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**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 731
Phase IV

In the Matter of the Investigation of)
Universal Service in the State of Oregon.)

ORDER

DISPOSITION: COST MODEL AND OTHER ISSUES RESOLVED

INTRODUCTION AND PROCEDURAL HISTORY

In this order we complete our initial development and implementation of the Oregon Universal Service (OUS) program. We completed Phase I of the OUS program on October 17, 1995, by issuing Order No. 95-1103. In that order, we addressed policy issues, design objectives, and proposals relating to universal service funding. In 1996 the Telecommunications Act of 1996 (Telco Act) became law and the Federal-State Joint Board on Universal Service (Joint Board) released its Recommended Decision. In May 1997 the FCC issued its First Report and Order in the federal universal service program.

We were working on Phase II of this proceeding during that time and completed the main portion of Phase II on March 13, 1998, by issuing Order No. 98-094. In that order, we addressed OUS design objectives, adopted criteria for defining basic universal services, and established policies for funding the program and making distributions from it. We resolved additional Phase II issues in Order No. 98-430. In Phase III, in Order No. 99-197 (March 11, 1999), we resolved issues relating to the administration of the OUS program.

The 1999 Oregon Legislative Assembly addressed universal service issues in SB 622 (now codified in ORS 759.425). Senate Bill 622 was passed by the legislature, signed by Governor Kitzhaber, and became effective on September 1, 1999. ORS 759.425 (SB 622) specifically addresses Oregon universal service issues and directs the Commission to create a competitively neutral and nondiscriminatory universal service fund. The fund must be designed to ensure that basic telephone service is available at a reasonable and affordable rate. The fund must conform to Section 254 of the federal Telco Act, and be established and implemented by September 1, 2000. ORS 759.425 (SB 622) also directs the Commission to establish a benchmark for basic telephone service. The universal service fund must provide explicit support to an eligible telecommunications carrier (ETC) that is equal to the difference between the cost of providing basic service and the benchmark "less any explicit compensation received by the

carrier from federal sources specifically targeted to recovery of local loop costs and less any explicit support received by the carrier from a federal universal service program.”

On March 24, 1999, and February 2, 2000, Administrative Law Judge Lowell Bergen presided over Phase IV procedural conferences. The parties also met in informal workshops to discuss Phase IV issues. As a result of discussions held during the workshops, the parties agreed on a schedule and Issues List. The schedule was later revised to respond to ORS 759.425 (SB 622) and various Federal Communications Commission (FCC) orders issued during the processing of this phase of the proceeding. The parties filed testimony between August 6, 1999, and January 18, 2000. An evidentiary hearing was held on February 7, 8, 9, and 10, 2000. Post-hearing briefs were filed until April 13, 2000.

The following parties filed testimony or comments or otherwise actively participated in this proceeding: AT&T Communications of the Pacific Northwest, Inc., and AT&T Wireless Services, Inc., (AT&T); MCI WorldCom, Inc. (MCI)¹; GTE Northwest (GTE); Oregon Exchange Carrier Association (OECA); Oregon Telecommunications Association (OTA); Sprint Corporation on behalf of United Telephone Company of the Northwest (Sprint); TCG Oregon (TCG); the American Association of Retired Persons, GVNW Inc./Management (GVNW), U S WEST Communications, Inc. (USWC), and our Staff. Four parties (USWC, AT&T/MCI, GTE, and Staff) submitted specific proposals for establishment of the OUS fund.

The record in this phase of the proceeding includes thousands of pages of testimony, cost studies, and exhibits. We appreciate the enormous amount of time and effort the parties expended in support of their views of how the OUS program should function. We have analyzed the record; this order states the decisions we have made, but does not comment on every issue raised by every party. This order makes the decisions that are important in establishing and implementing the OUS program; there is no need to prolong the order by discussing in detail the innumerable arguments and issues that could be discussed.

In this Phase IV order, we adopt a cost proxy model, establish input values to the model, establish a benchmark for basic telephone service, set the size of the OUS fund, select a mechanism for ascertaining high-cost areas, and resolve many other issues necessary to get the OUS program operational. The OUS fund will provide resources to support basic telephone service provided by non-rural telephone carriers² to high-cost areas. The OUS fund will be

¹ AT&T and MCI filed individual and joint testimony but filed combined post-hearing briefs.

² 47 U.S.C. 153 defines a rural carrier as a local exchange carrier that: (a) provides service to any area that does not include (1) any incorporated place of 10,000 or more inhabitants, or (2) any urbanized area as defined by the Bureau of the Census; (b) provides telephone exchange service, including exchange access, to fewer than 50,000 access lines; (c) provides telephone exchange service to any local exchange carrier study area with fewer than 100,000 access lines, or (d) has less than 15 percent of its access lines in communities of more than 50,000. All other carriers are classified as non-rural. We adopt that definition for OUS purposes.

created to provide support for basic telephone service as defined in Order No. 00-265 in Docket No. AR 368.

This order ends this docket, but is only one of many initiatives designed to encourage the development of a fair and competitive industry that provides telecommunications services at reasonable and affordable rates. This order focuses on support for high-cost areas and is organized around the issues specified for determination in this phase of the proceeding by the parties and the Administrative Law Judge.

EXECUTIVE SUMMARY

Most telephone network components provide service to more than one discrete service. As we move from the regulation of monopoly telephone companies to oversight of a more competitive industry, we need to know what each element of the network costs and what it costs to operate a reasonably efficient telephone network. The old system of providing implicit support for certain services by charging higher prices for other services must give way to pricing based on the costs incurred to provide each discrete service. The old system of charging customers of some areas more than it cost to serve them to provide implicit support for customers of other areas also must be changed. For several years the FCC and state utility commissions have worked hard to separate the various elements that constitute telephone service and assign costs to each element. Together and separately we have analyzed various accounting and cost proxy models.

In this proceeding, the parties vigorously supported several cost models and urged the Commission to adopt their favorite model. AT&T and MCI supported the Hatfield Model, also called the HAI model or the HM 5.1 model (referred to in this order as the HAI Model). GTE supported a company-specific model it called the Integrated Cost Model (ICM). USWC at one time supported the Benchmark Cost Proxy Model (BCPM), but later recommended adoption of what it called a Simplified Methodology (USWC-SM). Our Staff supported the FCC's Synthesis Model (FCC-SM), but recommended that the Commission adopt a few changes proposed by Staff. The parties also referred to a cost model developed by the staff of the FCC, called the Hybrid Cost Model. The FCC-SM is a synthesis of the Hybrid Cost Model for loop plant design and the HAI Model for switching and transport design.

Estimates of the costs to provide basic telephone service presented by USWC and GTE were significantly higher than cost estimates presented by AT&T and MCI. Staff's cost estimates lie between the high and low estimates provided by those parties.

We adopt the FCC-SM and proposed changes to it recommended by our Staff. We find that Staff's proposed OUS program best accommodates and implements our previous decisions in this and other dockets. It also complies with the requirements of ORS 759.425 (SB 622), and complements the federal Universal Service Program. The OUS program recommended by Staff reasonably deals with the myriad individual decisions that must be made to create any cost model.

In this order we establish and implement the OUS program. However, our Universal Service tasks and obligations are not at an end. Telecommunications utilities will need to make a revenue-neutral rebalancing of the prices they charge for their services. Rate rebalancing is necessary to offset additional revenues some companies will receive from the Universal Service Fund. We intend to ensure that the rebalancing is fair and equitable. The Universal Service Program will be dynamic, rather than static, requiring oversight and improvements as experience is gained. We expect cost models to become more accurate, and we will want to review them to make the OUS program as fair, competitively neutral, nondiscriminatory, and reasonable as possible.

RESOLUTION OF THE ISSUES

ISSUE 1: WHAT SHOULD BE THE CRITERIA FOR SELECTING A COST MODEL?

Staff recommends the use of a forward-looking economic cost model to determine OUS support. The FCC, after exhaustively analyzing the various cost models presented by telephone companies, issued its “Universal Service Order” to establish the federal universal service program.³ In that order, the FCC adopted criteria for selecting the most appropriate cost model to calculate the costs to serve rural, insular, and high-cost areas. These are the criteria it established:⁴

- The technology assumed in the cost study or model must be the least-cost, most-efficient, and reasonable technology for providing the supported services currently being deployed. A model must include the incumbent local exchange carriers’ (ILECs’) wire centers as the center of the loop network, and the outside plant should terminate at the ILECs’ current wire centers. The loop design should not impede the provision of advanced services;
- Any network function or element, such as loop, switching, transport, or signaling, necessary to produce supported services must have an associated cost;
- Only long-run forward-looking economic costs 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 must be based on an examination of the current cost of purchasing facilities and equipment, rather than list prices;
- The rate of return must be either the authorized federal rate of return on interstate services, or the state’s prescribed rate of return for intrastate services;
- Economic lives and future net salvage percentages used in calculating depreciation expense must be within the FCC-authorized range;

³ In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, *Report and Order*, FCC 97-157.

⁴ *Id.* ¶250.

