

**Farmers Telephone Cooperative, Inc. ("FTC")**  
**JSI Transmittal No. 177**  
**Ethernet Transport Service ("ETS") - Addition of 10 Gbps**

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Line #	Ethernet Transport Service ("ETS") Service Element	Plant Investment per Demand Unit	Fill Factor	Plant Required to Support Service Unit	Net Salvage Factor	Estimated Net Salvage	Discount Factor per Exh 3.H	PV of Net Salvage
	A	B	C	D = C / B	E	F = D * E	G	H = F * G

1 Factors

**ETS Channel Terminations- Fiber Within 300 Feet**

2	ETS Channel Termination-Transmission Equipment	\$27,759	80%	\$ 34,699	-5.0%	\$ (1,735)	47.41%	\$ (823.00)
3	ETS Channel Termination- Facilities (1)	<u>\$6,361</u>	100%	<u>6,361</u>	-10.0%	<u>(636)</u>	6.96%	<u>(44.00)</u>
4	Combined ETS Copper Channel Termination	34,120		41,060		(2,371)		(867.00)

**ETS Channel Terminations- Fiber Beyond 300 Feet**

5	ETS Channel Termination-Transmission Equipment	\$27,759	80%	\$ 34,699	-5.0%	\$ (1,735)	47.41%	\$ (823.00)
6	ETS Channel Termination- Facilities (1)	<u>39,882</u>	100%	<u>39,882</u>	-10.0%	<u>(3,988)</u>	6.96%	<u>(277.00)</u>
7	Combined ETS Copper Channel Termination	67,641		74,581		(5,723)		(1,100.00)

(1) Channel Termination cost is based on the average cost of installing Channel Termination facilities over different possible lengths between the central office and customer premises.

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 Cost per Unit Development - Channel Terminations

Exhibit 2.A.1  
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Line #	Ethernet Transport Service ("ETS") Service Element	Plant Investment with Discounted Net Salvage	Level-ization Factor per Exh 2.F	Direct Cost = Levelized Capital Cost	Overhead	Combined Direct Cost and Overhead	Total Cost Adjusted for Uncollectible	Total Cost per Month
	A	I = D - H	J	K = I * J	L = D * Factor	M = K + L	N = M / (1 - Factor)	O = N / 12

1 Factors

11.85%  
 Per Exh 2.E

2.00%

To Exhibit 2 B

**ETS Channel Terminations- Fiber Within 300 Feet**

2	ETS Channel Termination-Transmission Equipment	\$ 35,522	21.39%	\$ 7,599				
3	ETS Channel Termination- Facilities (1)	6,405	12.09%	774				
4	Combined ETS Copper Channel Termination	41,927		8,373	\$ 4,866	\$ 13,239	\$ 13,509	\$ 1,125.77

**ETS Channel Terminations- Fiber Beyond 300 Feet**

5	ETS Channel Termination-Transmission Equipment	\$ 35,522	21.39%	\$ 7,599				
6	ETS Channel Termination- Facilities (1)	40,159	12.09%	4,856				
7	Combined ETS Copper Channel Termination	75,681		12,455	\$ 8,838	\$ 21,293	\$ 21,728	\$ 1,810.63

Farmers Telephone Cooperative, Inc. ("FTC")  
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 Cost per Unit Development - ETS Ports

Exhibit 2.A.2

Line #	Ethernet Transport Service ("ETS") Port Service Element	Plant Investment per Demand Unit	Fill Factor	Plant Required to Support Service Unit	Net Salvage Factor	Estimated Net Salvage	Discount Factor per Exh 2.F	PV of Net Salvage
	A	B	C	D = C / B	E	F = D * E	G	H = F * G
1	ETS Basic Port	\$ 27,759	80%	\$ 34,699	-10.0%	\$ (3,470)	47.41%	\$ (1,645.00)
2		Plant Investment with Discounted Net Salvage	Level-ization Factor per Exh 3.F	Direct Cost = Levelized Capital Cost	Overhead	Combined Direct Cost and Overhead	Total Cost Adjusted for Uncollectible	Total Cost per Month
		I = D - H	J	K = I * J	L = D * Factor	M = K + L	N = M / (1 - Factor)	O = N / 12
					11.85% Per Exh 2.E		2.00%	
3	ETS Basic Port	\$ 36,344	21.39%	\$ 7,775	\$ 4,112	\$ 11,887	\$ 12,130	\$ 1,010.80 To Exhibit 2.B

