APPENDIX C
Changes Made to HAI 5.0a
For
Washington USF Proceedings, Docket No. UT-980311(a)

LOOP LENGTH ADJUSTMENT

All Hai 5.0a runs for all parties were done using the Loop Length adjustments provided by the parties. This was done per Par. 270.[1]

DEPRECIATION AND SALVAGE LIVES FOR US WEST

The following table illustrates the input service life values that were used in place of the HAI 5.0a model's default values for US WEST. These values were derived from service lives and net salvage value inputs that were decided in Docket UT 951425.

Table 1: US WEST Service Lives and Future Net Salvage Values

Acct.	Description	Service life	Future Net Salvage
2112	motor vehicles	9.6	16.00%
2114	Special Purpose Vehicle	14	0.00%
2115	garage work equip	14	0.00%
2116	other work equip	16	9.00%
2121	buildings	33	4.00%
2122	furniture	20	0.00%
2123.1	office equipment	15	0.00%
2123.2	company comp equip	9.9	0.00%
2124	gen purpose equip	5.8	5.00%
2211	analog equip		0.00%
2212	digital switch equipment	17	0.00%
2220	operator systems	12	0.00%
2231	radio systems	15	-3.00%
2232	Circuit Equipment	12	1.00%

[1] Paragraph references without additional citation refer to the numbered paragraphs in the Commission's Tenth Supplemental Order in Docket No. UT-980311(a), to which this document is Appendix C..

2351 public tel term equip	10	5.00%
2362 other term equip	9	0.00%
2611 pole lines	28	-75.00%
2421 Aerial cable met	24	-24.00%
2421 Aerial cable non-met	28	-24.00%
2422 Ungrd cable met	25	-22.00%
2422 Ungrd cable non-met	30	-22.00%
2423 Buried Cable met	22	-7.00%
2423 Buried Cable non-met	28	-7.00%
2426 intra bldg ca met	20	-20.00%
1426 intra bldg ca non-met	28	-20.00%
2431 Aerial wire	8.7	-124.00%
2441 conduit systems	55	-10.00%

DEPRECIATION LIVES FOR GTE

The following table illustrates the input service life values that were used in place of the HAI 5.0a model's default values for GTE. They were derived from service lives and net salvage value inputs which were decided upon in Docket UT 940926.

Table 2: GTE's Service Lives and Future Net Salvage Values

Acct.	Description	Service life	Future Net Salvage
2112	motor vehicles	9.3	20.00%
2115	garage work equip	18	5.00%
2116	other work equip	15	10.00%
2121	buildings	43	0.00%
2122	furniture	20	10.00%
2123.1	office equipment	15	10.00%
2123.2	company comp equip	8	2.00%
2124	gen purpose equip	8	5.00%
2212	digital switch equipment	16.5	3.00%
2220	operator systems	12	-2.00%
2231	radio systems	14	0.00%
2232	Circuit Equipment	12	4.00%
2351	public tel term equip	8	10.00%

2362 other term equip	10	5.00%
2611 pole lines	28	-75.00%
2421 Aerial cable met	21	-27.00%
2421 Aerial cable non-met	30	-5.00%
2422 Ungrd cable met	26	-15.00%
2422 Ungrd cable non-met	30	-5.00%
2423 Buried Cable met	23	-5.00%
2423 Buried Cable non-met	30	-5.00%
2426 intra bldg ca met	20	-30.00%
1426 intra bldg ca non-met		
2431 Aerial wire	15	-15.00%
2441 conduit systems	50	-5.00%

DEPRECIATION LIVES FOR SPRINT

For Sprint, the HAI 5.0a default values were used. Par. 248.

CAPITAL COST FACTORS

For US WEST and GTE the authorized values from the Eighth Supplemental Order at Par. 211 were used. For Sprint, the company numbers were used. Staff testified that Sprint's cost of Money and Tax Data comply with Guideline 4 and had not objected to the numbers filed with Sprint's cost study.[2]

CAPITAL COST FACTORS--USWEST

Expense Input	Current Scenario Value	Default Scenario Value
Cost of Debt	0.0727	**0.0770**
Debt Fraction	0.4800	**0.4500**
Cost of Equity	0.1180	**0.1190**

[2]For example, Staff witness Roth stated that Sprint complied with guideline 4 with the exception of fill factors. Tr. 898-902

CAPITAL COST FACTORS--GTE

Expense Input	Current Scenario Value	Default Scenario Value
Cost of Debt	0.0790	**0.0770**
Debt Fraction	0.4440	**0.4500**
Cost of Equity	0.1125	**0.1190**

CAPITAL COST FACTORS--SPRINT

Expense Input	Current Scenario Value	Default Scenario Value
Cost of Debt	0.088	**0.0770**
Debt Fraction	0.5541	**0.4500**
Cost of Equity	0.1225	**0.1190**

DROP LENGTHS

For both Sprint and GTE the drop length values from Par. 134 of the Eighth Supplemental Order were input into the HAI 5.0a model. Par. 121.

Distribution Input	Current Scenario Value	Default Scenario Value
Drop Distance, feet - 0	175	**150**
Drop Distance, feet - 5	175	**150**
Drop Distance, feet - 100	125	**100**
Drop Distance, feet - 200	125	**100**
Drop Distance, feet - 650	75	**50**
Drop Distance, feet - 850	75	**50**
Drop Distance, feet - 2550	50	**50**
Drop Distance, feet - 5000	50	**50**
Drop Distance, feet - 10000	50	**50**

For US WEST drop lengths the Commission performed three sensitivity runs. Par. 121.

1) The Base Run utilized 80% of the drop length values from Ex. 295:8.