- The cost study 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;
- A reasonable allocation of joint and common costs must be assigned to the cost of supported services;
- The cost study and all underlying data, formulae, computations, and software associated with the study must be available to all interested parties for review and comment. All underlying data should be verifiable, engineering assumptions reasonable, and outputs plausible;
- The cost study must include the capability to examine and modify the critical assumptions and engineering principles;
- The cost study must deaverage support calculations to the wire center serving area at least, and if feasible, to even smaller areas, and the support areas should be smaller than a carrier's service area.

Staff notes that the FCC's criteria are similar to the Commission's long-run incremental cost principles adopted in Order No. 93-118. Staff contends that estimates of forward-looking economic costs would best approximate the costs that would be incurred by an efficient telecommunications carrier in a competitive market and would encourage economically correct levels of entry, investment, and innovation. The cost estimates would be of an efficient generic telephone carrier, rather than estimates of the costs of individual companies that provide telephone service. The fund would provide the minimum support necessary, preventing the fund from becoming burdensomely large.

GTE supports its own cost model, called the ICM. It is designed to estimate costs specifically for GTE, rather than for an efficient generic telephone company. The model reflects actual costs as determined by GTE's revenue requirement. GTE contends that the Commission must identify and remove all implicit supports in its current rates and fund a like amount through explicit universal service support. GTE would apply an adjustment factor to its ICM to bring it into balance with its actual costs. GTE agrees with the 10 FCC-established criteria listed above, and states that we should adopt five additional criteria: accuracy; testability; openness; flexibility; and reasonable and supportable inputs.

USWC prefers not to use an economic cost model to estimate costs, arguing that all economic cost models are fatally flawed. If we decide to select a cost model, USWC recommends that we adopt the 10 criteria established by the FCC. In addition, USWC urges that we "apply a real-world reality check" to determine if the model produces results that are grounded in reality.

AT&T and MCI support the use of economic cost estimates and recommend that we adopt the FCC criteria listed above.

Discussion and Resolution

We are convinced that a forward-looking economic model provides the best forecast of the costs a reasonably efficient telephone carrier would incur to provide basic service. We agree with the criteria established by the FCC for selecting a cost proxy model and adopt them for the OUS program.⁵ The costs estimated should be those of an efficient generic telephone carrier, rather than the costs of individual companies. If support amounts were distributed to individual companies based on their specific costs, an inefficient company would receive more universal service support than a more efficient company for serving a similarly situated group of customers. It therefore would not be competitively neutral nor would it encourage efficiency. By adopting a forward-looking economic model, we give carriers incentives to improve operations and increase efficiencies. We have stated our belief in forward-looking cost principles in various orders over many years. *See*, for example, Orders 90-920 and 93-1118. We also encourage carriers to act efficiently by calculating costs on the basis of the costs an efficient carrier would incur, rather than on the costs a particular carrier has incurred in the past. On a practical level, using company-specific data to determine costs would require periodic review of the costs of each company participating in the OUS Program, an obviously time-consuming requirement.

The ten criteria we adopt for selecting the cost model encompass the concepts advocated by GTE and USWC in their additional suggested criteria. It would be merely repetitive to add them to the criteria adopted above.

ISSUE 2: WHAT COST MODEL SHOULD BE SELECTED AND WHY?

Staff recommends that we select the FCC's national cost model. The reasons for its support of the FCC-SM include the following factors: (1) the FCC's investigation of cost models was the focus of national attention and generated debate from numerous major players in the industry; (2) because of the size and complexity of cost proxy models, it would not be practical nor efficient for this Commission to duplicate the FCC's investigation, design its own model, or investigate other proprietary industry models; (3) the FCC-SM is nonproprietary and available for public review; (4) use of the FCC-SM allows the OUS program to be reasonably consistent with and complementary to the federal universal service program; (5) adopting the FCC-SM is the most expeditious way to keep abreast of new telecommunications technologies, network improvements, and cost changes as they are introduced into the network.

Staff compared the results of the FCC-SM with prior cost determinations we made in Dockets UM 773 and UM 844, and found them to be similar.

Staff does not agree with all aspects of the FCC-SM, but feels that it produces reasonable economic cost estimates for large urban LECs. Staff proposes that the Commission

⁵ The United States Court of Appeals for the Fifth Circuit affirmed the FCC's use of the economic costing methodology for a generic most efficient carrier for purposes of distributing universal service funds. *Texas v. FCC*, 183 F3rd 393.

make several changes to the results obtained by the FCC-SM to improve certain inputs deemed inappropriate and to use information more appropriate for the telecommunications industry in Oregon.

GTE recommends that the Commission adopt GTE's ICM version 4.0. The ICM is specific to GTE, using inputs and engineering guidelines tailored to the service territory characteristics of GTE.

USWC recommends that the Commission not adopt any cost proxy model, claiming all cost proxy models are fundamentally flawed. USWC points out that cost proxy models are very complex and hard to understand. It thinks the BCPM is the least offensive model, and uses a BCPM-based regression analysis to identify high-cost customers and to distribute a predetermined level of funding. The regression equation calculates, not the actual cost to serve, but rather the relative cost to serve one location as compared to the cost to serve other locations. The USWC-SM would require us to identify a density threshold in lines or customers per square mile below which we would consider service to be high cost. We also would have to establish the fund size based on public policy considerations. The USWC-SM would require each eligible telecommunications carrier (ETC) to provide a list of geocoded service addresses for the customers for whom the ETC seeks support. The data required for each customer would include latitude, longitude, rectilinear distance from the wire center, and density in lines per square mile. If we decide to adopt a cost model, USWC recommends that we adopt the BCPM.

AT&T and MCI recommend that the Commission adopt the HAI Model version 5.1, although they think the HAI Model and the FCC-SM both meet the FCC's criteria and produce reasonable estimates of the economic costs of basic service. AT&T states that the FCC-SM may overstate costs, and points out that the HAI model uses geocoded information on customer locations where possible. A geocoded customer location database pinpoints actual customer locations more accurately than do surrogate methods. AT&T and MCI agree generally with Staff's adjustments to the FCC-SM.

Discussion and Resolution

Our decision to use a cost model of general applicability necessarily prevents us from adopting the ICM proposed by GTE. A significant additional problem with the ICM is that it is not open and nonproprietary. GTE requires those seeking information on the ICM to sign a restrictive confidentiality agreement to protect GTE's third party vendors who provided information to GTE. Many inputs, process algorithms, and outputs are confidential, making it difficult for other parties to independently review and analyze the ICM. Also, the ICM is relatively new and has not undergone the scrutiny the HAI and FCC-SM have received. It is important to learn from the analysis and criticisms of experts in the disciplines involved in assembling a cost proxy model. ICM has not received the open review that we would want prior to adopting it for universal service purposes.

Another obvious difficulty with the ICM is that it was not designed to estimate the costs and characteristics of other companies. Adopting a cost model of general applicability makes it easier to treat equally all telephone companies participating in the universal service program.

Use of the USWC-SM would require substantial work before it would be ready for use to fund the OUS Program. It would require the geocoding of the addresses of customers for whom universal support will be requested. We are concerned about the feasibility of completing such a project in time to have the OUS Program implemented by September 1, 2000. USWC says it has the capability to convert its customer service addresses to geocodes, but has not done so. We also are uncomfortable with the specific nature and level of review the USWC-SM has undergone. It was designed for USWC and does not include important information for the state of Oregon as a whole or for the combined service territories of GTE and USWC, Oregon's two major ILECs. USWC-SM does not estimate the forward-looking costs an efficient carrier would incur in providing basic telephone service. It does not offer quantification of the OUS fund size, the benchmark, or the economic cost of basic telecommunications service.

The HAI model appears to adopt a reasonable approach to estimating costs of providing basic telephone service. It has general applicability and has been reviewed by industry experts, the FCC, and other regulatory officials. And most of it is not proprietary. However, it appears to understate the length of distribution plant by an average factor ranging between 15 and 41 percent. The effect is to understate the costs of distribution plant. The HAI model uses a statewide average study area, which glosses over the substantial cost differences between various areas of the state. AT&T concludes that no OUS fund is required. However, there are high-cost wire centers in Oregon that are expensive to serve and should be supported to foster competition. We disagree with AT&T that no OUS fund should be established. In addition, ORS 759.425 (SB 622) directs us to establish and implement a nondiscriminatory universal service fund to ensure basic telephone service is available at a reasonable and affordable rate.

We are convinced that a forward-looking cost proxy model of general applicability should be adopted. A cost model that estimates the costs a reasonably efficient generic telephone company would incur to provide basic telephone service promotes competition, is competitively neutral, and treats all carriers fairly. It also gives incentives to provide service as efficiently as possible. Anomalies and relative efficiencies of specific companies are avoided by the use of a general cost model. The FCC-SM meets those goals and is generally in line with our previous decisions establishing economic cost principles.⁶ We agree with the FCC that the use of forward-looking economic costs will send the correct signals for entry, investment, and innovation. The FCC-SM allows inputs to be changed as circumstances change, so it can accommodate future events. We select the FCC-SM, with appropriate adjustments, as the cost model for the OUS program.

⁶ See, for example, the orders we have issued in Docket Nos. UT 85, UM 351, UM 773, and UM 844.

ISSUE 3: WHAT INPUTS SHOULD BE USED IN THE COST MODEL?

