DESCRIPTION AND JUSTIFICATION

1.0 Introduction and Description of Filing

In this tariff filing, scheduled to become effective June 15, 2006, the Bell Operating Companies (BOCs) propose changes to Tariff F.C.C. No. 1, <u>800 Service Management System (SMS/800) Functions</u> (SMS/800 Tariff) to modify rates and charges based on current cost and demand data, remove non-recurring rates applicable to new MGI customers and update corporate names and individual contact information.

1.1 Modify Rates and Charges

This tariff filing is being made by the BOCs to modify rates and charges in the SMS/800 Tariff. The proposed changes, reflecting the BOCs' most current estimates of demand and cost for services provided under the tariff, would decrease revenue over the prospective one-year period of June 15, 2006 through June 14, 2007 by $17,129,412. A comparison of current and proposed rates, as well as the revenue impact of the rate changes, is displayed in Table 1 (after section 4.7).

The decrease in revenue is related to a significant decrease in cost as the development and implementation of the Next Generation SMS/800 system continues. This substantial development continues to be performed in addition to the continued maintenance and support of the existing SMS/800 system and customers. The Next Generation system will provide new capabilities, many requested by customers, including:
- ? Template capabilities;
- ? Additional automation capabilities;
- ? Revised number statuses;
- ? Revised Customer Record (CR) statuses;
- ? Output Resource Management; and,
- ? Date and Time Stamping.

Although the Next Generation SMS/800 system is not yet operational, many of the cost reductions anticipated have materialized. This, even though maintenance of the existing SMS/800 system and customers continues as Next Generation system development is ongoing.

The rates covered by this transmittal will expire on June 14, 2007 unless extended or revised by a tariff filing prior to the expiration date.

2.0 Revenue Requirement Development

The prospective revenue requirement for SMS/800 from June 15, 2006 through June 14, 2007 consists of expenditures for ongoing operations of the existing system and the cost of developing and implementing the Next Generation SMS/800 system. Virtually all of the costs are expense items. Specific budget items for SMS/800 ongoing operations are:

1. *SMS/800 Operation and Administration* which consists of: (a) Help Desk operational support to SMS/800 users including telephone assistance related to interfacing with SMS/800 and preparation/maintenance of toll-free number records, and processing of requests for changes in Responsible Organization for toll-free numbers; (b) day-to-day management, planning and administrative oversight provided by the SMT Business Manager (DSMI), external operational support services such as billing and collections, accounting, cost analysis and website support, and other costs such as bad debt (services provided to bankrupt Responsible Organizations), and general administrative and human resources expenses related to SMS/800; and (c) the indirect cost of significant internal resources that the Bell companies expend to support management, operation and administration of the SMS/800. These resources include employees in the companies' tariff, regulatory, legal, technical, financial, taxation, procurement, accounting, network operations, systems provisioning, and operations support organizations.

During the past tariff year the BOCs have continued to incur bad debt costs for those Responsible Organizations that either filed for bankruptcy protection or voluntarily discontinued service to their customers and could not pay for services rendered. The BOCs are expecting that additional Responsible Organizations will either terminate service or file for bankruptcy protection. The amount of bad debt which occurred in the last half of 2005 is approximately $225,000, and thus the estimated 'bad debt' allowance included in the revenue requirement for the coming tariff year (June 15, 2006 to June 14, 2007) is $450,000.

The estimated revenue requirement for SMS/800 operation and administration for the one-year period of June 15, 2006 through June 14, 2007 is $9,317,665 distributed as follows: (a) Help Desk: $1,642,265; b) Management and Administration, including the bad debt noted above: $6,587,986; and (c) BOC indirect costs: $1,087,414.

2. *SMS/800 Data Center Operation* reflects the cost of the ongoing support, maintenance of the existing production and test/disaster recovery SMS/800 data centers and operation of a Service Center (Help Desk) facility to handle security and access problems. Also, included in the expenses are the costs of developing the Next Generation SMS/800 production and test/disaster recovery data centers, testing of the new environment and the costs to transition from the existing environment to the new environment in 2006. The estimated revenue requirement for the data center operation is $28,074,011.

3. *SMS/800 Software Support* includes the provision of software maintenance, computer site and application support, and software development for new features for the existing SMS/800 system. Also,

included in the expense is the cost of developing the Next Generation SMS/800 software system, testing of the new environment and the costs to transition from the existing environment to the new environment in 2006. The estimated revenue requirement for software support is $10,894,877.