Distribution Input	Current Scenario Value	Default Scenario Value
Drop Distance, feet - 0	394	150
Drop Distance, feet - 5	296	150
Drop Distance, feet - 100	192	100
Drop Distance, feet - 200	137	100
Drop Distance, feet - 650	110	50
Drop Distance, feet - 850	85	50
Drop Distance, feet - 2550	66	50
Drop Distance, feet - 5000	58	50
Drop Distance, feet - 10000	51	50

2) The Mid Run utilized 90% of the drop length values from Ex. 295:8

Distribution Input	Current Scenario Value	Default Scenario Value
Drop Distance, feet - 0	444	150
Drop Distance, feet - 5	333	150
Drop Distance, feet - 100	216	100
Drop Distance, feet - 200	154	100
Drop Distance, feet - 650	124	50
Drop Distance, feet - 850	95	50
Drop Distance, feet - 2550	74	50
Drop Distance, feet - 5000	65	50
Drop Distance, feet - 10000	58	50

3) The High Run used 100% of the drop length values from Ex. 295:8.

Distribution Input	Current Scenario Value	Default Scenario Value
Drop Distance, feet - 0	493	**150**
Drop Distance, feet - 5	370	**150**
Drop Distance, feet - 100	240	**100**
Drop Distance, feet - 200	171	**100**
Drop Distance, feet - 650	138	**50**
Drop Distance, feet - 850	106	**50**
Drop Distance, feet - 2550	82	**50**
Drop Distance, feet - 5000	72	**50**
Drop Distance, feet - 10000	64	**50**

STRUCTURE SHARING

For US WEST, Sprint, and GTE the following structure sharing values, adopted by the Commission in the Eighth Supplemental Order at paragraph 76, were used for distribution and feeder.

STRUCTURE FRACTION SHARING FOR DISTRIBUTION

Expense Input	Current Scenario Value	Default Scenario Value
Distribution Aerial Fraction - 0	0.63	**0.50**
Distribution Aerial Fraction - 5	0.63	**0.33**
Distribution Aerial Fraction - 100	0.63	**0.25**
Distribution Aerial Fraction - 200	0.50	**0.25**
Distribution Aerial Fraction - 650	0.50	**0.25**
Distribution Aerial Fraction - 850	0.50	**0.25**
Distribution Aerial Fraction - 2550	0.35	**0.25**
Distribution Aerial Fraction - 5000	0.35	**0.25**
Distribution Aerial Fraction - 10000	0.35	**0.25**
Distribution Buried Fraction - 0	0.88	**0.88**
Distribution Buried Fraction - 5	0.88	**0.88**
Distribution Buried Fraction - 100	0.88	**0.88**
Distribution Buried Fraction - 200	0.68	**0.68**
Distribution Buried Fraction - 650	0.68	**0.68**
Distribution Buried Fraction - 850	0.68	**0.68**
Distribution Buried Fraction - 2550	0.55	**0.55**
Distribution Buried Fraction - 5000	0.55	**0.55**
Distribution Buried Fraction - 10000	0.55	**0.55**
Distribution Underground Fraction - 0	0.88	**1.00**
Distribution Underground Fraction - 5	0.88	**0.50**
Distribution Underground Fraction - 100	0.88	**0.50**
Distribution Underground Fraction - 200	0.63	**0.50**
Distribution Underground Fraction - 650	0.63	**0.40**
Distribution Underground Fraction - 850	0.63	**0.33**
Distribution Underground Fraction - 2550	0.63	**0.33**
Distribution Underground Fraction - 5000	0.63	**0.33**
Distribution Underground Fraction - 10000	0.63	**0.33**

STRUCTURE FRACTURE SHARING FOR FEEDER

Expense Input	Current Scenario Value	Default Scenario Value
Feeder Aerial Fraction - 0	0.63	**0.50**
Feeder Aerial Fraction - 5	0.63	**0.33**
Feeder Aerial Fraction - 100	0.63	**0.25**
Feeder Aerial Fraction - 200	0.50	**0.25**
Feeder Aerial Fraction - 650	0.50	**0.25**
Feeder Aerial Fraction - 850	0.50	**0.25**
Feeder Aerial Fraction - 2550	0.35	**0.25**
Feeder Aerial Fraction - 5000	0.35	**0.25**
Feeder Aerial Fraction - 10000	0.35	**0.25**
Feeder Underground Fraction - 0	0.88	**0.50**
Feeder Underground Fraction - 5	0.88	**0.50**
Feeder Underground Fraction - 100	0.88	**0.40**
Feeder Underground Fraction - 200	0.63	**0.33**
Feeder Underground Fraction - 650	0.63	**0.33**
Feeder Underground Fraction - 850	0.63	**0.33**
Feeder Underground Fraction - 2550	0.63	**0.33**
Feeder Underground Fraction - 5000	0.63	**0.33**
Feeder Underground Fraction - 10000	0.63	**0.33**
Feeder Buried Fraction - 0	0.88	**0.40**
Feeder Buried Fraction - 5	0.88	**0.40**
Feeder Buried Fraction - 100	0.88	**0.40**
Feeder Buried Fraction - 200	0.68	**0.40**
Feeder Buried Fraction - 650	0.68	**0.40**
Feeder Buried Fraction - 850	0.68	**0.40**
Feeder Buried Fraction - 2550	0.55	**0.40**
Feeder Buried Fraction - 5000	0.55	**0.40**
Feeder Buried Fraction - 10000	0.55	**0.40**

COMMON COSTS

For both US WEST, Sprint, and GTE the Common Cost, or Corporate Overhead Factor, located in the Expense Module, was changed in the various sensitivity runs in the following fashion (Par. 281):

1) For the Base run the Corporate Overhead Factor was left at the HAI 5.0a default

value of 10.4%;

2) For the Mid run the Corporate Overhead Factor was set at 12.25%, the average of the HAI 5.0a value of 10.4% and the value proposed by US WEST, Brief at 94, of 14.1%;

3) For the High run the Corporate Overhead Factor was set at the US WEST proposed value of 14.1%.

