SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Engineering Costs

990649A-TP

Engineering Costs

Engineering Loading Factor			
Issue	Recommendation	Justification	Impact
BellSouth still uses a Linear Loading Factor for Engineering	Reduce BellSouth's Linear Loading Factor for Engineering of 35.72% for fiber cable, and 27.07% for all other outside plant categories, to 10% of material + direct labor.	- BSTLM cannot model the best solution of fixed + variable bottoms-up engineering cost without major model changes - therefore use factor anyway. - BellSouth's engineering factor inputs are patently unreasonable. Outside plant costs more to engineer it than to construct it. - BellSouth advocated 5% to FCC in 1998. - FCC ordered 10% engineering factor after weighing evidence in USF case.	- Reduce 37.72% to 10% - Reduce 25.07% to 10% - UNE rates are significantly reduced.

3/6/07 (entire DN)
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appeal

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Structure Costs

Miscellaneous Contractor Charges Spread Over All Structure Costs			
Issue	Recommendation	Justification	Impact
BellSouth applies a 25.43% Miscellaneous Contractor Charge as a "closing factor" to spread inappropriate costs over all structure cost inputs.	The Miscellaneous Contractor Charge should be disallowed.	- No correlation to outside plant cost categories. - Unable to validate costs as attributable to construction vs. maintenance. - Does not conform to TELRIC requirements	- Remove / reset factor to zero for all structure items. - Costs are significantly reduced.

Aerial Structure Contract Labor			
Issue	Recommendation	Justification	Impact
Pole $ not divided by matching pole quantities	Exclude contractor line items that have pole placement cost but no matching pole quantities.	- Pole costs and quantities should correlate.	- Labor cost per pole corrected from $185.92 to $147.69

Plowing Cable			
Issue	Recommendation	Justification	Impact
Least expensive Buried Structure category of Plowing has been excluded.	Input discrete cost for plowing cable as $0.80 per foot.	- BellSouth includes trenching for all Buried Structure categories. - The cost difference between low cost cable plowing and much higher backhoe trenching is significant. - Experience and FCC USF order found costs less than $0.80/ft.	- Cost of plowing reduced from $5.18/ft. to $0.80/ft.

SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Structure Costs

Buried Restoration			
Issue	Recommendation	Justification	Impact
Inappropriate costs, such as cost for conduit pipe, are included in with Buried Restoration costs.	Remove extraneous costs such as corrugated pipe and other miscellaneous costs from the average cost of buried restoration	- Buried cable involves cable placed in contact with dirt, not placed inside large diameter pipe. - Other miscellaneous unrelated costs are inappropriate.	- Reduces buried restoration cost component by $0.71 (from $2.91 to $2.20)
Costs to Cut & Restore Asphalt, Concrete, and Sod should be attributed to those categories, rather than being spread across all buried structure categories.	Redirect the spread of Cut & Restore Asphalt to the Cut & Restore Asphalt category. Perform similar task for Concrete and Sod.	- Although BellSouth claims it cannot distinguish costs for different restoration activities, the data exists within its own filed information to allow disaggregation.	- Increases Cut & Restore Asphalt by $3.33/ft. from $0.49/ft. to $8.82/ft. - Increases Cut & Restore Concrete by $2.07/ft. from $0.49/ft. to $2.56/ft... - Increases Cut & Restore Sod by $0.30/ft. from $0.49/ft. to $0.79/ft. - Removes $0.49/ft. from other categories. - Results in cost differences between 3 density Zones in appropriate manner.

SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Structure Costs

Buried Restoration			
Issue	Recommendation	Justification	Impact
Buried restoration costs are inappropriate for Bore Cable and Plow Cable.	Remove buried restoration costs from Bore Cable and Plow Cable.	- Boring of cable is done to avoid the need for restoration. - Plowing cable does not require restoration expenditures.	- Reduces cost of Bore Cable and Plow Cable by $0.49/ft.
Buried Splice Pit costs are distributed over Bore Cable and Place Buried Cable.	Remove all splice pit costs.	- Splices for buried cable are normally contained in above ground pedestal closures. Material costs for such closures are included in the Exempt Material Loading Factor; labor is included in Splicing Labor. Therefore, splice pits are unnecessary in this restoration category. - Splice pits are normally used for maintenance activities, not for new construction.	- Reduces cost for all categories by $1.05/ft. - Spreads costs over other categories (except Asphalt, Cement, and Sod).
Cost of pipe is included in BellSouth costs for Bore Cable.	Remove costs of pipe from Bore Cable restoration.	- Bore Cable needs no restoration, by definition. In addition, pipe is not used in Bore Cable. Shift cost of pipe to Push Pipe / Pull Cable.	- Reduces cost by $3.17 from $17.22 to $14.05.

