



**Universal Service Fund  
Loop Cost and Expense Adjustment Algorithms**

**Cost Company Loop Cost Algorithm for 1997 and Subsequent Years**

<b>Line</b>	<b>Formula</b>	<b>Description</b>
1.	$(DL255 * (DL710/DL700)) + DL820$	Cable & Wire Facilities plus C&WF portion of Capital Leases assigned to Category 1
2.	$DL250 + DL810$	Central Office Equipment plus COE portion of Capital leases assigned to Category 4.13
3.	$AL1/(DL255 + DL815)$	"A" Factor Cable & Wire Facilities. C&WF Category 1 divided by Total C&WF
4.	$AL2/(DL230 + DL235 + DL240 + DL805)$	"B" Factor Central Office Equipment. COE Category 4.13 divided by Total COE
5.	$AL1/DL160$	"C" Factor Cable & Wire Facilities (Gross Allocator) C&WF Category 1 divided by Total Plant in Service
6.	$AL2/DL160$	"D" Factor Central Office Equipment (Gross Allocator) COE Category 4.13 divided by Total Plant In Service
7.	$AL5 * DL170$	Materials & Supplies assigned to Cable & Wire Facilities Category 1
8.	$AL6 * DL170$	Material & Supplies assigned to Central Office Equipment Category 4.13
9.	$AL3 * ((DL280 + DL330) + (DL815/DL800) * DL195)$	Accumulated Depreciation plus Accumulated Amortization plus Net Noncurrent Deferred Operating Income Taxes assigned to C&WF Category 1
10.	$AL4 * ((DL260 + DL265 + DL270 + DL310 + DL315 + DL320) + (DL805/DL800) * DL195)$	Accumulated Depreciation plus Accumulated Amortization plus Net Noncurrent Deferred Operating Income Taxes assigned COE Category 4.13
11.	[Reserved]	
12.	[Reserved]	
13.	$AL3 * (DL430 - DL435 - DL440)$	Cable & Wire Facilities Maintenance Expense assigned to Category 1



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14.	$AL4 * (DL365 + DL380 + DL395 - DL370 - DL375 - DL385 - DL390 - DL400 - DL405)$	Central Office Equipment Maintenance Expense assigned to Category 4.13
15.	$(AL5 + AL6) * (DL335 + DL350 - DL340 - DL345 - DL355 - DL360)$	Network Support Expenses plus General Support Expenses assigned to C&WF Category 1 and COE Category 4.13
16	$(AL5 + AL6) * (L450 - L455)$	Network Operations Expenses assigned to C&WF Category 1 and COE Category 4.13
17.	$AL3 * (DL530 + ((DL815/DL800) * DL830))$	Depreciation and Amortization Expense assigned to C&WF Category 1
18.	$AL4 * ((DL510 + DL515 + DL520) + ((DL805/DL800) * DL830))$	Depreciation and Amortization Expense assigned to COE Category 4.13
19.	$(AL5 + AL6) * (DL535 + DL550)$ (Adjusted for Corporate Operations Expense Limitation)	Corporate Operations Expense assigned to C&WF Category 1 and COE Category 4.13, limited in accordance with §54.1308(a)(4)
20.	$(AL5 + AL6) * DL650$	Operating Taxes assigned to C&WF Category 1 and COE Category 4.13
21.	$(AL5 + AL6) * (DL600 - DL540 - DL555)$	Benefits other than Corporate Operations Expense assigned to C&WF Category 1 and COE Category 4.13
22.	$(AL5 + AL6) * DL610$	Rents assigned to C&WF Category 1 and COE Category 4.13
23.	$(AL1 + AL7 - AL9) * ROR$	Return Component for C&WF Category 1
24.	$(AL2 + AL8 - AL10) * ROR$	Return Component for COE Category 4.13
25a.	$AL17 + AL18 + AL23 + AL24$ (Adjusted for Capex Benchmark Limits Jul 2012 – Mar 2013)	Total Capex Costs
25b.	$AL13 + AL14 + AL15 + AL16 + AL19 + AL20 + AL21 + AL22$ (Adjusted for Opex Benchmark Limits Jul 2012 – Mar 2013, adjusted for Opex Limits effective Jan 2017)	Total Opex Costs



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- |      |   |                                  |
|------|---|----------------------------------|
| 25c. | AL25a + AL25b<br>(Adjusted for Capex Opex Benchmark Limits Apr 2013 – Jul 2014) | Total Unseparated Costs          |
| 26.  | AL25c/DL060   | Study Area Cost per Loop (SACPL) |



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**Expense Adjustment Algorithm**

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Rate of Return (algorithm lines 23 and 24):

The FCC ordered that the rate of return (ROR) transition downward from .1125 to .0975. The transition is applied to HCL support as follows:

HCL Payment Year	ROR (January – June)	ROR (July – December)
2016	.1125	.1100

For HCL payment years 2017 through 2021 a blended ROR will be used for the entire payment year.