OPERATIONS EXPENSE FACTOR

Consistent with Par. 239 of the Eighth Supplemental Order, the ***Operations Expense Factor***, also known as the ***Forward-looking Network Operations Factor***, located in the **Expense Module**, was changed from 50% to 70% for US WEST, Sprint and GTE. This change was made so as to model a 30% reduction due to forward looking costs instead of the 50% reduction used as a default value.

COPPER/FIBER CROSSOVER

In conformity with Par. 198 of the Eighth Supplemental Order, the TR-303 DLC **Copper Feeder Max Distance, ft**, located in the **Distribution Module**, was changed from 9,000 ft to 12,000 ft. in the commission runs of US WEST, Sprint and GTE

ADJUSTMENTS FOR SPECIAL ACCESS LINE COUNTS

For GTE the Special Access Lines from the ARMIS report were reduced from 93,075 to 33,075, which represents a reduction of approximately 7% of the total number of lines. For US WEST the Special Access Lines from the ARMIS report were reduced from 522,276 to 327,097 which represents a reduction of approximately 7% of the total number of lines. Pars. 219 and 220.

AERIAL DROP PLACEMENT COSTS.

The Commission substituted the BCPM 3.1 national default value, $0.77, for the US WEST aerial value for use in both the Hai 5.0a and BCPM 3.1. Par. 226.

For US WEST this change was performed in the following manner:

1) For the Commission Base Run the $0.77 per foot charge was multiplied by US WEST's suggested drop lengths, reduced by a factor of 20%, as found on page 8 of Ex. 295. The resultant figures were then put in the HAI 5.0a model as Aerial Placement Cost (Total) and the HAI 5.0a input ***Drop cable investment per foot aerial*** was set to 0.

2) For the Commission Mid Run the $0.77 per foot charge was multiplied by US WEST's suggested drop lengths, reduced by a factor of 10%, as found on page 8 of

Ex. 295. The resultant figures were then put in the Hai 5.0a model as Aerial Placement Cost (Total) and the Hai 5.0a input ***Drop cable investment per foot aerial*** was set to 0.

3) For the Commission High Run the $0.77 per foot charge was multiplied by US WEST's suggested drop lengths, unreduced, as found on page 8 of Ex. 295. The resultant figures were then put in the HAI 5.0a model as Aerial Placement Cost (Total) and the HAI 5.0a input ***Drop cable investment per foot aerial*** was set to 0.

The following tables illustrate what this process.

COMMISSION BASE RUN--US WEST			
Distribution Input	**Us WEST Input**	**Commission Adopted per Foot Charge for Aerial Drop**	**Commission Base Run Aerial Drop Placement (Total) for HAI 5.0a**
Drop Distance, feet - 0	394	0.77	303.69
Drop Distance, feet - 5	296	0.77	227.92
Drop Distance, feet - 100	192	0.77	147.84
Drop Distance, feet - 200	137	0.77	105.34
Drop Distance, feet - 650	110	0.77	85.01
Drop Distance, feet - 850	85	0.77	65.30
Drop Distance, feet - 2550	66	0.77	50.51
Drop Distance, feet - 5000	58	0.77	44.35
Drop Distance, feet - 10000	51	0.77	39.42
COMMISSION MID RUN--US WEST			
Distribution Input	**Us WEST Input**	**Commission Adopted per Foot Charge for Aerial Drop**	**Commission Mid Run Aerial Drop Placement (Total) for HAI 5.0a**
Drop Distance, feet - 0	444	0.77	341.65
Drop Distance, feet - 5	333	0.77	256.41
Drop Distance, feet - 100	216	0.77	166.32
Drop Distance, feet - 200	154	0.77	118.50
Drop Distance, feet - 650	124	0.77	95.63
Drop Distance, feet - 850	95	0.77	73.46
Drop Distance, feet - 2550	74	0.77	56.83
Drop Distance, feet - 5000	65	0.77	49.90
Drop Distance, feet - 10000	58	0.77	44.35
COMMISSION HIGH RUN--US WEST			

Distribution Input	Us WEST Input	Commission Adopted per Foot Charge for Aerial Drop	Commission High Run Aerial Drop Placement (Total) for HAI 5.0a
Drop Distance, feet - 0	493	0.77	379.61
Drop Distance, feet - 5	370	0.77	284.9
Drop Distance, feet - 100	240	0.77	184.8
Drop Distance, feet - 200	171	0.77	131.67
Drop Distance, feet - 650	138	0.77	106.26
Drop Distance, feet - 850	106	0.77	81.62
Drop Distance, feet - 2550	82	0.77	63.14
Drop Distance, feet - 5000	72	0.77	55.44
Drop Distance, feet - 10000	64	0.77	49.28

Sprint and GTE's aerial drop placement total costs were calculated using the companies' respective recommended inputs. This was done in a manner similar to what was done for US WEST with the exception that, since neither GTE nor Sprint filed a drop length study of their own, the drop lengths adopted by the Commission in the Eighth Supplemental Order (Par. 134) were used in making the calculations. For Sprint and GTE no sensitivity runs were conducted on drop lengths.

The following tables illustrate the Aerial Drop Placement (Total Costs) for these companies' which were used in the Commission's runs.

