

**Minnesota Public Utilities Commission**  
*Staff Briefing Papers*

---

Meeting Date: **January 22, 2009** .....\*\*Agenda Item # 13

---

Company: **All Local Exchange Carriers, Telecommunications Carriers,**

Docket No. **P999/CI-07-617**

In the Matter of a Commission Investigation of How Carriers Assess 911,  
TAP, and TAM Surcharges on Various Telecommunications Services

Issue: What action should the Commission take with respect to assessment for 911,  
TAP, and TAM surcharges on various telecommunications services?

Staff: Lillian Brion.....651-201-2213

---

***Relevant Documents***

PUC Order ..... July 30, 2007  
PUC Notice Soliciting Comments ..... August 10, 2007  
Comments  
    McLeodUSA ..... August 20, 2007  
    Paul Bunyan Rural Telephone Cooperative. .... August 23, 2007  
    Global Connection, Inc. .... August 24, 2007  
    Rothsay Telephone Company Inc. .... August 24, 2007  
    Comtel Telecom Assets LP ..... September 10, 2007  
    Cypress Communications ..... September 10, 2007  
    CenturyTel ..... September 10, 2007  
    Time Warner Telecom ..... September 10, 2007  
    Qwest Corporation ..... September 10, 2007  
    MCIMetro dba Verizon Access Transmission ..... September 10, 2007  
    AT&T-TCG ..... September 10, 2007  
    Eschelon Telecom, Inc. .... September 11, 2007  
    Scott Rice Electric Lightwave ..... September 17, 2007  
    Integra Telecom ..... September 17, 2007

|   |                    |
|---|--------------------|
| MTA .....   | September 18, 2007 |
| XO Communications Services, Inc. ....                 | September 18, 2007 |
| Norlight .....  | September 24, 2007 |
| Department of Public Service .....                    | October 26, 2007   |
| Department of Commerce .....                          | April 1, 2008      |
| PUC Notice Soliciting Responses to DOC Comments ..... | April 3, 2008      |
| Responses   |                    |
| Velocity Telephone .....                              | April 7, 2008      |
| Embarq .....  | April 23, 2008     |
| CenturyTel .....                                      | April 23, 2008     |
| Verizon .....   | April 23, 2008     |
| PUC Notice Soliciting Further Comments .....          | April 30, 2008     |
| Responses   |                    |
| Level 3 Communications .....                          | May 27, 2008       |

---

The attached materials are workpapers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless noted otherwise.

**This document can be made available in alternative formats (i.e., large print or audio tape) by calling (651) 201-2203 or through the Minnesota Relay at-1-800-627-3529, or 7-1-1 for those with hearing or speech disabilities.**

### *Statement of the Issues*

What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on various telecommunications services?

### *Background*

The Legislature has established three state programs that are separately funded by surcharges paid by communications end-users. These programs are the Telephone Assistance Plan (TAP), Telecommunications Access Minnesota (TAM), and the 911 Emergency Telecommunications Service (911). TAP provides assistance to eligible low income customers through a discount on their telephone bills.<sup>1</sup> TAM provides relay service and equipment assistance to qualified communication-impaired persons.<sup>2</sup> The 911 system allows immediate response from police, firefighters, and emergency medical services when end-users dial the digits 911.<sup>3</sup>

The pertinent statutory provisions governing the funding of the TAP, TAM and 911 programs are as follows:

#### **TAP**

##### Minn. Stat. §237.70, Subd. 6. Funding

The commission shall provide for the funding of the telephone assistance plan by assessing a uniform recurring monthly surcharge, not to exceed ten cents per access line, applicable to **all classes and grades of access lines** provided by each local service provider in the state. (Emphasis added).

#### **TAM**

##### Minn. Stat. §237.52, Subd. 2. Assessment

...The commission shall establish a monthly charge no greater than 20 cents for **each customer access line, including trunk equivalents as designated by the commission** pursuant to section 403.11, subd. 1. (Emphasis added).

<sup>1</sup> See Minn. Stat. §237.70, subd. 5 and 7(b),

<sup>2</sup> See Minn. Stat. §237.50, subd. 11.

<sup>3</sup> See Minn. Stat. §403.025 and 403.03.

Minn. Stat. §237.52, Subd. 3. Collection

Every telephone company or communications carrier that provides service capable of originating a telecommunications relay call, including cellular communications and other nonwire access services, in this state shall collect the charges established by the commission under subdivision 2 and transfer amounts collected to the commission of public safety in the same manner as provided in section 403.11, subd. 1, paragraph (d).

**911**Minn. Stat. §403.11, Subd. 1. 911 System Cost Accounting Requirements; Fee

Emergency telecommunications service fee; account.

(a) Each customer of a wireless or wire-line switched or packet-based telecommunications service provider connected to the public switched telephone network that furnishes service capable of originating a 911 emergency telephone call is assessed a fee based upon the number of **wired or wireless telephone lines, or their equivalent**,..... (Emphasis added)

The statutes are generally clear that the various program surcharges, charges, or fees are applicable when an individual line is provided to customers. However, they are less clear how the program surcharges, charges and fees should be applied when equivalent lines are provided to customers using other technically complicated services.

The Commission opened the current investigation to look into how the various program surcharges should be assessed and collected on those more complicated services.

***Procedural History***

On July 30, 2007, the Commission issued an order approving a recommendation by the Department of Commerce to open an investigation on how 911, TAP, and TAM fees should be assessed on various telecommunications services based on trunk equivalencies. On August 10, 2007, the Commission issued a Notice Soliciting Information on the following:

1. Carriers should identify each business service upon which they assess 911/TAM/TAP fees based on trunk equivalency and list how they assess these fees on such services.
2. Carriers or interested parties should identify any service for which they would like the Commission to clarify how to assess the 911/TAM/TAP fees pursuant to its authority under Minn. Stat. §403.11, subd. 1(c).
3. Any other issues that should be addressed in this docket.

Some 16 companies provided information on whether or not they provide services on which these fees are assessed. Comments were also received from the Department of Public Safety (DPS), the Department of Commerce (DOC) and the Minnesota Telecom Alliance (MTA).

By April 23, 2008 CenturyTel, Embarq, Velocity and Verizon filed responses to the DOC's recommendations. These companies filed exceptions to some of the DOC's recommendations.

