

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

In the Matter of)
)
Application of Verizon New England Inc.,)
Bell Atlantic Communications, Inc. (d/b/a)
Verizon Long Distance), NYNEX Long) CC Docket No. 01-9
Distance Company (d/b/a Verizon Enterprise)
Solutions) And Verizon Global Networks Inc.,)
For Authorization to Provide In-Region,)
InterLATA Services in Massachusetts)

MEMORANDUM OPINION AND ORDER

Adopted: April 16, 2001

Released: April 16, 2001

By the Commission: Chairman Powell and Commissioner Ness issuing separate statements;
Commissioner Furchtgott-Roth concurring and issuing a statement; and Commissioner Tristani
dissenting and issuing a statement.

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I. INTRODUCTION

1. On January 16, 2001, Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), and Verizon Global Networks Inc. (Verizon) filed this application pursuant to section

This argument does not suggest that Verizon is not in compliance with current UNE requirements, and therefore is not relevant to our inquiry.

B. Checklist Item 4 – Unbundled Local Loops

1. Background

122. Section 271(c)(2)(B)(iv) of the Act, item 4 of the competitive checklist, requires that a BOC provide “[l]ocal loop transmission from the central office to the customer’s premises, unbundled from local switching or other services.”³⁹³ A BOC has an obligation to provision different types of loops, including “two-wire and four-wire analog voice-grade loops, and two-wire and four-wire loops that are conditioned to transmit the digital signals needed to provide service such as ISDN, ADSL, HDSL, and DS1-level signals.”³⁹⁴

123. In evaluating Verizon’s overall performance in providing unbundled local loops in Massachusetts, we examine Verizon’s performance in the aggregate (*i.e.*, by all loop types) as well as its performance for specific loop types (*i.e.*, by voice grade, xDSL-capable, line-shared and DS-1 types).³⁹⁵ In doing so, we are looking for patterns of systemic performance disparities that have resulted in competitive harm or otherwise denied competing carriers a meaningful opportunity to compete.³⁹⁶ As the Commission has noted in previous section 271 orders, we
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Dkt. Nos. 96-73/74, 96-75, 96-80/81, 96-83, 96-94, Phase 4-P Order at 6 (Jan. 10, 2000)
<<http://www.state.ma.us/dpu/telecom/96-73/UneProvi.htm>>) (emphasis omitted).

³⁹³ 47 U.S.C. § 271(c)(2)(B)(iv). The Commission has defined the loop as a transmission facility between a distribution frame, or its equivalent, in an incumbent LEC central office, and the demarcation point at the customer premises. See *Local Competition First Report and Order*, 11 FCC Rcd at 15691, para. 380; *UNE Remand Order*, 15 FCC Rcd at 3772-73, paras. 166-167, n.301 (retaining definition of the local loop from the *Local Competition First Report and Order*, but replacing the phrase “network interconnection device” with “demarcation point,” and making explicit that dark fiber and loop conditioning are among the features, functions and capabilities of the loop).

³⁹⁴ *Local Competition First Report and Order*, 11 FCC Rcd at 15691, para. 380; *UNE Remand Order*, 15 FCC Rcd at 3772-73, paras. 166-67.

³⁹⁵ Competing carriers in Massachusetts rely principally on three types of unbundled stand-alone loops that support high-speed services: the xDSL loop, the Digital loop and the high-capacity or DS-1 loop. The Massachusetts Department has adopted the New York Commission’s separate loop-type performance measurement categories for xDSL loops (including, but not limited to, loops provisioned for ADSL, HDSL, and SDSL services); Digital loops, which are used by competing carriers to provide xDSL, IDSL or ISDN-like services and high-capacity or DS-1 loops. Commenters in this proceeding do not specifically criticize Verizon’s performance with regard to Digital loops which are a decreasing proportion of all xDSL-capable loops requested by competing LECs. For example, in November of 2000, the measure of missed installation appointments, PR 4-04, captured 1292 xDSL loops compared to 276 Digital loops. The carrier-to-carrier reports also suggest that Verizon’s performance for xDSL loops is similar to its performance for Digital loops. We analyze high-capacity or DS-1 loops separately at the end of this section.

³⁹⁶ See Updated Filing Requirements for Bell Operating Company Applications Under Section 271 of the Communications Act, *Public Notice*, DA 01-734, (rel. March 23, 2001) at 6 (encouraging BOC-applicants to explain why factual anomalies may have no meaningful adverse impact on a competing carrier’s ability to obtain and serve customers).

examine the data for all the various loop performance measurements, as well as the factors surrounding the development of these measures. Verizon demonstrates that for xDSL loops, it is performing at acceptable levels for all of the measures the Commission has considered in previous section 271 orders. Isolated cases of performance disparity, especially when the margin of disparity or the number of instances measured is small, will generally not result in findings of checklist noncompliance. Finally, we evaluate the information Verizon provided describing its processes for installing and maintaining loops, the capabilities of its workforce, and employee training to show that it provisions and maintains unbundled loops.

124. We focus our analysis in this section on the issues in controversy under this checklist item, beginning with the pre-ordering, ordering, provisioning and maintenance and repair of stand-alone xDSL-capable loops. We also address voice-grade loops provisioned as new loops and hot cut loops as well as Verizon's subloop unbundling offering. Finally, we address line sharing and line splitting at the end of this discussion.

2. Discussion

125. Based on the record before us, we conclude that Verizon has adequately demonstrated that it provides unbundled local loops as required by section 271 and our rules. First, as described above, we find that Verizon provides access to loop make-up information in compliance with the *UNE Remand Order*. Second, we find that Verizon provides nondiscriminatory access to stand alone xDSL-capable loops and high-capacity loops. Third, we find that Verizon provides voice grade loops, both as new loops and through hot-cut conversions, in a nondiscriminatory manner. Finally, we find that Verizon has demonstrated that it has a line-sharing and line-splitting provisioning process that affords competitors nondiscriminatory access to these facilities. In so doing, we acknowledge that the Massachusetts Department also concludes that Verizon complies with this checklist item.³⁹⁷

126. When all types of loops are considered, Verizon shows that it performs at an acceptable level, generally meeting the parity standards in the four month period leading up to its application. Verizon demonstrates that it has put in place a process to deliver xDSL-capable loops in a timely manner and at acceptable levels of quality to allow competitors to meet the significant demand for high-speed services in Massachusetts. Furthermore, Verizon demonstrates that it has adapted its provisioning methods and procedures to accommodate competitive carrier requests for line-shared loops – loops that are recognized as an important element in providing high-speed service to residential subscribers. One commenter, Rhythms, initially opposed Verizon's application on the basis of its xDSL loop performance, but now states that Verizon has taken steps to resolve its difficulties and has withdrawn its opposition.³⁹⁸ We find that Verizon's overall performance meets the checklist requirements, even though some performance measurements indicate isolated and marginal problems. As explained below, we

³⁹⁷ See Massachusetts Department Massachusetts II Comments at 24.

³⁹⁸ See Letter from Kimberly Scardino, Assistant General Counsel, Rhythms, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed March 14, 2001).

believe that the marginal disparities in some measurements are not competitively significant and do not show signs of systemic discrimination.

127. As described above, the New York Commission developed Verizon's performance measurements, business rules and standards in a collaborative state proceeding with input from competing carriers.³⁹⁹ The Massachusetts Department has adopted these performance measures, business rules and standards. When possible, the New York Commission elected to compare Verizon's service to competing carriers using unbundled loops directly to the level of service provided to Verizon's retail operations.⁴⁰⁰ Where, however, the New York Commission determined that no comparable retail function exists, the level of service Verizon provided to competing carriers in Massachusetts is tested against benchmarks developed in New York.⁴⁰¹ Because the New York Commission adopted the performance measures through an open and collaborative process, and no commenter specifically criticizes the New York Commission's process, we defer to the reasonable standards it set for these measurements as a basis for analyzing Verizon's Massachusetts application.⁴⁰²

a. Overview of Performance Data

128. In our analysis we rely primarily on Massachusetts performance data collected and submitted by Verizon under the state-adopted carrier-to-carrier standards. Where the data displays facial disparities in performance between the manner in which Verizon provisions loops for itself vis-à-vis its competitors, Verizon proposes explanations for statistical disparities and offers studies that recalculate measures according to various exclusions which are discussed below. In such instances, we look to the availability of data reconciled under the auspices of the Massachusetts Department and specific evidence presented by commenters to determine the appropriate weight to accord the challenged data. In evaluating the probity of Verizon's explanations and studies, we consider among other things, whether third parties had access to the underlying data and whether the challenged data were reconciled by the Massachusetts Department.

³⁹⁹ See Massachusetts Department Massachusetts I Comments at 7.

⁴⁰⁰ Where the New York Commission determined that a retail analogue is appropriate and the Massachusetts Department uses this analogue in its evaluation, we examine Verizon's Massachusetts performance by determining whether it provides unbundled local loops to competing carriers in substantially the same time and manner as it does to its retail customers. See *Second BellSouth Louisiana Order*, 13 FCC Rcd at 20655, para. 87; see also *Bell Atlantic New York Order*, 15 FCC Rcd at 4098, para. 279.

⁴⁰¹ In these instances, we examine Verizon's service to competing carriers in terms of whether its performance affords competitors a meaningful opportunity to compete. See generally *Bell Atlantic New York Order*, 15 FCC Rcd at 4098, para. 279.

⁴⁰² See *Petition of New York Telephone Company for Approval of its Statement of Generally Available Terms and Conditions Pursuant to Section 252 of the Telecommunications Act of 1996 and Draft Filing of Petition for InterLATA Entry Pursuant to Section 271 of the Telecommunications Act of 1996*, Order Amending Performance Assurance Plan, Case 97-C-0271 (NY PSC Mar. 9, 2000); see also *Bell Atlantic New York Order*, 15 FCC Rcd at 3974-76, paras. 54-60.

129. Although KPMG conducted a review of other Verizon performance metrics in Massachusetts, it did not separately evaluate the xDSL metrics because they were implemented by Verizon after the initial testing period.⁴⁰³ In its supplemental filing, however, Verizon describes its engagement of PwC to “validate its DSL and line sharing measures” and notes that PwC performed its work under the same standards as KPMG did during its third party OSS testing.⁴⁰⁴ PwC replicated a total of 159 measures and matched Verizon’s calculations for 136 of 159 measures. Verizon asserts that for the remaining 23, the number of observations were identical and the reported performance was within one percent of the results replicated by PwC.⁴⁰⁵ In addition to replicating the carrier-to-carrier data, PwC examined the additional special studies Verizon performed with respect to certain DSL measures.⁴⁰⁶

130. Several commenters challenge the validity of Verizon’s adjustment to official carrier-to-carrier performance data.⁴⁰⁷ Where commenters challenge the comprehensiveness of a third-party evaluation of underlying data or a BOC-applicant’s adjustment to carrier-to-carrier measures, carrier-specific carrier-to-carrier data become an important tool for the Commission to evaluate a BOC’s compliance with section 271. Carrier-specific data underlying the carrier-to-carrier reports are important to this Commission’s section 271 process because they allow competing carriers to compare carrier-to-carrier results or BOC-applicants’ explanations to their own experiences and thus provide us with as complete a record as possible on which to make our decision.⁴⁰⁸ Likewise, where there is no comprehensive third-party evaluation of particular metrics, we strongly suggest that state commissions and applicants enable all parties to have access to the data used to calculate special studies of the BOC’s performance. We find evidence that has been scrutinized in this manner is most persuasive. Accordingly, BOC-applicants may facilitate the development of a full record upon which they may rely to demonstrate compliance with section 271.⁴⁰⁹ In this case, Verizon has provided carrier-specific data underlying carrier-to-

⁴⁰³ See Department of Justice Massachusetts I Evaluation at 15; Rhythms Massachusetts I Comments at 29-30 (quoting KPMG Technical Session Tr. 5185-89). As part of its more general process evaluation, Covad suggests that KPMG observed the installation of 45 xDSL loops. See Covad Massachusetts I Comments at 35.

⁴⁰⁴ Verizon Massachusetts II Ruesterholz/Lacouture Decl. at para. 20; see also *supra* at para. 47.

⁴⁰⁵ See Verizon Massachusetts II Ruesterholz/Lacouture Decl. at para. 20.

⁴⁰⁶ PwC used the carrier-to-carrier guidelines and Verizon’s raw data to replicate Verizon’s DSL performance results in Massachusetts for October. PwC undertook a similar process with Verizon’s October line sharing performance results for New York and Massachusetts based on the January 16th corrected guidelines filed with the New York Commission in compliance with its December 15 order approving the new carrier-to-carrier working group consensus.

⁴⁰⁷ See Rhythms Massachusetts II Comments at 7; Covad Massachusetts II Comments at 7-8; Rhythms Massachusetts I Comments at 29; Covad Massachusetts I Comments at 13; ALTS Massachusetts I Comments at 32; NAS Massachusetts I Comments at 5.

⁴⁰⁸ During the Massachusetts I application, Verizon began the process of submitting carrier-specific data to the Commission.

⁴⁰⁹ In addition, we note that carrier-specific data aided the Massachusetts Department in concluding that Verizon provides nondiscriminatory access to hot cut loops. See Massachusetts Department Massachusetts I Comments at (continued....)

carrier measures and the underlying data used to generate reformulated measures of performance.⁴¹⁰ We discuss competitor challenges to Verizon's performance based on carrier-specific data where relevant below.

b. xDSL-Capable Loops

131. We find that Verizon demonstrates that it is providing xDSL-capable loops in accordance with the requirements of checklist item 4. In analyzing Verizon's showing, we rely primarily on the performance measures and performance data described in prior section 271 orders. We review Verizon's xDSL-capable loop order processing timeliness, the timeliness of Verizon's xDSL-capable loop installation and percentage of Verizon-caused missed installation appointments, the quality of the xDSL-capable loops Verizon installs, and the timeliness and quality of the maintenance and repair functions Verizon provides to competing carrier xDSL-capable loops. We note, however, that we do not rely on data reflecting Verizon's provision of xDSL loops to its separate affiliate to reach our conclusions because Verizon demonstrates checklist compliance with an evidentiary showing of performance to its wholesale xDSL customers.⁴¹¹

132. Verizon has a concrete and specific legal obligation to provide unbundled xDSL-capable loops to competing carriers.⁴¹² Verizon makes available unbundled xDSL-capable loops (including all technically feasible features, functions and capabilities) in Massachusetts through interconnection agreements and pursuant to tariffs approved by the Massachusetts Department.⁴¹³

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290. The availability of carrier-specific data was an important factor in the Commission's prior section 271 approvals. In New York, the Commission relied upon carrier-specific data to find that Bell Atlantic provided nondiscriminatory access to OSS. *See Bell Atlantic New York Order*, 15 FCC Red at paras. 166, 175, 181.

