

# **DESCRIPTION & JUSTIFICATION INTERSTATE ACCESS TARIFF REVISIONS**

Transmittal No. 112  
Effective January 18, 2017

## **Introduction**

The Chillicothe Telephone Company (Chillicothe) submits the accompanying access tariff revisions to its Interstate Access Tariff No. 1. The purpose of this filing is to adjust the special access channel termination and channel mileage demand for declining DS1 and DS3 circuits and amend the rates for all of the special access channel termination and channel mileage services.

The following is a description and justification (including statements of cost and rate development which are in accordance with Section 61.38 of the Commission's Rules), which support the information contained in this filing. Exhibit I is the Revenue Price Out using effective demand and rates, as well as prospective demand and rates.

## **Description & Justification**

### ***Channel Termination Recurring Rates***

Chillicothe is experiencing more high capacity disconnects than projected in the July 1, 2016 annual access tariff filing. Interexchange carriers continue to disconnect high capacity circuits and move traffic to their own fiber facilities or other telecommunications companies' facilities. In addition, many businesses are choosing to disconnect special access service. Chillicothe over-forecasted the high capacity DS1 and DS3 channel termination demand for the annual tariff filing and is seeking to adjust its special access rates.

Chillicothe proposes decreasing its high capacity DS1 channel termination demand from 307 to 265. Chillicothe's DS1 demand is currently at 280 with another 15 additional disconnects pending. Chillicothe also proposes decreasing its high capacity DS3 channel termination demand from 11 to 8. There has been significant activity, especially for wireless carriers, to move special circuits from access services to private dedicated facilities. Chillicothe has been experiencing this trend for over a year and nearly 100 percent of the wireless carriers have migrated off of Chillicothe's access network. See Exhibit IV for the history of actual to forecast demand for the 2016-2017 tariff period.

Chillicothe uses a unit investment study to adjust its special access channel termination rates. A unit investment study identifies the average equipment needed to provide each special access service type including voice grade, digital data, high capacity DS1 and high capacity DS3. Each piece of equipment cost is multiplied by a factor if one circuit does not use 100% of the equipment. This results in a “typical unloaded investment” value for each piece of equipment. The unloaded investment is totaled for each service type. The unloaded investment by service type is multiplied by the service demand to calculate a weighted investment. Each service type’s weighted investment is divided by the total special access weighted investment to calculate a factor which is multiplied by the annual special access revenue requirement.

Essentially, the base equipment cost and demand for each service type is used to allocate the interstate special access revenue requirement to the individual special accesses services. The special access service type revenue requirement is divided by the service demand to calculate monthly rates. This type of analysis is performed separately for the channel termination, channel mileage termination, and channel mileage facility revenue requirements.

Exhibit I is the Revenue Price Out using effective demand and rates, as well as prospective demand and rates. The shift in rates is revenue requirement neutral in total and the special access channel terminating revenue requirement remains at \$1,616,008, and the channel mileage revenue requirement remains at \$190,101, as filed in the annual 2016-2017 tariff filing. Exhibit II details the revised channel termination unit investment study and identifies the proposed rates by service type. Exhibit III is the original channel termination unit investment study used for the 2016-2017 tariff filing. An exhibit has not been provided for the channel mileage unit investment study given its process is similar to the channel termination (as discussed below).

### ***Channel Mileage Recurring Rates***

Many of the channel termination circuits discussed above have mileage charges. Chillicothe over-forecasted the high capacity DS1 channel mileage demand for the annual tariff filing and is seeking to adjust the channel mileage special access rates.

Chillicothe proposes decreasing its high capacity DS1 channel mileage demand from 168 to 120. As with channel termination rates, Chillicothe uses a unit investment study to adjust its special access channel mileage rates. An exhibit has not been provided for the channel mileage unit investment study given its process is similar to the channel termination process shown in Exhibits II and III. See Exhibit IV for the history of actual to forecast demand for the 2016-2017 tariff period.