On May 27, 2008, Level 3 filed responses to Commission Notice soliciting further comments. Level 3's filing mostly addresses assessment of the regulatory charges on VoIP providers, cautioning the Commission about any unintended consequences from the imposition of fees on VoIP providers.

### ***Summary of Issues***

The main issue for Commission consideration is the clarification of assessments for 911, TAP and TAM surcharges on various telecommunications services. The parties identified services where clarification of the application of the TAP, TAM, and 911 funding statues would be helpful. The following lists the order by which the issues are presented:

- A. Establishment of a general principle for assessment using the number of bearer channels or simultaneous calls that can be made
- B. Single and multiple lines
- C. ISDN Basic Rate Interface (BRI)
- D. ISDN Primary Rate Interface (PRI)
- E. T1/DS1
- F. Partial T1/DS1
- G. Blocked Centrex
- H. Unblocked Centrex
- I. Incoming and/or Outgoing Trunks
- J. Long Distance Trunks
- K. VoIP Services
- L. Implementation Schedule

The VoIP issue listed in Section K is complicated and involves a myriad of legal and policy questions for the Commission. The Commission may want to separately look at the VoIP issue. Or, as presented here, it could make a determination on the application of the TAP, TAM, and 911 surcharges on some kinds of VoIP provision in Minnesota.

### ***General Comments from the Parties***

#### *Department of Public Safety*

The Department of Public Safety (DPS) administers the 911 system. The DPS stated that it supports efforts to standardize the application of the surcharges. It indicated support for the application of the 911 surcharge based on the number of simultaneous voice paths available and on any service that provides two-way communication regardless of the underlying technology in order to preserve the funding of the 911 program.

#### *MTA*

The Minnesota Telecommunications Alliance indicated that it surveyed its members on the issues listed in the Commission Notice, but response has been limited. The MTA supports efforts to standardize the application of the surcharges in a technologically and competitively neutral manner.

#### *Carriers*

Many parties indicated that they welcome Commission clarification on how to appropriately assess these surcharges. Most of the responding carriers reported how they apply the surcharges on the various services. Their responses are summarized in Table 1 of the DOC's April 1, 2008 filing, reproduced here as Attachment A.

In addition, Qwest asked for guidance on application of the surcharges to packet-based and/or VoIP services provided to Minnesota customers.

#### *Department of Commerce*

Based on the comments received from the service providers, the DOC concluded the following:

1. There is no dispute regarding how 911/TAM/TAP charges are assessed against single and multiple line phone service. These services are not addressed in this issue.
2. The companies did not report any discrepancy in assessing charges for ISDN-BRI (Basic Rate Interface). They apply two regulatory charges for the bearer channels (voice, data, and other services), and none for the data channel used for signaling.
3. There is no dispute in assessing one regulatory charge per Network Access Register (NAR) for Blocked Centrex.

4. There are discrepancies in the computations for line equivalencies for T1, Partial T1, ISDN-PRI, and Unblocked Centrex.

The DOC's comments and responses thereon related to specific services are discussed more fully below. In general, the DOC recommends that for T1, Partial T1, ISDN-PRI and Unblocked Centrex, the regulatory charges be based on the number of bearer channels or the number of simultaneous calls that can be made at any one time. The bearer channels are those that actually provide access to the network, as opposed to those used for signaling to set up calls.

The Department also noted that some companies requested Commission clarification on a number of issues, notably related to the application of the 911, TAM and TAP fees to VOIP services and packet services, which are discussed below.

### ***Responses to the DOC Recommendations***

In response to the Commission's Notice Soliciting Comments on the DOC's recommendations, the Commission received additional comments from Velocity, CenturyTel, Embarq and Level 3. Comments pertaining to specific services are discussed in later sections. The general comments include:

#### *CenturyTel*

CenturyTel does not support the DOC's recommendation that the regulatory charges be based on the number of bearer channels or the number of simultaneous calls that can be made at any one time.

Further, CenturyTel requests that the Commission provide adequate time for carriers to implement any changes. Century's current planning horizon for billing system changes is one year. Thus, CenturyTel requests the Commission to give companies one year to implement any changes resulting from this proceeding. Alternatively, the Commission could allow companies to request a waiver from the standards developed by the Commission.

#### *Embarq*

Embarq cautions the Commission against creating overly complex procedures that would result in additional expenses with little incremental improvement in the process or the level of surcharge collections. Embarq generally agrees with the DOC's recommendations, with the following exceptions discussed under the specific services.

Embarq also requests that the Commission allow waivers if the modifications will be economically burdensome, allow for reasonable implementation timeframes for compliance to accommodate any complicated Minnesota-only billing modifications, allow for recovery of any expenditure caused by the mandated changes in systems and administrative procedures. The

Company says that because only few customers purchase ISDN-PRI or T1 facilities, it would not be cost effective to incur significant expenses in order to collect surcharges from those customers.

### ***Staff Comments***

Questions about the application of the surcharges have lingered for years. Both the Commission and DOC staff have fielded questions from customers and carriers about the trunk equivalencies of many business services and how the surcharges should be applied particularly with respect to the newer telecommunications services.

The trunk equivalency concept developed in the 1970s as the Federal Communications Commission (FCC) explored access charge reform and considered ways to equalize the access charge burden for Centrex in comparison with the functionally equivalent PBX service and the regular business service.

The comments by various parties indicate that there are varied conventions by which access lines or line equivalents are used to calculate surcharges for programs similar to 9-1-1, TAP and TAM. The challenges associated with the differing interpretations of line counts and equivalents may have lead to considerations of other measures for similar programs. For example, instead of line counts, other programs employ measures such as revenues (used for funding the federal universal service fund and the interstate telecommunications relay service), or telephone numbers (as recently proposed in the Minnesota legislature for TAP, TAM and 9-1-1<sup>4</sup>), or others. A USF reform proposal circulated by FCC Chairman Martin in October 2008 also proposed a shift in the residential contribution method for USF from a percent of revenues to one based on a fixed monthly charge on a phone number. A decision on the issue has not been reached at the FCC at this time.

Be that as it may, the current funding provisions from the Minnesota statutes require the use of access lines or its equivalent. And the Commission's task at hand is focused on the appropriate assessments based on those existing legal provisions.