⁴¹⁰ Verizon states that it has provided carrier-specific reports beginning in May 2000 to competitors operating in Massachusetts that have requested them. *See Verizon Massachusetts II Lacouture/Ruesterholz Decl.* at para. 17. Verizon has included carrier-specific reports for September, October and November 2000 in its application. *See Verizon Massachusetts II Lacouture/Ruesterholz Decl.* App. C. Going forward Verizon has represented that it will provide carrier-specific reports to those competitors that have requested them by the 25th day of the following month. Further, Verizon is in the process of establishing a secure Website through which competitors will be able to obtain the aggregate performance results and their own individual reports and their Performance Plan reports, along with the underlying data in the first half of 2001. *See Verizon Massachusetts II Lacouture/Ruesterholz Decl.* at para. 17.

⁴¹¹ Verizon's separate affiliate has not been purchasing the same inputs to provide advanced services as unaffiliated competing carriers. Specifically, Verizon's separate affiliate purchases line sharing to provide ADSL service while competing carriers in Massachusetts continue to purchase stand alone, xDSL-capable loops and have only recently begun purchasing line sharing. As a result, Verizon's advanced services separate affiliate is not useful in making a presumption of nondiscriminatory performance.

⁴¹² *See Verizon Massachusetts I Lacouture/Ruesterholz Decl.* at paras. 63, 114.

⁴¹³ *See Verizon Massachusetts I Lacouture/Ruesterholz Decl.* at Exh. B (citing D.T.E. Tariff No. 17, Part B, Section 5).

(i) Order Processing Timeliness

133. To determine whether Verizon is processing orders in a timely fashion, we examine whether it provides competitors with nondiscriminatory access to loop information in a timely manner and whether it returns timely firm order confirmations (FOCs) to competitors.⁴¹⁴

134. *Timely Access to Loop Information.* As described above, we find that Verizon has demonstrated that its pre-ordering OSS provides competitors with access to the same underlying loop information available to Verizon's retail and back office personnel.⁴¹⁵ We also find that Verizon appears to be providing that information within the required time frames.

135. Verizon's performance data reflect that it provides responses to competing carrier requests for loop information in substantially the same time and manner as for itself.⁴¹⁶ The carrier-to-carrier reports contain four pre-ordering metrics that measure Verizon's performance in providing competitors with pre-order access to loop information.⁴¹⁷ Under two of these metrics, Verizon provides performance data for September through December 2000 showing that Verizon is providing timely responses to competitors' pre-order mechanized loop database queries submitted via Verizon's EDI and CORBA interfaces.⁴¹⁸ Verizon, however, has not reported carrier-to-carrier performance data measuring its average response times in conducting pre-order manual loop qualifications and engineering record requests.⁴¹⁹ Instead, Verizon provides data for manual loop qualifications conducted from September through November 2000 under Verizon's existing process through its ordering OSS, showing that between 97 percent and 99 percent of manual loop qualifications were completed within 48 hours.⁴²⁰ Although these data have not

⁴¹⁴ See *SWBT Texas Order*, 15 FCC Rcd at 18499-18501, paras. 286-90.

⁴¹⁵ See *supra* Part V.A.2.c(ii).

⁴¹⁶ See PO-1-06 (Facility Availability, Loop Qualification, EDI and CORBA).

⁴¹⁷ The first two metrics are "PO-1-06 Facility Availability (Loop Qualification) – EDI" and "PO-1-06 Facility Availability (Loop Qualification) – CORBA," both of which measure the timeliness of Verizon's responses to mechanized loop database queries. The second two metrics are "PO-8-01 Average Response Time – Manual Loop Qualification" and "PO-8-02 Average Response Time – Engineering Record Request," which measure the timeliness of Verizon's responses to manual loop qualification and engineering record requests. See Verizon Massachusetts I Guerard/Canny Decl. Tab B at 9, 18.

⁴¹⁸ See PO-1-06 for EDI. The performance data for these months show that Verizon consistently responds faster to queries for loop qualification information from the mechanized LiveWire database placed from competitors' application-to-application interfaces than to similar queries placed from VADI's retail pre-ordering interfaces. From October through December 2000, competitors received mechanized loop qualification responses on average within 3.11, 2.92, and 3.02 seconds respectively, as compared to 4.72, 17.26, 11.85 seconds for VADI's retail personnel.

⁴¹⁹ In its reply comments, Verizon explains that it has not reported data for the PO-8-01 and PO-8-02 metrics measuring the timeliness of its responses to pre-order manual loop qualification and engineering record requests, because there are currently no electronic pre-ordering OSS functions for manual loop qualification and engineering record requests. See Verizon Massachusetts I Guerard/Canny Reply Decl. at 13.

⁴²⁰ See Verizon Massachusetts II Lacouture/Ruesterholz Decl. Tab J. As discussed below, Verizon's performance data also show that it returns to competitors ordering xDSL loops timely firm order confirmations and rejects, which (continued....)

been submitted under the auspices of the Massachusetts carrier-to-carrier reports prepared in accordance with business rules developed collaboratively by Verizon and competitive carriers, we accept them here because they have not been challenged.⁴²¹ Finally, Verizon provides evidence that it is consistently meeting its target of returning loop make-up information to competitors within 24 hours under its interim LFACS process.⁴²² Verizon also states that competitors generally receive this information within 2 hours.⁴²³

136. *Timely Return of Firm Order Confirmations.* We conclude that Verizon's reported performance metrics indicate that it consistently provides timely confirmation notices to competing LECs in Massachusetts for xDSL unbundled loop orders.⁴²⁴ We encourage Verizon to work in the collaborative process to adopt disaggregated performance metrics for xDSL and digital loops, whether pre-qualified or manually qualified.⁴²⁵ As the Commission explained in the

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under Verizon's current manual loop qualification process contain the results of manual loop qualifications. *See id.* at Tab K and Tab L (summarizing Verizon's performance data for September through November 2000 for DSL order confirmation and reject timeliness); *see also infra* at para. 136.

⁴²¹ We note that Verizon has been ordered to begin reporting on these two pre-ordering metrics, in accordance with the guidelines adopted in the carrier-to-carrier working group. As stated above, the availability of carrier-to-carrier reports permits competitors to fully analyze Verizon's performance and evaluate it against the performance data they have collected themselves.

⁴²² *See* Verizon Massachusetts II Reply, App. A, Tab 1, Attach. C (showing 100 percent of LFACS queries receiving responses within 24 hours for February 2001).

⁴²³ *See* Letter from Dee May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed April 3, 2001).

⁴²⁴ As the Massachusetts Department concluded, "although [Verizon] includes xDSL orders with other loop orders in the denominator of the relevant metric, based upon our review of [Verizon's] performance data, it appears that [Verizon] returns [xDSL confirmation notices] within the stated interval almost all of the time." Massachusetts Department Massachusetts I Comments at 298. For example, from September through December 2000, respectively, for "Loop/Pre-qualified Complex/LNP" orders, Verizon timely returned 99.68, 99.82, 99.48, and 99.79 percent of confirmation notices for flow-through orders within 2 hours; 97.35, 97.35, 97.27, and 97.88 percent of confirmation notices for orders of less than 10 lines within 24 hours; and 96.90, 99.73, 100.00, and 99.74 percent of confirmation notices for orders equal to or more than 10 lines within 72 hours. Verizon likewise exceeded the 95 percent benchmark for timely return of reject notices during this period. *See* OR-1-02, OR-1-04, OR-1-06, OR-2-02, OR-2-04, OR-2-06. "Pre-qualified Complex" orders encompass orders for pre-qualified xDSL-capable loops, and include specifically orders for pre-qualified 2-wire xDSL and 2-wire digital loops. *See* Verizon Massachusetts I Guerard/Canny Decl. Attach. B at 100. Verizon also appears to have exceeded the 95 percent benchmark for timely return of confirmation and reject notices with respect to manually qualified, 2-wire xDSL loop orders. For example, from September through December 2000, respectively, for "2 Wire xDSL Service" orders, Verizon timely returned 98.75, 98.67, 99.25, and 96.77 percent of confirmation notices, and 98.80, 98.92, 99.38, 97.75 percent of reject notices, for orders of less than 10 lines within 72 hours. *See* OR-1-04 and OR-2-04.

⁴²⁵ In Texas, for example, SBC disaggregated its order confirmation timeliness performance data into separate categories for stand-alone loops, loops ordered with a ported number, digital loops, and xDSL loops. *See id.* at paras. 172, 288. SBC's disaggregated data arose from a Texas Commission proceeding and involved joint efforts by SBC, interested competitive LECs, and the Texas Commission. *See id.* at paras. 286-90. In Massachusetts, beginning with its August 2000 carrier-to-carrier metrics, Verizon has disaggregated manually-qualified, 2-wire xDSL loop ordering performance measures from manually qualified, 2-wire digital loop ordering performance (continued....)

Bell Atlantic New York Order, the “need for unambiguous [xDSL] performance standards and measures has been reinforced by the disputes in [that] record regarding . . . what performance is being measured.”⁴²⁶

(ii) Provisioning Timeliness

137. We find that Verizon demonstrates that it provisions xDSL-capable loops for competing carriers in substantially the same time and manner that it installs xDSL-capable loops for its own retail operations. In analyzing Verizon’s provisioning performance for checklist compliance, we continue to rely primarily upon the performance measurements identified in the *Bell Atlantic New York Order* and *SWBT Texas Order*, i.e., missed installation appointments and average completion intervals.⁴²⁷

138. *Percent Missed Installation Appointments*. Recent performance data show that Verizon’s missed appointment measure demonstrates parity performance for competitive LECs.⁴²⁸ Although past performance indicates some statistically significant disparities, the trend
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measures. See Verizon Massachusetts I Guerard/Canny Reply Decl. Attach. D at 7, 22 (metrics OR-1-03-06 and OR-2-03-06). Furthermore, one of the “consensus items” from the New York carrier-to-carrier working group, whose results are likewise to be implemented in Massachusetts shortly, see, e.g., Verizon Guerard/Canny Decl. at para. 15, calls for Verizon to disaggregate further its 2-wire xDSL services ordering metrics into separate measures pertaining to 2-wire xDSL loops and DSL line sharing. See Verizon Guerard/Canny Decl. Attach. A at 2, 7-8 (discussing further disaggregation to line sharing order confirmation and reject timeliness metrics, specifically OR-1-03-06 and OR-2-03-06). Such disaggregation likewise should apply to performance data on reject notice timeliness, as captured in the OR-2 metrics.

⁴²⁶ *Bell Atlantic New York Order*, 15 FCC Rcd at 4123, para. 334.

⁴²⁷ The New York Commission and Massachusetts Department established Verizon’s provisioning of 2-Wire xDSL services as the appropriate retail analogue for competing carrier xDSL loops in the performance measurement for missed installation appointments. Verizon notes, however, that, for purposes of one xDSL measure, the Percent Completed in 6 Days measure, PR 3-10, the retail analogue has been changed to Verizon’s installation of POTS second lines. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 94.

⁴²⁸ This performance metric is disaggregated to divide Verizon’s missed installation appointments between those requiring dispatch of a technician and those not requiring dispatch. A “dispatch” typically involves sending a Verizon technician “in” to a Verizon central office to provision a particular UNE or “out” into the field to work in the outside plant. To date, competing carriers generally request stand-alone xDSL-capable loops and thus request “dispatch” xDSL loops which require a Verizon technician to perform field work to provision an xDSL-capable loop. Verizon’s retail xDSL provisioning is overwhelmingly “no-dispatch” because its ADSL services are provided through line sharing arrangements. Since filing its original application, Verizon has amended its carrier-to-carrier performance reports to include both dispatch and no-dispatch information in the missed appointments measure. During the initial phase of this proceeding, Verizon was unable to resolve the discrepancy between the average completion interval and percent missed appointments measures for competing carrier no dispatch orders. On December 3, 2000, Verizon offered an explanation for this discrepancy. Verizon “discovered that performance for all unbundled xDSL loops was aggregated in the reported results for PR 4-04, whether or not the orders required a dispatch.” See Letter from Dee May, Executive Director Federal Regulatory, Verizon to Eric Einhorn, Policy and Program Planning Division, Common Carrier Bureau, Federal Communications Commission, CC Docket No. 00-176 (filed Dec. 3, 2000). Since then, Verizon has reported both dispatch and no-dispatch volumes in the percent missed appointment measure for the months of September, October, November and December. Accordingly, the Commission can now rely upon competing carrier carrier-to-carrier data when examining the percent missed
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in Massachusetts has improved significantly and, in the months of September, October, November and December, Verizon's performance moved to within approximately two percentage points of Verizon's retail missed appointment rate.⁴²⁹ Thus, the record shows that whatever performance disparities may have existed in the past, they have been narrowed to a small margin.⁴³⁰

139. We find no basis in the record to support NAS' contention that Verizon grants preferential installation appointments to its retail affiliate.⁴³¹ Verizon states that it offers nondiscriminatory access to shorter appointment windows for competitive LECs and Verizon alike.⁴³² Given Verizon's representation that it offers identical installation appointment windows to customers of both competitors and its retail affiliate that have "extenuating circumstances," we emphasize that Verizon is required to apply this policy consistently.⁴³³

140. *Average Completion Interval.* We find that Verizon's average completion interval data for the period September through December show nondiscriminatory treatment. During this period, the average completion interval for orders requiring a dispatch, which captures the vast majority of competing carrier orders, indicates a trend of improving performance and shows that retail performance is, on average, within approximately one-half a day of Verizon's retail affiliate
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appointments metrics to obtain a more accurate dispatch-to-dispatch comparison and therefore a more reliable picture of Verizon's performance.

⁴²⁹ The four month average (September – December) for competing carrier missed appointment rates, for dispatch services was 6.4 percent compared to 4.6 percent for Verizon. Indeed, in November, Verizon provided better service to competitors than its retail affiliate. In the months of October, November and December, the missed appointment rate for dispatch xDSL services for competitors was 3.67, 2.40 and 4.19 percent and the retail rate was 3.18, 4.21 and 2.13 percent, respectively. Verizon's performance in September showed some disparities, which Verizon attributes to the lingering effect of a strike it experienced in August. For September, Verizon missed 12.75 percent of its dispatch installation appointments for competitors compared to 7.13 percent for itself. See PR 4-04 (Provisioning, Two Wire xDSL Services, percent Missed Appointment, Verizon, Dispatch). Verizon responds that its September results were adversely affected by the work stoppage, because orders missed in August but completed in September were recorded as missed appointments in the September performance reports. Verizon performed a study which excludes orders not originally due during the strike, which shows that the adjusted missed appointment rate of 3.79 percent for September is comparable to its October and November results. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 72 and Attach. V.