GTE presented inputs for its ICM, but did not present inputs to the FCC-SM. GTE did, however, make arguments about inputs to cost determinations relevant to the OUS program. USWC presented evidence on inputs to an economic cost model even though it does not support the use of an economic cost model in this proceeding. AT&T recommends that we adopt either the HAI or the FCC-SM inputs, adjusted for Oregon-specific information. It points out that both sets of inputs are consistent with total element long-run incremental cost principles.

Staff recommends that we adopt the inputs adopted by the FCC in the FCC-SM, except for a number of adjustments Staff recommends. We are confident in general with the inputs adopted by the FCC. The inputs used in the model are based on forward-looking economic costs. The FCC adopted the inputs to its model after an exhaustive investigation and analysis of the variables. The inputs are well documented and the rationales for adopting them are explained in detail in FCC Order No. 99-304. The Joint Board studied the issues, and its recommendations form the basis of most decisions made by the FCC. And, of course, the major companies in the telecommunications industry argued their positions to the FCC. We are not adopting all the inputs adopted by the FCC, but are in general agreement with most of them.

Economic models are very complex and utilize an enormous number of inputs. Having decided to adopt the FCC-SM as the basic platform for determining costs, we will now discuss some of the more controversial or important inputs to the model, as well as the adjustments to the FCC-SM proposed by staff. Except for the inputs discussed below, we adopt the inputs adopted in the FCC-SM as adjusted by Staff.

General Parameters:

Cost of capital and capital structure.

Companies utilize debt and equity capital in their ongoing operations. A cost model that represents the costs companies incur in providing service must assign costs to the capital components. Deciding the capital structure to use, that is, the proportion of capital that is debt and the portion that is equity, is necessary to calculate an appropriate capital cost. Then the cost of each component of the capital structure must be determined. Several parties presented evidence to support their calculation of those costs.

USWC proposes that a capital structure of 17.3 percent debt and 82.7 percent common equity be used for OUS purposes. USWC estimates the cost of debt at 6.5 percent and the cost of common equity at 12.3 percent. The composite cost of capital therefore would be 11.297 percent. AT&T and MCI suggest that a capital structure of 45 percent debt and 55 percent common equity would be appropriate. They estimate the cost of debt at 7.7 percent and the cost of common equity at 11.9 percent. The composite cost of capital therefore would be 10.01 percent.

GTE proposes adoption of a capital structure of 22.17 percent debt and 77.83 percent equity. GTE estimates its cost of debt to be 7.03 percent and its cost of common equity to be 14.36 percent. The composite cost of capital therefore would be 12.74 percent. Staff proposes that the cost of capital stipulated in Docket No. UM 773, Order No. 96-284, be used in this proceeding. That stipulation assumed a capital structure of 38 percent debt and 62 percent common equity. The cost of debt was stipulated to be 7.1 percent and the cost of common equity was stipulated to be 11.75 percent. The resultant cost of capital was calculated at 9.98 percent.

Discussion and Resolution

USWC, AT&T and MCI did not present convincing evidence to support their cost of capital estimates. GTE recommends use of market-based cost estimates over the use of cost estimates based on embedded costs. GTE's estimate of the cost of debt is almost the same as Staff's estimate. To estimate the cost of common equity, GTE relies on a quarterly discounted cash flow model of industrial firms. GTE's use of that model is similar to the way it calculated its cost of capital in Docket No. UT 113. We rejected that calculation of the cost of equity in Order No. 94-336 in that docket and explained our conclusions on the relevant issues. It is also significant that local telecommunications carriers are typically less risky than industrial companies.

It is important in estimating the cost of capital for a cost proxy model to concentrate on forward-looking costs rather than relying primarily on historical data. We are estimating the costs of a reasonably efficient generic carrier employing technology in use today. The cost of capital estimated in Docket No. UM 773, Order No. 96-284, was calculated with forward-looking incremental capital structure and costs in mind. The record in this proceeding does not demonstrate that a more reliable estimate is now available.

We adopt the capital structure and cost of capital previously found to be appropriate in Order No. 96-284: 38 percent debt at a cost of 7.1 percent, 62 percent common equity at a cost of 11.75 percent, for a composite weighted cost of 9.98 percent.

Tax rates for income, property, and gross receipts.

Investor-owned utility companies are obligated to pay various federal and state income, gross receipts, and property taxes. Those costs must be included in an estimate of future carrier costs. Staff calculated the combined federal and state tax rates to be 39.29 percent. GTE presented information on tax rate inputs for ICM but not for FCC-SM or on any other generic basis. No party presented evidence to contradict Staff's calculation. Staff's calculation is reasonable and is adopted.

Capital recovery: economic lives, future net salvage.

The FCC has historically established guidelines for depreciation of the assets of telecommunications utility companies. The guidelines establish economic lives of assets and future net salvage percentages. The FCC-SM incorporates those guidelines into its calculations.

USWC complains that regulatory bodies have frequently established asset lives longer than would be reasonable, and urges adoption of shorter asset lives. It argues that technological changes and the introduction of competition will shorten the time assets are productive. GTE makes similar arguments, pointing out that an asset's economic life may be shorter than its physical life because competitors have lured away some traditional GTE customers. Staff proposes shorter lives and lower net salvage percentages than the FCC-SM uses. Adoption of Staff's recommendation would allow faster capital recovery. Staff bases its recommendation on the range of depreciation rates we adopted in UM 736, Order No. 95-634, for certain Oregon telecommunications companies, and on more recent information obtained from USWC and GTE.

Discussion and Resolution

We regularly establish asset lives and depreciation rates for Oregon's telecommunications utilities. These decisions are reached after careful analysis of industry factors. Changes in technology now come at a rapid pace, justifying faster capital asset recovery. Staff's recommendation takes competition and the pace of technological change into account. We find the capital recovery numbers recommended by Staff to be reasonable and adopt them for use in the OUS program.

Subscriber Loop Investment:

Geographic accuracy of customer location data.

Telecommunications networks are designed to reach customers in all populated areas of the telecommunications carrier's service territory. Customer location assumptions determine how networks are designed and the types of equipment employed to get telecommunications services to customers. Customer location information obviously is an important factor in a cost model's accuracy.

GTE presented evidence on customer locations for its service territory in Oregon. It developed what it calls "uniform demand units" that group customers into areas of about 60 acres. Road and terrain data are combined with GTE-specific information to model where its customers are located.

Neither GTE nor USWC presented evidence about customer locations for a reasonably efficient generic telecommunications carrier. AT&T recommends that we use either the customer location assumptions in the HAI Model or those in the FCC-SM, with appropriate

adjustments for Oregon conditions. Staff recommends that we adopt the customer location assumptions contained in the FCC-SM.

Discussion and Resolution

In its Order No. 99-304, the FCC noted that determining customer locations by geocoded longitude and latitude coordinates would be the most accurate way to determine loop lengths from wire centers to customers. However, such data is not available for review and comment. The only generally available geocoded customer location database is based on confidential third-party data. The FCC decided instead to use an algorithm based on the location of roads, realizing that customers are located beside roads. The FCC-SM uses files that contain all road segments in the United States and distributes customers uniformly along road segments. The FCC found this method to be more accurate than assuming that customers are located uniformly throughout a census block or along census block boundaries.

The FCC-SM calculates the average cost per line by dividing the total cost of serving customer locations by the current number of lines. The current number of lines corresponds to the number of occupied households rather than to the number of total housing units, which would include unoccupied residences. The FCC rejected the use of housing units because it would be inconsistent with the use of the current number of lines and would unfairly inflate the estimated cost per line to provide service. It would inflate the cost per line by using the highest possible numerator (all occupied and unoccupied housing units) and dividing by the lowest possible denominator (number of customers with telephones).

We find the customer location assumptions in FCC-SM to be reasonable and adopt them. Ideally, a cost model would use actual geocoded location information about each customer's exact location. However, that information is not now available. The geocoded customer location information available now is incomplete, confidential, and appears to contain errors. The road surrogate method adopted in the FCC-SM is a reasonable estimation of customer locations and the number of customer locations within a geographic area.

Engineering factors.

The FCC-SM uses an optimization technique referred to as the Prim algorithm. The Prim algorithm seeks to minimize the cost estimated to connect the wire center to a service area interface device and to connect the device to the customer. As relevant here, it calculates distribution routing by using two different sets of engineering assumptions, then selecting the one with the least annualized cost. Density of customer locations significantly affects the costs to make connections among customer locations. In its direct testimony Staff recommended a change to the FCC-SM-adopted values because the FCC-SM disabled the Prim algorithm for distribution plant. However, the latest version of the FCC-SM uses the Prim algorithm in all density zones for feeder and distribution plant. Staff now recommends adoption of the values for loop engineering factors used in the FCC-SM.

We have decided to adopt a cost model that constructs a least-cost, most-efficient telecommunications network. We reject models that focus on the costs of existing specific companies. The FCC-SM's treatment of loop engineering factors is in line with our cost model goals and is adopted.

Cost of copper cable.

There is an anomaly in the FCC-SM's treatment of the price of certain cable. It prices certain 26-gauge cable at a higher price than 24-gauge cable, obviously an error because 24-gauge wire is thicker and has better transmission performance. Staff adjusted the two wire sizes to the same price. We adopt that change.

