 facility charges include charges for Channel Mileage and Channel Facility elements with Channel Facility being synonymous with Channel Termination in other areas. Both Local Transport and End Office Switching are billed as a fixed amount per minute-of-use.

With Type 2A connections, the usage rate provides LATA-wide call terminations to U S WEST Communications offices. Terminations to non-U S WEST Communications offices is possible via a higher usage rate.

## 7.0 Comparison Of LEC Interconnection Rates

Interconnection rates can be a significant expense for a wireless carrier but comparing rates between different locations can be difficult. This is primarily because of the number of variables involved in the process which includes the cost of facilities to link the wireless location with the LEC office for interconnection, the rate elements are included in the usage rate calculation, and the calling scope provided by the quoted usage rate.

Without considering the variables, the usage rate alone can be misleading. For example, the calling scope of some usage rates are distance-sensitive as well as being usage-sensitive. Other usage rates provide calling scopes for a defined geographical area which

can be as small as a Local Calling Area (LCA) or as large as a Local Access and Transport Area (LATA).

Rates that are distance sensitive often have rates that are linked to mileage bands but these bands are by no means standard between LECs. For example, one LEC may have bands that are 0-10, 11-19, and 20-50 miles while another may use bands that are 0-8, 9-15, 16-25, and 26-40 miles.

Other rates may be message-rated instead of billing on a minutes of use basis. Message units may apply for periods as small as one-minute or for a call that may last up to eight minutes. If the message unit is for an eight-minute period, one message unit applies regardless of whether the call lasts 30 seconds or seven minutes and 59 seconds. Thus the length of the average call is also important in comparing rates.

## *7.1 The Base Case Interconnection Architecture*

In order to provide a standard type of arrangement for comparison purposes, MTA-EMCI used the same basic configuration for each location. This configuration, which is shown in Figure 7.1, includes Type 1, Type 2A, and Type 2B switched interconnection arrangements plus private lines to connect two remote cell sites back to the Wireless Switching Center (WSC). These types of connections are quite typical of existing arrangements although the facility mileage's will have considerable variations from those shown in Figure 7.1. Nonetheless, the configuration does provide a standard means of comparing rates from different jurisdictions.

All of the facilities in Figure 7.1 are assumed to be digital links that operate at the DS1 level, or 1.544 megabits per second (Mbps). Normally a DS1 facility is the equivalent of 24 voice channels but for the private line applications, like those to the two cell sites, bit

compression devices are available which can increase this capacity to 48 channels or more. However, due to distortions that can occur when facilities using these bit compression devices are linked together, they can only be used for private line applications and are not allowed on connections to a switch.

The Type 1 connection in Figure 7.1 is assumed to be located one mile from the end office providing the Type 1 connection. This end office, labeled End Office "A" in the diagram, is also known as the Serving Wire Center (SWC) and all connections are physically routed through the SWC.

A Type 2A connection is obtained from the Access and Local Tandem, which in this configuration is assumed to require a total of two-miles of facilities. Because one of these facilities is between the SWC and the Tandem, it is called an "interoffice facility." In some LECs, there is different facility pricing for local and interoffice facilities.

The Type 2B connection is served from End Office "B" in Figure 7.1. It requires a total of five miles of facilities, of which four miles are interoffice facilities.

Cell Site "A" is linked to the WSC by private line facilities that are connected in the SWC but do not require any switching function. Since these facilities are served entirely from End Office "A" there are no interoffice facilities involved.

Cell Site "B" is more remote and requires a total of eight mile of facilities, six of which are interoffice facilities.

It was assumed that all calls had a duration of two minutes and that the calls required 10-miles of transport to complete. The ten miles of transport simply means that the call terminated ten airline miles beyond the office where the call was switched so it does not

include the facility from the WSC to the switching point. In most cases, but not all, the facility between the WSC and the switching point is billed separately from the usage rate. The ten-mile distance was selected to represent the airline distance between two LEC offices for a typical call. The two-minute duration is still approximately the average length of a wireless call.

## *7.2 Rate Locations*

A comparison was made of the interconnection rates in at least one city in each of the 50 states plus Puerto Rico. Puerto Rico was included because the Federal Communications Commission (FCC) has the authority to issue radio licenses in Puerto Rico and approve interstate interconnection rates.