HCL Payment Year	ROR (January – December)	Notes
2017	.10875	6 months of .1100, 6 months of .1075
2018	.10625	6 months of .1075, 6 months of .1050
2019	.10375	6 months of .1050, 6 months of .1025
2020	.10125	6 months of .1025, 6 months of .1000
2021	.09875	6 months of .1000, 6 months of .0975

Beginning with the 2022 HCL payment year, the ROR will be .0975.



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**Expense Adjustment Algorithm**

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**Corporate Operations Expense Limitation**

The Cost Company Loop Cost Algorithm at Line 19 limits Corporate Operation Expenses in accordance with §54.1308(a)(4).

Step 1: ***Total Reported Corporate Operations Expense per loop per month*** is calculated by summing DL535 (Account 6710) and DL550 (Account 6720). This resulting amount is then divided by DL060 (Total Loops) and 12 (months) to yield a per line per month number.

Step 2: ***Total Allowed Corporate Operations Expense per loop per month*** is determined for specific working line groupings as defined in the FCC Part 54.1308(a)(4) rules:

- **Effective for the period January 1, 2002 through December 31, 2011**

Total Allowed Corporate Operations Expense per loop per month is adjusted annually to reflect the percentage change in Gross Domestic Product-Chained Price Index (GDPCPI).

For study areas with 6,000 or fewer USF Loops (DL070):

$[\$33.30853 - (\$0.00246 \times \text{DL070})] \times \text{GDPCPI}$  or  
 $[50,000 / \text{DL070}] \times \text{GDPCPI}$ , whichever is or greater

For study areas with more than 6,000 but fewer than 18,006 USF Loops (DL070):

$[\$3.83195 + (88,429.20 / \text{DL070})] \times \text{GDPCPI}$

For study areas with 18,006 or more USF Loops (DL070):

$\$8.74472 \times \text{GDPCPI}$

- **Effective for the period January 1, 2012 through December 31, 2018**

The GDPCPI factor for 2012 was re-indexed to 1 to reflect the use of a modified formula. Beginning January 1, 2013 the monthly per loop limit shall be adjusted annually to reflect the percentage change in GDPCPI.

For study areas with 6,000 or fewer Total Loops (DL060):

$[\$42.337 - (\$0.00328 \times \text{DL060})] \times \text{GDPCPI}$  or  
 $[63,000 / \text{DL060}] \times \text{GDPCPI}$ , whichever is or greater

For study areas with more than 6,000 but fewer than 17,887 Total Loops (DL060):

$[\$3.007 + (117,990 / \text{DL060})] \times \text{GDPCPI}$

For study areas with 17,887 or more Total Loops (DL060):

$\$9.562 \times \text{GDPCPI}$

Note: §54.1308(a)(4) uses the terms Working Loops and Total Working Loops, with Working Loops = USF Loops (DL070) and with Total Working Loops = Total Loops (DL060).



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**Expense Adjustment Algorithm**

- **Effective January 1, 2019**

For study areas with 6,000 or fewer total eligible lines (DL060 + DL090):  
[\$42.337 - (\$0.00328 x (DL060 + DL090))] x GDPCPI or  
[63,000 / (DL060 + DL090)] x GDPCPI, whichever is or greater

For study areas with more than 6,000 but fewer than 17,887 total eligible lines (DL060 + DL090):  
[\$3.007 + (117,990 / (DL060 + DL090))] x GDPCPI

For study areas with 17,887 or more total eligible lines (DL060 + DL090):  
\$9.562 x GDPCPI

Note: §54.1308(a)(4)(ii) defines total eligible lines as Total Working Loops (DL060) plus Consumer Broadband-Only Loops (DL090).