A comparison of projected past year and actual past year costs, and projected future year costs are shown in Table 2.

2.1 Revenue Requirement Distributions

The projected revenue requirement for budget (cost) items was distributed to appropriate SMS/800 rate elements by applying distribution factors based on cost-causation analyses. The methodology used is consistent with the methodology used for all previous SMS/800 tariff filings. The distribution factors actually applied are shown in Table 5. Resulting revenue requirement distributions are shown in Table 4 and include distribution to SMS/800 services (including those provided to Service Control Point [SCP] Owner/Operators which are offered via contract). Cost-causation analyses were performed and applied to budget elements as follows:

? A Task Oriented Costing (TOC) study was used to distribute SMS/800 Help Desk costs to rate elements. Each person providing Help Desk support was interviewed individually to identify the primary tasks performed, how often the tasks are performed, and the time (minimum, maximum, most likely) spent performing them. Each task was then analyzed and associated with the particular rate element it supports. The resulting distribution factors are shown in Table 5, column (a). All other (indirect) operations and administration costs were distributed to all rate elements proportionally on the basis of the relationship of the magnitude of each element to the total. The calculation method and allocation factors developed are shown in Table 4, columns (f) and (g).

? Data center costs consist primarily of: (a) network equipment and facilities needed to provide communications access for customers' links; (b) storage hardware (tape and disk drives) for toll-free number record data; and (c) central processor used to respond to and execute customer requests for SMS/800 services. *Network costs* are attributable almost entirely to rate elements required to access SMS/800. A unit cost analysis of each type of connection to SMS/800 was used to determine its cost and distribute the network revenue requirement on the basis of the relative, weighted (by demand) cost of each type of access. *Storage costs* are related almost exclusively to number records and were therefore assigned to the Customer Record Administration rate element. *Central Processor costs* are attributable to most rate elements. A two-step analysis was used to determine a reasonable distribution of costs. First, the quantity of lines of computer code used by each SMS/800 software application and platform function were determined and distributed to each rate element supported. Then, usage data reflecting a typical month's internal computer transactions for each software application and platform function was recorded and used to identify the relative usage of processing capacity. Since the relationship between rate elements and software applications/platforms had

been established and quantified with the lines of code study, the relationship was extended to processor transactions so that they could be assigned to rate elements. The factors developed with the lines of code and transactions analyses are shown in Table 5, columns (b) and (c), respectively. The composite factors actually used to distribute total data center costs are shown in column (d).

? The cost of software support includes software maintenance, site support and software development for new features. The software maintenance and site support dollars were distributed on the basis of the lines of code analysis described previously since there is a reasonable relationship between the magnitude of software code and the amount of support effort required to maintain it. The factors used to distribute software costs are shown in Table 5, column (e).

3.0 Basis of Ratemaking

The rate structure for SMS/800 consists of service elements that are used by Responsible Organizations. The proposed rate for each element is based on its projected revenue requirement and demand. The only exceptions are the proposed daily and hourly rates for Responsible Organization requested MGI Testing and the daily and hourly rates for Batch Update Testing. These rates are based on changes to vendor contracts. For the prospective tariff period, June 15, 2006 to June 14, 2007, the tariff rates of $119.84 per hour and $958.72 per day, have been developed as a weighted average of contractual rates from the various vendors involved in the MGI and Batch Update testing. This information is shown in Table 6.

4.0 Demand Forecast

The demand forecast for the prospective year is displayed in Table 3. Information and/or data considered in developing the forecast are discussed in the following sections.

4.1 Customer Record Administration (CRA)

This rate element represents the quantity of toll-free numbers for which customer records exist in the SMS/800 and is charged on a recurring (monthly) basis for each number record administered. To forecast demand for toll free numbers, we examined alternative models, searching to find the most accurate and reliable econometric estimation technique suitable for the problem at hand.

The first issue addressed involved data frequency. The toll free number data are collected and reported weekly, but previous tariff filings (as well as the CRA rate element charge) use monthly data. A two-year forecast of monthly data requires a 24-period forecast. Because data typically contain random elements, projections tend to become less reliable with the number of periods forecast. This problem can be mitigated by using lower data frequency, allowing random influences to offset, smoothing

observed values. When high frequency forecasts are not needed, modeling the dynamics at a lower frequency is usually more accurate. For example, estimating a moving average error term with quarterly data provides an average over three months to improve the forecast, while using monthly data produces just one month's worth of moving average correction. When the individual months are not required in their own right—as is the case here—the longer observation period provides an error correction more closely related to the longer forecast needed. Of course, lower frequency data yield fewer observations over the same time frame and, all else equal, additional observations tend to improve estimation accuracy. Given that the use of annual data is ruled out due to insufficient degrees of freedom, we chose to perform our estimations with demand measured quarterly. This approach is designed to balance forecast variance against loss of observations.