Some considerations that the Commission may wish to take into account in making its determination include:

- Competitive neutrality – by equalizing the support regardless of service or technology employed,
- Ease of administration – by not overly complicating the assessments that would impose significant financial and procedural burdens to service providers and program administrators,

---

<sup>4</sup> Minn. Stat. §237.49, 2005 Session. In January 2006, the Minnesota Department of Commerce reported that while adoption of a per number fee for 911, TAP and TAM would be more technology and competitively neutral method for collecting fees, it did not recommend changes in the 2006 session. The DOC mentioned 1) disagreement over the implementation details, 2) the potential adoption of a per number fee to support the federal USF, 3) the lack of data about the impact of changes on the amount of program funds, as reasons for its recommendation.



- Standard application– by applying the assessments uniformly across service providers,
- Sustainability – by preserving the level of support and not undermining the financial viability of 9-1-1, TAP, and TAM.

**A. Should the Commission establish a general principle that assessments for 911, TAP and TAM be based on the number of bearer channels or the number of simultaneous calls that can be made?**

The Department of Commerce and the Department of Public Safety indicate support for the Commission to base assessments on the number of bearer channels or the number of simultaneous calls that can be made.

One option for the Commission is to mandate all carriers to assess surcharges for 911, TAP, and TAM based on the number of bearer channels or the number of simultaneous calls that can be made. In such a scenario, the Commission would not need to address the individual services listed below; the respective program administrators will monitor the carriers' implementation and resolve any problems on their own or bring a complaint to the Commission. This option addresses comments regarding the cost effectiveness and administrative burden of any complex methodology that the Commission may employ in assessing surcharges.

Another option is to use the number of bearer channels or simultaneous calls as a guide whenever applicable when making the decision for each of the following services.

Or, the Commission may choose to decide assessments based on the peculiarities of each specific service discussed below.

***Commission Options*** - Establishing a general principle that assessments for 911, TAP, and TAM be based on the number of bearer channels or the number of simultaneous calls that can be made:

- A.1. Direct all affected carriers to assess surcharges for 911, TAP, and TAM based on the number of bearer channels or the number of simultaneous calls that can be made. Do not proceed to the other issues listed below.
- A.2. Whenever applicable, use the number of bearer channels or simultaneous calls as a guide when deciding the assessments for each of the individual services listed below.
- A.3. Decide on a service by service basis as listed in the subsequent issues.

***Staff Recommendation***

Staff recommends either Option A.2. or A.3.

**B. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on Single and Multiple Lines?**

There is no dispute among the parties that, for single and multiple individual telephone lines, there is one charge per line.

*Commission Options - Charges for Single and multiple lines*

- B.1. Reaffirm current application of one charge per line.
- B.2. Revise the current application.

*Staff Recommendation*

Staff recommends Option B.1.

**C. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on ISDN Basic Rate Interface (BRI)?**

ISDN Basic Rate Interface (BRI) consists of two bearer (B) channels, each with bandwidth of 64 Kbits, and one data (D) channel with a bandwidth of 16 Kbits; can be designated as 2B+D. There is no dispute that two charges for the bearer channels are assessed for this service, with no charges for the data channel. The DOC recommends 2 charges for ISDN-BRI. There is no dispute among the parties to charge 2 assessments for ISDN-BRI.

*Commission Options - Charges for ISDN-BRI*

- C.1 Reaffirm current application of two charges per line.
- C.2. Revise the current application.

*Staff Recommendation*

Staff recommends Option C.1.

**D. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on ISDN Primary Rate Interface (PRI)?**

ISDN Primary Rate Interface (PRI) consists of 23 B channels and 1 D channel, with an aggregate bit rate of 1.544 Mbps (T1). ISDN permits digital transmission over ordinary local loops and facilities through the use of advanced equipment in the central office and the customer premises. Unlike T1, one of the channels is usually dedicated for signaling purposes, thereby reducing the number of lines available for simultaneous calling. Most companies assess 23 charges against ISDN-PRI lines, but MCI and AT&T reported assessing 24 charges.

The DOC recommends an assessment of 23 charges for 23+D ISDN-PRI, and an assessment of 24 charges if all 24 channels are bearer channels.

In reply comments, CenturyTel argues that the DOC's recommendation requires the company to base the charge on information not in the billing system. The company's billing system has the number of ISDN-PRIs a customer has ordered, but it is only within the network system where it can identify the number of bearer channels a customer has. By basing the assessment on the number of bearer channels as recommended by the DOC, the company says it would have to track information contained only in the network and which would have to be verified monthly. Currently, CenturyTel applies 23 regulatory charges per each ISDN-PRI service ordered. CenturyTel suggests that the Commission adopt a standard of 23 charges per ISDN-PRI, instead of using the number of bearer channels. This approach provides for uniform treatment and is easily implemented.

Embarq does not agree with the DOC's recommendation to apply unlimited, multiple surcharges to customers via line equivalency variables for ISDN-PRI. Given the variable nature of customers' uses of the service for access to the PSTN, Embarq believes that it is not reasonable to arbitrarily establish assessments up to 23-24 times the surcharges for the total number of voice or data channels. This could significantly increase the level of TAP, TAM and 911 surcharges. Instead, Embarq suggests a cap of 25 charges for ISDN-PRI per customer in order to "level the playing field" with VoIP providers which do not pay the "social taxes." The capping is similar to practices employed by the FCC and by other states.

XO clarifies that it mirrors the FCC's End User Common Line application of a 5 line equivalency per ISDN-PRI.<sup>5</sup>

---

<sup>5</sup> In the FCC's First Report and Order in CC Docket 96-262, it determined that for purposes of estimating the subscriber line charge, ISDN-PRI is subject to a rate equal to 5 times an access line.

**Commission Options – Charges for ISDN- PRI**

- D.1. Following the DOC's recommendation, set a charge per ISDN-PRI based on the number of bearer channels, thus 23 charges for 23+D, and 24 charges if all channels are used as bearer channels.
- D.2. As suggested by CenturyTel, instead of basing charges on the number of bearer channels, adopt a standard of 23 charges per ISDN-PRI.
- D.3. As suggested by Embarq, set a cap of 25 charges for ISDN-PRI per customer.
- D.4. As practiced by XO following the FCC's directive, adopt 5 charges per ISDN-PRI.
- D.5. Adopt a charge of 24 for ISDN-PRI regardless of the number of bearer channels.
- D.6. Adopt another standard determined by the Commission.

**Staff Recommendation**

Staff recommends either Option D.1 or D.5.

