

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the matter of)	
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Federal-State Joint Board on)	
Universal Service)	CC Docket No. 96-45
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ORDER ON RECONSIDERATION

Adopted: December 4, 2003

Released: December 5, 2003

By the Chief, Wireline Competition Bureau:

I. INTRODUCTION AND BACKGROUND

1. In this Order, we deny petitions filed by the Maine Public Utilities Commission (Maine Commission) and the Verizon Telephone Companies (Verizon) seeking reconsideration of the Wireline Competition Bureau's (Bureau) decision to upgrade the computer language of its forward-looking cost model (the model) and to correct programming errors identified by interested parties.¹

2. The Commission uses the model to estimate forward-looking costs for purposes of calculating non-rural high-cost support.² In January 2003, pursuant to its delegated authority, the Bureau released the *Delphi Order*, which upgraded the model from Turbo-Pascal computer language to Delphi computer language.³ The Bureau also found that certain technical corrections identified by interested parties were necessary to ensure that the model operates as designed in the *Fifth Report and Order*.⁴ The Bureau evaluated the effects of upgrading and correcting the model before implementing technical changes. As explained in the *Delphi Order*, two particular corrections affected the model's cost estimates. First, a correction was made to locate drop terminals using the 360 feet square grid cell

¹ *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Order, 18 FCC Rcd 41 (Wireline Compet. Bur. Jan. 7, 2003) (*Delphi Order*); Maine Public Utilities Commission Petition for Reconsideration, filed March 12, 2003 (Maine Petition); Verizon Telephone Companies Petition for Reconsideration, filed March 12, 2003 (Verizon Petition).

² See *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Fifth Report and Order, 13 FCC Rcd 21,323 (1998) (*Fifth Report and Order*).

³ *Delphi Order*, 18 FCC Rcd at 41, para. 1, 44-45, paras. 7-8.

⁴ *Delphi Order*, 18 FCC Rcd at 45-46, para. 9-11; See *Fifth Report and Order*, 13 FCC Rcd at 21329, para. 13 (delegating to the Bureau "the authority to make changes or direct that changes be made as necessary and appropriate to ensure that the model platform of the federal mechanism operates as described in this Order.").

assumption adopted in the *Fifth Report and Order*, rather than 1000 feet square grid cells.⁵ This correction places drop terminals closer to customer locations and results in an overall decrease in distribution cable and structure costs.⁶ Second, coding errors that caused the model to read the wrong row of input tables for drop terminal, manhole, and service area interfaces (SAIs) costs were corrected.⁷ These coding errors caused the model to retrieve incorrect values for these outside plant inputs, and correcting them generally results in higher costs in wire centers with higher population densities.⁸ The combined effect of these technical corrections was to increase the nationwide average cost slightly, but the effect on modeled statewide average cost varied by state.⁹

3. The Maine Commission requests reconsideration of the *Delphi Order*. It contends that the technical corrections discussed in the *Delphi Order* are not sufficient to explain changes in the model's cost estimates, and that the changes must have been caused by "unidentified but powerful alterations in either the structure of the . . . model itself or in the parameters under which it was run."¹⁰ In particular, the Maine Commission asserts that the correction in the model's location of drop terminals had a relatively small effect on cost estimates because drop terminal costs account for only a small amount of total investment, and that other, unidentified modifications must be responsible for larger changes in feeder and distribution investment.¹¹ The Maine Commission contends that the overall effect of these unidentified changes is biased against states with less dense wire centers, such as itself.¹² In addition, the Maine Commission argues that the Bureau should not implement the *Delphi* version of the model with incorporated technical improvements until it provides interested parties a meaningful opportunity to test the Bureau's support calculations using that version of the model.¹³

4. Verizon requests that the Bureau reconsider the *Delphi Order* and defer implementation of any changes to the model until the Bureau has provided interested parties with a meaningful opportunity to understand and comment on them.¹⁴ Verizon states that it has been unable to validate the Bureau's finding that the technical corrections discussed in the *Delphi Order*, not the translation to *Delphi* computer language, impacted cost estimates generated by the model.¹⁵ Verizon complains that the Commission's web site does not provide the tools needed to isolate individual changes or to run sensitivity analyses of various changes, and that the Bureau has not made public, data underlying its

⁵ *Delphi Order*, 18 FCC Rcd at 45, para. 10; *See Fifth Report and Order*, 13 FCC Rcd at 21370, para. 20. An earlier version of the model used grid cells that were 1000 feet square, but the drop length in the model algorithm was not adjusted when the Commission adopted a 360 feet square grid cell assumption in the *Fifth Report and Order*.