COMMISSION RUN--GTE			
Distribution Input	**Commission Adopted Drop Lengths**	**Commission Adopted per Foot Charge for Aerial Drop**	**Commission Adopted Aerial Drop Placement (Total) for HAI 5.0a**
Drop Distance, feet - 0	175	0.89	155.75
Drop Distance, feet - 5	175	0.89	155.75
Drop Distance, feet - 100	125	0.89	111.25
Drop Distance, feet - 200	125	0.89	111.25
Drop Distance, feet - 650	75	0.89	66.75
Drop Distance, feet - 850	75	0.89	66.75
Drop Distance, feet - 2550	50	0.89	44.50
Drop Distance, feet - 5000	50	0.89	44.50
Drop Distance, feet - 10000	50	0.89	44.50
COMMISSION RUN--Sprint			

Distribution Input	Commission Adopted Drop Lengths	Commission Adopted per Foot Charge for Aerial Drop	Commission Adopted Aerial Drop Placement (Total) for HAI 5.0a
Drop Distance, feet - 0	175	0.61	106.75
Drop Distance, feet - 5	175	0.61	106.75
Drop Distance, feet - 100	125	0.61	76.25
Drop Distance, feet - 200	125	0.61	76.25
Drop Distance, feet - 650	75	0.61	45.75
Drop Distance, feet - 850	75	0.61	45.75
Drop Distance, feet - 2550	50	0.61	30.50
Drop Distance, feet - 5000	50	0.61	30.50
Drop Distance, feet - 10000	50	0.61	30.50

As in the US WEST runs, the HAI 5.0a input ***Drop cable investment per foot aerial*** was set to 0 as this input represents the material cost of the cable. This cost has been included in the placement costs input into the tables above.

BURIED DROP PLACEMENT

For US WEST, Sprint, and GTE the Commission used the per foot costs for buried drops appearing in the tables below. These costs include the labor costs related to cable installation and material costs of the cables themselves. Par. 227.

COMMISSION RUN--US WEST		
Distribution Input	**Commission Adopted Value**	**Default Scenario Value**
Buried Drop Placement (total) - 0	0.85	**0.60**
Buried Drop Placement (total) - 5	0.85	**0.60**
Buried Drop Placement (total) - 100	0.85	**0.60**
Buried Drop Placement (total) - 200	0.85	**0.60**
Buried Drop Placement (total) - 650	0.85	**0.60**
Buried Drop Placement (total) - 850	0.85	**0.60**
Buried Drop Placement (total) - 2550	0.85	**0.75**
Buried Drop Placement (total) - 5000	0.85	**1.50**
Buried Drop Placement (total) - 10000	0.85	**5.00**
COMMISSION RUN--SPRINT		

Distribution Input	Commission Adopted Value	Default Scenario Value
Buried Drop Placement (total) - 0	0.81	**0.60**
Buried Drop Placement (total) - 5	0.81	**0.60**
Buried Drop Placement (total) - 100	0.81	**0.60**
Buried Drop Placement (total) - 200	0.81	**0.60**
Buried Drop Placement (total) - 650	0.81	**0.60**
Buried Drop Placement (total) - 850	0.81	**0.60**
Buried Drop Placement (total) - 2550	0.81	**0.75**
Buried Drop Placement (total) - 5000	0.81	**1.50**
Buried Drop Placement (total) - 10000	0.81	**5.00**
COMMISSION RUN--GTE		
Distribution Input	**Commission Adopted Value**	**Default Scenario Value**
Buried Drop Placement (total) - 0	0.89	**0.60**
Buried Drop Placement (total) - 5	0.89	**0.60**
Buried Drop Placement (total) - 100	0.89	**0.60**
Buried Drop Placement (total) - 200	0.89	**0.60**
Buried Drop Placement (total) - 650	0.89	**0.60**
Buried Drop Placement (total) - 850	0.89	**0.60**
Buried Drop Placement (total) - 2550	0.89	**0.75**
Buried Drop Placement (total) - 5000	0.89	**1.50**
Buried Drop Placement (total) - 10000	0.89	**5.00**

For each company run, the HAI 5.0a input ***Drop cable investment per foot buried*** was set equal to 0 as this input represents the material cost of the cable. This cost has been included in the placement costs input into the tables above.

BURIED DROP SHARING FRACTION

The buried drop sharing fraction was set at the values adopted for distribution facilities in the generic cost docket. These values are (Par. 122):

Drop Sharing Fraction		
Distribution Input	**Commission Utilized Value**	**Default Scenario Value**
Buried Drop Sharing Fraction - 0	0.88	**0.50**

Buried Drop Sharing Fraction - 5	0.88	**0.50**
Buried Drop Sharing Fraction - 100	0.88	**0.50**
Buried Drop Sharing Fraction - 200	0.68	**0.50**
Buried Drop Sharing Fraction - 650	0.68	**0.50**
Buried Drop Sharing Fraction - 850	0.68	**0.50**
Buried Drop Sharing Fraction - 2550	0.55	**0.50**
Buried Drop Sharing Fraction - 5000	0.55	**0.50**
Buried Drop Sharing Fraction - 10000	0.55	**0.50**

POLE SPACING

For pole spacing, the Commission used the US WEST, Sprint, and GTE proposed values. Par. 175.

SPRINT--POLE SPACING		US WEST--POLE SPACING	
Distribution Input	**Current Scenario Value**	**Distribution Input**	**Current Scenario Value**
Pole Spacing, feet - 0	202	Pole Spacing, feet - 0	150
Pole Spacing, feet - 5	172	Pole Spacing, feet - 5	150
Pole Spacing, feet - 100	126	Pole Spacing, feet - 100	150
Pole Spacing, feet - 200	123	Pole Spacing, feet - 200	150
Pole Spacing, feet - 650	123	Pole Spacing, feet - 650	150
Pole Spacing, feet - 850	115	Pole Spacing, feet - 850	150
Pole Spacing, feet - 2550	115	Pole Spacing, feet - 2550	150
Pole Spacing, feet - 5000	115	Pole Spacing, feet - 5000	150
Pole Spacing, feet - 10000	115	Pole Spacing, feet - 10000	150