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**Expense Adjustment Algorithm**

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The GDPCPI values currently in effect are as follows:

January 1, 2015 through December 31, 2015 (Applies to 2014-1, -2, -3, -4)	1.054650
January 1, 2016 through December 31, 2016 (Applies to 2015-1, -2, -3, -4)	1.071998
January 1, 2017 through December 31, 2017 (Applies to 2016-1, -2, -3, -4)	1.083433
January 1, 2018 through December 31, 2018 (Applies to 2017-1, -2, -3, -4)	1.097290
January 1, 2019 through December 31, 2019 (Applies to 2018-1, -2, -3, -4)	1.118356
January 1, 2020 through December 31, 2020 (Applies to 2019-1, -2, -3, -4)	1.145197

**Step 3: Limitation Test** – compare the Total Reported Corporate Operations Expense per loop per month to the Total Allowed Corporate Operations Expense per loop per month.

- If the limitation is not exceeded, the Total Reported Corporate Operations Expense as reported for the study area is used in the cost per loop algorithm.
- If the limitation is exceeded, the Total Allowed Corporate Operations Expense is calculated by multiplying the Total Allowed Corporate Operations Expense per loop per month by DL060 (Total Loops) and 12 (months).

**Limits on Capital and Operating Expenses**

For the period July 2012 – July 2014 there is a limitation on allowable Capital Expenses (Capex) and Operating Expenses (Opex). Algorithm Line 25 has been split into separate Capex and Opex amounts which are compared to benchmark limit values published by the FCC and the lesser of the calculated value and limit value is used in the calculation. The impact of the limits is phased in. For the period July – December 2012, support is reduced by 25% of the difference between support calculated using the study area’s reported data and the support as calculated using the Capex Opex limits (unless that reduction would exceed 10% of support). For the period January – March 2013 support is reduced by 50% of the difference between support calculated using the study area’s reported data and the support as calculated using the Capex Opex limits.

For the period April 2013 – July 2014 the Capex and Opex limits is summed and compared to the sum of the reported capex and opex amounts, support is reduced by 50% of the difference between support calculated using the study area’s reported data and the support as calculated using the Capex Opex limit (unless that reduction would exceed 15% of the difference between support calculated using the study area’s reported data and the support as calculated using the Capex Opex limit).

The FCC eliminated the use of benchmark limits on Capex and Opex effective August 2014.



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**Expense Adjustment Algorithm**

**Limits on Operating Expenses**

The FCC adopted new limits on Opex in the ROR order that are effective January 2017. For study areas subject to the Opex limit, a study area specific factor will be applied to reduce reported eligible operating expenses. HCL eligible operating expenses include all of the Opex amounts included in Algorithm Line 25B except for Algorithm Line 20 (operating taxes). Operating taxes are not currently subject to the Opex limit.

The impact of the Opex limit was phased in. During 2017 study areas subject to the Opex limit had eligible operating expenses reduced by 50% of the difference between operating expenses reported and operating expenses as calculated using the Opex limits. Beginning in 2018 the full reduction in operating expenses will be in effect.

The FCC has indexed the Opex limit amounts for inflation. The inflation adjustment factors are as follows:

Year Expense Incurred In	Opex Limitation Inflation Adjustment Factor
2017	1.0273
2018	1.0128
2019	1.0192





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**Expense Adjustment Algorithm**

**National Average Cost Per Loop Algorithm**

- **Cost Study Area USF Unseparated Costs =**

Cost Study Area Total Unseparated Costs \* (Study Area USF Loops/Study Area Total Loops)

- **Nationwide USF Unseparated Costs =**

Sum of Cost Study Area USF Unseparated Costs  
+ Sum of Average Schedule Study Area USF Unseparated Costs

- **Nationwide Average Cost Per Loop (NACPL) =**

(Nationwide USF Unseparated Costs) / (Nationwide USF Loops)

- **Study Areas Reporting 200,000 or Fewer Loops**

- SACPL less than or equal to 115% NACPL: 0
- SACPL in excess of 115% NACPL, but not greater than 150% NACPL:
  - (.65 \* (SACPL – 115% of NACPL)) \* USF Loops
- SACPL in excess of 150% NACPL:
  - ((.65 \* (150% of NACPL – 115% of NACPL)) + (.75 \* (SACPL – 150% of NACPL))) \* USF Loops

Note: Beginning with the 2015-1 data collection, a frozen NACPL of \$647.87 is used in the formula above and then the result is multiplied by a pro rata adjustment factor in order to ensure that the total fund does not exceed the authorized fund size for that year.