In some cases more than one location was used in a single state. While all states are served by multiple LECs, in some cases some of the larger cities are served by different LECs. In addition, an effort was made to include some cities from all of the major LECs in the United States. Hence, some states have more than one city included in the study.

Data for interconnection rates from a total of 59 different locations involving 15 different LECs was gathered and analyzed. While a number of the interconnection rates are contained in tariffs filed by the LECs, there are also a number of contractual arrangements for interconnection. Complete copies of the contractual arrangements were not available but the LECs did provide pricing information suitable for comparison purposes.

The specific locations and LECs that were used in the study are shown in Table 7-1 below.

## Table 7-1

## Rate Study Locations And LECs

| STATE | [illegible] | [illegible] |
|---|---|---|
| Alabama | Birmingham | BellSouth |
| Alaska | Anchorage | Alaska Telecommunications Utilities |
| Arizona | Phoenix | U S WEST Communications |
| Arkansas | Little Rock | SBC Communications |
| California | Los Angeles | GTE |
| California | Los Angeles | Pacific Bell |
| California | San Francisco | Pacific Bell |
| Colorado | Denver | U S WEST Communications |
| Connecticut | Hartford | Southern New England Telephone |
| Delaware | Wilmington | Bell Atlantic |
| District Of Columbia | Washington | Bell Atlantic |
| Florida | Miami | BellSouth |
| Florida | Orlando | Sprint LTD |
| Florida | Tampa | GTE |
| Georgia | Atlanta | BellSouth |
| Hawaii | Honolulu | GTE |
| Idaho | Boise | U S WEST Communications |
| Illinois | Chicago | Ameritech |
| Indiana | Indianapolis | Ameritech |
| Iowa | Des Moines | U S WEST Communications |
| Kansas | Wichita | SBC Communications |
| Kentucky | Louisville | BellSouth |
| Louisiana | New Orleans | BellSouth |
| Maine | Bangor | Nynex |
| Maryland | Baltimore | Bell Atlantic |
| Massachusetts | Boston | Nynex |
| Michigan | Detroit | Ameritech |
| Minnesota | Minneapolis | U S WEST Communications |

| | | |
|---|---|---|
| **Mississippi** | Jackson | BellSouth |
| **Montana** | Helena | U S WEST Communications |
| **Nebraska** | Lincoln | Lincoln Telephone |
| **Nebraska** | Omaha | U S WEST Communications |
| **Nevada** | Las Vegas | Sprint |
| **Nevada** | Reno | Nevada Bell |
| **New Hampshire** | Nashua | Nynex |
| **New Jersey** | Newark | Bell Atlantic |
| **New Mexico** | Santa Fe | U S WEST Communications |
| **New York** | New York | Nynex |
| **North Dakota** | Bismarck | U S WEST Communications |
| **Ohio** | Cincinnati | Cincinnati Bell |
| **Ohio** | Cleveland | Ameritech |
| **Oklahoma** | Oklahoma City | SBC Communications |
| **Oregon** | Portland | U S WEST Communications |
| **Pennsylvania** | Pittsburgh | Bell Atlantic |
| **Puerto Rico** | San Juan | Puerto Rico Telephone |
| **Rhode Island** | Providence | Nynex |
| **South Carolina** | Columbia | BellSouth |
| **South Dakota** | Sioux Falls | U S WEST Communications |
| **Tennessee** | Nashville | BellSouth |
| **Texas** | Dallas | SBC Communications |
| **Utah** | Salt Lake City | U S WEST Communications |
| **Vermont** | Burlington | Nynex |
| **Virginia** | Richmond | Bell Atlantic |
| **Washington** | Seattle | U S WEST Communications |
| **West Virginia** | Wheeling | Bell Atlantic |
| **Wisconsin** | Milwaukee | Ameritech |
| **Wyoming** | Cheyenne | U S WEST Communications |

Basic usage rates were noted for each of the 59 locations. Typically, a Minutes Of Use (MOU) basis was used by the LECs for these usage rates. This was true for all Type 2A

and Type 2B rates although some LECs, notably Ameritech and Nynex, used a message rate basis for Type 1 connections.

The rates for the DS1 connecting facilities were also compiled. These rates normally contain non-recurring and monthly recurring charges. The monthly recurring charges usually have a fixed component as well as a mileage-sensitive component. These total monthly charges need to be included in the cost of the total interconnection rate but to do so required converting a fixed monthly sum into an MOU-based usage rate. To accomplish this, it was assumed that each DS1 would carry 8000 minutes of use. The 8000 minutes of use is a fairly conservative estimate that would provide an excellent level of service using a number of different traffic assumptions for the subscribers.