⁴³⁰ While the Department of Justice takes issue with isolated xDSL performance measures and the manner in which those measures report Verizon's wholesale performance, it does not specifically criticize the percent missed appointments measure for stand-alone xDSL loops. See generally Department of Justice Massachusetts I Evaluation at 8.

⁴³¹ See NAS Massachusetts II Comments at 5; but see Massachusetts Department Massachusetts I Reply at 86.

⁴³² Verizon states that if a retail customer has "extenuating circumstances and requests a shorter installation appointment window, Verizon will schedule either a morning or afternoon appointment window. Verizon will also schedule a morning or afternoon appointment for a competing LEC customer with extenuating circumstances." Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 38.

⁴³³ Failure to provide nondiscriminatory access to installation appointments at identical windows could subject Verizon to a targeted enforcement action or carrier-initiated complaint. See *infra* Part IX.

and approximately one and one-half days longer than the standard six-day interval established by the Massachusetts Department.⁴³⁴ The average completion interval for Verizon retail during the period September through December is also approximately one day longer than the standard interval.⁴³⁵ Verizon argues that these results show nondiscriminatory treatment and any average completion interval disparities that remain should be discounted because these results are skewed by competing carrier behavior. Specifically, Verizon asserts that orders which were not prequalified (which have a 9-day interval) and orders which request installation dates outside of the standard interval skew the carrier-to-carrier results.⁴³⁶

141. Although we recognize that the average completion interval as reported by the carrier-to-carrier measure slightly exceeds the standard interval adopted by the Massachusetts Department, we note that Verizon's performance has improved over the period September through December while the number of competitor orders has remained consistent.⁴³⁷ This

⁴³⁴ The 4 month (September – December) average for competing carrier dispatch orders was 7.3 days compared to 6.94 days for Verizon. In the months of September, October, November and December Verizon completed no-dispatch competing carrier orders in 9.7, 7.75, 7.3 and 6.7 days compared to 11.4, 7.63, 5.2 and 6.3 days for Verizon. See PR 2-02 (Provisioning, Two Wire xDSL Services, Average Interval Completed, Total Dispatch). While the September results for this measure appear to be affected by the strike, Verizon states that during the period September through November 2000, the average completion interval to provision DSL loops for competitors where a dispatch was required averaged 8.32 days, while Verizon's retail ADSL orders that likewise required a dispatch were provisioned within an average of 8.48 days. Verizon avers that consistent with the relevant business rules, this measure reports the time from Verizon's receipt of a valid service order to actual work completion, and uses the same measurement points for both retail and wholesale orders. See Verizon Massachusetts II Guerard/Canny Decl. Attach. B, at para. 42; Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 75.

⁴³⁵ See PR 2-02 (Provisioning, Two Wire xDSL Services, Average Interval Completed, Total Dispatch).

⁴³⁶ See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 75. In its original application, Verizon argued that its recalculated results - which exclude manually qualified loops - for average completion interval also show parity. See Verizon Massachusetts I Guerard/Canny Decl. at para. 79 and Attach. K. Approximately half of the orders, according to Verizon, were pre-qualified, while the remainder required manual loop qualification. The results of this study show that "[t]he average interval completed for pre-qualified xDSL loops was 6.46 days compared to 6.69 days for retail in June and 5.40 days compared to 5.93 days for retail in July." See Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 101. Covad responded to Verizon's study questioning its methodology and results. See Letter from Jason Oxman, Senior Governmental Affairs Counsel to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 00-176 (filed November 7, 2000) (Covad Nov. 7 *Ex Parte* Letter).

⁴³⁷ Competitor order volumes captured in the average completion interval, PR 2-01/2-02 peaked in October 2000 with 934 orders and have remained well-above 600 orders per month for the last four months. See PR 2-01/2-02 (Provisioning, 2-Wire xDSL Services, Average Interval Completed, Total Dispatch, Total No-Dispatch). Rhythms argues that Verizon's contention that VADl also receives service outside the standard interval is no response to Verizon's late wholesale performance for unaffiliated competitive LECs. Rhythms states that "it makes no difference to Rhythms that it received "parity" with Verizon's retail service when "parity" means that Rhythms received its loops two days later than the standard interval, an interval Rhythms notes is already an unnecessarily long period of time. See Rhythms Massachusetts II Comments at 11-12 and Williams Supplemental Declaration at para. 21. CIX argues that the Massachusetts Department's six-day interval was defined through a "long and thorough regulatory process" and Verizon should be accountable for failing to meet that interval for competitive LEC orders. CIX Massachusetts II Comments at 22.

improving trend and the competitively insignificant disparity between competitor and Verizon completion intervals persuades us that Verizon's technicians have gained sufficient expertise and operational readiness to adjust to the growth of competition in Massachusetts.⁴³⁸ To evaluate Verizon's provisioning timeliness, we look to the totality of the evidence presented to us. It is based on this totality and specifically, the measures the Commission has relied upon in the past, that we conclude that Verizon's provisioning timeliness performance offers competitors a meaningful opportunity to compete.

142. Although Verizon and some commenters urge us to rely on other measures, we need not do so in this case because Verizon has demonstrated compliance with this aspect of our loops analysis on the basis of the measures the Commission has relied upon in previous section 271 orders. We decline to rely upon the percent on-time measure supplied by Verizon⁴³⁹ or percent completed within 6 days measures supplied by competitors,⁴⁴⁰ because we do not have

⁴³⁸ The Department of Justice recognizes that Verizon's on-time performance is "improving" but notes that it falls short of the 95 percent on-time benchmark. Department of Justice Massachusetts II Evaluation at 9.

⁴³⁹ Verizon supplements its affirmative showing by arguing that it provides xDSL loops when competing carriers request them and asks us to consider, in addition to the average completion interval, Verizon's performance under a different metric which measures percent "on-time" installation. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 66. Verizon claims that when facility misses are included in the results, Verizon's performance, when adjusted to remove the impact of the strike, is approximately 85 percent on-time in October and in November it is approximately 90 percent on-time. Verizon's removal of strike-affected orders from these measures for September and October 2000 improves Verizon's reported performance somewhat (from 75.7 to 86.6 percent). See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 69 and Attach. S. Verizon's final data presentation of the revised on-time measure, which excludes orders for which Verizon cannot provide a loop and adjusts for strike-affected orders, shows on-time performance that exceeds the 95 percent standard in November 2000. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 66 and Attach. R.

⁴⁴⁰ Competing carriers contest Verizon's claim that it provides xDSL-capable loops on time and point to yet another measure of on-time performance, the percentage of xDSL loops completed within the standard interval of 6 days. See PR 3-10 (Provisioning, 2-Wire xDSL Services, percent Completed in 6 Days). In September, October, November and December Verizon completed 62.1, 64.6, 63.4 and 72.9 percent of competing carrier xDSL loops within 6 days. In the same months, Verizon completed 65.5, 82.3, 87.8, and 87.2 percent of xDSL loops within 6 days for itself. See Rhythms Massachusetts I Comments at 28; Department of Justice Massachusetts II Evaluation at 9 n.2; CIX Massachusetts II Comments at 22. USIAPA argues that the real provisioning interval is, on average, 25 days between the first FOC and actual installation because some 24 percent of orders in Massachusetts receive sliding FOCs. See USISPA Massachusetts II Reply at 8. During Verizon's original proceeding, Verizon and competing carriers reached consensus to eliminate the retail analogue and instead set a 95 percent benchmark standard for the percent completed within 6 days measure. Consensus was also reached to exclude orders that were not pre-qualified, orders requesting intervals outside of the standard interval and orders missed for lack of facilities. See Verizon Massachusetts II Lacouture/Ruesterholz Reply, Decl. at paras. 77-80. Verizon engaged a consultant, Lexecon, to recalculate the reported results for this measure consistent with the exclusions discussed above and to adjust this measure for orders affected by the strike. When Verizon's performance for this measure is calculated in accordance with the new business rules, Verizon argues it provides 84 percent of xDSL loops between September and November with six days. This study shows that during the September through November period, 95 percent of the competitor orders not completed within the standard six day installation interval are completed within 7 days. The Lexecon study shows that under the revised PR 3-10 measure, in September, 89.12 percent of competitive LEC orders were completed within 6 days; 80.00 percent were completed within 6 days in October and 82.24 percent were completed within 6 days in November. Reply Appendix, Tab 4, Joint Reply Declaration of Robert H. Gertner and Gustavo E. Bamberger. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 82. Competitors (continued....)

enough data or experience with them for determining a BOC's compliance with section 271.⁴⁴¹ Moreover, commenters have offered no persuasive reason to depart from Commission practice of placing primary reliance upon the percent missed appointment or the average completion interval measures. Accordingly, we view the on-time measures cited by Verizon and the percent completed within 6 days measure cited by competitors as additional diagnostic data to evaluate Verizon's contention that it provides xDSL-capable loops in a timely manner.⁴⁴² We find that these measures support rather than refute the measures the Commission relied upon in the past and confirm our view that the missed appointment and average completion interval measures provide an accurate description of Verizon's performance for competitors.

(iii) Provisioning Quality

143. We conclude that Verizon provides xDSL loops to competing carriers at a level of loop installation quality that meets the requirements of checklist item 4. In analyzing installation quality we continue to rely primarily upon the measure identified in the *Bell Atlantic New York Order* and *SWBT Texas Order* – percent installation troubles within 30 days.⁴⁴³ Assessing the quality of loop installation is important because advanced services customers that experience substantial troubles in the period following installation of an xDSL-capable loop are unlikely to remain with a competing carrier.⁴⁴⁴

144. As an initial matter, we reject Verizon's request that we depart from relying upon certain metrics the Commission has relied upon in the past. We conclude that Verizon's use of the total DSL trouble report rate as a substitute for the percent trouble within 30 days does not measure the quality of Verizon's installation performance.⁴⁴⁵ In fact, it is not even classified in the carrier-to-carrier reports or the Commission's past orders as a provisioning metric, but rather, as a measure of maintenance and repair activities. Verizon has not persuaded us that the metric

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respond that even Verizon's recalculated results show that that a substantial number of orders are completed outside the standard interval. Rhythms Massachusetts II Comments at 11-12; CIX Massachusetts II Comments at 22.

⁴⁴¹ Furthermore, by some estimates, 83.77 percent of all DSL orders are excluded from the percent completed within 6 days measure. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 84. We note that the Commission has not previously relied upon either the on-time measure cited by Verizon nor the percent completed within 6 days metric cited by competing carriers. Data supporting the 6-day measure became available for the first time in July 2000 and data supporting the on-time measure became available in June. The Massachusetts Department did not initially evaluate the percent completed on time measure relied upon by Verizon and also did not evaluate the percent completed with 6 day measure cited by competing carriers.

⁴⁴² For example, when the percent completed within 6 days results are examined in conjunction with the average completion interval, it is not surprising that approximately 80 percent of orders are completed within six days because the average completion interval is slightly more than 6 days.

⁴⁴³ The Commission stated in the *SWBT Texas Order*, that we consider trouble reports within 30 days as "indicative of the quality of network components supplied by the incumbent LEC." *SWBT Texas Order*, 15 FCC Rcd at 18504-05, para. 299.

⁴⁴⁴ *SWBT Texas Order*, 15 FCC Rcd at 18504-05, para. 299.

⁴⁴⁵ See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 86.

for trouble reports within 30 days of installation is any less probative of installation quality in the factual context of this application than it was in the previous applications wherein the Commission relied on this metric. Specifically, we find that the percent troubles within 30 days measure is more probative of installation quality than the total trouble report rate which measures all xDSL-lines in service throughout Verizon's network, not lines recently installed.⁴⁴⁶

145. During this proceeding, the New York Commission and the Massachusetts Department accepted a consensus revision to the trouble report within 30 days measure to control for certain carrier business practices.⁴⁴⁷ Under the new consensus measure, the metric will include only trouble reports that are submitted within 30 days of installation by competitors that participate in acceptance testing.⁴⁴⁸ The revised definition reflects the fact that properly conducted acceptance testing could identify some installation quality problems that could be resolved at the time the competitive LEC and Verizon conduct the acceptance test. When Verizon presents data that control for the exclusions adopted by the consensus revision, the performance dissimilarities are reduced or eliminated entirely.⁴⁴⁹ Competitive LECs question

⁴⁴⁶ See Letter from Dee May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 00-176 (filed Nov. 14, 2000); see also Letter from Edward D. Young, III, Verizon, to William E. Kennard, Chairman, Federal Communications Commission, CC Docket No. 00-176 (filed Dec. 1, 2000).

⁴⁴⁷ The New York Commission adjusted the retail analogue to compare Verizon's performance for competitors with Verizon's own retail POTS service rather than its DSL service because Verizon's DSL service is almost always provided over a loop that is already working and delivering dial tone, whereas retail POTS will involve providing service over a loop that is not already working. Thus, because stand-alone loops better approximate the manner in which Verizon provisions stand alone xDSL-capable loops to competitors, it was selected as the appropriate retail analogue.

⁴⁴⁸ Acceptance testing is a joint project whereby after installation, Verizon contacts competitors so the loop can be tested for improper voltages, or other impediments to xDSL service, such as ringers and load coils. Under established acceptance testing procedures, Verizon "shorts" a loop enabling competitors to verify continuity length and to ensure that the loop meets a competitor's requirements. Competitors then provide to Verizon a confirmation indicating a loop is in working order, or, in the alternative, reject the loop as non-working.