**E. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on T1/DS1?**

The development of high capacity trunks meant that for the present time, a T1 or DS1 can provide 24 times the access provided by a trunk line. DS1 is the transmission protocol used over a physical trunk or T1 line, but the terms are often used interchangeably. T1/DS1 consists of 24 channels with 1.544 Mbps bandwidth. Most companies mostly reported assessing 24 charges for T1 lines. The DOC recommends an assessment for 24 charges if all channels are activated. Velocity also supports 24 charges per T1s.

Embarq believes that the Commission should cap assessments for T1s per customer in order to level the playing field with providers such as VoIP providers who are not assessed "social taxes". Embarq suggests that the Commission should cap assessments on T1s to no more than 25 surcharges per customer. Embarq also suggests that the Commission consider allowing carriers to continue with their current assessment of one surcharge per T1.

Staff believes that Embarq's suggestion to cap assessments addresses differing interpretations in calculating access line equivalents. For example, the City of San Francisco calculates the access

line equivalent of a high capacity trunk such as a T1 as 180 lines (24 trunks x 7.5 line equivalents per trunk).<sup>6</sup>

***Commission Options*** – Charges for T1/DS1

- E. 1. As reported by most companies and recommended by the DOC and Velocity, adopt 24 charges per T1.
- E.2. As suggested by Embarq, adopt a cap of 25 charges per customer for T1s.
- E.3 As practiced by some governmental agencies, set the charge at 180 per T1.
- E.4. Adopt another standard as determined by the Commission.

***Staff Recommendation***

Staff recommends Option E.1.

**F. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on Partial T1s?**

Some companies also provide Partial T1s and assess charges based on the number of activated trunks. The DOC also recommends charges based on activated trunks.

***Commission Options*** – Charges for Partial T1s

- F.1. As reported by most companies and recommended by the DOC, assess charges for Partial T1s based on the number of activated trunks.
- F.2. Adopt another standard as determined by the Commission.

***Staff Recommendation***

Staff recommends Option F.1.

---

<sup>6</sup> City of San Francisco, Controller's Report on FY 2007-2008 911 Access Lines and Fees, dated May 7, 2007

**G. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on Blocked Centrex?**

Centrex provides a function provided through the central office similar to PBX switches provided at the customers' premises. Blocked Centrex has the ability to limit the number of simultaneous calls through the use of Network Access Registers or NARs. The NAR is required to complete a call involving access to the PSTN.

Qwest reported one regulatory charge against each Network Access Register or NAR. Other companies did not report if and how they charge for Blocked Centrex.

The DOC recommends 1 charge per NAR.

CenturyTel clarifies that it charges on a per Centrex line basis for both Blocked and Unblocked Centrex, instead of on a per NAR basis. A requirement to use NARs would require CenturyTel to use network information to determine the appropriate regulatory charge, and the information would have to be verified monthly to assure the charges were correct. It is also inconsistent with the DOC's recommendation that regulatory charges be applied to both inward and outward bound trunks, since inward bound trunks do not relate to the number of NARs or simultaneous calls that can be made at any one time. CenturyTel recommends that the Commission allow companies to charge on the basis of the number of Centrex lines, or alternatively, as some fixed percentage of the number of Centrex lines.

***Commission Options-*** Charges for Blocked Centrex

G.1. As recommended by the DOC, adopt one charge per NAR for Blocked Centrex.

G.2. As recommended by CenturyTel, charge on the basis of the number of Centrex lines.

G.3. As alternatively recommended by CenturyTel, charge on a fixed percentage of the number of Centrex lines.

G.4. Adopt another standard determined by the Commission.

***Staff Recommendation***

Staff recommends Option G.1.

## **H. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on Unblocked Centrex?**

When the applicable statutes were first implemented, Centrex was the newer technology, used as a comparable alternative to PBX; trunk equivalencies are commonly associated with both Centrex and PBX. With Unblocked Centrex, there is no NAR to register access to the network, but the industry uses probability studies to determine the number of simultaneous calls that can be made using the network. Although it is widely recognized in the industry that a trunk line represents about 7 to 8 times the access provided by a single access line, it is not clear whether the trunk equivalencies referred to in the Minnesota statutes refer to any such ratio, or to a 1 trunk equals 1 line ratio.

The FCC adopted, for purposes of the PICC or Presubscribed Interexchange Carrier Charge, a ratio of 9 Centrex lines to 1 PBX trunk.<sup>7</sup> Some states like Massachusetts used the 9:1 ratio to denote voice grade equivalent lines for Centrex service in charging subscribers for its 911 program. Thus, Massachusetts Rules contain a provision directing the 9:1 line equivalency for Centrex service.<sup>8</sup> Other states like New Jersey determined that each PBX trunk, or each Centrex trunk equivalent constitutes an individual and separate line.<sup>9</sup>

In calculating the trunk equivalency for Centrex lines, the industry mostly uses a distribution table that estimates the number of calls that are simultaneously accessing the network. An example is shown on Attachment B, denoting the line equivalents for a Centrex subscriber. For example, a customer with 100 Centrex lines would have 16 equivalent lines, while a customer with more than 300 Centrex lines, would have 1 additional line equivalent for each 18 line increment. It appears that Qwest and other Minnesota carriers base their trunk equivalency for Centrex on a similar distribution table.

The DOC recommends the use of a Poisson table or another reasonable method to estimate the likely number of simultaneous calls made to and from the public switched network.

Similar to its position on Blocked Centrex, CenturyTel recommends that the Commission allow companies to charge on the basis of the number of Centrex lines, or alternatively, as some fixed percentage of the number of Centrex lines.

---

<sup>7</sup> Second Report and Order in CC Docket 91-213, FCC Order released on October 9, 1997.

<sup>8</sup> Mass. Rule 220 CMR Section 16.03

<sup>9</sup> New Jersey Stat. 17C Title 52, 2004.

### ***Commission Options***

- H.1. As recommended by the DOC, use a distribution table or another reasonable estimation of the likely number of simultaneous calls made to and from the public switched network.
- H.2. As recommended by CenturyTel, charge on the basis of the number of Centrex lines or some fixed percentage of the number of Centrex lines.
- H.3. Adopt a ratio of 9:1 line equivalency for Unblocked Centrex.
- H.4. Adopt a ratio of 1:1 line equivalency for Unblocked Centrex.
- H.5. Use the distribution table shown on Attachment B in calculating the line equivalents for Unblocked Centrex.
- H.6. Adopt another standard determined by the Commission.

