center to the customer locations using the prices input into the model. The cost study estimates the costs of a forward-looking network, it does not rely on a loop length study.

(j) If the cost study meets criterion 1 in any way not captured by (a) through (h), please explain.

Criterion 2: ***Any network function or element, such as loop, switching, transport, or signaling, necessary to produce supported services must have an associated cost.***

(a) Does the study contain costs associated with all network functions or elements (such as loop, switching, transport, or signaling) necessary to produce supported services?

Response: Yes.

(b) What non-supported services, if any, are currently included in your cost study, and are the costs associated with provision of advanced services included in your calculation of cost?

Response: Only the costs of supported services are included in the Model, with one exception. It is that support of both basic and non-supported services is typically bundled into a single software package by the current vendors of switching equipment; the cost that specifically provides the supported service cannot be separately purchased. Thus, the bundled switching costs used in the model may include non-supported services.

(c) If the cost study meets criterion 2 in any way not captured by (a) and (b), please explain.

Criterion 3: ***Only long-run forward-looking economic cost may be included. The long-run period used must be a period long enough that all costs may be treated as variable and avoidable. The costs must not be the embedded cost of the facilities, functions, or elements. The study or model, however, must be based upon an examination of the current cost of purchasing facilities and equipment, such as switches and digital loop carriers (rather than list prices).***

Describe how the costs used in the study represent long-run, forward-looking costs. In particular, describe and verify how the costs of facilities and equipment used in the study reflect the current costs of purchasing those facilities and equipment.

Response: Only long-run forward-looking economic costs were included in the model. The costs used in the model, were not embedded costs, but were either based upon BellSouth's projections, as adjusted by the LPSC, which took into consideration future staffing cuts, productivity gains, and the effects of competition. The projection period used was 1997-99, however, it was assumed that all costs were variable or avoidable. Material prices for copper cable, fiber cable, and poles were based upon BellSouth's Louisiana's current cost of purchasing this equipment. The material prices were then adjusted using in-plant factors to account for splicing costs, engineering costs, placing costs, supply costs, and taxes. For DLC equipment and SAI's the LPSC relied upon, but adjusted the default values contained in the Hatfield model. According to the Hatfield developers these prices were based upon the judgement of subject matter experts with extensive experience in the acquisition of network facilities and equipment. All facility and equipment prices used as default inputs to the Hatfield model are based on discounted, rather than list prices.

Criterion 4: ***The rate of return should be either the authorized federal rate of return on interstate services, currently 11.25 percent, or the state's prescribed rate of return for intrastate services.***

(a) What rate of return is used in the cost study?

Response: The rate of return in the cost study was 10.15%. This overall cost of capital consists of an equity ratio of 60% and debt ratio of 40% and a cost of debt of 6.62% and a cost of equity of 12.5%.

(b) Please provide an explanation of the basis for the rate of return used if it is different from the authorized federal rate of return on interstate services. If available, please identify any documents (e.g., commission orders) supporting the value used in the study.

Response: The rate of return used in the cost study was the same rate of return that the LPSC used to develop the prices of unbundled network elements. The Commission adopted this cost of capital for purposes of setting UNE prices in Docket No. U-22002. The LPSC does not set a rate of return for BellSouth's Louisiana operations as BellSouth operates under price caps. The LPSC believes this cost of capital to be appropriate for universal service funding because it is consistent with its UNE docket.

(c) If the cost study meets criterion 4 in any way not captured by (a) and (b), please explain.

Criterion 5: ***Economic lives and future net salvage percentages used in calculating depreciation expense should be within the FCC-authorized range and use currently authorized depreciation lives.***

Please identify the depreciation rates and future net salvage percentages used in the cost study.

Response: The economic lives and future net salvage percentages used in calculating depreciation expense are within the FCC-authorized ranges. The lives and salvages values are set forth below.