GTE--POLE SPACING	
Distribution Input	**Current Scenario Value**
Pole Spacing, feet - 0	175
Pole Spacing, feet - 5	175
Pole Spacing, feet - 100	175
Pole Spacing, feet - 200	175
Pole Spacing, feet - 650	175

Pole Spacing, feet - 850	175
Pole Spacing, feet - 2550	175
Pole Spacing, feet - 5000	175
Pole Spacing, feet - 10000	175

PLANT MIX

For plant mix, the ILECs' proposed values were used in the HAI 5.0a runs. For US WEST, these values were derived from page 9 of Ex. 295. For Sprint and GTE, these values were taken from those companies' BCPM 3.1 input tabs. These inputs are illustrated in the tables below (Par. 106):

Plant Mix--US WEST				Plant Mix--GTE		
Distribution Input	**US WEST Value**	**Default Scenario Value**		**Distribution Input**	**GTE Value**	**Default Scenario Value**
Buried Fraction - 0	0.67	**0.75**		Buried Fraction - 0	0.85	**0.75**
Buried Fraction - 5	0.67	**0.75**		Buried Fraction - 5	0.63	**0.75**
Buried Fraction - 100	0.81	**0.75**		Buried Fraction - 100	0.57	**0.75**
Buried Fraction - 200	0.81	**0.70**		Buried Fraction - 200	0.48	**0.70**
Buried Fraction - 650	0.81	**0.70**		Buried Fraction - 650	0.37	**0.70**
Buried Fraction - 850	0.85	**0.70**		Buried Fraction - 850	0.39	**0.70**
Buried Fraction - 2550	0.71	**0.65**		Buried Fraction - 2550	0.25	**0.65**
Buried Fraction - 5000	0.71	**0.35**		Buried Fraction - 5000	0.25	**0.35**
Buried Fraction - 10000	0.29	**0.05**		Buried Fraction - 10000	0.25	**0.05**
Aerial Cable Fraction - 0	0.33	**0.25**		Aerial Cable Fraction - 0	0.15	**0.25**
Aerial Cable Fraction - 5	0.33	**0.25**		Aerial Cable Fraction - 5	0.35	**0.25**
Aerial Cable Fraction - 100	0.19	**0.25**		Aerial Cable Fraction - 100	0.39	**0.25**
Aerial Cable Fraction - 200	0.19	**0.30**		Aerial Cable Fraction - 200	0.47	**0.30**
Aerial Cable Fraction - 650	0.19	**0.30**		Aerial Cable Fraction - 650	0.10	**0.30**
Aerial Cable Fraction - 850	0.15	**0.30**		Aerial Cable Fraction - 850	0.42	**0.30**
Aerial Cable Fraction - 2550	0.11	**0.30**		Aerial Cable Fraction - 2550	0.59	**0.30**
Aerial Cable Fraction - 5000	0.11	**0.60**		Aerial Cable Fraction - 5000	0.59	**0.60**
Aerial Cable Fraction - 10000	-	**0.85**		Aerial Cable Fraction - 10000	0.59	**0.85**
From page 9 of Ex. 291						

Plant Mix--Sprint

Distribution Input	US WEST Value	Default Scenario Value
Buried Fraction - 0	0.69	**0.75**
Buried Fraction - 5	0.69	**0.75**
Buried Fraction - 100	0.66	**0.75**
Buried Fraction - 200	0.55	**0.70**
Buried Fraction - 650	0.50	**0.70**
Buried Fraction - 850	0.59	**0.70**
Buried Fraction - 2550	0.56	**0.65**
Buried Fraction - 5000	0.49	**0.35**
Buried Fraction - 10000	0.49	**0.05**
Aerial Cable Fraction - 0	0.30	**0.25**
Aerial Cable Fraction - 5	0.31	**0.25**
Aerial Cable Fraction - 100	0.32	**0.25**
Aerial Cable Fraction - 200	0.41	**0.30**
Aerial Cable Fraction - 650	0.45	**0.30**
Aerial Cable Fraction - 850	0.38	**0.30**
Aerial Cable Fraction - 2550	0.40	**0.30**
Aerial Cable Fraction - 5000	0.46	**0.60**
Aerial Cable Fraction - 10000	0.46	**0.85**

Plant Mix--US WEST

Feeder Input	US WEST Value	Default Scenario Value
Copper Aerial Fraction - 0	0.06	**0.50**
Copper Aerial Fraction - 5	0.06	**0.50**
Copper Aerial Fraction - 100	0.02	**0.50**
Copper Aerial Fraction - 200	0.02	**0.40**
Copper Aerial Fraction - 650	0.02	**0.30**
Copper Aerial Fraction - 850	-	**0.20**
Copper Aerial Fraction - 2550	-	**0.15**
Copper Aerial Fraction - 5000	-	**0.10**
Copper Aerial Fraction - 10000	-	**0.05**
Copper Buried Fraction - 0	0.92	**0.45**

Plant Mix--US WEST

Feeder Input	US WEST Value	Default Scenario Value
Fiber Aerial Fraction - 0	0.06	**0.35**
Fiber Aerial Fraction - 5	0.06	**0.35**
Fiber Aerial Fraction - 100	0.02	**0.35**
Fiber Aerial Fraction - 200	0.02	**0.30**
Fiber Aerial Fraction - 650	0.02	**0.30**
Fiber Aerial Fraction - 850	-	**0.20**
Fiber Aerial Fraction - 2550	-	**0.15**
Fiber Aerial Fraction - 5000	-	**0.10**
Fiber Aerial Fraction - 10000	-	**0.05**
Fiber Buried Fraction - 0	0.92	**0.60**