⁶ *Delphi Order*, 18 FCC Rcd at 45, para. 10.

⁷ *Id.*

⁸ *Id.* at 45, para. 11

⁹ *See id.* ("The statewide average cost per line increases in states containing wire centers with higher density zones because such service areas require more underground structure, larger SAIs, and larger drop terminals. By contrast, the average cost per line for states containing wire centers with lower density zones decreases, relative to the nationwide average, because their service areas require less underground structure, smaller SAIs, and fewer large drop terminals.").

¹⁰ Maine Petition at 3.

¹¹ *See id.* ("[t]here were other changes to feeder and distribution lengths and to feeder and distribution investment, but of unknown origin").

¹² *See id.* at 3-4.

¹³ *See* Maine Commission Petition at 4.

¹⁴ *See* Verizon Petition at 1-2.

¹⁵ *See id.* at 1-3, 4-5.

own analysis in the *Delphi Order*.¹⁶ Verizon contends that its request for reconsideration is particularly important because using the Delphi version of the cost model with incorporated technical changes to estimate costs will cause non-rural high-cost support to either decline or be eliminated for certain Verizon East states.¹⁷

II. DISCUSSION

5. We deny the petitions for reconsideration of the *Delphi Order* filed by the Maine Commission and Verizon. After review of the arguments presented on reconsideration, we conclude that neither the Maine Commission nor Verizon have provided any new information or arguments that require us to alter our decision to use the Delphi version of the cost model for calculating and targeting support for non-rural carriers. We continue to believe that the technical corrections incorporated into the Delphi version are necessary and appropriate to ensure that the cost model operates as designed in the *Fifth Report and Order*.

6. We are not persuaded by the Maine Commission's argument that unidentified modifications are responsible for changes in cost estimates generated by the corrected Delphi version of the model. This argument appears to be premised on the assumption that the cost impact of the drop terminal location change is limited to drop terminal costs, which represent a small portion of overall network investment. But, contrary to that premise, correcting the placement of drop terminals has a broad impact on several loop cost categories. The correction affects loop cost estimates because it alters how the model's optimization routines design outside plant in a wire center. Specifically, by locating drop terminals closer to customer locations, the technical correction decreases the routing distance of distribution cable, which potentially changes length and size of cable, distribution structure, and type of plant used in the loop. In turn, all costs associated with these changes are affected. Further, the correction in drop location may also impact feeder costs depending on the characteristics of the wire center.¹⁸ The correction's effect on loop cost estimates also may be greater in some wire centers due to topography, population density, or other features. Explaining the exact nature of this impact in a particular wire center requires a detailed examination of such features and their effects on the model's optimization routines.¹⁹ The model utilizes a complex process to estimate costs for over 11,000 wire

¹⁶ See *id.* at 1, 3-4. Verizon also states that it has been unable to replicate per-line cost estimates that were provided in Attachment A of the *Delphi Order*. See *id.* at 4. Attachment A of the *Delphi Order* compares cost estimates generated by the Turbo-Pascal version of the model with cost estimates generated by the Delphi version of the model with incorporated technical corrections using year-end 2000 line counts as input values in each case. See *Delphi Order*, 18 FCC Rcd at 48, Attachment A.

¹⁷ See Verizon Petition at 4-5. Further, Verizon argues that the line count and other limited updates proposed in the Bureau's January, 2003 *Line Counts Public Notice* would exacerbate this decrease in support. See *id.* at 5-6; *Wireline Competition Bureau Seeks Comment on Updating Line Counts and Other Limited Information Used in Calculating High-Cost Universal Service Support for Non-Rural Carriers*, CC Docket No. 96-45, Public Notice, DA 03-25 (rel. Jan. 7, 2003). We will address Verizon's arguments concerning special access lines and other proposed input updates in a separate, forthcoming order.

¹⁸ In addition, a correction was made to the reporting of feeder distances in the model platform's working files. In the original Turbo-Pascal version of the feeder/distribution module, the output by distribution cluster allocated the total feeder route distance to each cluster by an allocation fraction related to the number of lines and the direct distance of each cluster to the switch. A reporting correction has been incorporated into the Delphi version of the feeder/distribution module to report the direct distance of the cluster center to the switch. This reporting correction is explained in the history.doc file on the Commission's website. Because it involved only a reporting correction, this change did not impact costs. See history.doc file available at <http://www.fcc.gov/wcb/tapd/hcpm/>.