### ***Revenue Requirement Spread to Services***

The unit investment study in the original filing and the proposed filing holds the unloaded investment cost, by service type, constant. Because the unloaded investment cost is the basis for the rate calculation process, and the costs remain the same in the original 2016-2017 annual filing (Transmittal No. 111) and the subject tariff filing (Transmittal No. 112), the relationship between the spreading of the revenue requirement and the calculation of rates by service type remains the same. Although demand and rates may change for each service, the relationship between each service's revenue requirements will be the same. Therefore, each service's demand may change in this proposed filing and new rates will be calculated, but the change in rate, by service type, will be the same for all rates due to the underlying unloaded investment cost being the primary driver in the weighting of the revenue requirement by service.

When the DS1 channel termination demand is decreased from 307 to 265, all rates increase equally by 20%. This will occur every time because the demand components are weighted by the same unloaded investment costs. The same holds true for the DS1 channel mileage demand decreasing from 168 to 120. The rates increased equally by 37%.

# EXHIBIT I

## REVENUE PRICE OUT

### Channel Termination

Access Element	2016-2017 Effective Demand	Original Monthly	2016-2017 Prospective Demand	Prospective Monthly	Effective Rate	Prospective Rate	Effective Revenue	Prospective Revenue	Total
	[A]=Input	[B]=[A]/12	[C]=Input	[D]=[C]/12	[E]=Tariff Sheets	[F]=Exhibit III	[G]=[A]*[E]	[H]=[C]*[F]	[I]=[H]-[G]
CT-2W	72	6	72	6	119.53	143.79	\$ 8,606	\$ 10,353	\$ 1,747
CT-4W	12	1	12	1	137.94	165.95	\$ 1,655	\$ 1,991	\$ 336
CT-DDS (56K)	156	13	144	12	159.52	\$ 191.91	\$ 24,886	\$ 27,635	\$ 2,750
CT-HC (T1)	3,684	307	3,180	265	320.18	\$ 385.19	\$ 1,179,535	\$ 1,224,893	\$ 45,358
CT-HF (DS3)	132	11	96	8	3,040.35	\$ 3,657.66	\$ 401,326	\$ 351,135	\$ (50,191)
							<b>\$ 1,616,008</b>	<b>\$ 1,616,008</b>	<b>\$ 0</b>

### Channel Mileage

Access Element	2016-2017 Effective Demand	Original Monthly	2016-2017 Prospective Demand	Prospective Monthly	Effective Rate	Prospective Rate	BIP&Miles	Effective Revenue	Prospective Revenue	Total
	[A]=Input	[B]=[A]/12	[C]=Input	[D]=[C]/12	[E]=Tariff Sheets	[F.1]=Exhibit III	[F.2] Records	[G]=[A]*[E]	[H]=[C]*[F]	[I]=[H]-[G]
CT-4W	12	1	12	1	\$2.79	\$3.84	7.45	\$ 249	\$ 343	\$ 93
CT-DDS (56K)	96	8	84	7	\$2.72	\$3.73	7.50	\$ 1,956	\$ 2,353	\$ 396
CT-HC (T1)	2,016	168	1,440	120	\$13.57	\$18.76	6.69	\$ 183,020	\$ 180,682	\$ (2,338)
CT-HC (DS3)	48	4	48	4	\$15.16	\$20.91	6.70	\$ 4,875	\$ 6,724	\$ 1,848
								<b>\$ 190,101</b>	<b>\$ 190,101</b>	<b>\$ 0</b>