Copper Buried Fraction - 5	0.89	**0.45**		Fiber Buried Fraction - 5	0.89	**0.60**
Copper Buried Fraction - 100	0.83	**0.45**		Fiber Buried Fraction - 100	0.83	**0.60**
Copper Buried Fraction - 200	0.83	**0.40**		Fiber Buried Fraction - 200	0.83	**0.60**
Copper Buried Fraction - 650	0.83	**0.30**		Fiber Buried Fraction - 650	0.83	**0.30**
Copper Buried Fraction - 850	0.20	**0.20**		Fiber Buried Fraction - 850	0.20	**0.20**
Copper Buried Fraction - 2550	0.15	**0.10**		Fiber Buried Fraction - 2550	0.15	**0.10**
Copper Buried Fraction - 5000	0.15	**0.05**		Fiber Buried Fraction - 5000	0.15	**0.05**
Copper Buried Fraction - 10000	-	**0.05**		Fiber Buried Fraction - 10000	-	**0.05**
From page 9 of Ex. 291				From page 9 of Ex. 291		
Plant Mix--Sprint				**Plant Mix--Sprint**		
Feeder Input	**Sprint Value**	**Default Scenario Value**		**Feeder Input**	**Sprint Value**	**Default Scenario Value**
Copper Aerial Fraction - 0	0.30	**0.50**		Fiber Aerial Fraction - 0	0.18	**0.35**
Copper Aerial Fraction - 5	0.31	**0.50**		Fiber Aerial Fraction - 5	0.12	**0.35**
Copper Aerial Fraction - 100	0.32	**0.50**		Fiber Aerial Fraction - 100	0.13	**0.35**
Copper Aerial Fraction - 200	0.41	**0.40**		Fiber Aerial Fraction - 200	0.12	**0.30**
Copper Aerial Fraction - 650	0.45	**0.30**		Fiber Aerial Fraction - 650	0.14	**0.30**
Copper Aerial Fraction - 850	0.38	**0.20**		Fiber Aerial Fraction - 850	0.12	**0.20**
Copper Aerial Fraction - 2550	0.40	**0.15**		Fiber Aerial Fraction - 2550	0.11	**0.15**
Copper Aerial Fraction - 5000	0.46	**0.10**		Fiber Aerial Fraction - 5000	0.14	**0.10**
Copper Aerial Fraction - 10000	0.46	**0.05**		Fiber Aerial Fraction - 10000	0.14	**0.05**
Copper Buried Fraction - 0	0.69	**0.45**		Fiber Buried Fraction - 0	0.76	**0.60**
Copper Buried Fraction - 5	0.69	**0.45**		Fiber Buried Fraction - 5	0.81	**0.60**
Copper Buried Fraction - 100	0.66	**0.45**		Fiber Buried Fraction - 100	0.73	**0.60**
Copper Buried Fraction - 200	0.55	**0.40**		Fiber Buried Fraction - 200	0.62	**0.60**
Copper Buried Fraction - 650	0.50	**0.30**		Fiber Buried Fraction - 650	0.54	**0.30**
Copper Buried Fraction - 850	0.59	**0.20**		Fiber Buried Fraction - 850	0.68	**0.20**
Copper Buried Fraction - 2550	0.56	**0.10**		Fiber Buried Fraction - 2550	0.65	**0.10**
Copper Buried Fraction - 5000	0.49	**0.05**		Fiber Buried Fraction - 5000	0.53	**0.05**
Copper Buried Fraction - 10000	0.49	**0.05**		Fiber Buried Fraction - 10000	0.53	**0.05**
Plant Mix--GTE				**Plant Mix--GTE**		
Feeder Input	**GTE Value**	**Default Scenario Value**		**Feeder Input**	**GTE Value**	**Default Scenario Value**
Copper Aerial Fraction - 0	0.27	**0.50**		Fiber Aerial Fraction - 0	0.27	**0.35**
Copper Aerial Fraction - 5	0.43	**0.50**		Fiber Aerial Fraction - 5	0.43	**0.35**
Copper Aerial Fraction - 100	0.50	**0.50**		Fiber Aerial Fraction - 100	0.50	**0.35**
Copper Aerial Fraction - 200	0.49	**0.40**		Fiber Aerial Fraction - 200	0.49	**0.30**

Copper Aerial Fraction - 650	0.08	**0.30**		Fiber Aerial Fraction - 650	0.08	**0.30**
Copper Aerial Fraction - 850	0.38	**0.20**		Fiber Aerial Fraction - 850	0.38	**0.20**
Copper Aerial Fraction - 2550	0.52	**0.15**		Fiber Aerial Fraction - 2550	0.52	**0.15**
Copper Aerial Fraction - 5000	0.52	**0.10**		Fiber Aerial Fraction - 5000	0.52	**0.10**
Copper Aerial Fraction - 10000	0.52	**0.05**		Fiber Aerial Fraction - 10000	0.52	**0.05**
Copper Buried Fraction - 0	0.73	**0.45**		Fiber Buried Fraction - 0	0.73	**0.60**
Copper Buried Fraction - 5	0.54	**0.45**		Fiber Buried Fraction - 5	0.54	**0.60**
Copper Buried Fraction - 100	0.41	**0.45**		Fiber Buried Fraction - 100	0.41	**0.60**
Copper Buried Fraction - 200	0.36	**0.40**		Fiber Buried Fraction - 200	0.36	**0.60**
Copper Buried Fraction - 650	0.46	**0.30**		Fiber Buried Fraction - 650	0.46	**0.30**
Copper Buried Fraction - 850	0.15	**0.20**		Fiber Buried Fraction - 850	0.15	**0.20**
Copper Buried Fraction - 2550	0.13	**0.10**		Fiber Buried Fraction - 2550	0.13	**0.10**
Copper Buried Fraction - 5000	0.13	**0.05**		Fiber Buried Fraction - 5000	0.13	**0.05**
Copper Buried Fraction - 10000	0.13	**0.05**		Fiber Buried Fraction - 10000	0.13	**0.05**

BURIED PLACEMENT COSTS

For buried placement costs, the Commission used the same values as Staff. We did, however, change the HAI 5.0a hard rock and soft rock placement multipliers. These changes are reflected in the following table. Par. 216.