### ***Staff Recommendation***

Staff recommends Option H.5.

### **I. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on Incoming and/or Outgoing Trunks?**

Outbound trunks have the ability to carry outgoing call traffic, while inward only trunks, such as 800 trunks carry incoming calls.

The Department recommends that regulatory charges be applied to both inward and outward bound trunks.

Velocity believes that it is not appropriate to assess charges for incoming trunks. Only trunk types with the capability to access the 911 network should be assessed.

MCI likewise believes that since inbound-only lines cannot be used to make outgoing calls without reprogramming, those lines should not be assessed the charges.

Staff tends to agree with Velocity and MCI that it may not be appropriate to assess charges for incoming trunks. But, the Commission may want to hear from the DOC about the reason behind its recommendation. The Commission could also solicit more information at or after the meeting to enhance the record on this issue.



***Commission Options*** – Charges on Inward and Outward Bound Trunks

- I.1. As recommended by the DOC, apply charges on both inward and outward bound trunks.
- I.2. As recommended by Velocity and MCI, apply charges only on outward calls since inbound only lines cannot be used to make outgoing calls without reprogramming and also cannot access the 911 network.
- I.3. Defer Commission decision and direct parties to submit comments 30 days after Commission order.

***Staff Recommendation***

Staff recommends Option I.2 or I.3.

**J. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on long distance trunks?**

The Department recommends that long distance trunks be included in calculating the assessments for 911, TAM, and TAP. CenturyTel seeks clarification on what the DOC meant by “long distance trunks” in its recommendation.

The Commission may wish to ask the DOC to clarify its recommendation as requested by CenturyTel.

Staff believes that, by the nature of long distance trunks, they are not designed to carry local traffic and thus, 911 calls. The Commission could find that the charges do not apply to long distance trunks.

The Commission may also want to ask the parties at the meeting to provide more information. Or, it could defer action until there is sufficient record on this issue.

***Commission Options*** – Charges on Long Distance Trunks

- J.1. As recommended by the DOC, apply charges also to long distance trunks.
- J.2. Do not apply charges to long distance trunks.
- J.3. Defer Commission until the record is more complete. Direct parties to submit comments 30 days after Commission order.

### ***Staff Recommendation***

Staff recommends either Option J.2 or J.3.

### **K. What action should the Commission take with respect to assessment on 911, TAP, and TAM surcharges on VoIP Services?**

#### ***Procedural Background***

In Initial Comments, Qwest indicated that in a letter dated October 6, 2006, it asked for guidance from the Commissioner of Public Safety regarding the application of the surcharges to packet-based and/or VoIP services provided to Minnesota customers. Staff is not aware of any response from the DPS. Specifically, Qwest asked the following questions:

1. Does the State of Minnesota interpret its statutes to include VoIP service as a “packet based telecommunications service” such that the 911 fee imposed by Sec. 403.11 is applicable to this service sold to Minnesota residents?
2. Does the State of Minnesota interpret the term “customer access line” as used in Sec. 237.52 to describe VoIP service, thereby requiring the collection of the TRS fee on such service sold to Minnesota residents?
3. Does the State of Minnesota interpret the term “access lines” as used in Sec. 237.70 to describe VoIP service, thereby requiring the collection of the TAP fee on such service sold to Minnesota residents?
4. In the event that the bases upon which the 911, TRS and TAP fees differ such that only one or two of the fees are applicable to VoIP service, should a VoIP provider be required to aggregate the fees:
  - a. On the Minnesota VoIP customer’s bill, and
  - b. In the monthly/quarterly collection reports submitted to the Commissioner?
5. If only one or two of the fees are applicable to VoIP service, is a specific “bill phrase” that identifies the aggregate charges on the customer’s bill required to be utilized by the VoIP provider?

The DOC did not fully address this issue and asks the Commission to consider whether it should be addressed in a separate proceeding. The DOC added that the following questions may be included for consideration in that other proceeding:

1. Who should be responsible to pay for regulatory fees? The VoIP provider itself or the telecommunications provider of the physical interface to the public switched network?
2. Should the number of fees assessed be dependent on the number of simultaneous calls or data channels provided to the end-user by the VoIP provider or by the number of

- simultaneous calls or data channels provided by the telecommunications carrier who provides the interface to the public network for the VoIP provider?
3. Does the Commission have the authority to impose one or more of these fees on VoIP providers on its own authority?
  4. Does the Commission have the authority to impose one or more of these fees on VoIP providers on authority granted to it by the FCC?

In Level 3's response to Notice Soliciting Further Comments, the Company warns the Commission of unintended consequences should the Commission determine that it has authority to assess 911, TAM and TAP surcharges on VoIP providers. The Company states that any new rules or policies should clearly define which party in the service chain is obligated to make payments.

### ***Staff Comments***

#### *VoIP and its regulation by the Minnesota PUC and by the FCC*

VoIP or Voice over Internet Protocol refers to calls where the phone signals are converted into IP voice and/or data packets and designed mostly for calls over a broadband internet connection. If the call is received by a customer of another telephone company, the IP packets are converted to Time Division Multiplex (TDM) signals so they can be delivered to the PSTN. If the call is received by another customer served by the VoIP provider, the signal may not be converted and delivered entirely over the VoIP network.

VoIP service is usually categorized in terms of connection with other telephone users as 1) interconnected, and 2) closed. An interconnected service, such as Vonage's, means that its customers can place calls to, and receive calls from, anyone with a telephone connected to the traditional PSTN. A closed system, on the other hand, is not interconnected with the telephone network of other providers, and is generally excluded in the discussions that follow.

VoIP service is also categorized as 1) nomadic or portable, and 2) fixed. For a portable or nomadic system, such as Vonage's, the service is not tied to a specific location, and the customer needs to separately obtain his or her own high-speed internet connection. A fixed service is available only from the fixed coaxial cable or other fixed high speed internet connection (i.e., DSL over a phone line) at the customer's home or business.

The Vonage case documents the Minnesota PUC's regulatory venture into VoIP. In said case, this Commission concluded that VoIP service provided by Vonage is a telephone service as that term is defined under Minnesota law and directed Vonage to comply with the certification, tariffing and other related requirements as a condition of offering the service in Minnesota.<sup>10</sup>

---

<sup>10</sup> *In the Matter of Complaint of the Minnesota Department of Commerce Against Vonage Holding Corp. Regarding Lack of Authority to Operate in Minnesota*, Docket No. P6214/C-03-108, Order Finding Jurisdiction and Requiring Compliance issued September 11, 2003.