⁴⁴⁹ Verizon engaged Lexecon to recompute the I-code rate (trouble reports within 30 days) presented in the official carrier-to-carrier data, for September through November 2000 using the new consensus method. Lexecon found that the performance disparity between competitive LEC and retail I-code rate was eliminated in September and substantially reduced – by 51 percent in October (from 8.2 to 4.34 percentage points); and by 74 percent in November (from 4.96 to 1.29 percentage points). Verizon contends that the "weighted average I-code rate under the new consensus rules for September through November 2000 was 4.78 for [competing carriers] and 3.3 for Verizon's retail customers." Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 94. Verizon goes on to adjust its performance results to include troubles that could have been discovered by a properly conducted acceptance test. Under this adjustment the competitive LEC I-code rate was 3.12 percent in September 2000; 6.08 percent for October 2000, and 4.19 percent for November 2000. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 95 Attach. Z. The weighted average for this period is 4.28 percent for competitive LECs and 3.30 percent for Verizon retail. *Id.* Verizon performs a third level of analysis: after quantifying the I-code rate under the revised measure recently approved by the New York Commission, and then excluding those I-codes that could have been discovered by a properly conducted acceptance test, Verizon shows that the gap between competitive LECs and retail I-code rate in September and November 2000 is eliminated and reduced to less than one percent in October 2000. The adjusted rate is 1.43 percent for September 2000, 4.04 percent for October 2000 and 1.94 percent for (continued....)

whether Verizon may appropriately exclude some of these trouble reports and have used carrier-specific data supplied by Verizon to argue that Verizon does not provide loops at an acceptable level of quality.⁴⁵⁰

146. We agree with the Department of Justice that Verizon's adjustments to the data are justified if an inference could reliably be made when the type of trouble reported: (1) could not occur post-acceptance, but rather must have existed at acceptance; and (2) would consistently be detected by the joint testing methods employed.⁴⁵¹ The issue of whether competing carriers can consistently detect loop quality problems is disputed by Covad, Rhythms and NAS.⁴⁵² Covad argues that carrier-specific data show that it experiences installation quality troubles which are over four times higher for its orders compared to Verizon retail.⁴⁵³ Verizon responds that when

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November 2000 compared to the weighted average during this period of 2.36 percent for competitive LECs and 3.30 percent for Verizon. *See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 96 and Attach. AA.*

⁴⁵⁰ *See Rhythms Massachusetts II Williams Decl. para. 26; Covad Clancy Decl. para. 10-23; see also USISPA Massachusetts II Reply at 8.* The Department of Justice questions the validity of the performance data and contends that Verizon's exclusion methodology infers improper acceptance testing from the nature of the trouble reported. *See Department of Justice Massachusetts II Evaluation at 10 n.39.* The Massachusetts Department discounts this measure entirely and questions whether the measure accurately captures Verizon's ability to provision quality loops. *Massachusetts Department Massachusetts II Evaluation at 30.* We agree with the Department of Justice that the calculation of the revised measure appears to be flawed. While trouble reports from carriers that do not conduct acceptance tests are excluded from the numerator of this measure, orders from such carriers are not excluded from the denominator. The result is to inappropriately skew the trouble report rate. When these orders are excluded from the denominator, the reported trouble rate is higher for October and November 2000 under the revised measure than as reported under the original carrier-to-carrier measure. The Department of Justice has recalculated PR 6-01 to control for this anomaly. Pursuant to this recalculation, for the period September to November, competitive LECs experienced 6.99 percent troubles within 30 days. *See Department of Justice Evaluation at 10-11, Exh. 1.*

⁴⁵¹ *See Department of Justice Massachusetts II Evaluation at 11 n.39.* Verizon responds that "while it is possible for a DSL loop to break after the loop is installed, that is a rare occurrence." *Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 100.*

⁴⁵² *See Covad Massachusetts II Comments at 11; NAS Massachusetts II Comments at 11; Rhythms Massachusetts II Comments at 18.*

⁴⁵³ In its comments, Covad reviewed 8 trouble tickets in the month of November to refute Verizon's argument that Covad knowingly accepted non-working loops. Covad contends that these loops were accepted because: (1) the Verizon technician was not at the NID when the test was performed; (2) Verizon failed to provision the loop to the appropriate NID; or (3) the loops became non-working after Covad accepted it. *See Covad Massachusetts II Reply at 9.* On reply Covad surveyed its acceptance testing logs for all of the I-codes reported in November. This survey showed that of the 25 I-codes which Verizon excluded from its adjusted performance measure, none of the installation quality troubles could have been discovered at the time of acceptance and all of these installation quality troubles were properly addressed as maintenance and repair issues. Covad argues that in many cases its records show that loops were much shorter at the time of acceptance testing than when repaired by Verizon, demonstrating that Verizon did not test the full loop length during acceptance testing. *See Covad Massachusetts II Reply at 10.* Verizon responds to Covad's initial survey of I-codes by showing that in two cases, Covad's test equipment was not available to perform an acceptance test and in two other instances, Covad's acceptance test failed to identify the presence of a load coil and half ringer. *See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 91.* In three other instances, Verizon states that Covad tested and accepted a loop that Verizon identified as defective; (continued....)

an adjustment is made for Covad's failure to properly conduct acceptance testing its I-code rate falls to below retail.⁴⁵⁴ Verizon forwards similar carrier-specific responses to Rhythms and NAS.⁴⁵⁵

147. We find that Verizon is making loops available at substantially the same level of quality as Verizon provides to itself. In reaching this conclusion we rely upon data that are adjusted to comply with the recently-adopted consensus revision to the troubles with 30 days measure.⁴⁵⁶ During the period September through November 2000, competitive LECs experienced installation quality troubles at a rate of 7.0 percent compared to 2.3 percent for Verizon retail.⁴⁵⁷ Thus, the adjusted data narrow the facial disparity between Verizon's performance to its competitors compared to itself. Moreover, we also note that recent performance shows that Verizon has improved its ability to provide competitors with xDSL-capable loops at acceptable levels of quality.⁴⁵⁸ We find, therefore, that the adjusted data coupled

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Covad's technician went to the wrong demarcation point and finally, Covad could not locate the acceptance testing data on the loop in question in its database. *See id.*

⁴⁵⁴ When Verizon controls for installation quality issues that could have been discovered during acceptance testing Covad's rate is at parity for the period September through November. *Id.* at para. 83.

⁴⁵⁵ Rhythms claims that it reviewed the list of I-codes excluded by Verizon for acceptance testing reasons and states that "its records did not match Verizon's." Rhythms Massachusetts II Comments at 18. Verizon states that Rhythms did not provide any information for a number of the Rhythms I-codes excluded by Verizon. Verizon shows that some of the I-codes contested by Rhythms were not excluded by Verizon, therefore no downward adjustment to the competitive LEC I-code rate was taken. Finally, of the remaining I-codes submitted by Rhythms, Verizon's records show that these loops had ringers on the lines and should have been discovered during acceptance testing; these records contain inconclusive information or contained no relevant data or finally, the I-code was not related to Rhythms' failure to properly perform acceptance testing. *See* Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 94. Verizon performed a similar analysis for NAS adjusting its I-code rate to below retail in the period September through November. *See id.* at paras. 84-85.

⁴⁵⁶ We also agree with the Department of Justice that Verizon's practice of excluding trouble reports from carriers that do not conduct acceptance testing from the numerator but not the denominator is inappropriate and will result in inappropriately low trouble report rates. *See* Department of Justice Evaluation at 10. In this circumstance, where the carriers have agreed to revise a measure going forward, we believe it is reasonable to include the results of the revised measure to adjust Verizon's performance as officially reported.

⁴⁵⁷ *See* Department of Justice Massachusetts II Evaluation at 10, Attach. 1.

⁴⁵⁸ The individual results for competitive LECs performing acceptance testing for September, October and November were 4.13 percent, 11.18 and 8.22 percent compared to 1.93 percent, 2.09 percent and 2.81 percent for Verizon retail over the same period. *See id.* The unrevised carrier-to-carrier data confirm this positive trend. Even as volumes have remained substantial, the percent trouble within 30 days measure as originally reported moved from a high in October 2000 of 11.1 percent to 7.8 percent in November and 5.8 percent in December, reducing the disparity to approximately 3 percent in the most recent month we consider. In September, competitive LEC trouble reports within 30 days were 5.4 percent. The comparable numbers for Verizon retail were 1.93, 2.09, 2.81 and 2.79 percent in September, October, November and December respectively. *See* PR 6-01 (Provisioning, 2-Wire xDSL Services, percent Installation Troubles Reported Within 30 Days). The four month (September – December) average for competitive LEC trouble reports within 30 days, according to the unrevised carrier-to-carrier reports filed with the application, was 7.3 percent compared to 2.4 percent for Verizon.

with the improving trend in Verizon's performance are sufficient for us to conclude that Verizon is installing loops in a nondiscriminatory manner.

148. We are unable to quantify exactly the effect of Verizon and competitor adjustments to the data because of limited factual disputes.⁴⁵⁹ We note however, that the Massachusetts Department has conducted a comprehensive and detailed factual reconciliation of I-codes for the month of November 2000 with the participation of Covad and Verizon.⁴⁶⁰ This inquiry has yielded several process improvements that are designed to improve Verizon's installation quality results.⁴⁶¹ We welcome the Massachusetts Department's participation in addressing Verizon's acceptance testing process and are encouraged by the improvements to this process.⁴⁶² We encourage carriers to bring issues such as these to the attention of state commissions so that factual disputes can be resolved before a BOC applicant files a section 271 application with this Commission.

149. We find that recent carrier-to-carrier installation quality measures show that Verizon has improved significantly its ability to provide competitors with xDSL-capable loops at

⁴⁵⁹ We note that Verizon's adjustment to the data lower the I-code rate to less than 7 percent and competitive LEC challenges to Verizon's adjustment raise the I-code rate; but in no case do competitor challenges to Verizon's adjustment raise the I-code rate above the 7 percent level presented by the revised carrier-to-carrier measure as calculated by the Department of Justice. See Letter from Paul Afonso, General Counsel, Massachusetts Department of Telecommunications and Energy to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed March 21, 2001) (*Massachusetts Department Reconciliation Letter*).

⁴⁶⁰ On March 15 2001, at the request of the Commission's staff, the Massachusetts Department, together with Covad and Verizon, undertook a review of the disputed Covad orders. After conducting its review, the Massachusetts Department submitted a list of process improvements developed by Verizon and Covad during this review.

⁴⁶¹ Under the auspices of the Massachusetts Department, Covad and Verizon have agreed to several modifications or additions to the existing acceptance testing process. Verizon has agreed to implement a process requirement that its technicians will "cut down" xDSL loops at the NID before the final cooperative test is performed. Additionally, Covad has agreed to insert into its acceptance testing script a question to determine whether the Verizon technician is testing through the network interface device. Second, to reduce technician confusion about where in Verizon's outside plant the cooperative test was performed, the carriers have agreed to enhance the demarcation point information procedures by establishing a three-fold process whereby the Covad technician can: (1) verify before dispatch, that the loop was located and tagged by the Verizon technician during cooperative testing; (2) access Verizon's demarcation information electronically before dispatching to the field; and (3) call Verizon from the field if the technician cannot locate the demarcation point. Third, Verizon has committed to make it clear to its technicians that they should remove all half ringers on stand-alone xDSL loops. Fourth, Covad and Verizon have agreed to implement a process for obtaining a final acceptance test when an earlier acceptance test has failed and to educate their technicians about interim loop testing versus final acceptance testing. See Massachusetts Department Reconciliation Letter at 8.

⁴⁶² We note that the Department of Justice did not have the benefit of the Massachusetts Department's reconciliation of Verizon's I-codes. See Department of Justice Massachusetts II Evaluation at 15 n.61 (noting that the Department of Justice's evaluation is "necessarily based solely on the evidence in Verizon's application" and stating that "[r]eply comments and *ex parte* submissions undoubtedly will provide additional evidence concerning the questions that have been raised about Verizon's pre-application DSL performance.").

acceptable levels of quality.⁴⁶³ Moreover, we find that Verizon's remedial efforts to improve the stand-alone xDSL loop provisioning and acceptance testing process, in addition to those agreed to in the context of the Massachusetts Department's reconciliation proceeding, are likely to reduce competitive LEC installation quality impairments in the future. Starting in January 2001, Verizon will tag DSL loops at both the NID and the cross-connection box with special services markers to indicate to Verizon technicians that the loop is in use for data services and should not be used to serve another customer.⁴⁶⁴ Verizon is also engaged in on-site visits to competitive LEC testing centers to discover ways to improve the acceptance testing process.⁴⁶⁵ Verizon has committed to providing competitive LECs with detailed information on their I-codes to diagnose acceptance testing issues and reconcile data.⁴⁶⁶ Verizon has also agreed to a trial of "sync" testing to enable Verizon technicians, at the time of testing, to determine whether the competitive LEC can synchronize its DSLAM with customer premises modems.⁴⁶⁷ Finally, Verizon is working with a competitive LEC to make access to its testing equipment available to Verizon through a voice response unit.⁴⁶⁸ We emphasize that Verizon's installation quality performance is minimally acceptable -- even under our flexible approach of reviewing Verizon's performance in light of the totality of the circumstances.⁴⁶⁹

(iv) Maintenance and Repair

150. We agree with the Massachusetts Department that Verizon demonstrates that it provides maintenance and repair functions for competing carrier xDSL-capable loops in a manner sufficient to meet the requirements of checklist item 4.⁴⁷⁰ In analyzing Verizon's maintenance and repair functions we continue to rely primarily upon the mean time to repair and repeat trouble rate measures identified in the *Bell Atlantic New York* and *SWBT Texas Orders*.

151. *Mean Time to Repair.* Like the Massachusetts Department, we find that Verizon offers nondiscriminatory access to maintenance and repair functions. During the period from

⁴⁶³ We therefore rely upon the Massachusetts Department's conclusion that "the information contained in VZ-MA's supplemental application only affirms our earlier conclusion that VZ-MA provides [competing carriers] an installation quality sufficient to afford them a meaningful opportunity to compete." Massachusetts Department Massachusetts II Comments at 29-30; *see also SWBT Kansas/Oklahoma Order* at para. 191 (finding that SWBT generally met 6 percent installation quality benchmark and noting improved performance trend).

⁴⁶⁴ *See Verizon Massachusetts II Lacouture/Ruesterholz Decl* at para. 110.

⁴⁶⁵ *See id.* at para. 110.

⁴⁶⁶ *See id.* at para. 109.

⁴⁶⁷ *See id.* at para. 118.

⁴⁶⁸ *See id.* at para. 109.

⁴⁶⁹ Any future evidence of significant and sustained deterioration may result in a targeted enforcement action or carrier-initiated complaint under the Act. *See also infra* Part IX.

⁴⁷⁰ *See Massachusetts Department Massachusetts II Comments* at 31.