## EXHIBIT II

### UNIT INVESTMENT STUDY – WITH PROSPECTIVE DEMAND

Type of Service		Typical Unloaded Investment	2016-2017 Monthly Demand	BIP and Miles	Monthly Demand Miles	Weighted Rate Relations	Weighting Distribution	Original Test Tear RRQ	Rate Per Year	Rate Per Month	Proof
[A]		[B]=Records	[C]=Input	[D]	[E]	[F]=[B]*[C]	[G]=[F]/Total [F]	[H]=[G]* Total [H]	[I]=[H]/[C]	[J]=[I]/12	[K]=[J]*[C]*12
<b>Channel Termination Rate</b>											
Voice Grade 2 Wire											
	Total	\$647.22	6	na	na	\$3,883	0.64%	\$10,353	\$1,725.53	\$143.79	10,353
Voice Grade 4 Wire											
	Total	\$746.94	1	na	na	\$747	0.12%	\$1,991	\$1,991.37	\$165.95	1,991
Digital Data											
	Total	\$863.81	12	na	na	\$10,366	1.71%	\$27,635	\$2,302.95	\$191.91	27,635
HI CAP DS1											
	Total	\$1,733.74	265	na	na	\$459,442	75.80%	\$1,224,893	\$4,622.24	\$385.19	1,224,893
HI CAP DS3											
	Total	\$16,463.32	8	na	na	\$131,707	21.73%	\$351,135	\$43,891.91	\$3,657.66	351,135
Total						\$606,145		\$1,616,008			1,616,008
Checksum								\$1,616,008			

#### Source and Calculations

[A] Tariffed Services

[B] The amount of investment item used by on service circuit type. Investment costs are per vendor quotes or CPRs.

[C] Estimated demand is forecast circuits based on historical data.

[D] Not applicable for channel termination billing.

[E] Not applicable for channel termination billing.

[F] Demand multiplied times the investment cost for one circuit.

[G] Distribution of the total in this column.

[H] The total revenue requirement for the respective Part 69 access element is allocated to individual service types by applying the individual weighting factors in column G.

[I] Annual revenue requirement divided by demand.

[J] Annual amount divided by 12.

### EXHIBIT III

#### UNIT INVESTMENT STUDY – WITH EFFECTIVE DEMAND

Type of Service		Typical Unloaded Investment	2016-2017 Monthly Demand	BIP and Miles	Monthly Demand Miles	Weighted Rate Relations	Weighting Distribution	Original Test Tear RRQ	Rate Per Year	Rate Per Month	Proof
[A]		[B]=Records	[C]=Input	[D]	[E]	[F]=[B]*[C]	[G]=[F]/Total [F]	[H]=[G]* Total [H]	[I]=[H]/[C]	[J]=[I]/12	[K]=[J]*[C]*12
<b>Channel Termination Rate</b>											
Voice Grade 2 Wire											
	<i>Total</i>	\$647.22	6	na	na	\$3,883	0.53%	\$8,606	\$1,434.31	\$119.53	8,606
Voice Grade 4 Wire											
	<i>Total</i>	\$746.94	1	na	na	\$747	0.10%	\$1,655	\$1,655.28	\$137.94	1,655
Digital Data											
	<i>Total</i>	\$863.81	13	na	na	\$11,229	1.54%	\$24,886	\$1,914.27	\$159.52	24,886
HI CAP DS1											
	<i>Total</i>	\$1,733.74	307	na	na	\$532,259	72.99%	\$1,179,535	\$3,842.13	\$320.18	1,179,535
HI CAP DS3											
	<i>Total</i>	\$16,463.32	11	na	na	\$181,096	24.83%	\$401,326	\$36,484.20	\$3,040.35	401,326
Total						\$729,216		\$1,616,008			1,616,008
Checksum								\$1,616,008			

#### Source and Calculations

[A] Tariffed Services

[B] The amount of investment item used by on service circuit type. Investment costs are per vendor quotes or CPRs.

[C] Estimated demand is forecast circuits based on historical data.

[D] Not applicable for channel termination billing.

[E] Not applicable for channel termination billing.

[F] Demand multiplied times the investment cost for one circuit.

[G] Distribution of the total in this column.

[H] The total revenue requirement for the respective Part 69 access element is allocated to individual service types by applying the individual weighting factors in column G.

[I] Annual revenue requirement divided by demand.

[J] Annual amount divided by 12.

## EXHIBIT IV

### HISTORICAL CHANGE IN DEMAND FOR HIGH CAPACITY DS1