Distribution and feeder mix by aerial, buried, and underground placement.

Telecommunications companies use aerial, buried, and underground cables to transmit communications to their customers. Aerial cables are above ground on poles. Buried cables are placed in trenches below ground level. Underground cables are placed in conduits under the ground. There are cost differences to install and maintain the various kinds of cables. A cost model needs to make assumptions about how much of each type of cable a company will use and the costs associated with each type. Various factors influence costs, including customer density and terrain characteristics, as well as the size and type of cable installed.

The FCC-SM separates outside plant by distribution and feeder structures, both copper and fiber. It uses plant mix ratios for most outside plant that vary for each type of plant for each of nine density zones. The FCC model uses a least-cost optimization algorithm when the minimum ratios of plant mix by aerial, buried, and underground total less than 100 percent. The FCC found that terrain conditions also influence outside plant costs, but the FCC-SM does not recognize terrain conditions in its plant mix factors.

Staff recommends a modification of the FCC's plant mix formula. Staff would have the model optimize a mix of plant 50 percent of the time in all density zones except in metropolitan areas, and would have the model use the FCC-adopted fixed ratios of plant mix in the other 50 percent. Metropolitan areas would be assumed to use underground conduit primarily. The 50 percent optimization formula would select the least-cost installation and maintenance charges in each density zone. Staff proposes the modification to offset the FCC-SM's failure to account for terrain differences and to minimize the universal service fund size.

USWC contends that Staff's modification to the FCC-SM's plant mix factors inappropriately increases the percentage of aerial plant in the plant mix. USWC contends the FCC-SM incorrectly assumes that aerial plant is the least expensive to install and maintain. Therefore, using the economic optimization algorithm 50 percent of the time, as Staff suggests, would unfairly minimize plant costs for half the outside plant structures. The adopted cost model would design an inferior network, a network that would be below current standards in Oregon. USWC contends that the percentage of aerial plant assumed should be no greater than USWC's current aerial mix, and recommends that, as a minimum, we use the FCC-SM default plant mix.

If we accept Staff's optimization concept, USWC recommends that we adopt an Oregon-specific factor for aerial plant.

AT&T recommends that we use a nationwide plant mix, rather than company-specific data, noting that there are difficulties in obtaining verifiable company-specific data. It recommends that we adopt the plant mix utilized in the HAI Model or the FCC-SM. GTE recommends that we use actual recorded data for GTE's system to determine an appropriate plant mix.

Discussion and Resolution

We agree with AT&T that we should use a nationwide plant mix formula, rather than use company-specific data. Efficiency is encouraged by the use of inputs for a reasonably efficient generic telecommunications carrier. The FCC-SM is the logical platform for plant mix assumptions, but it does not account for terrain differences. Terrain differences can significantly affect installation and maintenance costs of outside plant. The question is whether the FCC-SM's default inputs should be modified as Staff suggests. We want to use an economic model that assumes a least-cost, efficient carrier is providing the supported services. Staff's modification to the FCC-SM's default plant mix assumptions accomplishes that purpose because it forces the model to select the least-cost plant mix over predetermined default values in many situations.

We disagree with USWC's criticism that the plant optimization routine unduly selects aerial plant over underground facilities. The routine looks at both initial costs and ongoing maintenance expenses before selecting the optimum plant mix. In many situations, especially in rural areas, buried plant is selected as the least cost plant because of its initial and ongoing cost factors.

We understand the concern that a plant mix formula could unduly minimize outside plant costs. However, the FCC-SM is, in general, a good representation of a reasonably efficient generic carrier minimizing costs to meet competition. We would prefer that the FCC-SM account for terrain factors, but modifying default values to find the least-cost plant mix in about half the outside plant facilities will be a reasonable approach. We will use a generic approach to plant mix costs, rather than making decisions based on current plant mix data as USWC and GTE suggest. We continue to state our preference to use estimates of costs based on an efficient generic carrier rather than on estimates of individual companies.

We adopt the Staff position on the mix of the three placement types used for distribution and feeder plant.

Cable structure-sharing factors.

Utility companies routinely share some of their facilities with other companies. Joint use of facilities reduces costs and increases efficiency. A cost model that models the telecommunications network must make assumptions about the extent and cost implications of facilities sharing. Parties agree that the amount of facilities sharing likely to occur depends

primarily on the type of structure under consideration and the density (number of lines per square mile) of the area being considered. The facilities at issue here are aerial, buried, and underground conduit structures that hold wires and cable.

USWC notes that economic cost models use what is called the scorched node assumption. Under that assumption, a single provider replaces the entire telecommunications network, and everything else remains in place. Streets, buildings, TV cables, and power networks remain in place. USWC proposes that it be assigned 80 percent of the cost of underground conduit in most density zones, stating that sharing of conduit occurs most often in new developments. USWC would assign to itself 80 percent of the cost of most types of buried cable. It points out that it is unsafe for telephone utilities to share certain structures with electric power and gas utilities. USWC would assign to itself 50 percent of the cost of aerial structures, except guy wire and anchor costs, which it would assign 100 percent to itself. USWC states that aerial cables and poles are frequently shared, but anchors and guy wires are not shared.

USWC contends that there are more sharing opportunities for aerial structures than for structures placed underground (some cables are merely buried, while others are placed in underground conduits). It predicts that underground structures will make up a greater percentage of future structures than they have in the past, reducing the overall percentage of sharing likely to occur in the future. It is more expensive to add a cable to an underground installation than it is to add a cable to a utility pole. USWC cites concerns about maintenance, reliability, and aesthetics as reasons why aerial cables will be installed less often in the future.

AT&T contends that USWC underestimates the amount of sharing that should be assumed for an efficient provider. It contends that monopoly providers have had little incentive to share facilities in the past, but in the future competition will provide greater incentives to share. It recommends use of the HAI model sharing assumptions, or those of the FCC-SM.

GTE contends that its actual experience in Oregon should dictate sharing capabilities for the future. Its plant is already in place and is shared according to prudent decisions. It would assign approximately half the cost of aerial cable to itself, and all buried and underground costs to itself. No sharing of buried or underground structures is assumed.

The FCC addressed cable structure issues in Order No. FCC 99-304.⁷ It assigned sharing percentages for each type of structure based on line density (the model has nine density zones). It found the assumptions by the ILECs to be unnecessarily conservative, and noted that there was little hard evidence to support any party's position. Therefore, a large measure of educated predictive judgment must be employed. The FCC's decision on structure sharing produced assumptions of sharing that were less than recommended by competitive providers and more than recommended by the ILECs. Staff recommends that we adopt the structure sharing assumptions made by the FCC.

⁷ ¶ 241 and following.

Discussion and Resolution

We agree with the FCC that a large measure of predictive judgment is required to make assumptions about the future sharing of structure costs. The telecommunications industry is changing from a monopoly-based regimen to one embracing competition. Competition will provide incentives to reduce costs and to increase efficiency. Competitive pressures should drive the carriers to share their facilities more in the future than they have in the past. Of course, safety and practical limitations still will be important. After considering the evidence and arguments presented by the parties, we think the best approach is to adopt the structure sharing assumptions made by the FCC in its Order No. 99-304. They are reasonable and are a good estimate of what is likely to occur in the near future.

End office switching, tandem switching, transport, signaling and operator systems investments:

Traffic factors.

Recently, in Order No. 00-265 we defined basic telephone service. The definition removes extended area service from the definition of basic telephone service. Staff proposes to remove extended area service usage from the economic cost of basic telephone service. Staff also proposes to update all usage in ILEC service territories to reflect a 1998 test year, consistent with the FCC-SM's base year. These changes are adopted.

Cost of fiber cable used for Transport.

Another adjustment to the FCC-SM proposed by Staff is to use the same price for 24-strand fiber cable whether used in feeder plant or for transport. The FCC-SM used different prices, but there is no evidence to show that the price would be different for fiber used as feeder cable as opposed to its use as transport cable. The change is adopted.

ISSUE 4: WHAT IS THE AVERAGE STATEWIDE ECONOMIC COST PER LINE FOR USWC? GTE? COMBINED ALL OREGON INCUMBENT LECs?

GTE stated that its average economic cost for basic service was \$45.07 and that its average actual cost was \$40.80 per line per month. USWC presented evidence on its economic cost per line that ranged from a low of \$23.00 to a high of \$32.49 per line per month, depending on the assumptions made for the costs of money and depreciation life parameters. It recommended adoption of \$28.96 as the cost per line per month for its Oregon territory and \$36.33 for all Oregon ILECs. AT&T estimated the average economic costs for basic service were \$14.52 for USWC and \$15.35 for GTE using the HAI Model, and \$18.08 for USWC and \$23.38 per line per month for GTE using the FCC-SM. Staff calculated USWC's cost to be \$20.48 and GTE's cost to be \$23.11, and a total urban LEC cost of \$21.16 per line per month. Staff calculated that rural LECs have per line costs of \$61.66 per month, and that the average for all Oregon LECs is \$25.73. OECA argues that it would be inappropriate to attempt to establish

the average statewide economic cost per line because the Commission does not need to deal with rural LECs at this time.