Vonage filed suit against the Minnesota PUC in the U.S. District Court for the District of Minnesota. The District Court entered a permanent injunction in favor of Vonage, determining that Vonage provided an information service under the Telecommunications Act, not a telecommunications service, and that the Act preempts the Minnesota Commission's authority to subject VoIP service to common carrier regulation.

While the Minnesota PUC's appeal was pending in the U.S. Court of Appeals for the Eighth Circuit, the FCC ruled on another petition filed before it by Vonage. Vonage requested the FCC to preempt Minnesota's order alleging that the services being offered by Vonage were "information services" and not "telecommunications services." Pursuant to the Supremacy Clause of the U.S. constitution, the FCC has declared that the services offered by Vonage are subject to the exclusive jurisdiction of the FCC and that the various states cannot regulate those services, regardless of whether the service is an information service or a telecommunications service.<sup>11</sup> The FCC determined that it may preempt state regulation under the "impossibility exception" in situations where "(1) it is not possible to separate the interstate and intrastate aspects of the service, and (2) federal regulation is necessary to further a valid federal regulatory objective." In preempting Minnesota's regulation of Vonage's VoIP service, the FCC found that it was impractical, if not impossible to separate the intrastate portions of calls from the interstate portions because of the nomadic nature of the service. The FCC found the state's certification and tariffing requirements would frustrate the FCC's policy of removing economic regulation for competitive telecommunications markets.

Following the FCC Vonage Order, the Eighth Circuit then concluded that the FCC Vonage Order was binding with respect to Minnesota's appeal. Several petitions seeking court review of the FCC Vonage Order were consolidated into one case before the Eighth Circuit which ultimately affirmed most of the FCC Vonage Order.

In the appeal of the FCC Vonage Order, the New York PSC challenged the FCC Vonage Order on the grounds that it could read to preempt state regulation of fixed VoIP services. The Court found that:

the NYPSC's challenge to the FCC's order is not ripe for review. The order only suggests the FCC, if faced with the precise issue would preempt fixed VoIP services. Nonetheless, the order does not purport to actually do so and until that day comes it is only a mere prediction... As a consequence, NYPSC's contention that state regulation of fixed VoIP services should not be preempted remains an open issue.

In WC Docket 04-36, the FCC opened a rulemaking proceeding in which it is considering the regulatory classification of whether VoIP service is "*telecommunications* service" and therefore subject to common carrier regulation as a substitute for traditional telephone service, or is an "information service" which is subject to minimal regulation.<sup>12</sup> The FCC had committed to

<sup>11</sup> *Vonage Holdings Corporation Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, Vonage Preemption Order, 19 FCC Rcd 22404 (2004).

<sup>12</sup> *IP-Enabled Services* Proceeding, WC Docket No. 04-36.

resolve important regulatory matters pertaining to VoIP in said docket. On June 27, 2006, it released its VoIP USF Order, which while still not deciding on the “telecommunications service or information service” regulatory classification for VoIP service, determined that interconnected VoIP providers provide “telecommunications” and that in exercising the FCC’s permissive authority, established universal service obligations for providers of interconnected VoIP.<sup>13</sup> According to the FCC, the action is in response to the growing pressures on the stability and sustainability of the universal service fund. The FCC also concluded that requiring interconnected VoIP providers to contribute to universal service would promote “the principle of competitive neutrality by reducing the possibility that carriers will compete directly with providers without such obligations.”<sup>14</sup>

In April 2007, after the FCC issued its VoIP USF Order, the Nebraska Public Service Commission ordered interconnected VoIP providers to contribute to the Nebraska Universal Service Fund (NUSF). The contribution mechanism used by the Nebraska Commission mirrors the federal USF contribution mechanisms, but is based on intrastate rather than interstate revenues.

In December 2007, Vonage filed a lawsuit in federal district court, arguing that the Nebraska Commission is preempted from requiring VoIP providers to contribute to the NUSF. In March 2008, a federal court in Nebraska issued a preliminary injunction that bars the Nebraska Commission from requiring Vonage and other VoIP providers to contribute to the NUSF. The court’s order was based largely on the FCC Vonage Order preempting the Minnesota Commission from regulating Vonage and other similar providers, and the federal district court decision in Minnesota finding that Vonage offers an information service, not a telecommunications service.<sup>15</sup>

The Nebraska Commission appealed the decision to the 8<sup>th</sup> Circuit Court of Appeals. The FCC filed an amicus brief with the 8<sup>th</sup> Circuit, arguing that the federal district court got it wrong. The FCC’s brief clarified that it only meant to preempt Minnesota’s entry and tariff requirements. The FCC expressly stated that it has not preempted state USF requirements as long as the state requirements are consistent with the federal USF requirements applicable to VoIP providers. The FCC’s brief noted that “unlike the state regulations at issue in the [Minnesota] *Vonage Preemption Order*, Nebraska’s decision to require interconnected VoIP providers to contribute to the state’s universal service fund does not frustrate any federal rule or policy. Rather, the *NPSC USF Order* is fully consistent with the FCC’s conclusion in the *VoIP USF Order* that requiring interconnected VoIP providers to contribute to the federal universal service fund would serve the public interest.”<sup>16</sup> Vonage filed a response arguing the FCC’s brief is inconsistent with the FCC Vonage Order and federal law. Oral argument in the Nebraska case was set for December 2008, with a decision on the preemption question expected within six months from oral argument.

---

<sup>13</sup> VoIP USF Order, para. 34-41, FCC 06-94, adopted June 21, 2006.

<sup>14</sup> VoIP USF Order, para. 44.

<sup>15</sup> U.S. District Court ruling dated March 3, 2008.

<sup>16</sup> FCC Brief before the U.S. District Court for Amici Curiae Supporting Appellants’ Request for Reversal, filed August 5, 2008; at page 12.

Finally, in July 2008, the New and Emerging Technologies Improvement Act was signed into law<sup>17</sup>. This law provides that states are not preempted from imposing 911 fees on VoIP providers.

#### *Minnesota Legislative Development related to VoIP*

In the 2005 legislative session, Minn. Stat. §403.11 was amended by adding the term “packet-based” to wireless or wire-line switched telecommunications service provider to the fee base for 911.