The monthly forecasts for May 2006 through December 2007 reported in Table 3A represent linear interpolations of the quarterly forecasts. (For instance, if toll free lines were projected to rise from 22,000,000 to 22,300,000 from one quarter to the next, the consecutive estimated monthly totals would be 22,100,000, 22,200,000, and 22,300,000.) For the forecast, we used the unweighted average of the three months in each quarter to construct the quarterly series of toll free numbers. The average monthly number of lines for a quarter was considered to be that number which would accrue to the middle month of each quarter. The middle month for the quarter ending March 2006 is February 2006, the middle month for the quarter ending June 2006 is May 2006, etc. Use of this averaging methodology tended to smooth out random fluctuations, as desired.

Similar to the choice of quarterly data, we chose a three-year estimation window that represents a tradeoff between regime stability and the number of estimation observations. We considered using shorter periods of time for estimation, but found reason to believe that the estimates were more susceptible to short term fluctuations and were less precise. Longer periods were not used because it is believed that factors that might drive demand change over time, and that factors that affected the market as recently as four years ago might not have any influence over current market conditions. It should be noted that this was the methodology used in the previous forecast.

Note that whenever actual data available ends mid-quarter, data for the remaining months of that quarter are unknown. This means that either some known data must be disregarded or that the remaining months in the quarter must be extrapolated. Since the former option requires disregarding actual data, the latter option is preferable. The methodology for forecasting demand for the remaining months of the quarter is similar to the methodology used for forecasting quarterly estimates. The difference is that only monthly data will be used in this forecast, as opposed to smoothed quarterly data. The lack of smoothing is acceptable because the demand will only be forecasted one or two months ahead, which is a fairly short run forecast. Twelve months of monthly data is used in this forecast to capture all the effects that might be observed in a year.

The time series model. Previous forecasts of this same series showed that it was appropriate to use time series models to fit the series, and correcting for serial correlation was necessary. Positive serial correlation is present in time series estimation when predicted values are too high (or too low) because previous predictions were too high (or too low). In essence, serial correlation exists when over-

predictions (or under-predictions) bunch together. Failing to detect and correct for serial correlation means that prediction errors are not random and, therefore, contain additional useful information.

Given first-order serial correlation, errors from one period help predict errors in the next. With second-order serial correlation, errors from the two previous periods contain information aiding prediction of the error in the current period. Correcting for serial correlation takes this predictive power into account to improve the accuracy of the estimated equation and its forecast.

We found evidence that there is significant information in past residuals that can be used to improve forecast accuracy. We believe that after correcting for first order serial correlation when predicting monthly forecasts, and third order serial correlation when predicting quarterly forecasts, the residuals appeared random. Thus, monthly demand for May and June of 2006 were forecasted using an AR(1) model and quarterly forecasts thereafter were forecasted using an AR(3) model.

Forecasting May and June 2006 Monthly Demand

Because the available data ends in April 2006, to produce a quarterly forecast as described above, it is first necessary to produce a monthly forecast for the second quarter of 2006. The best ARIMA model was an AR(1) model with no MA term:

  R-Square = 0.2163 R-Square Adjusted = 0.1380
  Akaike Information Criteria -AIC(K) =   23.0012
  Schwarz Criteria - SC(K) =   23.092

	Estimate	Standard Error	t-Statistic
AR(1)	-0.64215	0.1862	-3.448
CONSTANT	23,446,000	41,890	559.7

The respective forecasts for May and June of 2006 are 23,419,000 and 23,445,800.

Forecasting Quarterly Demand Through December 2007

The ARMA model that appeared to produce the best fit had an AR(3) term and no MA terms.   The model predicts the future value of the dependent variable (toll free numbers) solely by analysis of past values of that variable[1].