Discussion and Resolution

We adopt the cost figures presented by Staff for urban LECs. They result from the economic cost model adopted by the FCC, as adjusted by Staff. Earlier in this order we adopted that platform as the best estimate of costs for this proceeding. The approximate cost of \$21.00 per line per month is a reasonable estimate for the non-rural carriers involved in this proceeding. We will address costs for rural carriers in a future proceeding.

ISSUE 5: WHAT SUPPORT AREAS SHOULD BE DESIGNATED?

A support area is the geographic level at which cost-of-service data is disaggregated and high-cost universal service support is calculated. Staff recommends that the support area be no larger than a wire center. GTE believes support should be tied to the smallest feasible area. GTE recommends that its 58 wire centers be consolidated into 15 support areas where cost differences are not significant, and suggests that a loop cost differential of \$5.00 per line per month would be appropriate. Alternatively, GTE says it can also support Staff's proposal to use the wire center. USWC recommends that we designate a threshold density below which OUS support could be received. The Commission would determine a line-density or customer-density threshold to determine where specific high-cost support areas should be located. Then line density in a one-mile radius circle around individual customer locations would be measured to determine support areas. USWC recommends that we adopt a threshold of 100 lines per square mile and order the mapping of geographic areas to that standard. AT&T and MCI recommend that we designate the entire state as the support area. They contend that a smaller support area is not needed until there is competition for residential local service. OECA recommends that we establish two support areas per wire center.

Discussion and Resolution

We elect to set the support area at the ILEC wire center level. Wire centers are geographically distinct, and allow a reasonable deaveraging of study area costs by urban, suburban, and rural communities. The FCC-SM produces cost aggregation data by wire center areas. The OUS Administrator will be able to verify line counts by wire center without undue difficulty. Selection of the wire center as the support area is a reasonable compromise between the difficulty of administering a support program for very small areas and the need to differentiate between the costs to serve urban, suburban, and rural areas. Adopting an overly large support area would advantage competitors who could provide service in a relatively low cost area but receive support based on the higher average cost in the service area. It would do nothing to replace implicit support with explicit support for high-cost areas. Adopting a support area smaller than a wire center at this time would be burdensome and impractical.

OECA argues that support could be targeted to sub-wire center areas to more precisely identify areas needing support. It states that work on that issue is being conducted in

the state of Washington, and recommends that we defer the issue of targeting support until the work in Washington is completed. We are convinced that establishing the support area at the wire center level is appropriate for starting the OUS Program. In the future, experience in other states, including Washington, can be evaluated as we review our program.

ISSUE 6: HOW SHOULD DIFFERENCES BETWEEN UNBUNDLED NETWORK ELEMENT (UNE) COSTS AND OUS ECONOMIC COSTS BE HANDLED IN TERMS OF OUS FUND DISTRIBUTION?

Staff recommends that OUS support be shared between the ILEC and the competitive local exchange carrier (CLEC) in the following manner:

- For customer lines served by the CLEC's own loop facilities, the CLEC would receive the full OUSF support;
- For customer lines served by a CLEC who is merely reselling an ILEC's supported retail local service, the CLEC would receive no OUS fund support;
- For customer lines served via UNE loops leased from an ILEC, OUS fund support would be divided as follows:

(a) If the composite UNE platform price for basic local service is less than or equal to the benchmark, the ILEC would receive the full support and the CLEC would receive no OUS fund support.

(b) If the composite UNE platform price for basic local service is greater than the benchmark but less than the OUS cost, the CLEC and ILEC would share support based on the relative differences of the UNE platform price and the benchmark (CLEC portion) and of the OUS cost and UNE platform price (ILEC portion).

(c) If the composite UNE platform price for basic local service is equal to or greater than the OUS cost, the CLEC would receive the full OUS support and the ILEC would receive no support.

The UNE platform on which support payments will be divided will include a basic two-wire (or equivalent) loop, a loop connection, end office switching, local transport and tandem switching, intercept, operator assistance, billing and collection, and basic local exchange service specific costs. Staff recommends that end office switching be priced at the ILEC's study area average local exchange dial equipment minutes rate, that local transport and tandem be priced at the ILEC's study area average local exchange usage rate for the respective UNEs, and that extended area service, carrier access, and toll minutes not be included in the calculations. The other parties did not object to Staff's recommendations relating to the pricing of UNE platform services.

USWC proposes that a CLEC receive support directly from the fund only if the CLEC provides the loop using its own plant facilities. When a CLEC purchases a UNE loop, USWC believes the carrier providing the loop plant should receive the support and the UNE rate should reflect the high cost support received. USWC notes that we are currently considering deaveraging UNE rates, and asserts that we must deaverage retail rates in the same manner that we deaverage UNE rates. GTE and OECA basically agree with Staff. AT&T proposes that a CLEC receive support up to the cost of the UNEs used to provide the supported service, and the remainder go to the ILEC.

Discussion and Resolution

No sharing of OUS support is required when UNE prices are equal to or less than the benchmark because the UNE purchaser will pay an amount equal to or less than the amount the Commission has set as a reasonable rate for basic service. Any universal service support should go to the UNE provider to offset the additional costs of providing the underlying facility that makes the provision of service possible. When UNE prices are greater than the benchmark but less than the OUS cost, sharing is appropriate.

We reject the AT&T proposal as to how CLECs and ILECs divide support payments when they both provide portions of a supported basic service. Its proposal would potentially allow a CLEC to receive OUS fund support equal to what it paid the ILEC for the UNE and then offer retail basic services at negligible cost.

We also reject USWC's proposed division of support payments. Its proposal would make it an intermediary between the fund administrator and the CLECs, forcing it to make decisions that it will not be in the best position to make, such as deciding whether the CLEC is an eligible carrier for the specific high-cost area involved and whether the CLEC is using the support for the supported retail services. In addition, not all UNEs are eligible for OUS credits because the credits are type, area, carrier, and retail-service specific. The fund administrator, with information and assistance from our Staff, is the more appropriate entity to make such decisions.

We adopt the division of support payments between ILECs and CLECs proposed by Staff.

ISSUE 7: SCOPE OF OUS SUPPORT

USWC, OECA, GTE, and Staff recommend that residential and business basic local exchange service, both single and multi-line, be supported.⁸ AT&T and MCI contend that universal service support should be limited to primary residential lines. OECA responds that there “is no such thing as primary line service and then a separate service called secondary line service.”

Discussion and Resolution

We agree with USWC, GTE, OECA, and Staff that the OUS Program should support all residential and business basic local exchange lines. It can be argued that support should be limited to primary residential lines on the theory that those who purchase more than one line may not need Universal Service support. However, basic telephone service is provided to customers over both single and multiple lines and OUS support is intended to support basic telephone service. No showing has been made that customers with secondary or multi-line service do not need OUS support. The FCC-SM shows that the cost differences between residential and business lines are not large. In addition, there are practical difficulties if support were restricted to primary lines. It would encourage artificial competition by creating arbitrage incentives, and would encourage arguments about which lines are primary and which are secondary. Including business and multiple lines does not make the fund unacceptably large. At a \$21 benchmark, we estimate that close to four-fifths of the support would go to carriers providing service over primary residential lines.

ISSUE 8: AT WHAT LEVEL SHOULD THE OUS BENCHMARK BE SET?

GTE contends that the benchmark and the rate for local service should be the same, and recommends that the benchmark for GTE be set at its current flat-rated local exchange rates. GTE recommends that we establish one benchmark for residential service and another benchmark for business service. Benchmark rates would include EAS service and be area specific. If we decide not to set the benchmark at GTE's current rates, it recommends that we increase its current rates to match the benchmark. Therefore, if we adopted a benchmark of \$21.00, GTE's residential rate for basic, local service would increase \$8.39 per line from its current \$12.59 to \$21.00. GTE's recommendation is based on its belief that implicit supports must be eliminated immediately from its rate structure.

USWC contends that the benchmark should differentiate between residential and business customers, believing there are affordability differences between the two categories of service. USWC would size the fund first, based on public policy considerations, and then would use the benchmark as the vehicle to size the fund to the predetermined amount.

⁸ GTE's agreement that business multi-line service should receive universal service support extends only to areas where the costs to provide multi-line service exceed current rates.

AT&T recommends use of a revenue benchmark, rather than a cost-based benchmark. AT&T contends that the OUS fund should account for all sources of revenue, so it would include in the benchmark the average study area residential revenues derived from basic exchange services, vertical services, and switched access services. AT&T points out that neither federal action nor ORS 759.425 (SB 622) requires a cost-based benchmark, but leaves that determination to the Commission. AT&T argues that a revenue benchmark would not be inconsistent with the federal benchmark, which is cost-based, because the federal benchmark is designed to equalize rates between states, not within them. If the Commission decides to include business services, AT&T recommends that a specific benchmark be established for each type of service.

OECA recommends that we focus on the affordability of telephone service between rural and urban areas. Staff recommends that a statewide, cost-based benchmark be established at the composite forward-looking economic cost produced by the FCC-SM for USWC and GTE. Staff would not differentiate between residential and business classes of service or between primary, secondary, and multi-line services. The specific composite benchmark Staff recommends is \$21.00 per month.