September through December, the mean time to repair competing carrier troubles on xDSL loops was 29.4 hours while the comparable number for Verizon was 21.59 hours, an approximately 8 hour difference. Although this disparity is statistically significant, we note that, in December, Verizon repaired competitive LEC lines in 19.1 hours compared to 17.8 hours for its retail affiliate, bringing Verizon into near facial parity with its retail operation.⁴⁷¹ Accordingly, the most recent month we consider indicates that Verizon has virtually eliminated this performance disparity.⁴⁷² We do not find, therefore, any systematic discrimination in Verizon's maintenance and repair functions offered to competitors.⁴⁷³

152. Verizon contends that the data reflecting the measurement of mean time to repair for xDSL loops provide a misleading indication of its performance and thus the Commission should look behind the measures for additional evidence of nondiscrimination. Verizon claims that it is much more likely to be unable to access competing carriers customers' premises to repair xDSL loops than access to the premises of its own retail customers⁴⁷⁴ and that competing carriers are less willing to schedule weekend appointments than are Verizon's retail customers.⁴⁷⁵ Both of these factors, Verizon claims, lengthens the time needed to repair competing carrier

⁴⁷¹ Verizon's missed repair appointment performance is likewise at parity. During September through November 2000, Verizon met approximately 85 percent of repair appointments for competitive LECs compared to approximately 86 percent for retail. MR 3-01 (Maintenance and Repair, 2-wire xDSL Services, percent Missed Repair Appointment – Loop); *see also* Verizon Massachusetts II Lacouture/Ruesterholz Decl. Attach. EE. Verizon concludes that during September through November 2000, nearly 58 percent of troubles reported within 30 days of the installation of a DSL loop were closed with no trouble found. *See id.* at para. 105 and Attach. BB. This number is consistent with Verizon's analysis for the period May through July. *See* Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 78, 104 & Attach. I (discussing the effect of failure to isolate troubles on UNE POTS repair metrics).

⁴⁷² Indeed, we take additional comfort in Verizon's January performance which indicates that this trend has continued. In fact, Verizon performs better for competitive LECs than for itself in January. The January mean time to repair competitive LEC xDSL loops was 20.82 hrs compared to 23.80 hrs. for Verizon. *See* MR 4-02 (Maintenance, 2-Wire xDSL Services, Mean Time to Repair – Loop Trouble).

⁴⁷³ Should Verizon's future performance reverse this positive trend, Verizon risks a targeted enforcement action or carrier-initiated complaint under the Act. *See infra* Part IX.

⁴⁷⁴ Verizon Massachusetts II Application at 25; Verizon Massachusetts II Lacouture/Ruesterholz Decl at para. 106. During April, May, June and July 2000, Verizon claims that competing carriers provided only "limited access" to end users for 58.9 percent of competing carrier Complex loop repair requests, compared to 3.4 percent on Verizon's Complex loop retail repair requests. *Id.* at para. 106 & Attach. N.

⁴⁷⁵ Verizon contends that a relatively small disparity in the mean time to repair measure exists during September, October and November and that there is some variation among competitive LECs regarding the rate at which they accept weekend repair appointments. *See* Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 119 Attach. GG. Verizon performed an analysis of the weekend repair appointment exclusion and concluded that the rejection of weekend repair appointments added approximately 4.35 hours to the average repair interval for competitive LEC loops, reducing the 9 hour difference to approximately 4-5 hours of disparity, an amount Verizon contends, that is not competitively significant. *See also* Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para 119 Attach. GG. *See also* Verizon Massachusetts I Lacouture/Ruesterholz Decl. at 73-74 & Attach. G (discussing the effect of not accepting weekend repair appointments on the UNE POTS repair metrics.)

xDSL loops. Covad and Rhythms specifically deny that they avoid weekend repair appointments and otherwise criticize Verizon's maintenance and repair functions.⁴⁷⁶

153. We exercise our discretion to afford Verizon's adjusted mean time to repair data little weight.⁴⁷⁷ Because the official carrier-to-carrier data provide sufficient evidence for the Commission to conclude that Verizon provides nondiscriminatory access to maintenance and repair functions, we need not resolve the factual dispute presented by commenters regarding refused weekend repair appointments. We recognize and encourage BOCs to conduct root cause analysis of their performance and will appropriately credit explanations of disparities in the performance measures. We believe, however, that such explanations are best used to improve processes and carrier-to-carrier reporting and that they are most useful when surfaced in state proceedings. We note that the development of performance measures is an iterative process and we encourage competitive LECs and Verizon to continue to specifically improve the mean time to repair measure to provide a more accurate indicator of performance.⁴⁷⁸

154. *Repeat Trouble Rate.* We conclude that Verizon provides competitors with maintenance and repair services at an acceptable level of quality. Verizon's repeat trouble report data show that competing carriers infrequently experience problems after a repair visit for a trouble on DSL loops. This measure shows that competing carriers experience fewer repeat troubles than Verizon's retail affiliate.⁴⁷⁹ For the period September through December, competing carriers experienced 16.3 percent repeat trouble report rates compared to 21.5 percent

⁴⁷⁶ See Rhythms Massachusetts I Comments at 31-32; See Letter from Dhruv Khana, Executive Vice President and General Counsel, Covad to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 00-176, at 8 (filed Dec. 5, 2000); see also Covad Massachusetts I Comments at 20-22 (stating that Verizon adds to the "no access" problem by assigning "all day" appointment windows); Network Access Solutions Massachusetts I Comments at 3-4 (same). Rhythms Massachusetts I Comments at 32. Covad specifically notes that an apparent increase in competing carrier "no access" situations is explained by the fact that Verizon's schedules retail repair appointments in smaller windows than for competing carriers. The Massachusetts Department was unable to comment on Covad's alleged unsuccessful attempt to shorten repair windows offered by Verizon to competing carriers. See Massachusetts Department Massachusetts I Reply at 86. On reply, Verizon states that it will grant morning or afternoon appointments for retail customers if they have extenuating circumstances and it will do the same for competing carriers. Verizon Massachusetts I Lacouture/Ruesterholz Reply Decl. at 33 (emphasis added).

⁴⁷⁷ See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para 119 Attach. GG.

⁴⁷⁸ The Department of Justice notes that the mean time to repair measure is likely to be disputed in the future and, if the measure is left unrevised, it may create an analysis that is biased toward finding parity. "Excluding observations involving competitive LEC refusals of weekend appointments makes Verizon's performance for competitive LECs look stronger, moving the apparent balance toward parity. Excluding observations involving refused weekday appointments – an adjustment Verizon did not make – could make Verizon's performance as to its retail unit or separate affiliate look better, moving the apparent balance away from parity." Department of Justice Massachusetts II Evaluation at 12.

⁴⁷⁹ The Percent Repeat Trouble Reports metric, MR 5-01 shows that the 4-month (September – December) average for competing carriers is 16.3 percent and 21.5 percent for Verizon. For the months of September, October, November and December, competing carrier repeat trouble rates were 19.3, 15.4, 16.1 and 13.4 percent. For the same months, Verizon repeat trouble rate was 22.7, 20.3, 22.6 and 16.5 percent. See MR 5-01 (Maintenance, 2-Wire DSL Services, percent Repeat Trouble Reports within 30 Days).

for Verizon.⁴⁸⁰ Thus, during the four recent months we consider, Verizon provides better service to competitors in this area than it does for its retail affiliate.⁴⁸¹

c. Subloops

155. We find that Verizon provides nondiscriminatory access to subloops consistent with the requirements of section 271 and the *UNE Remand Order*.⁴⁸² The Commission's *UNE Remand Order* requires incumbent LECs to provide competitors access to subloop elements at any technically feasible point to ensure that "requesting carriers [have] maximum flexibility to interconnect their own facilities" with those of the incumbent LEC.⁴⁸³ Competitors take issue with Verizon's subloop offering claiming that Verizon limits subloops to "metallic distribution pairs/facilities;" restricts competitor subloop access to interconnection at the feeder distribution interface (FDI); and refuses to allow competitors to collocate equipment inside remote terminals for purposes of accessing subloops.⁴⁸⁴

156. We find that, consistent with our rules, Verizon allows collocation inside remote terminals on a space-available basis.⁴⁸⁵ Where space is unavailable, competitive LECs may deploy an adjacent cabinet to access subloops through an interconnecting cable.⁴⁸⁶ Furthermore, Verizon does not limit competitive LEC access to subloops to only metallic distribution facilities. Rather, Verizon allows requesting carrier to obtain access to subloop facilities regardless of the transmission medium.⁴⁸⁷ Finally, Verizon has demonstrated that competitive

⁴⁸⁰ See *id.*

⁴⁸¹ The average repeat trouble report rate for the period September through December is 16.3 for competing LECs compared to 21.5 for Verizon retail. See MR 5-01 (Maintenance, 2-Wire DSL Services, percent Repeat Trouble Reports within 30 Days). We take additional comfort in Verizon's network trouble report rates for DSL loops in Massachusetts. These results further support our conclusion that Verizon provides competing carriers with maintenance and repair service in substantially the same time and manner as Verizon's own retail operations. Competing carriers experienced a trouble report rate of 1.9 percent for the months of September through December 2000 while Verizon experienced trouble report rates at a comparable 1.3 percent rate. See MR 2-02/2-03 (Maintenance, 2-Wire xDSL Services, Network Trouble Report Rate, Loop; Network Trouble Report Rate, Central Office).

⁴⁸² Although nondiscriminatory access to subloops technically falls under checklist item 2, we treat subloops in this section because it is logically related to the provision of unbundled loops.

⁴⁸³ *UNE Remand Order* at para. 206. The Commission held that technically feasible points of interconnection near a customer premises could include poles or pedestals, the NID or the minimum point of entry (MPOE), the feeder distribution interface (FDI) or a remote terminal or environmentally controlled vault. *Id.*

⁴⁸⁴ Rhythms Massachusetts I Comments at 12; ALTS Massachusetts I Comments at 16-17; Covad Massachusetts I Comments at 25-28.

⁴⁸⁵ See Verizon Massachusetts I Lacouture/Ruesterholz Reply Decl. at para. 44.

⁴⁸⁶ *Id.*

⁴⁸⁷ Verizon offers "feeder subloops over DS1 or DS3 transmission paths which may be either fiber or copper depending upon facilities availability." See Verizon Massachusetts I Lacouture/Ruesterholz Reply Decl. at para. (continued....)

LECs may gain access to subloops at technically feasible points of interconnection other than the FDI.⁴⁸⁸ For these reasons, we cannot agree with the commenters' claims that Verizon limits access to subloop unbundled network elements in violation of the requirements of section 271.

d. High Capacity Loop Performance

157. We find that Verizon's performance for high capacity loops does not result in a finding of noncompliance with checklist item four. We look to the totality of the circumstances in evaluating Verizon's performance in providing loops in accordance with the checklist requirements.⁴⁸⁹ During the period September through November, although volumes are low, carrier-to-carrier data show that Verizon misses a comparable number of installation appointments for competitors and retail alike.⁴⁹⁰ Verizon's performance data for its maintenance and repair functions for high capacity loops show parity.⁴⁹¹ Like other types of loops we consider, Verizon states that competing carrier behavior skews its high capacity loop performance.⁴⁹² We recognize that Verizon's performance on other measures with respect to

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137. *Id.* at Attach. P (stating that a 'Feeder Sub-Loop' means a DS1-DS3 transmission path over a feeder facility in Verizon's network).

⁴⁸⁸ Verizon specifically identifies the NID and the MPOE as possible alternative points for competing LECs to obtain access to subloops. *See* Verizon Massachusetts I Lacouture/Ruesterholz Reply Decl. at para. 138.

⁴⁸⁹ In so doing, we do not consider Verizon's special access services performance. OnSite Access specifically criticizes Verizon's performance in provisioning high capacity "loops" in New York and Massachusetts. *See also* On Site Access Massachusetts I Comments at 20-21 (citing Leonard Kriss Decl. at 2-6). CompTel lodges a related complaint alleging that Verizon has not demonstrated that it can comply with the competitive checklist at the same time it meets its obligation to provision access services and operate its long distance affiliate consistent with section 272's nondiscrimination requirements. *See* CompTel Massachusetts II Comments at 1-3. Criticisms of Verizon's provisioning of special access service are not relevant to compliance with checklist item four. As we held in the *SWBT Texas* and *Bell Atlantic New York Orders*, we do not consider the provision of special access services pursuant to tariffs for purposes of determining checklist compliance. *SWBT Texas Order*, 15 FCC Rcd at 18504, para. 335; *Bell Atlantic New York Order*, 15 FCC Rcd at 4126-27, para. 340. Checklist item 4 does not address itself to retail services Verizon provides to competitors such as special access services.

⁴⁹⁰ *See* PR 4-01 (UNE POTS/Special Services, percent Missed Appointments – Verizon – Total). In September and October, Verizon did not miss any installation appointments for high-capacity loops and missed 18.39 percent of its installation appointments in November. In November, the number of observations in this metric is 310 competitive LEC installations. However, this measure aggregates EEL and interoffice facilities installations. The comparable numbers over the same period for Verizon retail were 2.78, 1.90 and 1.43 percent. *See id.*

⁴⁹¹ For the period September through January, the Mean Time to Repair measure shows that Verizon troubles are resolved in 8.38 hours compared to 8.40 hours for competitive LECs during the same period. *See* MR 4-01 (Maintenance, UNE POTS, Special Services, Mean Time to Repair, Total).

⁴⁹² Verizon examined a sample of the January orders that were included in the Average Interval Offered measure (PR 1-07) and discovered that the vast majority of the orders should have been "X" coded because the competitive LEC asked for an interval longer than the standard interval. Because the orders were incorrectly "W" coded, Verizon states that they were included in the results and skewed the reported results. *See* Letter from Dee May, Executive Director Federal Regulatory, Verizon to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-09 (filed February 28, 2001) (*Verizon Feb. 28 Ex Parte Letter*).

provisioning high capacity loops has been poor in Massachusetts.⁴⁹³ High capacity loops in Massachusetts represent only approximately 0.8 percent of all unbundled loops provisioned to competitors.⁴⁹⁴ Verizon performs at an acceptable level for most types of unbundled local loops. Given the low volumes of orders for high capacity loops in Massachusetts we cannot find that Verizon's performance for high capacity loops results in a finding of noncompliance for all loop types.⁴⁹⁵

e. Voice Grade Loops

158. We agree with the Massachusetts Department that Verizon demonstrates that it provides voice grade unbundled loops in a nondiscriminatory manner.⁴⁹⁶ This category includes hot cut loops and new stand-alone loops. We discuss each of these categories separately below.