As in the forecast with the time trend, ARMA-type models provide for cyclical variation around a base forecast. In the final specification, however, the base forecast is provided by the moving average correction instead of a time trend. The moving average correction makes an adjustment in the current period for the error from the estimated equation from the previous period. This specification is capable

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[1] This is an example of the Box-Jenkins approach to time-series modeling that only uses past values of a variable to predict future values

of modeling both the time trend growth period and the flattening out regime change when the coefficients are allowed to change between the two periods by using the moving three-year frames described above.

The same process was followed in preparing the current forecast. The best model obtained using 12 quarters of data was defined by the following parameters and summary statistics:

R-Square = 0.9207 R-Square Adjusted = 0.8910
Akaike Information Criteria -AIC(K) = 25.156
Schwarz Criteria - SC(K) = 25.318

PARAMETER	ESTIMATES	STD ERROR	T-STAT
AR(1)	1.4792	0.1204	12.29
AR(2)	-0.5515	0.2088	-2.641
AR(3)	-0.25441	0.1273	-1.998
CONSTANT	7,531,700	2,397,000	3.142

In equation form, the model indicates that:

Forecasted CRA_{t+1} = 7,531,700 + 1.4792 CRA_t – 0.5515 CRA_{t-1} - 0.25441 CRA_{t-2}

Monthly demand in the second half of 2005 declined slightly with this trend continuing through the first quarter of 2006. This decline is expected to continue for the upcoming tariff period, June 15, 2006 through June 14, 2007. The monthly CRA demand resulting from the ARMA model described above can be seen in Table 3A.

4.2 Change of Responsible Organization for Toll-Free Number

This element provides for changing the Responsible Organization for a toll-free number and is charged on a non-recurring (per request) basis. Monthly demand in 2004 was just over 4,591, and that monthly demand was reduced to approximately 3,821 in 2005. Projected demand is expected to remain at 2005 levels and is estimated at 45,849 annually for the prospective one-year period of June 15, 2006 to June 14, 2007.

4.3 SMS/800 Access

This service element provides for the connection of dedicated and dial-up communications links to the SMS/800 and is charged on a recurring (monthly) basis. While dial-up access and non-MGI dedicated access have remained relatively stable, the MGI dedicated method of access has trended down in the last year. Monthly demand for dedicated MGI access was approximately 26 in 2004, 21 in 2005 and is projected to remain at 21 for the tariff period. Average monthly demand for non-MGI dedicated

access in 2005 was 65 units and is projected to remain at that level for the upcoming tariff period. Average 2005 demand for dial-up access was 869 units per month, and is expected to remain stable for the prospective period of June 15, 2006 to June 14, 2007.

4.4 Service Establishment

This service element provides for various aspects of establishing service, i.e., first log-on ID, and subsequent (additional) log-on IDs. Charges for these services are applied on a non-recurring (one time) basis. Demand for first log-on IDs averaged 2.75 requests per month during 2005 and is forecast at that level for 2006 and 2007. Demand for subsequent IDs averaged just over 146 requests per month over the same time period, resulting in annualized demand projection of 1,755 for the prospective tariff period.

4.5 Reports

This service element covers the provision of special reports ordered by users from the SMS/800 Help Desk and is charged on a non-recurring (per report) basis. The introduction of the Web-based Reporting System (WRS) feature has reduced the demand for special reports from a peak of 75 per month (900 per year) in 2000 to approximately 33 per month (396 per year) in 2005. At this time, use of WRS is not expected to spur additional erosion of demand for the ordering of special reports, and the demand projection for the prospective tariff period June 15, 2006 to June 14, 2007 is expected to remain at the 2005 level of 396 reports.

4.6 MGI Development and Testing

The BOCs are proposing that these non-recurring rate elements, which cover the activation and installation testing of a mechanized interface to the SMS/800 for a Responsible Organization's operation system, be removed. There has only been 1 such request for MGI installation in the last 5 years and demand is not expected to change. However, the removal of the rate elements is not intended to remove the BOCs intentions to fulfill all future requests for MGI activations and/or testing. To the extent such requests materialize, SMS/800 intends to fulfill these requests and charge customers based on the existing hourly rate for MGI testing.

4.7 MGI Additional Testing per Hour

This service element provides for initial and/or additional MGI testing as requested from the SMS/800 software support team and is charged on an hourly basis as required. Monthly demand in 2005 averaged approximately 62 hours of additional MGI testing, an increase of nearly 30 hours per month over the 2004 demand. The change of locations for the Data Center is the likely reason for the increase in demand and is expected to keep the demand for the prospective tariff period at 2005 levels.