Push Pipe / Pull Cable			
Issue	Recommendation	Justification	Impact
BellSouth costs for Push Pipe / Pull Cable are based on one line of contractor cost data that has nothing to do with this category.	Recalculate costs for Push Pipe / Pull Cable by adding the corrected costs for Bore Cable to the corrected costs for Pipe (incorrectly included by BellSouth in Bore Cable).	- One line of contractor cost data labeled "Place Cable or Wire in Conduit" has nothing to do with Push Pipe / Pull Cable. Use of recommended costs is a reasonable proxy for PPPC.	- Costs for PPPC increase substantially from $3.56/ft. to $17.06/ft.

SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Structure Costs

Underground Excavation			
Issue	Recommendation	Justification	Impact
Costs to Cut & Restore Asphalt, Concrete, and Sod should be attributed to those categories, rather than being spread across all buried structure categories.	See same category under *Buried Structure*.	- See same category under *Buried Structure*.	- See same category under Buried *Structure*.
BellSouth distinguishes costs between density zones by manipulating the percentage of high cost Bore Underground Cable.	- Accept BellSouth cost for Bore Underground Cable, but reflect percentage occurrence to average of actual contractor data equating to 160 feet of Bore Underground Cable to total Underground Cable of 33,991 feet = 0.47%. - Allocate percentage based on BSTLM underground sheath feet by density zone, to result in overall average of 0.47% Bore Underground Cable to total Underground Cable.	- There is no justification for BellSouth's use of 2.67% in Rural, 5.75% in Suburban, and 12.5% in Urban density zones. - BellSouth used this parameter to artificially create different underground costs by density zone.	- Reallocate costs more appropriately, by justifiable percentages, to density zones. - Proper allocation of Cut & Restore Asphalt, Concrete, and Sod creates different cost by density zone.

Conduit Material			
Issue	Recommendation	Justification	Impact
Conduit material should not contain labor costs.	Recalculate cost after eliminating one line of contractor cost data that contains conduit placing labor.	- BellSouth data has one line of data annotated "This is conduit placed by contractor." This line of data must be eliminated because it contains labor costs. - Recommended cost of $0.82/ft. is still higher than expert opinion ($0.60/ft.) and FCC USF *Final Inputs Order* on input values for conduit material of $0.72/ft.	- Cost decreases from $1.98/ft. to $0.82/ft.

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SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Structure Costs

Conduit Material			
Issue	Recommendation	Justification	Impact
BellSouth increases conduit material costs from its calculated cost of $1.98 to $2.77 without explanation.	Remove extra $0.79/ft. unexplained extra cost per foot of conduit.	- No justification for extra cost.	- Reduces cost by $0.79/ft. - Cost of conduit material decreases from $2.77/ft. to $0.82/ft.

Manholes			
Issue	Recommendation	Justification	Impact
BellSouth uses incorrect manhole sizes	- Retain 72 cu. ft. manholes used by BellSouth for Type-1 and Type-2 manholes with capacity for 4 cables. - Replace 224 cu. ft. manhole, used by BellSouth for Type-3 manhole with capacity for 4 cables, with a 72 cu. ft. manhole. - Replace 703 cu. ft. manhole, used by BellSouth for Type-5 manhole with capacity for 5 cables, with 224 cu. ft. manhole.	- BSTLM Type-1, Type-2, and Type-3 manholes all require an identical capacity of up to 4 cables. - There is no justification for a larger manhole for Type-3. - BSTLM Type-5 manholes require capacity for up to 5 cables. BellSouth presents no evidence justifying the use of a huge 703 cu. ft. manhole for adding the capability to house only one more cable (even a 504 cu. ft. Type-A manhole will hold 20 cables). A 224 cu. ft. manhole is large enough for 5 cables.	- Reduces cost for Type-3 and Type-5 manholes significantly.

SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Structure Costs

Manholes			
Issue	Recommendation	Justification	Impact
Manhole costs include inappropriate charges	- Compute cost of one manhole cover & collar per manhole from BellSouth contractor data. - Eliminate manhole cover & collar cost per cu. ft. in favor of one manhole cover & collar per manhole.	- BellSouth inappropriately divided cost of 207 manhole covers & collars by 7 manholes.	- Removes $16.87/cu ft. and adds back in $246.48 per manhole for one manhole cover & collar per manhole. - Reduces manholes costs significantly.

Buried and Underground Structure Sharing			
Issue	Recommendation	Justification	Impact
Buried and Underground Structure Sharing percentages do not represent forward-looking TELRIC environment with competition.	Alter BellSouth Underground structure sharing from virtually zero to 50% sharing in Rural and 33% telco share in Urban and Suburban density zones.	- Forward-looking environment with significant levels of competition will either result in significant structure sharing, or else roadways will be constantly excavated and under construction.	- Reduces underground and buried structure costs significantly.
BellSouth input reflects far too little structure sharing between distribution cable and feeder cable.	Change structure sharing of distribution structure with feeder cable from 25% of feeder cable riding on distribution-built structure to 75% of feeder cable riding on distribution-built structure.	- BellSouth has no evidence supporting its low percentage. Distribution cable is much more prevalent than feeder cable, and is likely to exist along the Right-of-Way, except at the very end of the feeder route near the central office zone boundary. Engineers are taught to avoid building expensive, limited-resource structure.	- Reduces structure costs associated with feeder cable.

SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Structure Costs

Distance Between Poles			
Issue	Recommendation	Justification	Impact
BellSouth assumes an unreasonably short distance between poles.	Change average distance between poles from 120 feet to 184 feet.	- BellSouth surmises 75 feet between poles to be a reasonable average, and claims its input of 120 feet between poles is reasonable. However, many parties and jurisdictions cite much longer distances between poles. - A weighted average of distance between poles by density zone, as ordered in the FCC USF *Final Inputs Order*, and based on sheath feet of aerial cable by density zone as produced by BSTLM, results in an average of 184 feet between poles. - BellSouth has previously advocated pole spacing distances adopted by the FCC in its USF *Final Inputs Order*. - Simple observation of pole span distances in Florida reveal much long span distances than BellSouth proposes.	- Pole costs are reduced somewhat because fewer poles are required.

Span Length Between Anchors and Downguys			
Issue	Recommendation	Justification	Impact
BellSouth proposes unreasonable distances between Anchors & Downguys	Reinstate the BSTLM default value of 1200 feet between Anchors & Downguys	- BellSouth produced no evidence in support of changing the BSTLM distance between Anchors & Downguys, which comports with generally accepted industry opinion, including distances supported by BellSouth before the FCC in 1998.	- Anchor & Downguy costs are reduced slightly.

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Copper Cable and Fiber Cable Costs