In addition to the facilities charges, a number of LECs also have charges for trunk terminations and other miscellaneous items. Often, these charges also have non-recurring and monthly recurring charges. The trunk charges are for the equipment that terminates the facility into the switching machine and may either be on a per-trunk basis or per DS1 facility. If the charges were on a per-trunk basis, they were multiplied by 24 to obtain an equivalent DS1 rate. The monthly recurring charges were added to the DS1 facility charges, where applicable, so that the total charges could be divided by 24.

A Total Equivalent Usage Charge was then obtained by summing the DS1 facility charges plus trunk termination charges, then dividing that total by 8000 (for the minutes of use) and again by 24 since a DS1 contains 24 channels. The result was a cost that averaged $0.002315 for the facilities used for Type 2A connections for all locations.

An average per-foot rate for DS1 facilities was also computed using the monthly fixed charges plus any monthly mileage-sensitive charges for all of the DS1 facilities used in the Base Case example. These facilities included those used in conjunction with the Type 1, Type 2A, and Type 2B connections as well as the private line DS1 facilities used to

connect the two cell sites to the Wireless Switching Center. The charges for all five DS1 facilities were totaled and then divided by five to obtain a monthly average. The average price per foot was obtained by dividing the total facilities charges by 18 to find the average price per mile and then divide that amount 5,280 to obtain a per-foot average.

Appendix 7-2 provides a summary of the Basic Usage Rates and Total Usage Rates for Type 1, Type 2A, and Type 2B connections, as well as the average per-foot price for DS1 facilities, for the various locations that were included in the study.

## *7.3 Interconnection Rates - National Averages*

Interconnection rates for all 59 locations were totaled and sorted into seven different categories. Computations on these categories included a mean average, standard deviation, plus the maximum and minimum values for each category. The specific categories, and the charts that depict the results, are shown in Table 7-2 below.

**Table 7-2**

**Interconnection Rate Categories**

| Rate Category | Chart Depicting Results |
|---|---|
| **Type 1 Basic Usage Rate** | Chart 7A |
| **Type 2A Basic Usage Rate** | Chart 7B |
| **Type 2B Basic Usage Rate** | Chart 7C |
| **Average DS1 Price Per Foot** | Chart 7D |
| **Total Type 1 Usage Rate** | Chart 7E |
| **Total Type 2A Usage Rate** | Chart 7F |
| **Total Type 2B Usage Rate** | Chart 7G |

Basic usage rates are strictly the usage rate components and do not include additional charges such as facility or trunk termination charges. A Total Usage Rate is computed when these components are added to the Basic Usage Rate.

As shown in Chart 7A, there is a tremendous range of Basic Usage Rates for Type 1. The average value is $0.047463 with a standard deviation of $0.028378. The median average is $0.037. Las Vegas, Nevada, has the lowest Type 1 Basic Usage Rate at $0.016286 while Nashua, New Hampshire, has the highest rate at $0.159 per minute of use.

Type 2A Basic Usage Rates average $0.026923 per minute of use with a standard deviation of $0.010632. The median value is $0.0245. San Juan, Puerto Rico, has the highest rate at $0.07 and Dallas, Texas, has the lowest rate at $0.012442.

Chart 7C shows the Type 2B Basic Usage Rates with a mean average of $0.022346 and a median average of $0.0206. The standard deviation is $0.012054. The highest Type 2B Basic Usage Rate is again found in San Juan, Puerto Rico, and it is identical with the Type 2A rate of $0.07. Chicago, Illinois, has the lowest Basic Type 2B rate at $0.0064.

As previously explained, the basic architecture used DS1 facilities to connect the Type 1, Type 2A, Type 2B, and provide private lines from the Wireless Switching Center (WSC) to the cell sites. For all locations, the mean average was $0.018548 per foot with a standard deviation of $0.006154. The median average was $0.016307. San Juan, Puerto Rico, had the highest DS1 rates at $0.043486 per foot while the lowest rate is $0.009745 in Reno, Nevada. These results are shown in Chart 7D.