¹⁹ Furthermore, in addition to the corrections discussed in the *Delphi Order*, the Delphi version incorporated minor technical corrections that were identified in the history.doc file on the Commission's web site. See *Delphi Order*, 18 FCC Rcd at 45, n. 29; history.doc file available at <http://www.fcc.gov/wcb/tapd/hcpm/>. Based on its evaluation, the

(continued...)

centers, and the Maine Commission's contention that certain results do not obviously or directly conform to expectations does not point to the existence of unidentified modifications.²⁰ At the outset of this process, the Bureau evaluated the effects on costs of upgrading and correcting the cost model, and concluded that results were consistent with the technical corrections discussed in the *Delphi Order*.²¹ Significantly, the cost changes identified in the Maine Petition are consistent with the Bureau's own evaluation and do not point to the existence of unidentified or hidden modifications to the cost model.²² Accordingly, we are not persuaded by the Maine Commission's argument that the *Delphi Order* was in error.

7. We also disagree with Verizon and the Maine Commission that the Bureau failed to provide a meaningful opportunity for comment on the corrected Delphi version of the model. Initially, we note that the Commission's authority to fix technical bugs in the model without notice and comment was upheld by the United States Court of Appeals for the Tenth Circuit in the *Qwest* decision.²³ In any event, the Bureau provided ample opportunity for interested parties to review and comment on the impact of upgrading and correcting the model before adopting the *Delphi Order*. It posted a beta Delphi version on the Commission's web site, accompanied with instructions on how to run it, in June 2001.²⁴ At the same time, it issued a public notice asking for comment on whether to use the posted Delphi version to calculate non-rural high-cost support, and explaining that it would continue to work with interested parties to refine and update the posted Delphi version.²⁵ Several parties submitted responsive comments, and the corrected Delphi version incorporating many of the parties' comments was posted on the Commission's web site as of August 31, 2001.²⁶ In particular, each technical correction discussed in the *Delphi Order* was identified by an interested party, and no party questioned

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Bureau concluded that these corrections did not impact model cost estimates, but in particular instances these corrections could interact with the drop terminal location change and lead to results that cannot be directly related to any particular technical change without a detailed analysis. *See id.*

²⁰ Although petitioners maintain that the impact is biased against certain eastern states served by Verizon, the Bureau explained in the *Delphi Order* that this impact is consistent with the nature of the corrections. *Delphi Order*, 18 FCC Rcd at 45-46, at para. 11.

²¹ *Delphi Order*, 18 FCC Rcd at 45-46, paras. 9-11.

²² The Maine Commission also incorrectly asserts that the cost impact of the other type of technical correction explained in the *Delphi Order* was limited to manhole investment. *See* Maine Petition at 2-3. As described in the *Delphi Order*, Bureau staff corrected the coding that caused the model to read the wrong row of input tables for not only manhole costs, but also drop terminal and SAI costs. *See Delphi Order*, 18 FCC Rcd at 45, para. 10. Moreover, because the drop terminal input table also includes costs for indoor SAIs, those costs increased as a result of the input table correction.

²³ *Qwest Corp. v. FCC*, 258 F.3d 1191, 1205-06 (10th Cir. 2001).

²⁴ *See Common Carrier Bureau Seeks Comment on Translation of Cost Model to Delphi Computer Language and Announces Posting of Updated Cost Model*, CC Docket No. 96-45, Public Notice, 16 FCC Rcd 12630 (2001) (*Delphi Public Notice*).

²⁵ *See id.*

²⁶ *See In the Matter of Federal-State Joint Board on Universal Service*, CC Docket 96-45, Comments of AT&T Corp., filed Aug. 13, 2001, at 3, 4; *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket 96-45, Comments of WorldCom, Inc., filed Aug. 13, 2001, at 2, 5; *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket 96-45, Reply Comments of BellSouth Corporation, Qwest Communications, Inc., and Sprint Corporation, filed Aug. 27, 2001, at 2 ("Joint Commenters do not object to investigation of the proposed changes regarding the placement of the drop terminal, the sizing and configuration of lots, the sizing of outside plant equipment, and the elimination of inconsistencies in the model's expense modules").

that these corrections were needed to ensure that the model operates as designed.²⁷ Thus, the process the Bureau employed was an open one, expressly designed to permit the review and input of affected parties.