Discussion and Resolution

The composite average economic cost of service for Oregon's two major local exchange carriers, GTE and USWC, makes a good surrogate for an affordable rate for basic local exchange service. Support is needed in wire centers with costs higher than average to encourage the development of competition. Competition to provide service in high cost areas will develop only if potential competitors think it is profitable to serve those areas. Providing universal service support to the high cost areas will help supply the needed incentives. The support will be portable and available to all eligible telecommunications carriers.

A cost-based benchmark to size the fund will be a more stable platform than would a revenue- or rate-based benchmark. Customer rates and company revenues are dynamic and subject to change in short periods of time. Costs to provide service also change over time, but are less likely to change quickly as the result of increased competition and changes in the industry. We agree with USWC and GTE that using a revenue benchmark would leave implicit support in current rates as the basis for funding the Oregon universal service program. Vertical service revenues would be used to implicitly support universal service obligations.

We will be comparing an average composite cost to the costs of serving high cost areas, making a cost-to-cost comparison of relevant information. Also, it will be more practical to establish the benchmark with reference to the average composite cost for the major ILECs as determined in a reasonable cost model than to determine and track revenues and rates for the LECs. The average will be a composite, and we see no need to establish different benchmarks among lines providing residential or business service or whether there is one or more lines connected to a customer.

This approach is more in line with our immediate goal to target high-cost areas for support, rather than to find services implicitly supporting other services and offsetting that implicit support with universal service support dollars. Telephone rates should be affordable throughout the state, and we want to encourage competition statewide, including areas that are more expensive to serve. Our goal is not merely to offset implicit support built into the present pricing regime, but to target high cost areas for support. We also are engaged in efforts to remove implicit support as the industry moves to greater competition, but our primary goal in sizing this universal service fund is to provide support to high cost areas.

ORS 759.425 (SB 622) directs us to “seek to limit the difference between the price a telecommunications utility may charge for basic telephone service and the benchmark.” Use of the phrase “seek to limit,” rather than “shall eliminate,” is an indication that the legislature understood the flexibility we need, in both time and method, to replace implicit supports with explicit supports as the industry embraces competition. We intend to rebalance telephone rates after this order issues. We will address issues about how rates should be structured in those proceedings. We will seek to minimize the difference between the price for basic telephone service and the benchmark. However, we must keep in mind other considerations, such as the affordability of basic telephone rates -- ORS 759.425 (SB 622) also directs us to ensure that basic telephone service is available at a reasonable and affordable rate. In this proceeding, we are establishing a benchmark in order to size the universal fund. The universal service fund will bridge the gap between the cost of providing basic telephone service in high cost areas and the benchmark (less federal compensation amounts detailed elsewhere in this order).

We establish the benchmark at \$21.00 per month for all types of telephone lines.

ISSUE 9: WHAT SPECIFIC FORMULA SHOULD BE USED FOR COMPUTING THE OUS SUPPORT AMOUNT IN ORDER TO COMPLEMENT THE FEDERAL HIGH-COST UNIVERSAL SERVICE FUND?

Staff proposes the following formula to calculate the OUS support per line per month: Support equals the economic cost per switched access line, less the benchmark, less the federal Universal Service Fund amount per line, less the federal compensation per line (reduced by the Long Term Support (LTS) amount per line). The economic cost per switched access line would be the average forward-looking cost produced by the FCC-SM at the wire center level. It would exclude usage costs associated with extended area service and interexchange toll/access. The benchmark would be the statewide amount we set for basic local exchange service. The federal Universal Service Fund amount is a study area amount prorated to the wire center; however, Staff assumes no federal Universal Service Fund amounts will be paid to Oregon’s two non-rural telecommunications carriers. The federal compensation per line is 25 percent of the embedded loop cost, and is comprised of the subscriber line charge (SLC), the presubscribed interexchange carrier charge (PICC), and the carrier common line charge (CCLC); the LTS amount per loop would be subtracted from the federal compensation per line to avoid double counting the LTS amount.

GTE proposes the following formula to calculate the Oregon intrastate universal service fund: First, identify each support area where the cost of providing supported services exceeds the affordable rate, and multiply this cost-price difference by the affected number of lines. Second, identify the implicit support levels in both intrastate and interstate rates. Third, deduct any federal interstate support for such service. Fourth, add the costs of any state-mandated support programs, such as Lifeline and Link-Up. Fifth, add the administrative costs associated with the universal service programs. GTE also recommends that the Commission seriously consider increasing local exchange rates to limit the fund size and limit the difference between local exchange rates and the benchmark.

USWC says the Staff formula is appropriate except that it undersizes the fund by failing to follow the FCC's separations process. AT&T and MCI recommend that the need for any state subsidy be determined by reducing the statewide average forward-looking economic cost per line of an ILEC by the statewide average revenue benchmark per line for that ILEC, reduced by any federal universal service receipts. They would include in the revenue benchmark revenues from basic local exchange service, extended area service, discretionary services, and access and toll services. They also would offset any support amount by revenues received from directory and operator services and Yellow Page advertising.

Discussion and Resolution

ORS 759.425 (SB 622) states that the “universal service fund shall provide explicit support to an eligible telecommunications carrier that is equal to the difference between the cost of providing basic telephone service and the benchmark, less any explicit compensation received by the carrier from federal sources specifically targeted to recovery of local loop costs and less any explicit support received by the carrier from a federal universal service program.”

Staff’s recommended formula follows the statutory mandate quoted above. It defines the OUS formula to equal the economic cost per line, minus the benchmark, minus the federal Universal Service Fund support, minus the net federal loop compensation. GTE’s recommended formula expands on the directive of ORS 759.425 (SB 622) by including other implicit and explicit costs in the universal service amounts to be paid to carriers. AT&T’s recommended formula does not follow the mandates of ORS 759.425 (SB 622) and calculates revenues, rather than expenses, as the starting point for determining support amounts. Elsewhere in this order we have adopted cost as the basis from which support amounts are determined.

We adopt the formula recommended by Staff. It is the only one that completely follows the mandates of ORS 759.425 (SB 622) and produces a fund that is adequate and competitively neutral. We have adopted the concept that the formula should compare average costs, as represented by the benchmark, to costs for high-cost wire centers. After subtracting federal revenues, the difference is what we should establish as the support for the high-cost areas. We prefer that method to attempting to identify implicit supports currently in various service categories and offsetting them with support amounts, as GTE advocates. Adopting a methodology that looks at the costs of a reasonably efficient generic carrier gives incentives to carriers to be as efficient as possible. That approach sends appropriate signals to the industry

about the efficient allocation of resources. It furthers our goal to make telecommunications rates both affordable and reasonably comparable across high-cost and urban areas. It also provides a better gauge to identify areas that need support. We will discuss in Issue 10 USWC's argument that Staff's formula is appropriate except that it understates the fund by failing to follow the FCC's separations process.

ISSUE 10: WHAT IS THE SIZE OF THE OUS FUND IN ANNUAL DOLLARS?

The OUS fund must be large enough to provide meaningful support to high-cost areas, yet not so large that it makes basic telephone service unaffordable. In the words of USWC, "creation of the fund involves balancing the public policy concerns of ensuring that competition reaches high cost and rural areas while, at the same time, avoiding shifting an undue financial burden onto consumers in other areas of the state." The parties' recommendations about the appropriate size of the fund necessarily follow from their proposed cost study format and inputs.

USWC believes that we should determine the fund size on public policy considerations, and then distribute the fund according to its Simplified Methodology. USWC does not recommend a specific fund size for all Oregon ETCs. It contends that Staff's calculation of the fund size "is within striking distance of a reasonably sized fund." USWC would change some inputs to Staff's version of the FCC-SM and contends that Staff's calculation of the federal support is higher than it should be. USWC says that if we adopt the Staff's calculation of the fund size, we must increase the fund by \$2.7 million to account for USWC's plant mix and cost sharing experience and by \$12 million to properly account for the FCC federal/state separations process.

GTE contends that it should receive \$47.7 million in annual OUS support, based on its calculation of its actual costs. GTE states that it should receive \$66.4 million if its economic cost study results are used instead of its actual costs. GTE estimates that a surcharge of 9.7 percent of intrastate and interstate revenues would be needed to pay for the fund it recommends, assuming the \$47.7 million figure and the inclusion of wireless carriers.

Staff recommends adoption of its estimated fund size of \$38.9 million for non-rural carriers, based on the number of lines at year-end 1998 for USWC and GTE. Staff estimates that the fund size could be \$42.8 million by the time it is implemented. The recommendation is based on a benchmark of \$21.00, a support area set at the wire center level, use of the OUS formula recommended by Staff, adoption of the cost study recommended by Staff, and provision of OUS support to both residential and business basic exchange service. Wireless revenues and the costs of administration of the program are not included in Staff's numbers.

AT&T and MCI argue that no fund is necessary because revenues exceed costs according to their study area (statewide) analysis. They contend that all federal loop compensation amounts, which are calculated on an average basis for all loops, should be subtracted from the gross OUS fund amount to arrive at a proper fund size. The subtraction

would result in a fund of \$0.00. They contend that federal loop compensation adequately compensates ILECs for universal service purposes.