Chart 7E depicts the Total Type 1 Usage Rate which has a mean average of $0.050957 with a standard deviation of $0.029866. The median average is $0.039591. Nashua, New Hampshire, still had the highest rate but it increased to $0.163766 because of the facility

and trunk charges. Dallas, Texas, edged out Reno, Nevada, for the lowest rate at $0.018941. This was primarily due to the trunk charges for Reno.

Total Type 2A Usage Charges, as shown in Chart 7F, have a mean average of $0.028767 and a standard deviation of $0.01074. Not surprisingly, San Juan, Puerto Rico, had the highest rate since San Juan also had the highest rate for both the Type 2A Basic Usage Rate and the highest DS1 price per foot. The lowest Total Type 2A rate is found in Dallas, Texas, at $0.014359.

Many locations, but not all, have lower rates for Type 2B than Type 2A. Chart 7G shows the mean average Total Type 2B rate as $0.024901, which is slightly lower than the rate for Type 2A. The standard deviation is $0.011872 while the median average is $0.021974. Once again, San Juan, Puerto Rico, has the highest rate at $0.076021. The lowest rate is Milwaukee, Wisconsin, whose rate is $0.007746.

## *7.4 Interconnection Rates - Specific Locations*

Interconnection rates for each of the categories for all of the 59 locations that were sampled are listed below. Included in the data is the ranking, both numerically and by quartile, of that location in comparison to the other locations.

Because a number of locations had the same rates, there are not 59 different rate possibilities for each category. Moreover, the number of variations was not the same in each rate category. Consequently, the numerical rankings have slightly different significance in each category and the size of each quartile varies by category. Listed below are the number of different rates for each category as well as the size of each quartile for each category.

**Table 7-4**

**Rate Variations Per Category And Quartile Sizes**

| [illegible] | Rate Per Category | Size Quartile Up To Whole Numbers |
|---|---|---|
| Type 1 Basic Usage Rate | 44 | 11 |
| Type 2A Basic Usage Rate | 40 | 10 |
| Type 2B Basic Usage Rate | 34 | 9 |
| Average DS1 Price Per Foot | 49 | 13 |
| Total Type 1 Usage Rate | 57 | 15 |
| Total Type 2A Usage Rate | 46 | 12 |
| Total Type 2B Usage Rate | 40 | 10 |

Charts 7-1 through 7-59 show the Total Usage Rates for Type 1, Type 2A, and Type 2B for each location in comparison to the national average for those categories.

### 7.4.1 Alabama (Birmingham)

Chart: 7-1

Local Exchange Carrier: BellSouth

Alabama has the same Basic Usage Rate ($0.02231) for Type 1, Type 2A, and Type 2B connections. This results in Alabama ranked in the Top Ten for both Basic and Total Usage Type 1 rates but they drop into the 2nd quartile for both Basic and Total Type 2A rates. Largely because there is no difference between Type 2A and Type 2B, the Basic and Total Type 2B rates slip to the third quartile. BellSouth's usage rate provides LATA-wide termination to BellSouth offices.

Connecting facility rates are excellent as BellSouth's DS1 rates in Alabama are $0.013226 per foot and rank in the 1st quartile.

| Rate Category | Rate | Statewide Ranking | Quartile |
|---|---|---|---|
| Type 1 Basic Usage Rate | $0.02231 | 8 | 1st |
| Type 2A Basic Usage Rate | $0.02231 | 15 | 2nd |
| Type 2B Basic Usage Rate | $0.02231 | 18 | 3rd |
| Average DS1 Price/Foot | $0.013226 | 8 | 1st |
| Total Type 1 Usage Rate | $0.024794 | 8 | 1st |
| Total Type 2A Usage Rate | $0.025226 | 19 | 2nd |
| Total Type 2B Usage Rate | $0.025508 | 23 | 3rd |

### 7.4.2 Alaska (Anchorage)

Chart: 7-2

Local Exchange Carrier: Anchorage Telecommunications Union

Anchorage has identical Basic usage rates for Type 1, Type 2A, and Type 2B connections but in reality only has Type 1 connections in service. However, if Type 2A or Type 2B connections were ordered, the Basic usage rate ($0.0202) would be the same as Type 1. The DS1 price per foot in Anchorage is $0.014998, resulting in a ranking of 14th out of 49 different rates.