Hard and Soft Rock Placement Multipliers						
	0-5 Lines Per Square Mile			6-100 Lines Per Square Mile		
	Normal	Soft Rock	Hard Rock	Normal	Soft Rock	Hard Rock
Gabel/Kennedy[3]	1.69	3.17	4.66	2.23	3.72	5.20
Rock Placement Multipliers		1.88	2.76		1.67	2.33
Average Soft Rock Placement Multiplier		1.77				
Average Hard Rock Placement Multiplier			2.55			

The average hard and soft rock placement multipliers were derived in the following manner:

1) For the 0-5 density zone the soft rock multiplier is found by taking the Gabel/Kennedy value for soft rock of $3.17 and dividing this by the $1.69 to arrive at

[3] These values were derived from Ex. 241:41.

the 1.88. For the 6-100 density zone, the multiplier is 1.66 (3.72/2.23). The average of 1.88 and 1.66 is 1.77.

2) The average hard rock placement multiplier was calculated in the same fashion.

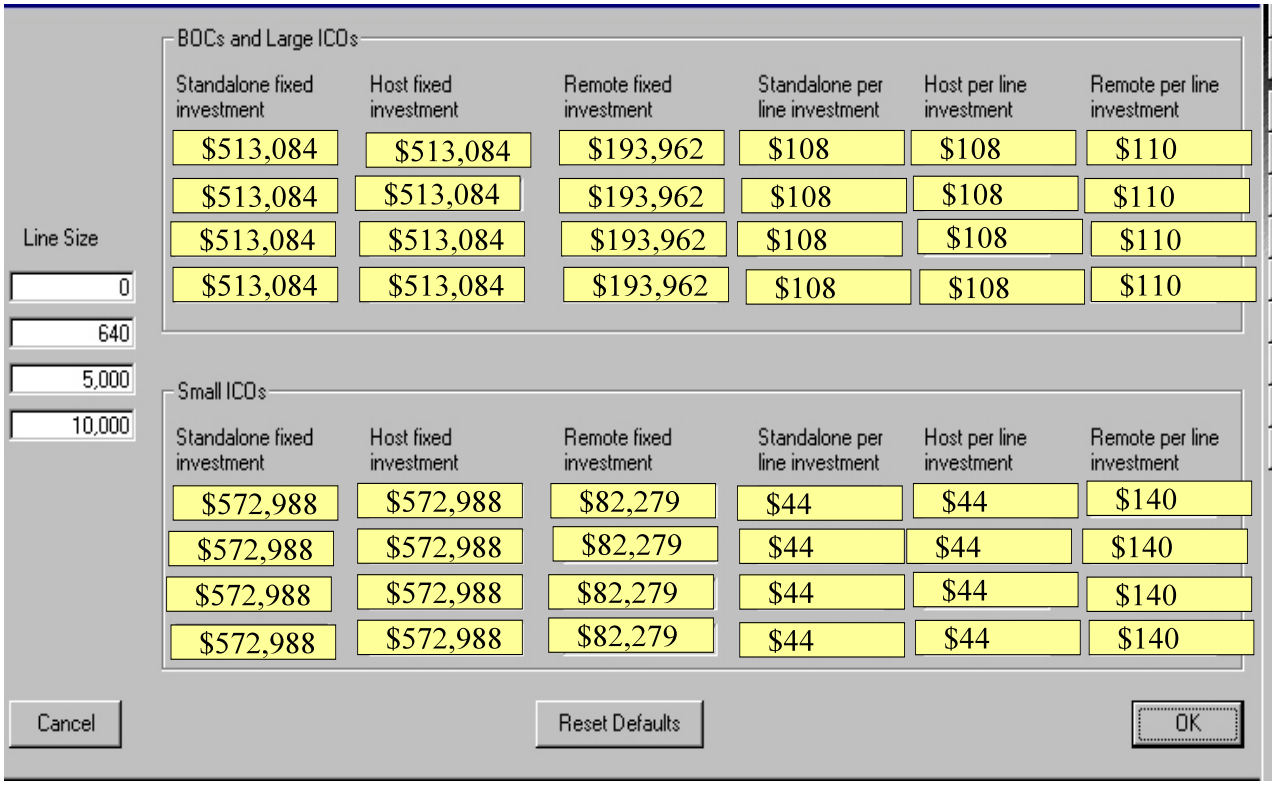
SWITCHING INPUT CHANGES TO HAI 5.0a MODEL