Account No.	Description	Life	Value
10C, 11C	Building	44	5
377C, 587C	Digital Switch	16	0
117C	Operator Systems	8	1
157C	Digital Circuit - DDS	8	5
257C	Digital Circuits - Pair Gain	11	0
357C	Digital Circuits - Other	11	0
530C	Gen. Purpose Comp., Other	7	0
630C	GP Comp, Data Cont. & Wrkst	7	0
1C, 811C	Poles	30	(49)
12C	Aerial Cable - Met - Bldg Enter	18	(20)
22C	Aerial Cable - Metallic	18	(20)
812C	Aerial Cable - Fiber - Bldg Enter	25	(20)
822C	Aerial Cable - Fiber	25	(20)
5C	Underground Cable - Metallic	25	(25)
85C	Underground Cable - Fiber	25	(20)
45C	Buried Cable - Metallic	20	(10)
845C	Buried Cable - Fiber	25	(10)
52C	Intrabuilding Cable - Metallic	20	(5)
852C	Intrabuilding Cable - Fiber	20	(1)
4C	Conduit	55	(5)

Criterion 6: ***The cost study or model must estimate the cost of providing service for all businesses and households within a geographic region. This includes the provision of multi-line business services, special access, private lines, and multiple residential lines. The inclusion of multi-line business services and multiple residential lines will permit the cost study or model to reflect the economies of scale associated with the provision of these services.***

Describe how the study takes into account the cost of providing service for all businesses and households within a geographic region, including the provision of multi-line business services, special access, private lines, and multiple residential

lines per household.

Response: The study includes the line counts for all businesses and residential customers. The study includes line counts for multi-line business services, special access lines, private lines, and multiple residential lines per household.

Criterion 7: ***A reasonable allocation of joint and common costs should be assigned to the cost of supported services.***

Describe how the study's methodology assigns a reasonable allocation of joint and common costs to the cost of supported services. What is the amount of common costs attributed to supported services, and what percentage does this represent of total common costs as identified in the study or model? Please explain how this amount was determined. Specifically, please identify how line-side port costs are identified as a portion of total switching costs.

Response: The study used a joint and common cost factor of 10.5%, which produces a cost per line per month of $2.86. These expenses are assigned in the Hatfield model as a variable expense in proportion to investment or line counts as appropriate. The treatment of these costs in the model helps to ensure that the joint and common costs caused by the provision of non-supported services are not inappropriately included in the costs reported for supported services. The amount of common costs attributed to the supported services is approximately 69% of the total common costs as identified in the model of $78,509,489. The figure of 69% was determined by dividing the sum of primary residences line and single line businesses by the total lines included in the study.

To the extent that certain components of the network -- the loop, and the part of the switch associated with the attachment of lines to the switch -- may be considered to be joint and common costs, the model allows the user to specify the portion of each that are attributed to universal service. The LPSC used the default values for these assignments of 100% in each case. The fraction of the total switching cost that is assumed to be not associated with the connection of lines to the switch is user-adjustable as well, with a default value of 70%. The LPSC also used this default value in its use of the model.

Criterion 8: ***The cost study or model and all underlying data, formulae, computations, and software associated with the model should be available to all interested parties for review and comment. All underlying data should be verifiable, engineering assumptions reasonable, and outputs plausible.***

(a) Please identify any underlying data, formulae, computations, or software used in the study that are not available for review and comment, and explain why they are unavailable.

Response: The Hatfield model relies upon a preprocessing process that is not readily or easily available to all interested parties. The LPSC understands that the clustering algorithm for the Hatfield model's preprocessing has been made available to the FCC. The Metromail data bases used to geocode data is also not readily available, however, the LPSC understands that it can be purchased from Metromail. In addition, the switch constant term used in the model is based upon BellSouth specific switch purchases. BellSouth has claimed that this information is proprietary. Presumably, it can be reviewed, but it requires the execution of a Protective Agreement.

(b) Please describe what steps were taken to determine that the study's outputs are plausible.

Response: Steps taken to determine that the study's outputs are reasonable include examining the UNE prices that result from running the Hatfield model with the inputs for the universal service model, but adjusted were appropriate for UNE pricing purposes. The resulting UNE loop and port price were compared to the results of the LPSC's UNE docket. This comparison showed that after adjustment for the difference between universal digital loop carrier and integrated digital loop carrier, there was a difference of $2.87. To ensure that the results of using Hatfield were consistent with the LPSC's decision in the UNE docket, the Commission scaled the USF costs for the loop and port by 87%. The combined cost of the loop and port set in the UNE docket is 87% of the combined cost of the loop and port resulting from running the Hatfield model.

(c) Standardized presentation of outputs. If the state cost study is based on a version of the HAI model, please file: the universal service calculation, cost summary, cost of network elements, and USOA detail breakdown (HAI 5.0 only) reports. If the state cost study is based on a version of BCPM, please file: the area-wide summary, key elements, aggregate support summary and plant summary reports. If the state cost study is based on neither BCPM nor HAI, please provide outputs in either of the BCPM or HAI formats just mentioned, or provide investment and expenses per study area by USOA accounts or ARMIS rows, and show whether and how cost calculations differ across geographic areas.