In spite of being a rather high-cost area, the interconnection rates in Anchorage are quite favorable with all of them being in the first or second quartile.

| Rate Category | Rate | National Ranking | Quartile |
|---|---|---|---|
| Type 1 Basic Usage Rate | $0.0202 | 58 | 1st |
| Type 2A Basic Usage Rate | $0.0202 | 12 | 2nd |
| Type 2B Basic Usage Rate | $0.0202 | 14 | 2nd |
| Average DS1 Price/Foot | $0.014998 | 14 | 2nd |
| Total Type 1 Usage Rate | $0.021199 | 3 | 1st |
| Total Type 2A Usage Rate | $0.021285 | 12 | 2nd |
| Total Type 2B Usage Rate | $0.022078 | 18 | 2nd |

### 7.4.3 Arizona (Phoenix)

Chart: 7-3

Local Exchange Carrier: U S WEST Communications

Type 1 rates in Phoenix are just under the national average and rank 31st out of a total of 44 rates.

Basic and Total Type 2A and Type 2B rates are also less than the national average. Type 2B is priced slightly lower than Type 2A. Total Type 2A is tied with all but one of the other U S West locations for 21st out of 46 so it is just in the 2nd quartile. Total Type 2B rates are similar, being tied for 17th with all but one of the other U S West locations out of a total of 40 rate possibilities.

The DS1 rates are among the highest, ranking 44th out of 49.

| Rate Category | Rate | Ranking | Quartile |
|---|---|---|---|
| **Type 1 Basic Usage Rate** | $0.0481 | 31 | 2nd |
| **Type 2A Basic Usage Rate** | $0.0245 | 22 (14-way tie) | 2nd |
| **Type 2B Basic Usage Rate** | $0.0206 | 16 (14-way tie) | 2nd |
| **Average DS1 Price/Foot** | $0.025124 | 44 | 4th |
| **Total Type 1 Usage Rate** | $0.049793 | 35 | 3rd |
| **Total Type 2A Usage Rate** | $0.02566 | 21 (13-way tie) | 2nd |
| **Total Type 2B Usage Rate** | $0.021974 | 17 (13-way tie) | 2nd |

### 7.4.4 Arkansas (Little Rock)

Chart: 7-4

Local Exchange Carrier: SBC Communications

Interconnection rates in Little Rock are below the national average for all categories and rank in the first quartile for each of the categories. The pricing provides an economic incentive to use Type 2B in conjunction with Type 2A since Type 2B is one-half the rate for a Type 2A and Type 1 is 25% higher than Type 2A.

The Type 1 rates share a four-way tie with the other SBC Communications' locations.

Type 2A rates are tied with three other SBC Communications locations while Type 2B is a five-way tie with other SBC Communications states plus Louisiana.

The DS1 rate is the third lowest of all the locations.

| Rate Category | Rate | Rank | Quartile |
|---|---|---|---|
| **Type 1 Basic Usage Rate** | $0.025 | 11 (4-way tie) | 1st |
| **Type 2A Basic Usage Rate** | $0.020 | 10 (3-way tie) | 1st |
| **Type 2B Basic Usage Rate** | $0.010 | 4 (5-way tie) | 1st |
| **Average DS1 Price/Foot** | $0.01115 | 3 | 1st |
| **Total Type 1 Usage Rate** | $0.025219 | 10 | 1st |
| **Total Type 2A Usage Rate** | $0.020237 | 8 | 1st |
| **Total Type 2B Usage Rate** | $0.011604 | 4 | 1st |

### 7.4.5 California (Los Angeles)

Chart: 7-5

Local Exchange Carrier: GTE

Los Angeles is served by two LECs - GTE and Pacific Bell. Therefore, wireless carriers that serve the entire Los Angeles area may have interconnections with both LECs.

For a relatively high-cost area like Los Angeles, GTE's rates for Type 1, Type 2A, and Type 2B are fairly reasonable and are below the national average. Type 2B is priced less than Type 2A. All of the Type 1, Type 2A, and Type 2B rates are in the 2nd quartile. However, the DS1 rates are quite high, tied for 42nd out of 49 different rates, and in the 4th quartile.

| Rate Category | Rate | National Ranking | Quartile |
|---|---|---|---|
| Type 1 Basic Usage Rate | $0.023141 | 9 | 1st |
| Type 2A Basic Usage Rate | $0.023141 | 17 | 2nd |
| Type 2B Basic Usage Rate | $0.016869 | 12 | 2nd |
| Average DS1 Price/Foot | $0.024518 | 42 | 4th |
| Total Type 1 Usage Rate | $0.025096 | 8 | 1st |
| Total Type 2A Usage Rate | $0.025265 | 20 | 2nd |
| Total Type 2B Usage Rate | $0.019499 | 14 | 2nd |