Farmers Telephone Cooperative, Inc. ("FTC")  
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 Cost per Unit Development - Meet Point Interface ("MPI")

Exhibit 2.A.3

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Line #	ETS Meet Point Interface ("MPI") Service Element	Plant Investment per Demand Unit	Fill Factor	Plant Required to Support Service Unit	Net Salvage Factor	Estimated Net Salvage	Discount Factor per Exh 3.H	PV of Net Salvage
	A	B	C	D = C / B	E	F = D * E	G	H = F * G

1	Channel Mileage Termination - All Capacities	\$27,759	80%	\$ 34,699	-10.0%	\$ (3,470)	47.41%	(\$1,645)
2	Channel Mileage Facility-Per Mile - All Capacities	\$6,361	100%	\$ 6,361	-10.0%	\$ (636)	6.96%	(\$44)

Plant Investment with Discounted Net Salvage	Level-ization Factor per Exh 2.F	Direct Cost = Levelized Capital Cost	Overhead	Combined Direct Cost and Overhead	Total Cost Adjusted for Uncollectible	Total Cost per Month
I = D - H	J	K = I * J	L = D * Factor	M = K + L	N = M / (1 -Factor)	O = N / 12

3 Factors

11.85%  
Per Exh 2.F

2.00%

4	Channel Mileage Termination - All Capacities	\$36,344	21.39%	\$7,775	\$4,112	\$11,887	\$12,130	<b>\$1,010.80</b> To Exh. 2.B, Col. B, Lines 3 & 6
5	Channel Mileage Facility-Per Mile - All Capacities	\$6,405	12.09%	\$774	\$754	\$1,528	\$1,559	<b>\$129.93</b> To Exh. 2 B, Col. B, Lines 7

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 Cost per Unit Development - EVCs

Exhibit 2.A.4

**Development of ETS Virtual Connection ("EVC") Revenue Requirement**

- 1 Projected 2014 Special Access Revenue Requirement
- 2 Estimated Interoffice Portion of Revenue Requirement
- 3 Estimated Annual Revenue Requirement - Combined EVCs
- 4 Estimated Monthly Revenue Requirement - Combined EVCs
- 5 Estimated EVC Demand in bps Capacity per Month
- 6 Estimated Monthly Cost per EVC Mbps

<u>Source</u>	
Per Exhibit 1	\$3,910,159.00
Estimate based on Relative CWF	5%
Line 1 * Line 2	\$ 195,508.00
Line 3 / 12	\$ 16,292.00
Estimate	200,000,000
Line 4 / Line 5	0.00008146

**Estimated EVC Monthly Cost**

<u>bps</u>	<u>Monthly Cost per bps per Line 6</u>	<u>Monthly Revenue Requirement</u>
10,000,000	0.00008146	\$ 814.60

To Exh. 2.B Line 4

**Development of Extended EVC Cost**

- 11 Shared Monthly Channel Mileage Termination Revenue Requirement
- 12 Shared Monthly Channel Mileage Facility Revenue Requirement per Mile
- 13 Shared Miles
- 14 Shared Channel Mileage Facility Costs
- 15 Combined Extended EVC Shared Cost
- 16 Estimated EVC Demand in bps Capacity per Month
- 17 Estimated Monthly Cost per EVC Mbps

<u>Source</u>	
Exhibit 2.A.3 - Line 4	\$1,011
Exhibit 2.A.3 - Line 5	\$130
Average Route to Interface	10
Line 15 * Line 16	\$ 10,107.99
Line 14 + Line 17	\$ 11,118.79
Estimate	40,000,000
Line 18 / Line 19	0.00027797

**Estimated Extended EVC Monthly Cost**

- 21 1 Gbps

<u>bps</u>	<u>Monthly Cost per bps per Line 20</u>	<u>Monthly Revenue Requirement</u>
10,000,000	0.00027797	\$ 2,779.70

To Exh. 2.B Line 5

Farmers Telephone Cooperative, Inc. ("FTC")  
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 Projected Total Annual Cost