Response: All outputs from the Hatfield model's universal service study are being filed. The calculation of the amount of universal service support at the wire center level is contained in the file Exhibit 3. The calculation of the amount of universal service support at the CBG level is contained in the file Exhibit 2.

(d) If the cost study meets criterion 8 in any way not captured by (a) through (c), please explain.

Criterion 9: ***The cost study or model should include the capability to examine and modify the critical assumptions and engineering principles. These assumptions and principles include, but are not limited to, the cost of capital, depreciation rates, fill factors, input costs, overhead adjustments, retail costs, structure sharing percentages, fiber-copper cross-over points, and terrain factors.***

(a) Please describe the extent to which and how the user can examine and modify the cost study's critical assumptions and engineering principles.

Response: Each of the types of data listed as an input to the model can be reviewed and changed by the user. In addition, each of the model cells containing formulae is unlocked, making it possible for the user to make direct changes to both calculations and inputs.

(b) Standardized presentation of inputs. Please provide the input values used in your cost study using the attached Excel spreadsheet document. If your study uses input values that are not identified in the Excel document, please add them to the end of the list in the appropriate category. You may also provide the standard presentation of inputs in electronic form in an identical spreadsheet prepared using any other commercially-available spreadsheet software.

Response: The input values used in the LPSC's cost study are attached as Exhibit 1.

(c) If the cost study meets criterion 9 in any way not captured by (a) and (b), please explain.

Criterion 10: ***The cost study or model must deaverage support calculations to the wire center serving area level at least, and, if feasible, to even smaller areas such as a Census Block Group, Census Block, or grid cell in order to target universal service support efficiently.***

(a) Describe the manner in which the study disaggregates investment calculations to small geographic areas, such as wire centers, census block groups, census blocks, or grid cells and identify the level to which cost calculations are disaggregated. For example, please describe how costs that are shared among customers in different geographic areas, such as feeder structures, are allocated.

Response: The Hatfield model can calculate and display universal service results by wire center or Census Block Group. Depending on the geographic

disaggregation chosen, costs that are shared among customers such as feeder structure may be allocated in different ways. Generally, there are no shared investment costs at the wire center level. Feeder structure costs, for example, would be calculated for each wire center separately, as opposed to calculating them at a higher level subject to allocation. At the density zone level, some investment costs will be shared and allocation would be necessary. For example, shared feeder segments would be allocated to density zones on the basis of the relative number of loops and loop lengths. Likewise, the clustering approach result in shared investments such as feeder structure. Relative numbers of loops and their lengths would again be the cost allocator of shared structure.

C. Demonstration that the Cost Study Fulfills Other Requirements of the *Universal Service Order*

1. ***"In order for the Commission to accept a state cost study submitted to [the Commission] for the purposes of calculating federal universal service support, that study must be the same cost study that is used by the state to determine intrastate universal service support levels pursuant to section 254(f)."***14

If your state has an intrastate universal service support mechanism for non-rural LECs, please demonstrate that the cost study being submitted for the purpose of calculating federal universal service support is the same cost study that will be used by your state to determine intrastate universal service support levels pursuant to Section 254(f) of the Telecommunications Act of 1996.

Response: To date Louisiana does not have an intrastate universal service support mechanism for non-rural LECs.

2. ***"We also encourage a state, to the extent possible and consistent with the above criteria, to use its ongoing proceedings to develop permanent unbundled network element prices as a basis for its universal service cost study."***15

Please explain the interrelationship, if any, between this universal service cost study and the cost study that will be used by your state in developing permanent prices for unbundled network elements.

Response: As indicated in the response to many of the above questions, the foundation for changes to default input assumptions used in the Hatfield model were made to be consistent with the LPSC's determination of permanent prices for unbundled network

elements. One of the goals of the LPSC in determining the amount of universal service support was to be consistent with the inputs and assumptions used in its UNE docket. Where there were reasons for different inputs in the USF proceeding relative to the UNE proceeding different inputs were used. For example, in the UNE docket retail costs were excluded. However, in the USF proceeding retail costs were included. Differences between the UNE docket and the USF docket are explained more fully in the attached Exhibit 9.