Copper & Fiber Cable Placing and Splicing Costs			
Issue	Recommendation	Justification	Impact
BellSouth's failure to use setup costs for cable placing operations, available but unused by BellSouth in BSTLM, results in a Linear Loading Factor, rather than bottoms-up costing.	- Utilize reasonable fixed setup cost and reasonable Feet per Day per Placing Crew rate for cable placing. - Use 15 min. travel + 30 min. setup = 0.75 hr. - Use 2-tech crew for underground, 1-tech crew for buried and aerial. - Assume feet placed per crew of 3,000 ft./day underground, 8,000 ft./day buried, and 5,000 ft./day aerial. - Assume (conservatively) the same rate for copper cable and fiber cable, even though fiber cable can actually be placed faster.	- There is no justification for BellSouth's failure to use available inputs. - Effect of failure to use setup costs is that BSTLM with BellSouth inputs performs the equivalent costs of *Travel-Setup-Place* 100 ft., *Travel-Setup-Place* 100ft., etc., rather than reflecting continuous cable placing operations. - Underground = (0.75 setup hr./3,000 ft./day + 8 hrs./3,000 ft./day) x 100 ft. x 2 tech's = 0.58 hrs./100 ft. - Buried = (0.75 setup hrs./8,000 ft./day + 8 hrs./8,000 ft./day) x 100 ft. x 1 tech. = 0.11 hrs./100ft. - Aerial = (0.75 setup hrs./5,000 ft./day + 8 hrs./5,000 ft./day) x 100 ft. x 1 tech. = 0.18 hrs./100 ft.	- Copper cable placing costs are reduced significantly.
BellSouth's failure to use setup costs for copper cable splicing operations, available but unused in BSTLM, results in a Linear Loading Factor, rather than bottoms-up costing.	- Implement a reasonable fixed setup cost and a reasonable Copper Pairs per Hour splicing rate. - Use 15 min. travel + 2 clock hours of setup per splice plus copper splicing rate of 250 pairs per hour.	- There is no justification for BellSouth's failure to use available inputs. - Effect of failure to use setup costs is that BSTLM with BellSouth inputs performs the equivalent costs of *Travel-Setup-Splice* 76 copper pairs, *Travel-Setup-Splice* 76 copper pairs, etc., rather than reflecting continuous cable splicing operations. - There is significant evidence, as also adopted by the FCC, that copper splicing can be readily performed with productivity in excess of 250 pairs per hour.	- Smaller cables have slightly higher costs. - Larger cables have significantly lower costs.

SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Copper Cable and Fiber Cable Costs

Copper & Fiber Cable Placing and Splicing Costs			
Issue	Recommendation	Justification	Impact
BellSouth's failure to use setup costs for fiber cable splicing operations, available but unused in BSTLM, results in a Linear Loading Factor, rather than bottoms-up costing.	- Implement a reasonable fixed setup cost and reasonable Minutes per Fiber Strand splicing rate. - Use 15 min. travel + 2 clock hours of setup per splice plus fiber splicing rate of 6 minutes per fiber. - Assume fiber cable placing costs are the same as copper cable placing costs.	- There is no justification for BellSouth's failure to use available inputs. - BellSouth indicates no setup time, as opposed to industry opinion of 2 hours for setup and closure per splice. - BellSouth agrees with 6 minutes per fiber spliced.	- Fiber Splicing cost increases significantly.

Underground Copper Cable Stubs			
Issue	Recommendation	Justification	Impact
BellSouth doubles copper splicing cost for underground cable by assuming a Copper Cable Stub, with an extra splice in every manhole.	Eliminate costs for copper cable stubs and associated splicing.	- Cable stubs are only required if more than a 4-way splice is required. - BSTLM is designed to never create larger than a 3-way splice. - Therefore, a copper cable stub is never required in BSTLM.	- Copper cable splicing costs are reduced somewhat.

SUMMARY OF ISSUES, RECOMMENDATIONS, AND IMPACTS

Copper Cable and Fiber Cable Costs

Miscellaneous Material Rate			
Issue	Recommendation	Justification	Impact
Exempt Material costs used by BellSouth are too high and incorrectly applied to Non-Exempt Material, rather than being applied as a component of the fully loaded direct labor rate.	Reduce the Exempt Material Loading Factor to 20% of Direct Labor, rather than a variety of percentages against Non-Exempt Material	- BellSouth and other ILECs have disbursed Exempt Material as part of the fully loaded labor rate, not as a loading applied again Non-Exempt labor. Since properly costed labor accounts for economies of scale, the Commission's order is fulfilled by using this method. - Exempt Material is probably being double counted because it is already cared for in BellSouth's fully loaded labor rate. - If BellSouth proves that it is not included in the labor rate, then Exempt Material should be applied as 20% of the cost of labor, which comports with standard industry practice.	- Copper and Fiber cable costs are reduced significantly.

Other - Plant Labor - Indirect Salaries			
Issue	Recommendation	Justification	Impact
BellSouth inappropriately includes a Loading Factor against Non-Exempt Material for Other - Plant - Labor - Indirect Salaries	Eliminate the Loading Factor for Other - Plant Labor - Indirect Salaries.	- BellSouth already includes these costs as components of the fully loaded Direct Labor rate.	- Copper and Fiber cable costs are reduced somewhat.