(i) Hot Cut Loop Provisioning

159. *Hot Cut Process.* Verizon's hot cut process is designed to move a loop that is in service from Verizon's switch to a competitor's switch. Competitors can request that Verizon complete the hot cut within a specific appointment window and Verizon has committed to ensuring that the customer will not be out of service for more than five minutes during the hot cut.⁴⁹⁷ Verizon's hot cut process includes a number of steps that Verizon and competitors must take during the days preceding the hot cut. These steps include pre-wiring a cross-connection from the competitor's collocation arrangement to Verizon's main distribution frame prior to the committed date and time of the hot cut, setting the appropriate Local Number Portability triggers and confirming with the competitor that the loop is to be cut over to a competitor's switch.⁴⁹⁸

⁴⁹³ See e.g., PR 2-07 (Special Services – Provisioning, Av. Interval Completed – DS-1); PR 6-01 (Special Services – Provisioning, percent Installation Troubles reported within 30 Days).

⁴⁹⁴ Verizon states that during the period September through January, observations for PR 2-07 totaled 176 loops. Verizon notes that the high-capacity loop volumes the Commission considered in the *SWBT Kansas/Oklahoma Order* was even higher over the four month period the Commission considered in that proceeding. See *Verizon Feb. 28 Ex Parte Letter*. Letter from Dee May, Executive Director Federal Regulatory, Verizon to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-09 (filed February 28, 2001). In the period July through October, SWBT received 210 orders for DS-1 loops in Oklahoma. *SWBT Kansas/Oklahoma Order* at para. 213 n.616.

⁴⁹⁵ Although we recognize specific performance problems for high capacity loops, we do not find that these disparities in and of themselves are enough to render a finding of checklist noncompliance because of the small numbers of DS-1 loops requested by competing carriers. We stress, however, that we will be actively monitoring Verizon's performance in this area and we will take swift and appropriate enforcement action in the event that Verizon's provisioning performance for high capacity loops deteriorates. See *infra* Part IX.

⁴⁹⁶ See Massachusetts Department Massachusetts I Comments at 279.

⁴⁹⁷ See Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 81.

⁴⁹⁸ *Id.* at Attach. J.

160. *Hot Cut Timeliness and Quality.* We find that Verizon demonstrates that it provides hot cuts in Massachusetts in accordance with checklist item 4 because it provides hot cuts in a timely manner, at an acceptable level of quality, with minimal service disruption, and with a minimum number of troubles following installation.⁴⁹⁹ Verizon reports data on the percentage of hot cut orders completed within the cut-over window specified by the requesting competing carriers on an LSR.

161. In the instant application, Verizon demonstrates that its hot cut performance has returned to acceptable pre-strike levels which afford a competitor a meaningful opportunity to compete.⁵⁰⁰ During October and November 2000, Verizon completed on average 96 percent of hot cut orders on time. During the same time period, less than 0.8 of the hot cut lines experienced installation troubles within 7 days.⁵⁰¹ The Massachusetts Department engaged in a reconciliation of various Verizon self-reported hot cut performance measurement data in the context of the state section 271 proceeding.⁵⁰² Relying upon the results of its carrier-specific data reconciliation, the Massachusetts Department concluded that “there is no need for further data reconciliation” and concluded that Verizon provides sufficient on-time hot cut performance to meet the requirements of checklist item 4.⁵⁰³ Because the Massachusetts Department performed a searching and specific data reconciliation of Verizon’s hot cut performance, we accord its resolution of this issue substantial weight. We note that no commenter challenges Verizon’s hot-cut conversion performance in this phase of the proceeding. We thus conclude that the record demonstrates that the hot cut performance Verizon makes available to competing carriers in Massachusetts minimizes service disruptions and affords a competitor a meaningful opportunity to compete.

⁴⁹⁹ We evaluate the PR 9-01 (Provisioning, POTS, percent On-Time Performance – Hot Cut); PR 6-02 (Provisioning, POTS, percent Installation Troubles reported within 7 Days – Hot Cut Loop) measures in Massachusetts.

⁵⁰⁰ See Verizon Massachusetts I Guerard/Canny Decl. at Attach. E; PR 9-01 (Provisioning POTS, percent On Time Performance – Hot Cuts). For May, PR 9-01 showed 98.45 percent on time performance, for June, PR 9-01 showed 99.63 percent on time performance and for July, PR 9-01 showed 99.19 percent on time performance. KPMG reviewed Verizon’s hot cut performance between October 1999 and January 2000 and found that 98 percent of hot cuts were completed on-time. See Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 83 (citing KPMG Report at 198-99 (POP-6-2-6). The Massachusetts Department characterizes Verizon’s hot cut timeliness performance as “excellent” and notes that unlike Verizon’s performance in New York prior to filing its application with this Commission, Verizon bettered the 95 percent “on time” benchmark in Massachusetts every month from January through July 2000. See Massachusetts Department Comments at 284-85.

⁵⁰¹ See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 5.

⁵⁰² In response to criticism from one carrier, AT&T, regarding the accuracy of Verizon’s hot cut data, the Massachusetts Department engaged in a reconciliation of various Verizon self-reported hot cut performance measurement data in the context of the state section 271 proceeding. Massachusetts Department Massachusetts I Comments at 288. AT&T does not criticize Verizon’s hot cut performance in this proceeding.

⁵⁰³ Massachusetts Department Massachusetts I Comments at 288.

(ii) New Stand-Alone Loop Provisioning

162. We agree with the Massachusetts Department that Verizon demonstrates that it provisions new unbundled stand-alone voice grade loops in accordance with the requirements of checklist item 4.⁵⁰⁴ When Verizon does not presently service the customer on the line in question, a hot cut loop is not required. In such instances, a competing carrier obtains a new stand-alone loop from Verizon which dispatches a technician to the customer's premises to complete the installation. We find that Verizon demonstrates that it provisions and maintains new stand-alone voice grade loops for competing carriers in substantially the same time and manner that it installs new voice grade loops for its own retail operations.

163. *Provisioning Timeliness and Quality, Maintenance and Repair.* Verizon demonstrates that it delivers new voice grade loops in a timely manner and at acceptable levels of quality. Verizon also demonstrates that it provides maintenance and repair functions for such loops in a nondiscriminatory manner. No party specifically criticizes Verizon's new, stand-alone loop provisioning performance. As in previous section 271 orders, in reviewing Verizon's performance we examine the average completion interval, missed installation appointments, trouble reports within 7 days and mean time to repair measures. Specifically, Verizon's performance results for the months of September, October, November and December 2000 also demonstrate parity for the average completion interval for new loop orders of 1-5 lines measure.⁵⁰⁵ During the same period, Verizon's missed installation appointment rate for new voice loops also demonstrated parity.⁵⁰⁶ Furthermore, Verizon appears to be providing new voice grade loops to competitors at an acceptable level of quality. Based on the trouble report within 7 days measure, Verizon provided installation at the same level of quality for competitive LECs compared to retail during the months of September, October, November and December 2000.⁵⁰⁷ Verizon's mean time to repair measures show that it is providing maintenance and repair functions for new loops to competitors in a nondiscriminatory manner.⁵⁰⁸

⁵⁰⁴ See *id.* at 256.

⁵⁰⁵ In September, Verizon completed POTS loop orders of 1-5 lines in 8.82 for Verizon retail and 8.53 for competitors. The comparable numbers for October were 5.81 for Verizon retail affiliate and 9.22 and 5.45 for Verizon retail and 4.86 for competitors in December. See PR 2-03 (Provisioning, Average Completed Interval, Dispatch 1-5 lines – Loop).

⁵⁰⁶ See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at Attach. A. The September to November missed appointment rate, PR 4-04, is 8.13 percent for Verizon and 7.09 percent for [competing carriers]. The December rate was 6.96 for Verizon and 10.31 for competing LECs. See PR 4-04 (Provisioning, POTS, percent Missed Appointments, Verizon, Dispatch, Loop – New).

⁵⁰⁷ The percentage of installation troubles reported on voice grade loops for competitors were 1.13 percent in September, .98 percent in October, .80 percent in November and .74 in December. The comparable numbers for Verizon were 2.39 in September, 1.87 in October, 1.77 in November and 1.60 in December. See PR 6-02 (Provisioning, POTS, percent Installation Troubles reported within 7 Days – Loop).

⁵⁰⁸ Results for the mean time to repair measure, Mean Time to Repair – Total, in the months of September, October, November and December show parity. Competitor troubles were repaired in 19.77 hours in September, 18.52 hours in October, 19.00 hours in November and 15.38 hrs in December. Verizon's troubles were repaired in (continued....)

f. **Line Sharing**

(i) **Background**

164. On December 9, 1999 the Commission released the *Line Sharing Order* that, among other things, defined the high-frequency portion of local loops as a UNE that must be provided to requesting carriers on a nondiscriminatory basis pursuant to section 251(c)(3) of the Act and, thus, checklist items 2 and 4 of section 271.⁵⁰⁹ In the *Line Sharing Order* the Commission acknowledged that it could take as long as 180 days from the release date for incumbent LECs to develop and deploy the modifications necessary to implement this new requirement. This 180 day period concluded on June 6, 2000, approximately six months before Verizon filed its Massachusetts II application. In the *SWBT Kansas/Oklahoma Order*, the Commission provided BOC-applicants guidance concerning the required section 271 line sharing showing necessary to meet a BOC's burden of proof. Specifically, the Commission stated that "a successful BOC-applicant should provide evidence that its central offices are operationally ready to handle commercial volumes of line sharing and that it provides competing carriers with nondiscriminatory access to the pre-ordering and ordering OSS functions associated with the provision of line shared loops, including access to loop qualification information and databases."⁵¹⁰ The Commission also held that "to the extent that a BOC applicant relies upon commercial data from another state to establish that it is providing nondiscriminatory access to line shared loops in a state where it requests section 271 authority, it should provide evidence that the OSS and provisioning processes are identical."⁵¹¹ Verizon must demonstrate, therefore, that it provides nondiscriminatory access to the unbundled high-frequency portion of the loop to gain section 271 approval in Massachusetts.

165. Verizon proposes to demonstrate compliance with its line sharing obligation with evidence that it has signed nine interconnection agreements in Massachusetts with line sharing provisions. Verizon also notes that the Massachusetts Department recently approved its line sharing tariffs, with only minor amendments.⁵¹² It further states that it is able to handle

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21.63 hours in September, 17.68 hours in October, 17.95 hours in November and 16.98 hrs in December. See MR 4-01 (Maintenance, POTS Loop, Mean Time to Repair – Total).

⁵⁰⁹ See *Deployment of Wireline Services Offering Advanced Telecommunications Capabilities and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order, CC Docket No. 98-147, Fourth Report and Order, CC Docket No. 96-98, 14 FCC Rcd 20912 (1999) (*Line Sharing Order*) (*pet. for rehearing pending sub nom. USTA v. FCC*, DC Cir. No. 00-102 (filed Jan 18, 2000)).

⁵¹⁰ *SWBT Kansas/Oklahoma Order* at para. 215.

⁵¹¹ *SWBT Kansas/Oklahoma Order* at para. 215. The Commission further stated that to "the extent its OSS provisioning processes are not identical, a BOC applicant bears the burden of showing that whatever differences are present are not material." *Id.*

⁵¹² Verizon offers competing carriers two arrangements for line sharing pursuant to its interconnection agreements and line sharing tariff. The first arrangement provides a competing carrier with the ability to install, own and maintain the splitter in the competing carrier's own collocation arrangement. In the second arrangement, a competitive LEC-owned splitter is located in Verizon's central office space and is maintained by Verizon. See Verizon Massachusetts I Ruesterholz/Lacouture Decl. at para. 118. As part of its *Phase III* proceeding, the (continued....)

“considerable volumes of line sharing orders” by utilizing its successful New York provisioning methods and procedures in Massachusetts.⁵¹³ Finally, through the New York DSL collaborative, it has worked with competing carriers to identify and resolve various technical and operational issues associated with line sharing in Massachusetts.⁵¹⁴ Competing carriers contest Verizon’s operational readiness to offer line sharing and Verizon’s ability to offer line sharing on a nondiscriminatory basis.⁵¹⁵

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Massachusetts Department has directed Verizon to implement OSS enhancements to support line sharing by April 1, 2001. The Massachusetts Department, however, found that the fact that line sharing orders currently require manual processing does not prevent it from finding that Verizon satisfies its nondiscrimination obligation. *See* Massachusetts Department Massachusetts I Comments at 328. Covad contests Verizon’s showing that it offers line sharing capability over fiber-fed loops. Covad Massachusetts II Comments at 35. Verizon responds that it satisfies the Commission’s requirements through remote terminal collocation and unbundled subloop offerings. *See* Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at paras. 160-65. We note that the issue of line sharing over fiber-fed loops is the subject of a *Further Notice of Proposed Rulemaking* at the Commission. *See* Line Sharing Reconsideration Order at para. 12; *see also accompanying*, Third Further Notice of Proposed Rulemaking in CC Docket No. 98-147, Sixth Further Notice of Proposed Rulemaking in CC Docket No. 96-98.

⁵¹³ Verizon Massachusetts I Ruesterholz/Lacouture Decl. at para. 114. In its initial application Verizon stated that it has provisioned over 7,000 line sharing orders in New York, the majority of which were for its own data affiliate. *See id.* Verizon’s Massachusetts II application shows that Verizon has processed roughly 10 times the number of line sharing orders for its retail affiliate compared to line sharing orders processed for unaffiliated competing LECs.

⁵¹⁴ Verizon Massachusetts I Ruesterholz/Lacouture Decl. at para. 115. For example, Verizon asked competing carriers to identify their priority wire centers throughout Massachusetts by March 13, 2000 so that Verizon could prioritize the central office wiring work necessary to accommodate line sharing requests. *Id.* at 127.