Staff has learned from the Department of Public Safety that as of June 2008, the following VoIP providers have been paying into the 911 fund resulting from the 2005 legislative amendment: Access Line Communications Corporation, DIECA aka COVAD, Nextera Communications, Primus Telecom, Qwest Communications Corporation, SkyPix LLC, Voltel Telecom, Inc. and Vonage America. This is in addition to all the other telephone providers that have been paying not only to the 911 fund, but for the TAP and TAM programs as well. The DPS also indicated that it has no way of knowing which other VoIP companies operate in the state.

#### *Qwest’s Request for Guidance*

Qwest’s request for guidance is directed to the Commissioner of Public Safety. Thus, the Commission may wish to defer to the Department of Public Safety to respond to Qwest’s questions pertaining to 911, and directly respond on the TAP and TAM surcharge issues. Or, as the regulatory entity with responsibility over telecommunications services in Minnesota, the Commission could decide on the issues and allow parties to take notice of its determination on 911 issues as an advisory opinion.

That said, the Commission may wish to solicit comments on whether it has jurisdiction over the issues raised by Qwest, and if so, what should be the answers to those questions.

#### *Discussion of Commission Options*

**First**, the Commission could indefinitely defer action on this issue. Commission’s authority, at least on certain segments of VoIP provision, is an open issue and is the subject of ongoing FCC and court proceedings. There is also the possibility that federal action affecting USF reform could impact the issues at hand.

**Second**, the Commission may wish to act now and determine, based on its own authority and the authority emanating from the FCC’s VoIP USF Order, and/or the federal 911 law, that all interconnected VoIP service providers are required to contribute to the 911 fund, and that all fixed interconnected VoIP service providers are also required to contribute to the TAP and TAM

---

<sup>17</sup> Also called *Net 911 Improvement Act of 2008*; it was signed by President Bush into law on July 23, 2008. The law requires VoIP providers to provide enhanced 911 service to their customers, gives authority over VoIP providers to state commissions and any local or state body with authority over emergency communications, and allows states to collect 911 fees from VoIP providers.

funds. The Commission may then wish to solicit comments related to the obligation of each party in the service chain as to the implementation of that determination.

The Commission may wish to make its determinations to act now based on the discussions above as summarized here:

- 1) Non-interconnected VoIP service does not appear to be relevant for purposes of Commission assessment of 911, TAP and TAM surcharges. Since non-interconnected VoIP service does not touch the PSTN, the Commission could exclude it from VoIP discussion in this docket.
- 2) The 2008 federal law on Net 911 allows states to impose 911 surcharge on both fixed and nomadic types of VoIP provision. Staff believes that 911 fees apply to interconnected fixed and nomadic types of VoIP service.
- 3) The classification of fixed interconnected VoIP service as either telecommunications service or information service is still an open issue in the FCC's IP-Enabled Service Proceeding in WC Docket No. 04-36, which the FCC has claimed as the appropriate forum for the resolution of economic regulatory issues related to interconnected VoIP services. Absent federal preemption of fixed interconnected VoIP service, Staff believes that this Commission has authority to impose TAP and TAM surcharges on fixed interconnected VoIP providers.
- 4) The Commission's authority over nomadic interconnected VoIP service is currently preempted by the FCC Vonage Order and by the Nebraska federal district court order. Staff believes that, pending any Court reversal of such federal preemption, this Commission should not impose TAP and TAM surcharges on nomadic interconnected VoIP providers.
- 5) Subsequent to its authority to impose 911 fees on nomadic and fixed interconnected VoIP, as well as TAP and TAM fees on fixed interconnected VoIP, the Commission may find that requiring such contributions promote its public policy goals by enhancing universal service by enlarging the pool of subscribers who can receive and make calls through the PSTN, and by promoting competitive neutrality by ensuring that the costs of those programs are not borne solely by the non-VoIP service providers. Under Minn. Stat. §237.011, this Commission is mandated to encourage, among others, the growth of (1) universal service and (2) of fair and reasonable competition in a competitively neutral manner.
- 6) The Commission could solicit comments on the mechanics of imposing the 911, TAP, and TAM surcharge (e.g., whether the fee is dependent on the number of simultaneous calls or data channels provided to the end-user by the VoIP provider or by the number of simultaneous calls or data channels provided by the telecommunications carrier who provides the interface to the PSTN for the VoIP provider).

**Third**, the Commission may wish to open a separate proceeding to resolve the issues related to VoIP service provision and the assessment thereon of 911, TAP, and TAM fees. Although newer developments suggest that the FCC itself has not ruled on such a classification for fixed interconnected VoIP service, the U.S. District Court for the District of Minnesota had found VoIP to be an information service and would likely require a fuller development of the record should the issue be raised before it again. Thus, the Commission may wish to tap the broad perspectives of different parties on whether 911, TAP, and TAM surcharges apply to fixed interconnected VoIP or other VoIP providers.

The Commission may want to initiate the process by soliciting comments from all interested parties on the following issues:

*On the issues of Commission authority:*

1. Has Congress or the FCC preempted the application of a) TAP, b) TAM, and c) 911 statutes to fixed interconnected VoIP or other VoIP providers? Please explain.
2. What authority requires fixed interconnected VoIP or other VoIP providers to comply with a) TAP, b) TAM, and c) TAM statutes? How should the Commission implement any such authority?
3. Does the Commission have the authority to impose a) TAP, b) TAM, c) 911 fees on fixed interconnected VoIP or other VoIP providers on authority granted to it by the FCC or Congress?

*On the questions from Qwest to the DPS:*

4. Should the Commission respond to the questions posed by Qwest to the Department of Public Service, as follows:
  - a. Should the State of Minnesota interpret its statutes to include VoIP service as a “packet based telecommunications service” such that the 911 fee imposed by Sec. 403.11 is applicable to this service sold to Minnesota residents?
  - b. Should the State of Minnesota interpret the term “customer access line” as used in Sec. 237.52 to describe VoIP service, thereby requiring the collection of the TRS fee on such service sold to Minnesota residents?
  - c. Should the State of Minnesota interpret the term “access lines” as used in Sec. 237.70 to describe VoIP service, thereby requiring the collection of the TAP fee on such service sold to Minnesota residents?
  - d. In the event that the bases upon which the 911, TRS and TAP fees differ such that only one or two of the fees are applicable to VoIP service, should a VoIP provider be required to aggregate the fees:
    - i. On the Minnesota VoIP customer’s bill, and in the monthly/quarterly collection reports submitted to the Commissioner?