### 7.4.6 California (Los Angeles)

Chart: 7-6

Local Exchange Carrier: Pacific Bell

Pacific Bell's rates in Los Angeles for all three interconnection types is greater than the national average. The rate structure between GTE and Pacific Bell differs because Pacific Bell uses both a per-message and a per-minutes of use charge. All of the rates fall into either the third or fourth quartile.

The Total Type 2A rates are tied for 41st (with Pacific Bell's San Francisco location) out of a total of 46 possibilities.

The DS1 rates are tied (with Pacific Bell in San Francisco) for 38th out of 49 different rates.

| Rate Category | Rate | Position | Quartile |
|---|---|---|---|
| **Type 1 Basic Usage Rate** | $0.0449 | 28 (2-way tie) | 3rd |
| **Type 2A Basic Usage Rate** | $0.0395 | 36 (2-way tie) | 4th |
| **Type 2B Basic Usage Rate** | $0.0274 | 22 (2-way tie) | 3rd |
| **Average DS1 Price/Foot** | $0.023674 | 38 (2-way tie) | 3rd |
| **Total Type 1 Usage Rate** | $0.053518 | 36 (2-way tie) | 3rd |
| **Total Type 2A Usage Rate** | $0.041609 | 41 (2-way tie) | 4th |
| **Total Type 2B Usage Rate** | $0.0299 | 27 (2-way tie) | 3rd |

### 7.4.7 California (San Francisco)

Chart: 7-7

Local Exchange Carrier: Pacific Bell

Pacific Bell's rates in San Francisco mirror those in Los Angeles. As a consequence, the rates are towards the high side of all of the rates in the country. All of the rates fall into either the third or fourth quartile.

The Total Type 2A rates are tied for 41st out of a total of 46 possibilities.

The DS1 rates are tied (with Pacific Bell in Los Angeles) for 38th out of 49 different rates.

| Rate Category | Rate | [illegible] | Quartile |
|---|---|---|---|
| Type 1 Basic Usage Rate | $0.0449 | 28 (2-way tie) | 3rd |
| Type 2A Basic Usage Rate | $0.0395 | 36 (2-way tie) | 4th |
| Type 2B Basic Usage Rate | $0.0274 | 22 (2-way tie) | 3rd |
| Average DS1 Price/Foot | $0.023674 | 38 (2-way tie) | 3rd |
| Total Type 1 Usage Rate | $0.053518 | 36 (2-way tie) | 3rd |
| Total Type 2A Usage Rate | $0.041609 | 41 (2-way tie) | 4th |
| Total Type 2B Usage Rate | $0.0299 | 27 (2-way tie) | 3rd |

### 7.4.8 Colorado (Denver)

Chart: 7-8

Local Exchange Carrier: U S WEST Communications

Total Type 1 rates in Denver are above the national average and rank 39th out of a total of 57 rates but Total Type 2A and Type 2B rates are less than the national average. Type 2B is priced slightly lower than Type 2A.

Total Type 2A is tied with all but one of the other U S West locations for 21st out of 46 so it is just in the 2nd quartile.

Total Type 2B rates are similar, being tied for 17th with all but one of the other U S West locations out of a total of 40 rate possibilities.

The DS1 rates are mid-range, tied for 24th out of 44 different rates.

| Rate Category | Rate | [illegible] | Quartile |
|---|---|---|---|
| **Type 1 Basic Usage Rate** | $0.0528 | 35 | 4th |
| **Type 2A Basic Usage Rate** | $0.0245 | 22 (14-way tie) | 2nd |
| **Type 2B Basic Usage Rate** | $0.0206 | 16 (14-way tie) | 2nd |
| **Average DS1 Price/Foot** | $0.016202 | 24 (3-way tie) | 2nd |
| **Total Type 1 Usage Rate** | $0.054206 | 39 | 4th |
| **Total Type 2A Usage Rate** | $0.02566 | 21 (13-way tie) | 2nd |
| **Total Type 2B Usage Rate** | $0.021974 | 17 (13-way tie) | 2nd |

### 7.4.9 Connecticut (Hartford)

Chart: 7-9

Local Exchange Carrier: Southern New England Telephone (SNET)

SNET uses the same Basic Usage rate for Type 1, Type 2A, and Type 2B. Although the Total Type 1 rate in Hartford is slightly less than the national average, both the Total Type 2A and Total Type 2B rates are above the national average.