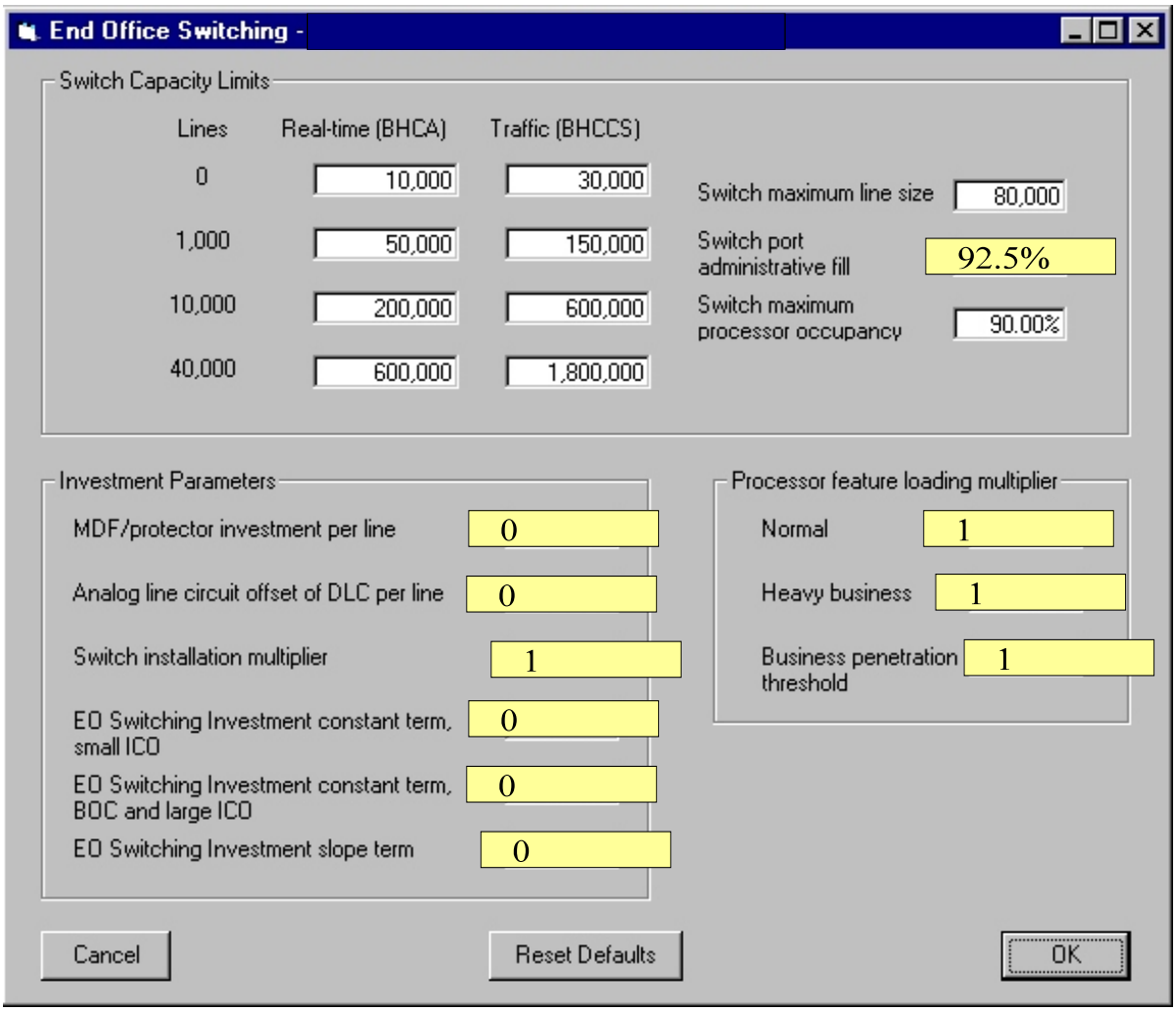
For its switch related costs the Commission used the estimates provided by the NRRI report, *Estimating the Cost of Switching and Cables Based on Publicly Available Data*, Ex. 241:124. Par. 316.

Switching Investment Used in the Commission Runs		
	Small Companies	Medium and Large Companies
Remote Getting Started	82,279	193,962
Line on remote switch	140.34	110.49
Host/Stand-Alone Getting Started	572,988	513,083
Line on host switch	44	108

This data was implemented in the HAI 5.0a model in the manner outlined in the following tables.

SWITCHING INVESTMENT USED IN COMMISSION RUNS





The Investment Parameters in the above table were set to zero as these values are already included in the switching cost figures reported above as the **Switching Investment Used in the Commission Runs**. The Processor feature loading multipliers were set to 1 as these are multipliers for vertical services, whose costs are already included in the aforementioned Switch Investment figures. Ex. 241, page 122.

Power Investment was also set to zero as this investment is included in the switch cost data reported in the **Switching Investment Used in the Commission Runs** table, above. Ex. 241 page 122.

Switching Input	Current Scenario Value
Power Investment 1	0
Power Investment 2	0
Power Investment 3	0
Power Investment 4	0
Power Investment 5	0

Page 114 of Exhibit 241 notes that line switch use typically ranges from 90 to 95%. Since the Commission decided to adopt the switch investments suggested in Exhibit 241, it was decided to use a switch port administrative fill factor of 92.5%, the average of the 90% and 95% reported in Exhibit 241.

In its runs the Commission used the host-remote assignment option of the HAI 5.0a model. The host, remote, and stand-alone assignments used were the same as those used in the BPCM 3.1 runs by the various parties.

OTHER INPUT CHANGES

The buried fraction available for shift was set equal to 0. This has the effect that no fraction of buried cable would be shifted over to aerial cable. This was done so as to conform with the Commission's decision to use ILEC values for plant mix. Par. 106.

CHANGES MADE TO HAI 5.0a MODULE ALGORITHMS

The following changes were made to the ***investment inputs*** worksheet in the **wire center expense module** per Ex. 221T:30-31:

Cell DB3: "Inputs!H70" was changed to "Inputs!$H$70"

So as to allow the calculation of feeder buried cable expense to work correctly for all wire centers,

Cell DH3: "(O3+Q3+R3)" was changed to "(O3+R3*Inputs!$G$70+Q3*Inputs!$G$70)"

So as to include the effects of structure sharing on feeder underground placement in the total feeder cost calculation,

Cell DI3: "IF(Inputs!$G$70>0.5,1" was changed to "IF(Inputs!$G$70>0.5,P3" (two instances in formula)

So as to include full manhole investment in the calculation of manhole direct cost whenever

the sharing fraction is greater than 0.5 (the calculation works correctly when the sharing fraction is less than or equal to 0.5, including the default values),

Column GD: "GT3/((GE3/B3/12)/(1-'96 Actuals'!F142))" was changed to "GW3/((GH3/B3/12)/(1-'96 Actuals'!$F$142))" Note that the '96 Actuals'!F142' cell reference must be changed to an absolute reference as shown.