- ii. If only one or two of the fees are applicable to VoIP service, is a specific “bill phrase” that identifies the aggregate charges on the customer’s bill required to be utilized by the VoIP provider? If so, what phrase should be used?
5. If yes, what is the Commission’s appropriate response to each of those questions?

*On the mechanics of imposing the surcharges on VoIP providers*

6. Who should be responsible to pay for regulatory fees? The VoIP provider itself or the telecommunications provider of the physical interface to the PSTN?
7. Should the number of fees assessed be dependent on the number of simultaneous calls or data channels provided to the end-user by the VoIP provider or by the number of simultaneous calls or data channels provided by the telecommunications carrier who provides the interface to the PSTN for the VoIP provider?
8. What timeframe should the Commission adopt for the implementation of any decision imposing TAP, TAM and 911 fees on VoIP providers?

*Other Questions*

9. Other questions determined by the Commission.

***Commission Options – Charges on VoIP Services***

- K.1. Take no action at this time– the issues are not subject to Commission authority, or not ripe for Commission determination.
- K.2. Determine that, based on its own authority and the authority emanating from Congress and the FCC’s VoIP USF Order, that all interconnected VoIP service providers are required to contribute to the 911 fund, and that all fixed interconnected VoIP service providers are also required to contribute to the TAP and TAM funds, and solicit comments within 60 days of Commission Order on the mechanics of contributing to the funds and the implementation of that determination.
- K.3. Open a separate docket to address this issue. Initiate the separate proceeding by soliciting comments within 60 days of Commission Order from all interested parties on the issues identified above.
- K.4. Another action determined by the Commission.

***Staff Recommendation***

Staff recommends Option K.3.

**L. What timeframe should the Commission adopt for implementation of any line equivalency standard directed above for services listed on sections B-J?**

CenturyTel has stated that any billing modifications require a one-year planning horizon.

If the Commission decides on a shorter timeframe, it may also want to address any allowance for variance thereon as suggested by CenturyTel and Embarq.

***Commission Options-*** Implementation Schedule

- L.1. Direct the implementation of the adopted line equivalencies within three months and allow for individual companies to request waivers or extensions.
- L.2. Direct the implementation within one year from date of Commission Order.
- L.2. Direct some other schedule for implementation.

***Staff Recommendation***

Staff recommends Option L.1.

**TABLE I-LINE EQUIVALENCY CONVENTIONS**

| Company   | T1  | Partial T1   | ISDN-BRI | ISDN-PRI                                       | Centrex-Blocked                       | Centrex-Non-Blocked                                     |
|---|---|--|----------|--|---------------------------------------|---|
| AT&T  |   | 24 NA  | NA       |  | 24 NA                                 | NA  |
| Centurytel  |   | All Lines used for voice service.<br>24                | NA       | NA   | NA                                    | 1 charge per station port.                              |
| Cypress   |   | NA   | NA       | NA   | NA                                    | See matrix in tariff.                                   |
| Eschelon  | 24 (Lines used for voice or data service) | All Lines used for voice or data service.              |          | 23 (Lines used for voice or data service)<br>2 | NA                                    | NA  |
| Integra Telecom (Electric Lightwave and Scott-Rice) | 24 (All lines capable of local calling)   | All Lines capable of local calling.                    |          | 23 (All lines capable of local calling)<br>2   | NA                                    | NA  |
| MCI (Verizon Access)                                | 24 (Outbound local voice only)            | All outbound Lines used for local voice service.<br>NA |          | 24 (Outbound local voice only)                 | NA                                    | NA  |
| McLeod  | 24 ("Voice paths")                        | All Lines used for voice paths.<br>NA                  |          | 23 ("Voice paths")                             | NA                                    | NA  |
| Qwest   | 24 (Outbound trunks.)                     | All outbound Lines.                                    |          | 23 (Outbound trunks.)<br>2                     | 1 charge per Network Access Register. | 1/9th up to 300 lines then 1/18th. (use Poisson Tables) |
| Time Warner   | 24 (Intra-state dial tone lines)          | All intra-state dial tone lines.<br>NA                 |          | 23 (Intra-state dial tone lines)               | NA                                    | NA  |
| XO  | 24 (Data and voice trunks)                | All Lines used for voice or data service.<br>NA        |          | FCC (5 lines per PRI)                          | NA                                    | NA  |

Note: The following companies indicated that they do not provide the listed services at this time.

Comptel  
Global Connection  
MTA  
Rothsay

Source: Company responses to August 10, 2007 Commission Notice soliciting information

## CENTREX LINE/TRUNK EQUIVALENCY TABLE

Centrex Equivalent Lines are calculated on a per Centrex customer basis. For each Centrex customer, find the Number of Centrex Lines

| Number of Centrex Lines          | Equivalent Lines |
|----------------------------------|------------------|
| 1                                | 1                |
| 2                                | 2                |
| 3                                | 3                |
| 4 to 6                           | 4                |
| 7 to 10                          | 5                |
| 11 to 15                         | 6                |
| 16 to 21                         | 7                |
| 22 to 28                         | 8                |
| 29 to 36                         | 9                |
| 37 to 45                         | 10               |
| 46 to 54                         | 11               |
| 55 to 64                         | 12               |
| 65 to 75                         | 13               |
| 76 to 86                         | 14               |
| 87 to 98                         | 15               |
| 99 to 111                        | 16               |
| 112 to 125                       | 17               |
| 126 to 139                       | 18               |
| 140 to 155                       | 19               |
| 156 to 171                       | 20               |
| 172 to 189                       | 21               |
| 190 to 207                       | 22               |
| 208 to 225                       | 23               |
| 226 to 243                       | 24               |
| 244 to 262                       | 25               |
| 263 to 281                       | 26               |
| 282 to 300                       | 27               |
| Each additional 18 Centrex lines | 1                |

The following is an example of how to calculate the Centrex Equivalent Lines. It is for illustrative purposes only:

Example:

| Customer   | # of Centrex Lines | # of Centrex Equivalent Lines |
|------------|--------------------|-------------------------------|
| Customer A | 100                | 16                            |
| Customer B | 75                 | 13                            |
| Customer C | 300                | 27                            |
| Customer D | 50                 | 11                            |
| Customer E | 400                | 32                            |
| Customer F | 650                | 46                            |
| Total      | 1575               | 145                           |