The Total Type 1 rate is $0.37 and is tied for 25th with Columbia, South Carolina.

Total Type 2A and Type 2B rates rank in the 4th quartile.

The DS1 rates are also considerably above the national average and rank 45th out of a total of 49 rates.

| Rate Category | Rate | National Ranking | Quartile |
|---|---|---|---|
| Type 1 Basic Usage Rate | $0.037 | 25 (2-way tie) | 3rd |
| Type 2A Basic Usage Rate | $0.037 | 35 (2-way tie) | 4th |
| Type 2B Basic Usage Rate | $0.037 | 30 (2-way tie) | 4th |
| Average DS1 Price/Foot | $0.027479 | 45 | 4th |
| Total Type 1 Usage Rate | $0.039464 | 29 | 2nd |
| Total Type 2A Usage Rate | $0.039472 | 39 | 4th |
| Total Type 2B Usage Rate | $0.039847 | 35 | 4th |

### 7.4.10 Delaware (Wilmington)

Chart: 7-10

Local Exchange Carrier: Bell Atlantic

Wilmington's Basic Type 2A usage rate is very favorable, tied for 2nd nationally and the Total Type 2A usage rate is ranked 4th.

Total Type 2B usage rates also rate favorably with a 7-way tie (with all six other Bell Atlantic areas) for 15th place.

The Type 1 rates are also quite expensive, ranking 48th for Total Type 1 rates.

Bell Atlantic's DS1 rates are rather high but Bell Atlantic does not charge for a DS1 facility in Wilmington when used with a Type 2A connection. DS1 rates in Wilmington average $0.019984 per foot resulting in a 5-way tie (with four other Bell Atlantic jurisdictions) for 37th place in the third quartile.

| Rate Category | Rate | National Ranking | Quartile |
|---|---|---|---|
| Type 1 Basic Usage Rate | $0.07 | 39 (3-way tie) | 4th |
| Type 2A Basic Usage Rate | $0.015 | 2 (2-way tie) | 1st |
| Type 2B Basic Usage Rate | $0.0143 | 8 (7-way tie) | 1st |
| Average DS1 Price/Foot | $0.019984 | 37 (5-way tie) | 3rd |
| Total Type 1 Usage Rate | $0.079765 | 48 | 4th |
| Total Type 2A Usage Rate | $0.018125 | 4 | 1st |
| Total Type 2B Usage Rate | $0.019958 | 15 (7-way tie) | 2nd |

### 7.4.11 District Of Columbia (Washington)

Chart: 7-11

Local Exchange Carrier: Bell Atlantic

The Basic Type 2A usage rate in the District Of Columbia, like other Bell Atlantic jurisdictions, is rated in the 1st quartile and ranked 5th overall. But Total Type 2A usage is in the 2nd quartile and ranked 14th. Part of this is due to the fact that the District Of Columbia uses an interstate tariff and is the only Bell Atlantic area that has a charge for the DS1 facility for Type 2A.

Total Type 2B usage rates also rate favorably with a 7-way tie (with all six other Bell Atlantic areas) for 15th place.

The Type 1 rates are tied for 42nd place (with Maryland) for Total Type 1 rates.

DS1 rates in the District of Columbia average $0.024619 per foot resulting in a 2-way tie (with Maryland) for 43rd place in the 4th quartile.

| Rate Element | Rate | Rank | Quartile |
|---|---|---|---|
| Type 1 Basic Usage Rate | $0.10 | 42 (2-way tie) | 4th |
| Type 2A Basic Usage Rate | $0.016618 | 5 | 1st |
| Type 2B Basic Usage Rate | $0.0143 | 8 (7-way tie) | 1st |
| Average DS1 Price/Foot | $0.024619 | 43 (2-way tie) | 4th |
| Total Type 1 Usage Rate | $0.108445 | 55 | 4th |
| Total Type 2A Usage Rate | $0.022037 | 14 | 2nd |
| Total Type 2B Usage Rate | $0.019958 | 15 (7-way tie) | 2nd |