⁵¹⁵ *See* Covad Massachusetts II Comments at 7-8; Rhythms Massachusetts II Comments at 6; CIX Massachusetts II Comments at 7; USISPA Massachusetts II Reply at 9; AT&T Massachusetts II Reply at 25; Covad Massachusetts I Comments at 28; WorldCom Massachusetts I Comments at 62; Rhythms Massachusetts I Reply at 18; ALTS Massachusetts I Reply at 36. On March 14, 2001, Verizon filed an *ex parte* letter in this proceeding stating that Verizon has “taken steps to address the outstanding issues” between Rhythms and Verizon and accordingly, Rhythms “no longer opposes Verizon’s Application for section 271 authority in Massachusetts.” Letter from Kimberly A. Scardino, Assistant General Counsel, Rhythms to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed March 14, 2001). Rhythms had argued that where Verizon completed pre-wiring collocation work, in some instances it was wired incorrectly or the cable and pair assignment were not entered into Verizon’s inventory system. *See* Rhythms Massachusetts II Comments, Williams Decl. at para. 39. Covad claims that Verizon cannot “provision a single line shared order in a central office while at the same time Verizon was shutting off line-sharing ready central offices for its own retail service because orders are flowing through beyond capacity.” Letter from Jason D. Oxman, Senior Government Affairs Counsel, Covad to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 00-176 at 1 (filed Feb. 21, 2000); *see also* Letter from Jason D. Oxman, Senior Government Affairs Counsel, Covad to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 00-176 at 1 (filed Nov. 28, 2000) (arguing that walkthroughs of Verizon central offices showed incomplete splitter installations as of the week of November 20, 2000). Verizon responds that Covad and Rhythms are the only competing carriers that submitted their line sharing plans to Verizon’s project management plan and that installation of splitters was performed on a timely basis. Verizon Massachusetts I Lacouture/Ruesterholz Decl. at paras. 112-13. The Massachusetts Department found that whatever delays resulted from splitter installation were attributable to competing carriers, specifically Covad. Massachusetts Department Massachusetts I Comments at 327.

(ii) Discussion

166. We find that Verizon demonstrates that it provides nondiscriminatory access to the high-frequency portion of the loop. Specifically, the most probative evidence that Verizon submits to support this point is actual commercial usage.⁵¹⁶ The Commission stated in the *SWBT Kansas/Oklahoma Order* that “a successful BOC applicant could provide evidence of BOC-caused missed installation due dates, average installation intervals, trouble reports within 30 days of installation, mean time to repair, trouble report rates and repeat trouble report rates.”⁵¹⁷ Our approach in this case is to rely primarily on the limited commercial data Verizon has submitted from its Massachusetts operations. Because line sharing volumes in Massachusetts have escalated only recently, however, we look to Verizon’s line sharing performance in New York as well, where line sharing volumes are larger for additional evidence that Verizon is providing nondiscriminatory access to line sharing.⁵¹⁸ As discussed above, we conclude that Verizon’s line sharing OSS in New York and Massachusetts uses the same systems and offers the same functionality.⁵¹⁹ Accordingly, we shall consider Verizon’s commercial line sharing performance in New York as a supplement to Verizon’s limited commercial line sharing performance in Massachusetts.

⁵¹⁶ See *supra* Part II.A.

⁵¹⁷ See *SWBT Kansas/Oklahoma Order* at para. 215.

⁵¹⁸ From September 2000 through January 2001, Verizon has provided a total of approximately 51,000 line shared loops in Massachusetts including those for VADI. During December and January, Verizon completed nearly 500 line shared loops for competitors in Massachusetts. See *Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl.* at para. 103. In New York, Verizon has processed 110,000 line shared orders including those provided to VADI. See *id.* at para. 28.

⁵¹⁹ See *supra* Part IV.A.2.b. The Massachusetts Department concluded that the “systems and processes in Massachusetts are comparable to, indeed the very same as, those found in New York.” Massachusetts Department Massachusetts II Comments at 35; see also *Verizon Massachusetts II Sapienza/Mulcahy Decl.* App. A, Attach. B. PwC also investigated whether VADI has the same interface options as unaffiliated competitive LECs and whether Verizon treats transactions it receives from VADI the same as transactions it receives from unaffiliated competitive LECs. PwC confirmed that VADI offers DSL service using line sharing purchased from Verizon using the same interfaces that are available to other unaffiliated competitive LECs. VADI generally uses CORBA for pre-ordering, EDI for ordering and the Web GUI for maintenance and repair. In addition, PwC confirmed that once Verizon receives the orders over the interface, it provisions a VADI order using the same systems and processes as it uses to provision an order for any other competitive LEC. Likewise, PwC reports that VADI’s maintenance and repair requests are handled by Verizon in the same manner as a request from an unaffiliated competitive LEC. See *Verizon Massachusetts II Lacouture/Ruesterholz Decl.* at para. 143. Verizon does, however, reveal that a “small percentage” of VADI’s New York line sharing orders are distributed by a team leader in the Boston xDSL/Line Sharing Center to a group of approximately 35 temporary service order representatives located in New York. Verizon contends that it retained these temporary representatives to clear a backlog of retail DSL orders in New York that existed before VADI was operational. *Verizon Massachusetts II Lacouture/Ruesterholz Supp. Decl.* at para. 154. This slight difference in OSS functionality does not alter our conclusion that the OSS in New York and Massachusetts are identical for purposes of the Commission’s consideration of New York line sharing commercial data.

167. *Operational Readiness.* Competitive LECs take issue with Verizon's ability to wire adequately central offices to offer line sharing.⁵²⁰ Covad specifically contests Verizon's representation that it was operationally ready to provision line sharing for all splitter collocation arrangements in place as of December 1, 2000.⁵²¹ In response, Verizon states that it recognized central office wiring problems that delayed the readiness of certain offices and committed to reinspections of all line-sharing related central office work beginning in December 2000.⁵²² The Department of Justice recognizes that "Verizon is making efforts to resolve its line sharing implementation difficulties" and the Massachusetts Department urges us to find that Verizon provides nondiscriminatory access to the high frequency portion of the loop.⁵²³

168. Verizon has now completed all the quality inspections and has "taken the necessary corrective action for all of the line sharing-related collocation arrangements that were in place as of December 1, 2000 . . . in both Massachusetts and New York."⁵²⁴ Verizon has also agreed to implement the elements of its quality inspection process into the normal collocation inspection process and thus, new line sharing-related collocation arrangements will be subject to

⁵²⁰ See Covad Massachusetts II Comments at 6; Rhythms Massachusetts II Comments at 8. Rhythms contends that Verizon's explanation of defective splitter installation could not apply to it because Rhythms has elected to place splitter in Rhythms collocation spaces and the only remaining central office wiring work to be done is the re-termination of existing 200 cable and pair, a process that Rhythms claims is simple and accomplished quickly. Rhythms Massachusetts II Comments at 8.

⁵²¹ Covad argues that it requested that 55 central offices in Massachusetts offer line sharing capability. As of February 21, 2000, Covad has successfully provisioned line sharing in 44 of those 55 offices and it has provided the CLLI codes for those offices where Covad has pending orders. See Covad Massachusetts II Reply at 19; see also Rhythms Massachusetts II Comments at 8. Verizon responds that only two of the offices Covad initially complained of are in Massachusetts and of these two, it has provisioned Covad orders in a number of the central offices which are relevant to this application. See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 131. As to the status of contested offices in New York, Verizon responds that Covad's claim that its "Failed Dispatch Report" shows discrimination is misplaced because joint investigations at these central offices show that the orders have failed due to operational and other problems on Covad's part. *Id.* at 133-35. Covad concedes that for some of its collocation arrangements, it is possible that "Covad has not yet installed DSLAM cards in a particular office to support line sharing capability" to conserve scarce resources but nonetheless argues that regardless of whether such equipment is installed, Verizon has an obligation to ensure that the office is line-sharing ready. Covad Massachusetts II Reply at 20 n.35. Verizon offers a similar response to Rhythm's allegations that several Massachusetts central offices are not line sharing ready. Verizon contends that the central offices in question have been re-examined and it has not found any wiring problems. Verizon further responds that its records show that of the LSRs submitted by Rhythms only a small proportion of the central offices in Massachusetts are at issue. Of these offices, Verizon claims that it has completed line sharing orders for Rhythms in nearly all of the central offices at issue in Massachusetts. See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at paras. 143-145.

⁵²² Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 138.

⁵²³ Massachusetts Department Massachusetts II Comments at 36-38; Department of Justice Massachusetts II Evaluation at 14.

⁵²⁴ See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para 126; see also Letter from Dee May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed February 23, 2001). Covad represents that it submitted "every single one of its linesharing collocation applications in Massachusetts in April 2000." Covad Massachusetts II Reply at 22.

this inspection process as well.⁵²⁵ It therefore appears that Verizon instituted its quality inspection process and completed any necessary corrective action as it became aware of central office wiring issues described by competitive LECs.⁵²⁶

169. *Line Sharing Performance Data.* Verizon has supplied a limited amount of Massachusetts commercial data for the period September through November 2000 in support of its line sharing showing.⁵²⁷ To show that the data are reliable, Verizon engaged PwC to replicate its carrier-to-carrier results and 34 line sharing measures for the period September through November, the results of which, according to PwC, largely confirm the results presented by Verizon.⁵²⁸ We recognize the Department of Justice's concerns that some of the line sharing completion interval data may be inaccurate.⁵²⁹ Like the Massachusetts Department, however, we conclude that the data adequately show that Verizon has met its line sharing obligation.⁵³⁰ The

⁵²⁵ See Letter from Dee May, Executive Director Federal Regulatory, Verizon to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed February 22, 2001). Rhythms argues that Verizon did not institute its quality inspection audit process soon enough. See Rhythms Massachusetts II Comments at 8. Verizon responds that its "implemented the inspection process as soon as it became aware of the start-up issues." Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 37.

⁵²⁶ See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 137. Verizon has continued to address these issues, particularly with Covad. Recent reports suggest that Verizon has largely, if not completely, resolved central office wiring issues that have affected the deployment of line-shared services by competing carriers. See Letter from Jason Oxman, Senior Counsel, Covad to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9, (filed April 6, 2001) (stating that "Covad verified, in Massachusetts, that Verizon honored its commitment to clear all infrastructure related troubles, throughout the former Bell Atlantic footprint, by February 15, 2001").

⁵²⁷ See Verizon Massachusetts II Sapienza/Mulcahy Decl. at para. 13.

⁵²⁸ See *id.* (finding that for the majority of the line sharing measurements, PwC's numbers matched Verizon's and that for the remaining measurements, the number of observations was consistent and Verizon's reported performance was within one percent).

⁵²⁹ While PwC confirmed that Verizon accurately calculated the missed appointment rates under the terms of the new consensus measurements, the reported results may overstate Verizon's performance. Verizon's technicians may have marked some competitive LEC orders as completed after they had tested the line and received a working dialtone, even though the splitter to enable DSL serve on that line may not initially have been installed correctly. Verizon however has committed to adopt additional testing procedures to ensure that line sharing orders are not marked completed unless working splitters are in place. See Verizon Massachusetts II Application at 30 n.25. The Department of Justice states that this problem "affected those performance measures calculated using the provisioning completion date: PR-2 (average interval completed); PR 3-10 (percent completed within x days); and PR-4 (missed appointments)." Department of Justice Massachusetts II Evaluation at 13 n.54. Competing carriers also contest Verizon's line sharing showing and argue that the current record is insufficient to support a finding of nondiscrimination. See Covad Massachusetts II Comments at 8; Rhythms Massachusetts II Comments at 6; CIX Massachusetts II Comments at 24.

⁵³⁰ The Massachusetts Department notes that Verizon states that for the percent missed appointments – dispatch measure, PR 4-05, "Verizon may not have included those instances where Verizon's technician performed the central office work typically required for xDSL loops but failed to confirm that a splitter . . . was functioning on the line." Massachusetts Department Massachusetts II Comments at 37. The Massachusetts Department found that Verizon's manual processing of line sharing orders "will be short-lived and, even absent complete line sharing order flow- (continued....)

New York Commission only recently directed Verizon to capture its xDSL performance in disaggregated line sharing measures. In this case, we decline to hold isolated inaccuracies against Verizon where the method of reporting and collecting data is new and the underlying cause of the distortion has been addressed by Verizon.⁵³¹ In this context, we believe it is appropriate to credit Verizon's submission of Massachusetts commercial line sharing data, supplemented by data from New York, when making our determination that Verizon provides nondiscriminatory access to the high-frequency portion of the loop. Specifically, we are convinced that the flawed timeliness measures provide evidence of the time it takes Verizon to provision line shared loops.

170. *Provisioning Timeliness.* Overall, Verizon adequately demonstrates that it provisions line sharing to competitors in substantially the same time as it does for itself. We note at the outset that we give no decisional weight to Verizon's missed appointment data for line sharing in New York and Massachusetts. Although the data on their face show that Verizon meets the parity standard⁵³² we agree with the Department of Justice, the Massachusetts Department and even Verizon itself, that the measure may be flawed.⁵³³ Specifically, Verizon states that this measure may not have captured those instances where a Verizon technician performed the central office work typically required for xDSL loops but failed to confirm that a splitter was functioning on the line.⁵³⁴ Parties criticizing the completion measures appear to argue that because a Verizon technician did not test for a functioning splitter, the quality – rather than the timeliness – of Verizon's installation work is unacceptable.⁵³⁵ While we recognize that performing the additional work required to test whether a splitter was functioning on the line could have an impact on the completion measures, we find that the data provided by Verizon are probative of the time it takes Verizon's technicians to install line-shared service.⁵³⁶ We are
(Continued from previous page)

through" Verizon can meet foreseeable demand for line sharing. Massachusetts Department Massachusetts I Comments at 327.

⁵³¹ Verizon now performs a "splitter signature test" which is used "to determine whether the splitter, which is necessary for line sharing, is functioning on the line." Verizon Massachusetts II Reply at 23.

⁵³² In September, October, and November in Massachusetts, Verizon did not miss any competitive LEC line sharing appointments. In December, Verizon missed approximately one percent of competitive LEC appointments. Verizon has supplied provisioning information for its separate data affiliate, VADI, only for the month of November. In November, these results demonstrate parity. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at Attach. JJ.

⁵³³ Verizon Massachusetts II Application at 30 n.25. The Massachusetts Department believes that the measure is sufficiently flawed to merit exclusion of this information as evidence that Verizon is providing nondiscriminatory access to line sharing. Massachusetts Department Massachusetts II Comments at 37. The Department of Justice agrees and characterizes the measure as "substantially undermined" by the inaccuracies captured in the measure. *Id.* at 13.

⁵³⁴ Verizon Massachusetts II Brief at 30 n.25. Without such testing, even though technicians have confirmed dial-tone to and from the splitter, Verizon is unable to confirm that a splitter is properly functioning on a line.

⁵³⁵ See Covad Massachusetts II Comments at 8; see also Department of Justice Massachusetts II Evaluation at 13.