Discussion and Resolution

USWC argues that we should increase the fund size recommended by Staff by two amounts if we decide to adopt Staff's approach. In the first instance, USWC argues that \$2.7 million should be added to the fund to account for USWC's plant mix and cost sharing experience. We rejected USWC's positions on those subjects in Issue 3 above. In the second instance, USWC argues that we should increase the fund by \$12 million to properly account for the FCC federal/state separations process. We now discuss why we reject USWC's argument.

ORS 759.425 (SB 622) requires that OUS support equal the difference between the cost of providing basic telephone service and the benchmark, less (1) any explicit compensation received by the carrier from federal sources specifically targeted to recovery of local loop costs, and (2) any explicit support received by the carrier from a federal universal service program. Part (2) is not relevant here because Oregon's two non-rural carriers will not receive any federal universal service support. In the part (1) category are the SLC, the PICC, and the CCLC. Staff calculated the support amount by starting with the per-line cost and subtracting the benchmark and the total of the SLC, PICC, and CCLC charges. USWC contends that the federal loop compensation mentioned in ORS 759.425 (SB 622) encompasses a "76/24 percent allocation factor." USWC would multiply the excess of the economic cost over the benchmark by 76 percent. There is a federal 76/24 percent allocation factor, but it is in conjunction with the federal universal service program, not the recovery of loop costs. Oregon non-rural carriers will not receive federal universal service support, so the 76/24 percent factor does not apply to a calculation of the OUS fund.

AT&T and MCI contend that no fund should be created because ILEC revenues exceed costs and any new subsidy would create a windfall for USWC and GTE. The problem with their argument is that there will not be new streams of revenue added to revenue already received by local exchange carriers. The telephone utilities will file revenue-neutral tariffs to offset the support received pursuant to the OUS Program. The OUS Program will not bring them an additional source of income to increase their profits. AT&T and MCI also argue that all federal loop compensation amounts should be used to offset universal service costs when computing the fund size. Federal loop compensation is not portable between wire centers, so high-cost and low-cost loops are allocated the same compensation amount. Adoption of the argument advanced by AT&T and MCI would continue the current system of implicit subsidies by low-cost areas to high-cost areas.

We reject the contention of AT&T and MCI that the appropriate universal service fund amount is \$0.0. The traditional system of implicit support of some services by other services simply cannot continue in a competitive market. We are creating a universal service program that reduces the implicit support regime in place now and establishes a fund to explicitly support high-cost lines. We also reject GTE's calculation of a fund of \$47.7 million

for it based on its actual costs. Its calculation is not for an efficient generic carrier, and we rejected its formula for calculating the fund amount in Issue 9 above.

We adopt the fund size recommended by Staff. Staff's recommendation is the only one that accommodates the other decisions we have made in this order. It appropriately targets high-cost wire centers. A fund size of \$38.9 million translates into an average cost of approximately 2.1 percent of retail telecommunications revenues. These are estimates based on current information filed with us about the rates and revenues of non-rural telecommunications companies we regulate. Regulatory actions involving USWC and GTE could change the estimates somewhat, perhaps increasing the fund to \$42.8 million and increasing the retail revenue percentage to 2.5 percent.

A surcharge between two and two-and-a-half percent of revenues is reasonable and will not make telephone service in Oregon unaffordable. It will, however, provide needed funding to support service in high-cost areas. We expect to establish the actual numbers at a Public Meeting in advance of the rate going into effect.

ISSUE 11: HOW SHOULD TELECOMMUNICATIONS CARRIERS RECOVER PAYMENTS TO THE OUS FUND?

Staff recommends that we establish a uniform percentage surcharge on retail telecommunications revenues sold in Oregon, regardless of where the billing address is located. The surcharge would apply to all intrastate and interstate services rendered in Oregon. Staff recommends that the surcharge be listed as a separate line item on customer bills in language approved by the Commission. Staff would make the surcharge optional, allowing the carriers to either charge it or not, as they see fit. Those who impose the surcharge would have to use the Commission-approved language and the percentage adopted by the Commission. Staff's proposed language is as follows: "Oregon Universal Service Surcharge (*Percent Amount*) Percent" followed by the computed dollar amount.

Staff would include in the services subject to the surcharge retail service provided or rendered in Oregon. Generally, the service address where the service is rendered is the one that counts. Long-distance services are generally provided where the call originates, except for "800" type calls, where it is the location of the termination of the call. For retail private line and special access services, the important service address is the customer location where each leg of the service is terminated. Meet-point billing practices prevail in Oregon, in which each provider bills for its component of the service.

USWC agrees with Staff. GTE agrees generally with Staff but argues that the surcharge should be mandatory and that wireless providers should be required to contribute to the fund. AT&T and MCI recommend that we establish a mandatory end user surcharge imposed by regulated telecommunications carriers on Oregon intrastate retail services, net of uncollectables.

Discussion and Resolution

ORS 759.425 (SB 622) establishes a uniform percentage surcharge on retail telecommunications revenues sold in Oregon. It does not make the surcharge mandatory, and we see no reason to make it mandatory. In our regulation of utility companies, we try to give as much freedom to them as possible, believing that competition can be an effective force in the marketplace. To the extent it is consistent with our obligation to secure adequate service at reasonable rates for Oregon customers, we do not tell those we regulate how to conduct their business. Giving telecommunications carriers the freedom to collect or not collect the surcharge is consistent with that philosophy. The surcharge will be optional, but if imposed must be imposed in the percentage we establish, and must be explained on the bill as directed by the Commission. A decision to forego imposition of the surcharge will not change the carriers' obligations to contribute to the OUS fund.

We note that the Joint Board recommends that both the FCC and the states include both intrastate and interstate revenues in their calculation of universal service obligations under the Telco Act.⁹ Previously in this docket we excluded interstate revenues from the OUS revenue base. The theory was that the federal universal service program would tap interstate revenues and the Oregon universal service program would tap intrastate revenues. We could have applied the fund to all telecommunications revenues in Oregon, but we liked the symmetry of the intrastate/interstate federal/Oregon division of revenues on which to base the fund. However, because of significant changes that have occurred since our previous decision, we now decide to establish a base that includes both intrastate and interstate revenues.

The federal universal service program is now operational. It is designed to establish reasonably comparable rates among the states rather than within individual states. The latter job has been left to the states. We do not anticipate Oregon non-rural telecommunications companies receiving federal universal service support for high-cost areas. The linkage between the federal and state universal service programs is not as close as we anticipated when we made our earlier decision.

ORS 759.425 (SB 622) does not limit the surcharge to intrastate retail revenue, but establishes it for "all retail telecommunications services sold in this state." Both intrastate and interstate telecommunications services are sold in Oregon. Telecommunications services sold in Oregon are rendered between LATAs (local access and transport areas) and between Oregon locations and locations in other jurisdictions. The portions sold in Oregon should be included in the OUS Program. We construe the legislative intent to include both intrastate and interstate revenues from telecommunications services sold in Oregon. ORS 759.425 (SB 622) does not limit the surcharge to regulated telecommunications carriers, but speaks in terms of telecommunications services sold in Oregon.

⁹ Second Recommended Decision, *Federal-State Joint Board on Universal Service*, CC Docket Nos. 96-45, 13 FCC Rcd 24744 ¶ 63 (Nov. 25, 1988).

AT&T and MCI vigorously argue that recovery of contributions to the OUS fund should be restricted to intrastate services. They cite the historical difference between intrastate and interstate telecommunications regulations and make legal arguments contending that the Commission lacks the jurisdiction to include interstate revenues sold in Oregon in the recovery mechanism. We are not persuaded that we lack the authority to make any decision that involves interstate telecommunications in Oregon. Our decision here does not burden or rely on the federal universal service program to fund the OUS Program, as prohibited by the Telco Act. The surcharge will be modest in size and apply equally to telecommunications revenues sold in Oregon. Both intrastate and interstate telecommunications services sold in Oregon will benefit from the OUS program and should share in contributing to the program. This is particularly reasonable in light of the FCC's decision that the federal universal service program will not provide any high-cost support to Oregon non-rural carriers, meaning that Oregon telecommunications services will have to provide all the universal service support.

ORS 759.425 (SB 622) exempts wireless carriers from contributing to the OUS fund, unless they elect to participate and receive eligibility authority from the Commission. GTE argues that the Telco Act requires all telecommunications carriers to participate in the program, including wireless carriers. It contends that the Telco Act preempts ORS 759.425 (SB 622) and requires us to order wireless carriers to contribute to the OUS fund. It is debatable whether the Telco Act necessarily includes telecommunications services provided by wireless carriers and whether the Act preempts state law. ORS 759.425(7)(a), on the other hand, specifically addresses wireless carriers, allowing them to opt into the program if they desire. We elect to follow the mandate of ORS 759.425(6) and reject GTE's position to include wireless carriers as a group.

ISSUE 12: SHOULD ELIGIBLE TELECOMMUNICATIONS CARRIERS PERFORM RATE REBALANCING BASED ON OUS FUND DISTRIBUTION?