8. We also find that the Bureau's action was consistent with the criterion that "[t]he cost study or model and all underlying data, formulae, computations, and software associated with the model must be available to all interested parties for review and comment."²⁸ We reject Verizon's claim to the contrary. The model versions the Bureau used in analyzing the cost impact of upgrading and correcting the model were posted on the Commission's web site, and the input data used by the Bureau was available to the public under a protective order.²⁹ Verizon was capable of analyzing the model's computer code and identifying any errors in upgrading its computer language or correcting technical bugs before adoption of the corrected Delphi version, as did other interested parties.³⁰ Verizon continues to have the capability to bring problems or errors to the Bureau's attention.³¹ At this stage of the proceeding, Verizon has the burden of identifying why specific changes to the cost model are inappropriate if it is concerned about the impact of such changes on non-rural support amounts, and it has not met its burden sufficiently to justify reconsideration.³²

9. Finally, we disagree with the petitioners that the Bureau should further delay use of the upgraded and corrected model to calculate non-rural high-cost support. The manner in which the Bureau has proceeded in both the development and the fine-tuning of the model demonstrates its commitment to an inclusive, open, yet cautious approach. As noted above, the technical corrections were not only posted on the website for review by parties, but Bureau staff made itself available to work with parties, such as Verizon, that were initially having difficulty replicating results.³³ Further, in December 2001, the Bureau deferred to a later date the question of whether to transition to the Delphi version of the model with technical corrections in order to allow sufficient time to address concerns about the impact of technical model corrections on support amounts.³⁴

10. When the Bureau adopted the corrected Delphi version of the model more than a year later, in January 2003, it also deferred its implementation in order to enable staff to determine cost estimates under this version, which would afford the Commission the opportunity to consider those estimates in

²⁷ See *id.*

²⁸ Verizon Petition at 3 (quoting *Federal-State Joint Board on Universal Service, First Report and Order*, CC Docket No. 96-45, 12 FCC Rcd 8776, 8915, para. 250 (1997)).

²⁹ See *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Interim Protective Order, 15 FCC Rcd 10183 (Com. Car. Bur. 2000).

³⁰ See *supra* note 26.

³¹ Consistent with its delegated authority "to make changes or direct that changes be made as necessary and appropriate to ensure that the model platform operates as described in [the *Fifth Report and Order*]," the Bureau will continue to work with interested parties to identify instances where the model is not working as intended and develop appropriate modifications. *Fifth Report and Order*, 13 FCC Rcd at 21329, para. 13. To the extent that interested parties wish to analyze previous beta versions of the Delphi cost model, they are free to do so.

³² See *Qwest v. FCC*, 258 F.3d at 1205-06. Although Verizon broadly claimed in its petition that it was unable to replicate the cost estimates attached to the *Delphi Order*, we note that Bureau staff worked with Verizon to assist it in replicating these estimates both before and after the filing of Verizon's petition. See Verizon Petition at 1, 3.

³³ See *id.*

³⁴ See *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Order, 16 FCC Rcd 22418, 22426, para. 22 (Com. Car. Bur. 2001).

the *Ninth Report and Order* remand proceeding.³⁵ The deferral not only provided an additional opportunity for the agency to consider the impact of the model's changes upon support amounts, but also avoided the possibility of two successive changes in support amounts within a relatively short period of time.³⁶ This sequence of events further demonstrates the agency's commitment to ensure that cost support is both specific and predictable, consistent with section 254(b)(5) of the Communications Act of 1934, as amended.³⁷ Under these circumstances, where the agency has proceeded cautiously both in adopting and implementing its technical changes to the model, further delay is not appropriate where there is an absence of any new information or arguments that would demonstrate the existence of errors in the technical corrections.

III. ORDERING CLAUSES

11. Accordingly, IT IS ORDERED that, pursuant to sections 4, 201-205, 218-220, 303(r), and 405 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154, 201-205, 218-220, 303(r), and 405 of the Communications Act of 1934, as amended, and sections 1.106 and 1.429 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.429, that the petitions for reconsideration filed March 12, 2003, by the Verizon Telephone Companies and by the Maine Public Utilities Commission are DENIED.

William F. Maher, Jr.
Chief, Wireline Competition Bureau

³⁵ See *Delphi Order*, 18 FCC Rcd at 46-47, para 12. The Bureau explained that adopting the Delphi version of the model with incorporated technical corrections at that time was appropriate to enable the staff to perform necessary work to determine cost estimates under this version, and to enable the Commission to consider such estimates in conjunction with its consideration of the Joint Board recommendations in the *Ninth Report and Order* remand proceeding. *Id.*

³⁶ See *id.* at 47, para. 12.

³⁷ See *id.*; 47 C.F.R. § 254(b)(5).