Exhibit 2.B

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Line #	Ethernet Transport Service ("ETS") Service Element		Monthly Cost per Unit	Source	Projected Annual Demand per Exhibit 3.D	Projected Annual Cost
	A		B	C	D	E = B * D
1	ETS Chan Term-Within 300 Ft	1 Gbps	\$ 1,125.77	Exh 2.A.1 Line 4	12	\$ 13,509.18
2	ETS Chan Term-More than 300 Ft	1 Gbps	1,810.63	Exh 2.A.1 Line 7	12	21,727.55
3	ETS Basic Port	1 Gbps	1,010.80	Exh 2.A.2 Line 3	24	24,259.18
4	ETS Ethernet Virtual Connections (EVC)	1 Gbps	814.60	Exh 2.A.4 Line 7	12	9,775.20
5	ETS Extended EVC	1 Gbps	2,779.70	Exh 2.A.4 Line 28	0	-
<b>ETS Meet Point Interface (ETS-MPI)</b>						
6	Channel Mileage Termination	1 Gbps	\$1,010.80	Exh 2.A.3 Line 4	0	-
7	Channel Mileage Facility-Per Mile	1 Gbps	129.93	Exh 2.A.3 Line 5	0	-
8	Total Annual Cost for Monthly Recurring Elements				\$ 69,271.12	

To Exh. 2.D Ln 2

Farmers Telephone Cooperative, Inc. ("FTC")  
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 Proposed Rates and Projected Annual Revenue

Exhibit 2.C

Line #	Proposed Service Element	Capacity	Proposed Rate	Projected Annual Demand	Projected Revenue Before Term Discount	Projected Term Discount Election	Projected Revenue After Discount
	A	B	C = Input	D = Input	E = C * D	F	G = E * (1-F)
<b>Monthly Recurring Charges</b>							
1	ETS Chan Term-Within 300 Ft	1 Gbps	\$ 1,375.00	12	\$ 16,500.00		\$ 14,850.00
2	ETS Chan Term-More than 300 Ft	1 Gbps	\$ 2,000.00	12	24,000.00	10%	21,600.00
3	ETS Basic Port	1 Gbps	\$ 1,060.00	24	25,440.00	10%	22,896.00
4	ETS Intraswitch Ethernet Virtual Connection (EVC)	1 Gbps	\$ -	0			
5	ETS Interswitch Ethernet Virtual Connections (EVC)	1 Gbps	\$ 914.00	12	10,968.00	10%	9,871.20
6	ETS Extended Ethernet Virtual Connection	1 Gbps	\$ 576.00	0	-		-
7	Meet Point Interface Channel Mileage Termination	1 Gbps	\$ 1,060.00	0	-		-
8	Meet Point Interface Channel Mileage Facility-Per Mile	1 Gbps	\$ 325.00	0	-		-
9	Total				<u>\$ 76,908.00</u>		<u>\$ 69,217.20</u>
							<i>To Exhibit 2.D, Line 1</i>
10	ETS Basic Port NRC	1 Gbps	\$ 1,350.00	2	\$ 2,700.00		\$ 2,700.00
11	ETS Intraswitch EVC NRC	1 Gbps	\$ 75.00	0	-		-
12	ETS Interswitch EVC NRC	1 Gbps	\$ 75.00	1	75.00		75.00
13	ETS Extended EVC NRC	1 Gbps	\$ 100.00	0	-		-
14	ETS Meet Point Interface Channel Mileage Term NRC	1 Gbps	\$ 1,600.00	0	-		-
					<u>\$ 2,775.00</u>		<u>\$ 2,775.00</u>
15	Total Projected Revenue from ETS 1 Gbps services						<u>\$ 71,992.20</u>



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**Annual Impact on Special Access Revenue of New Service Offering**

**Exhibit 2.D**

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- 1 Projected Annual Revenue from Proposed Additional Ethernet Transport Service
- 2 Projected Annual Cost for 10 Gbps Ethernet Transport Service
- 3 Projected Revenues Over (Under) Cost
- 4 Percentage of Revenues over Cost
- 5 Projected 2009 TYCOS Special Access Revenue
- 6 Projected Annual ETS Revenue as % of 2009 TYCOS Special Access Rev.

Source	Amount
Exhibit 2.C Line 9	\$ 69,217
Exhibit 2.B Line 8	69,271
Line 1 - Line 2	<u>\$ (54)</u>
Line 3 / Line 2	<u>-0.08%</u>
Exhibit 3.G Line 5	\$ 3,910,159
	1.8%

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 Development of Carrying Charge Factor {"CCF"}

Exhibit 2.E

Development of Interstate Special Access Carrying Charge Factor

Based on 12/31/2014 Farmers Projected Revenue Requirement at Exhibit 1, JSI Transmittal No. 177:

1	Plant in Service	<i>Trans 177 Attachment 1, Line 1, Special Access</i>	<u>22,617,237</u>	Removal of support plant allows reflection of general support as part of overhead.
2	Less Support Assets	<i>Trans 177 Attachment 2, Line 3, Special Access</i>	2,149,368	
3	Plant Specific Operations Plant	<i>Line 1 - Line 2</i>	20,467,869	
4	Support Plant Ratio to Total	<i>Line 2 / Line 1</i>	9.5%	
5	Revenue Requirement	<i>Trans 177 Attachment 1, Line 30, Special Access</i>	3,910,159	Removal of Depreciation due to coverage of depreciation on direct investment by levelization process at Exhibit 1.A
6	Less Total Depreciation Expense	<i>Trans 177 Attachment 2, Line 133, Special Access</i>	1,491,610	
7	Add Back Support Asset Depreciation Expense	<i>Trans 177 Attachment 2, Line 127, Special Access</i>	74,011	Support assets are indirect and thus must be covered in overhead by adding back both depreciation and a provision for return and taxes to the numerator for CCF calculation.
8	Revenue Requirement Adjusted for Depreciation	<i>Line 5 - Line 6 + Line 7</i>	2,492,560	
9	Less Return and Tax Portion of Rev. Req.	<i>Trans 177 Attachment 1, Line 16, Special Access</i>	74,011	Removal of Return and Taxes due to coverage of return and taxes on direct investment by levelization process at Exhibit 1.A.
10	Add Back Return attributable to Support Assets	<i>Line 9 * Line 4</i>	7,033	See note for Line 7 above.
11	Costs Covered by Carrying Charge Factor	<i>Line 8 - Line 9 + Line 10</i>	2,425,582	
12	Carrying Charge Factor	<i>Line 11 / Line 3</i>	11.85%	

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Development of Discount Factors for Levelization

Exhibit 2.F

			n = Years	PV Discount Factor
1	"Interest" (Return Rate) ( <b>Note A</b> )	Current Interstate Authorized Rate of Return		11.2500%
2	PMT = "Payment" Amount (Annuity)	Input Value of 1 for Factor Development		1
3	Year 1	PV Factor = Line 2 [1/(1+ Line 1)^Col n]	1	0.8989
4	Year 2	" "	2	0.8080
5	Year 3	" "	3	0.7263
6	Year 4	" "	4	0.6528
7	Year 5	" "	5	0.5868
8	Year 6	" "	6	0.5275
9	Year 7	" "	7	0.4741
10	Year 8	" "	8	0.4262
11	Year 9	" "	9	0.3831
12	Year 10	" "	10	0.3443
13	Year 11	" "	11	0.3095
14	Year 12	" "	12	0.2782
15	Year 13	" "	13	0.2501
16	Year 14	" "	14	0.2248
17	Year 15	" "	15	0.2021
18	Year 16	" "	16	0.1816
19	Year 17	" "	17	0.1633
20	Year 18	" "	18	0.1468
21	Year 19	" "	19	0.1319
22	Year 20	" "	20	0.1186
22	Year 21	" "	21	0.1066
22	Year 22	" "	22	0.0958
22	Year 23	" "	23	0.0861
22	Year 24	" "	24	0.0774
22	Year 25	" "	25	0.0696

**PV Formula:  $PV = FV \cdot [1/(1+i)^n]$**

Where:

PV = Present Value.

FV = Future Value.

i = Interest rate per compounding period.

n = Number of compounding periods.

<- Discount Factor for Net-Salvage  
for Terminal Equipment (**Note B**)

<- Discount Factor for Net-Salvage  
for Fiber Facilities (**Note B**)

**7-YEAR LEVELIZATION FACTOR for TRANSMISSION/TERMINAL EQUIPMENT**

23	Sum of Discount Factors for Eight Years	Sum Columnb PV Lines 3 through 9	4.6744
24	Capital Recovery levelization Factor	Reciprocal of Line 23	21.39%

**25-YEAR LEVELIZATION FACTOR for FACILITIES**

25	Sum of Discount Factors for 25 Years	Sum Columnb PV Lines 3 through 22	8.2704
26	Capital Recovery levelization Factor	Reciprocal of Line 25	12.09%

**Note A:** The return rate for development of the discount factors does not include income-tax gross-up inasmuch as Farmers Telephone Cooperative, Inc. is a cooperative exempt from income taxes for member-sourced revenue including access charges.

**Note B:** Recovery periods based on low range of life per "Depreciation Ranges Adopted in CC Docket No. 98-137 – December 17, 1999.