The parties agree that a revenue-neutral filing should be made by telecommunications utilities to offset OUS support amounts received. USWC notes that some of the OUS funds received could be used for up-front infrastructure investments designed to meet universal service requirements. AT&T argues that the first priority for rebalancing rates should be to reduce switched carrier access charges. GTE contends that current prices for services that are higher than their economic cost should be reduced on a dollar-for-dollar basis. GTE cites access, toll, vertical services, and multi-line business services in that category. Staff would require USWC and GTE to make revenue-neutral filings to offset universal service payments. Staff would restrict the filing requirement to telecommunications utilities, noting the Commission's lack of rate regulation for other companies. Staff suggests several areas for price reductions, including line extension charges, business rates, and vertical service rates. However, Staff suggests that the best time to decide how the rebalancing should be accomplished would be when the carriers make their tariff filings to accomplish the rebalancing.

Discussion and Resolution

We agree that a revenue-neutral filing by telecommunications utilities is necessary when they start receiving OUS support. It would be unconscionable to allow them to receive explicit universal support while continuing the same level of implicit support. However, the best time to decide exactly what service rates should be changed will be when the companies make their tariff filings. They and other parties will have an opportunity to analyze the issues in depth and make their arguments during the rate-rebalancing process. That, in turn, will provide a more complete record on which we can make the most appropriate decisions.

We therefore direct telecommunications utility companies in Oregon to file with the Commission by September 1, 2000, revenue-neutral tariffs to offset universal service receipts. The tariffs should be filed to be effective when the utility companies begin receiving universal service support payments from the fund Administrator.

ISSUE 13: WHAT IS THE APPROPRIATE ACCOUNTING FOR TELECOMMUNICATIONS CARRIERS TO RECORD FEDERAL AND STATE UNIVERSAL SERVICE FUND CONTRIBUTIONS AND DISTRIBUTIONS?

Transactions involving the payments made by telecommunications carriers to the OUS fund Administrator, the support received by eligible carriers from the Administrator, and recovery of those payments from end users must be entered in books of account. The parties do not agree about how to record the recovery from their customers of contributions to the universal service fund.

We decided in Phase III of this proceeding to adopt a mechanism whereby carriers may start collecting funds from their customers prior to sending universal service funds to the Administrator. Staff recommends that recovery by carriers from their customers be recorded in revenue accounts against which the surcharge was applied. GTE and USWC consider themselves to be merely passing through universal service funds to the Administrator, and recommend that recovery amounts be recorded in a liability account on the balance sheet, rather than as revenue on the income statement.

Discussion and Resolution

The recovery from customers of universal service contributions will not necessarily be strictly a pass-through arrangement. Carriers will have the option to recover their contributions through a customer surcharge, or to deal with their contributions in other ways. We need to adopt an accounting procedure that will accurately record recovery amounts no matter how collected. The income statement method of accounting will provide a consistent method for recording recovery amounts whether through a surcharge or another method. Recovery amounts must be recorded to revenue accounts.

Accounting for contributions to the administrator by carriers and support amounts received from the administrator will be treated according to generally accepted accounting practices and FCC guidelines.

ISSUE 14: WHAT SHOULD BE THE CRITERIA FOR DESIGNATING ELIGIBLE TELECOMMUNICATIONS CARRIERS?

In Order No. 97-481 we designated the 34 Oregon ILECs as eligible carriers for federal Universal Service Fund and Oregon Telephone Assistance Program purposes. We now address what criteria should be established for any carrier to be eligible to participate in the OUS program.

Section 214(e) of the Telco Act provides that a common carrier designated as an ETC has two basic duties: it must offer the services supported by the federal universal service program either using its own facilities or a combination of its own facilities and resale of another carrier's services; and it must advertise the availability of those services and the charges for them using media of general distribution. In its universal service order the FCC adopted those duties as the criteria for qualification as an ETC for the federal program. We used the same criteria when we designated ETCs for the federal program in Order No. 97-481. The Telco Act and the FCC constrained us to use those criteria for designation of ETCs for the federal program, but authorize us to establish additional criteria for a state universal service program. The Telco Act Section 254(f) provides that a state "may adopt regulations to provide for additional definitions and standards to preserve and advance universal service within that State only to the extent that such regulations adopt additional specific, predictable, and sufficient mechanisms to support such definitions or standards that do not rely on or burden Federal universal service support mechanisms."

Staff recommends that we adopt eligibility requirements for the OUS program based on federal requirements and requirements specific to Oregon. Staff recommends that to qualify as an ETC under the OUS program, the carrier must:

1. Offer, throughout the designated service area, services we have defined to be basic local exchange services, using the carrier's own facilities, leased UNE facilities, or a combination of its own or leased facilities and resale of another carrier's retail services;
2. Advertise in media of general distribution throughout the designated service area the availability and prices of supported basic local exchange services;
3. Offer the Oregon Telephone Assistance Program (OTAP), in compliance with Oregon Administrative Rules 860-033-0001 through 860-033-0046;
4. Not deny or disconnect basic local exchange service to an OTAP customer for failure to pay for toll charges;

5. Not require a deposit from OTAP customers who voluntarily elect to receive toll-blocking service;
6. Accept the duty to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers;
7. Not install network features, functions, or capabilities that do not comply with the Telco Act's requirements for access by persons with disabilities and coordination for interconnectivity;
8. Not prohibit or impose unreasonable or discriminatory conditions or limitations on the resale of telecommunications services;
9. Provide, to the extent technically feasible, number portability in compliance with FCC rules;
10. Provide dialing parity to other telecommunications providers;
11. Provide access to rights-of-way to other telecommunications providers; and
12. Establish reciprocal compensation arrangements for the transport and termination of telecommunications.

The eligibility requirements would apply to geographic service areas. Staff recommends that each carrier already designated as an ETC for the federal program also be designated as an ETC for the OUS program. Any CLEC wanting ETC status would file a petition with the Commission showing it qualifies as an eligible carrier and stating the service areas for which eligibility is requested.¹⁰ The Commission would then consider the petition in a Public Meeting, and either grant the petition or suspend it for investigation.

USWC points out that the Telco Act allows states to determine the criteria for state funding. USWC recommends that we adopt the FCC eligibility criteria and add two additional criteria implied in the Telco Act. USWC asks us to require ETCs to offer the services supported by the universal service mechanism on a stand-alone basis at an affordable rate. The ETC could offer a wider package of services, but would be required to offer the basic services on a stand-alone basis. USWC also asks us to impose duties similar to those required of a carrier of last resort, such as providing service to anyone requesting service in its service area. That would include the duty to build its own facilities when no other facilities are available. The ETC could resell services available from other carriers, but could not require another carrier to build new or additional facilities.

¹⁰ The petitioning carrier would also serve a copy of its petition on the carriers already providing local exchange service in the service areas for which eligibility is being requested.

GTE contends that any carrier that assumes the obligations of a carrier of last resort should be eligible to receive universal service support. It contends that we should require an ETC to offer supported services at rates that do not exceed Commission-set affordable rates. GTE agrees with USWC that eligible telecommunications carriers should be required to provide a stand-alone package of basic, supported services. GTE also states that we may want to adopt a set of minimum quality standards for all telecommunications carriers. AT&T and MCI recommend that we adopt the criteria established by the Telco Act, and not impose additional criteria.

Discussion and Resolution

We adopt the criteria established by the Telco Act and the FCC, as well as the additional criteria and the process recommended by Staff. We also adopt the requirement proposed by USWC and GTE that ETCs must offer supported services on a stand-alone basis. Supported services should not be available only as part of an expensive package of services. We also adopt USWC's proposal that an ETC must build its own loop facilities to serve a customer where no facilities currently exist. ETCs must accept responsibilities to serve all customers in the areas in which they receive universal service support. Carriers meeting these requirements will be capable of providing quality basic service to all persons in the territories for which they qualify as ETCs.

We addressed the service quality issue in a previous order issued in this docket, and will not address it again in this order. *See* Order No. 98-094. We are addressing service quality issues for retail telecommunications services in Docket No. AR 375.

We reject the suggestion that we regulate the rates of non-utility company ETCs. We see no authority for us to regulate the rates of non-utility telecommunications carriers in the Telco Act, ORS 759.425 (SB 622), or elsewhere. In addition, we have no desire to extend rate regulation into markets that are expected to be competitive and to offer numerous choices to the public.

CONCLUSIONS

In this order we have resolved the issues necessary to establish the Oregon Universal Service program so the program can now commence operation. Our decisions here comply with ORS 759.425 (SB 622) and Telco Act requirements, implement policies we adopted in previous orders in this proceeding, and complement the federal universal service program.

ORDER

IT IS ORDERED that the Commission hereby adopts the policies and decisions announced above.

Made, entered, and effective _____.

Ron Eachus
Chairman

Roger Hamilton
Commissioner

Joan H. Smith
Commissioner

A party may request rehearing or reconsideration of this order pursuant to ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements of OAR 860-014-0095. A copy of any such request must also be served on each party to the proceeding as provided by OAR 860-013-0070. A party may appeal this order to a court pursuant to ORS 756.580.

UM 731

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ORDER NO.

ENTERED

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 731
Phase IV

In the Matter of the Investigation of)
Universal Service in the State of Oregon.)

ORDER