⁵³⁶ Even with the miscoding, the measures describe accurately the amount of time Verizon technicians required to install line-shared service without the added task of performing a splitter signature test. Because failure to install a
(continued...)

therefore not prepared to dismiss all of the evidence of commercial usage as USISPA suggests because the inaccuracies appear to be limited to the completion measures and are not so pervasive as to render Verizon's line sharing data completely untrustworthy.⁵³⁷ Furthermore, as Verizon became aware of this problem, it addressed this data integrity issue by properly instructing its installation personnel to code orders as complete after properly functioning splitters are working on a given line, implementing its quality inspections for line sharing-related collocation work and performing a splitter signature test to ensure that the quality of its installation work was acceptable. Indeed, the record shows that during the period of time not affected by the distortion, Verizon's timeliness performance demonstrates parity.⁵³⁸

171. The average completion interval data for line sharing show parity.⁵³⁹ While Verizon has supplied no retail information as a basis for comparison during the months of September and October for Massachusetts data, the average completion interval measure in November shows that Verizon required slightly more than six days to provision line-shared loops to competitors compared to over seven days for itself.⁵⁴⁰ In New York, for the months of September and November, performance for competitive LECs is superior to that provided to VADI.⁵⁴¹ Although these data show that Verizon is performing at parity we note that Verizon's (Continued from previous page) _____

functioning splitter on a line could prevent line-shared service, the lack of a splitter test suggests that the quality of the work, rather than its timeliness, was affected.

⁵³⁷ We disagree with USISPA that the line sharing "measurements simply do not exist." USISPA Massachusetts II Reply at 6.

⁵³⁸ Verizon remedied this miscoding problem by December 15, 2000. In Massachusetts, the missed appointment measure in January shows that Verizon missed only one percent of competitive LEC line sharing installation appointments. Verizon argues that the January results show that "the impact on the performance measures caused by the lack of the splitter signature test was minimal." Letter from Dee May, Executive Director Federal Regulatory, Verizon to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed March 19, 2001). The December results also show that Verizon misses less than one percent of installation appointments for competing carrier line sharing orders. *See id.*

⁵³⁹ We acknowledge that the failure of Verizon's technicians to test whether a splitter was functioning on the line may also have affected the average completion interval. As discussed above, Verizon has addressed this data integrity issue going forward and has instituted a quality inspection program to ensure that competitive LECs receive acceptable installation quality performance.

⁵⁴⁰ The Massachusetts average completion interval in November was 6.37 days for competitive LECs compared to 7.53 days for VADI. In September, Verizon completed competitive LEC line sharing orders in 6.47 days and 6.29 days in October. *See Verizon Massachusetts II Lacouture/Ruesterholz Decl.* at para. 159 & Attach. NN. Verizon has also presented data for another interval measure, the percent completed within 6 days measure. In New York, from September through November, Verizon completed 74.87 percent of competitive LEC orders and 71.60 percent of VADI orders within six days, where a six day interval was requested. *See Verizon Massachusetts II Lacouture/Ruesterholz Decl.* at para. 159 & Attach. OO. Verizon contends that a majority of the competitive LEC orders not completed within six days are completed within seven days. In Massachusetts, over 93 percent of the competitive LEC line sharing orders in the period September through November were completed within seven days. *See id.*

⁵⁴¹ For the months of September, October and November, the average completion interval for competitive LECs in New York was 5.59, 6.4, and 6.42 days compared to 9.15, 6.2, 6.02 days for VADI. *See Verizon Massachusetts II Lacouture/Ruesterholz Decl.* at 159, Attach. MM.

performance is generally above the 5-day interval established by the Massachusetts Department even as the current interval is scheduled to be reduced to four days in the near future.⁵⁴² It is encouraging that Verizon is moving toward meeting this state-approved provisioning interval while it gains additional experience provisioning commercial volumes of line shared orders.

172. *Installation Quality & Maintenance and Repair.* Based on the commercial data presented in Massachusetts, Verizon appears to be providing line shared loops at acceptable levels of quality. Although VADI did not submit any trouble reports within thirty days of installation in the month of November, the competitive LEC rate was 1 percent and in September and October 2000, competitive LECs did not report any troubles on line-shared loops captured by the measures.⁵⁴³ In New York, from September through November, the weighted average of installation troubles for competitive LECs was 1.70 percent compared to less than one percent for VADI.⁵⁴⁴

173. With respect to maintenance and repair, Verizon repairs loops for competitors in less time than it takes to repair retail line-shared loops. In November, the only month for which Verizon provided such data in Massachusetts, Verizon repaired competing carrier line-shared loops in just over three hours.⁵⁴⁵ Verizon represents that it took significantly longer to repair loops for VADI – over 25 hours.⁵⁴⁶ In New York, Verizon shows that the mean time to repair is

⁵⁴² Verizon has introduced flow through capability for line-shared ADSL orders and will accomplish line sharing provisioning for most orders without the time necessary to dispatch a technician to install service. Given the fact that line sharing provisioning is largely accomplished without manual intervention, the Massachusetts Department ordered Verizon to reduce its line sharing interval from 6 days to five days effective November 27, 2000. Massachusetts Department Massachusetts I Comments at 36 n.110; *see also* CIX Massachusetts I Comments at 25. Verizon states that its 5-day interval tariff for line sharing orders of 1-9 lines went into effect on November 27, 2000 and Verizon “is now complying with the new interval.” *See* D.T.E. Tariff No. 17, Part A, Section 3.2.10. Additionally, Verizon has committed to file, as required by the Massachusetts Department, a tariff reducing the provisioning interval by an additional business day after the April 1st deadline for fully implementing certain OSS upgrades. *See* Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 164.

⁵⁴³ Massachusetts Department Massachusetts II Comments at 36. We are mindful that, because Verizon has committed to resolving line sharing troubles through a coordinated process, it addresses some number of line sharing troubles “without the receipt of a trouble ticket” and concedes that the “small number of maintenance and repair requests reported is likely attributable to that interim process.” *See* Verizon Massachusetts II Lacouture/Ruesterholz Supp. Decl. at para. 156.

⁵⁴⁴ Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 166 & Attach. SS. Covad argues that Verizon’s line sharing I-code data are skewed because Verizon classifies troubles associated with splitter wiring as “CPE troubles” which show up in the performance measure as competitive LEC-caused troubles. Covad Massachusetts II Reply at 15. Verizon responds that Covad mistakenly assumes that Verizon’s trouble designation codes are designed to assign blame for a trouble ticket to Verizon or a competitive LEC. *See* Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 119. The codes at issue are designed to indicate whether the trouble is caused by an item in the Verizon or competitive LEC network. Because splitters are not part of Verizon’s network Verizon codes splitter troubles accordingly.

⁵⁴⁵ *See* Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 71.

⁵⁴⁶ *Id.*

comparable to stand-alone xDSL loop repair times and offers competitors nondiscriminatory access to maintenance and repair functions.⁵⁴⁷ Verizon also shows that its repair services are performed at acceptable levels of quality.⁵⁴⁸ Thus we find that the data suggest that Verizon is providing line-shared loops at an acceptable level of quality and repairing these facilities in a nondiscriminatory manner.

174. Although we have some concerns with the accuracy of Verizon's performance results and the limited volume of competitive LEC orders captured by the measures, we base our decision on measures not affected by such inaccuracies, the replication of other measures by PwC and Verizon's efforts in addressing the central office wiring issues that have impaired the ability of competitive LECs to submit commercial volumes of line sharing orders. Recent efforts by Verizon have substantially, if not completely, addressed the initial central office wiring implementation issues experienced by competitive LECs in Massachusetts.⁵⁴⁹ Furthermore, we also note that Verizon has designed a process to address line sharing implementation difficulties going forward.⁵⁵⁰

g. Line Splitting

(i) Background

175. In the *Line Sharing Order on Reconsideration*, the Commission made clear that line splitting is an existing legal obligation and that incumbent LECs must allow competitors to order line splitting immediately, whether or not a fully electronic interface is in place.⁵⁵¹ The Commission further stated that "we expect Bell Operating Companies to demonstrate, in the

⁵⁴⁷ During September through November, the mean time to repair for competitive LECs was 16 hours compared to slightly longer than 10 hours for VADI. Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 172. In New York, from September through November, Verizon met more than 92 percent of the repair appointments that did not require a dispatch for both VADI and competitors. Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 170 & Attach. TT.

⁵⁴⁸ Verizon also provided the percentage of repeat trouble reports for both competitors and VADI. These data demonstrate that Verizon provides superior service to competitors compared to itself. See MR 5-01 (Line Sharing, percent Repeat Troubles w/30 Days).

⁵⁴⁹ See Letter from Kimberly A. Scardino, Rhythms to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-09 (filed March 2, 2001).

⁵⁵⁰ Verizon has designated a single point of contact for each competitive LEC to address line sharing ordering or provisioning processes regardless of whether they arise in Verizon's TISOC, CLPC or RCMC. Verizon is participating in the Commission's "Line Sharing Summit" and is engaged in a dialogue with competitive LECs to further improve the line sharing process. Verizon has also introduced flow through capability on line sharing orders for connections requiring less than three lines. Verizon has also accompanied Covad on site visits of several Massachusetts central offices to address what it terms are several "minor collocation-related issues." See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 139.

⁵⁵¹ Third Report and Order and Order on Reconsideration, CC Docket No. 98-147; Fourth Report and Order on Reconsideration, CC Docket No. 96-98; Third Further Notice of Proposed Rulemaking; CC Docket No. 98-147; Sixth Further Notice of Proposed Rulemaking; CC Docket No. 96-98 (rel. Jan. 19, 2001) at para. 20 n.36.

context of section 271 applications, that they permit line splitting, by providing access to network elements necessary for competing carriers to provide line-split services.⁵⁵² We discuss below the steps Verizon has taken to offer line splitting capabilities consistent with the *Line Sharing Order on Reconsideration*.⁵⁵³

176. Verizon states that it currently offers the unbundled network elements that would allow line-split services.⁵⁵⁴ On February 14, 2001, Verizon issued a statement of policy to accommodate line splitting.⁵⁵⁵ Additionally, Verizon has incorporated line splitting contract language reflecting this policy into its Model Interconnection Agreement which it will make immediately available to any carrier who wishes to offer line-split services.⁵⁵⁶ Verizon has also demonstrated that it offers competitors nondiscriminatory access to the individual network elements necessary to provide line-split services and that nothing prevent competitors from offering voice and data services over a single unbundled loop.⁵⁵⁷ Several competitors contest the adequacy of this language and argue that Verizon is currently not in compliance with the Commission's line sharing and line splitting requirements.⁵⁵⁸ These carriers further contend that Verizon has engaged in a pattern of recalcitrant behavior with regard to implementing line sharing and line splitting requirements and the Commission should not credit its promises of future compliance.⁵⁵⁹

⁵⁵² *Id.*

⁵⁵³ The Massachusetts Department recognizes that Verizon is required to offer line splitting but requests that the Commission "take into account the recent nature of both its and the Department's clarifying Orders on line splitting when reviewing" Verizon's section 271 application. Massachusetts Department Massachusetts II Comments at 41.

⁵⁵⁴ *See* Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at 149.

⁵⁵⁵ Verizon issued its statement of policy on February 14, 2001, approximately three weeks after this Commission issued the *Line Sharing Reconsideration Order*. *See* Verizon Massachusetts II Lacouture/Ruesterholz Reply. Decl. at 154. AT&T argues that Verizon must at least demonstrate it has a nondiscriminatory process in place to support line-split services. AT&T Massachusetts II Reply at 24; *see also* USISPA Massachusetts II Reply at 5; CompTel Massachusetts II Comments at 3-5.

⁵⁵⁶ In its line splitting amendment, Verizon commits to offer line splitting consistent with the Commission's *Line Sharing Reconsideration Order* by utilizing Verizon's OSS to order the unbundled network elements necessary to provide line-split services. With regard to migrations of UNE-P customers to line splitting, Verizon commits to follow the implementation schedules, terms, conditions and guidelines established in the ongoing DSL collaborative at the New York Public Service Commission. Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at 154, Attach. Q.

⁵⁵⁷ *See* Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 149-58. Verizon further argues that the Commission has already held that Verizon can provide unbundled network elements in combination, and line splitting can be achieved through the combination of unbundled network elements. *See id.* at para. 158.

⁵⁵⁸ *See* AT&T Massachusetts II Reply 24; WorldCom Massachusetts II Reply at 12-13; Covad Massachusetts II Reply at 5-6.

⁵⁵⁹ AT&T Massachusetts II Reply 24; WorldCom Massachusetts II Reply at 12-13; Covad Massachusetts II Reply at 5-6.

(ii) Discussion

177. Verizon demonstrates that it makes it possible for competing carriers to provide voice and data service over a single loop – *i.e.*, to engage in “line splitting.”⁵⁶⁰ Specifically, Verizon demonstrates that it has concrete and specific legal obligation to provide line splitting through rates, terms and conditions in interconnection agreements. As a result, a competing carrier may, for instance, provide voice service using UNE-P and, either alone or in conjunction with another carrier, provide xDSL service on that same line.

178. Our recent *Line Sharing Reconsideration Order* is clear: Verizon must permit competing LECs to offer both voice and data services over a single unbundled loop in a line splitting configuration.⁵⁶¹ The Commission also stated that incumbents must make necessary network modifications including access to OSS necessary for the “pre-ordering, ordering, provisioning, maintenance and repair and billing for loops used in line splitting arrangements.”⁵⁶² As carriers identify operational issues associated with line splitting, the Commission recognized that state collaboratives and change management processes could be used by “incumbent LECs and competing carriers to work together to develop processes and systems to support competing carrier ordering and provisioning of unbundled loops and switching necessary for line splitting.”⁵⁶³

179. We disagree with WorldCom’s contention that Verizon’s line-splitting interconnection agreement language limits line splitting to carriers who are collocated in Verizon central offices or that Verizon is taking the position that the UNE-P providers may not line split unless they are collocated.⁵⁶⁴ Verizon’s contract language, which includes a reference to “collocator to collocator” connections, does not require UNE-P providers to be collocated in Verizon central offices to offer line split services.⁵⁶⁵ Rather, UNE-P providers need not obtain collocation in Verizon central offices to offer the voice component of line-split services.

⁵⁶⁰ *Line Sharing Reconsideration Order* at para. 14-25; *SWBT Texas Order*, 15 FCC Red at 18515-17, paras. 323-329 (describing line splitting); 47 C.F.R. § 51.703(c) (requiring that incumbent LECs provide competing carriers with access to unbundled loops in a manner that allows competing carriers “to provide any telecommunications service that can be offered by means of that network element”).

⁵⁶¹ *Line Sharing Reconsideration Order* at para. 18.

⁵⁶² *Id.* at paras. 18-20.

⁵⁶³ *Id.* at para. 21.

⁵⁶⁴ See WorldCom Massachusetts II Reply at 13.

⁵⁶⁵ See Letter from Dee May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed March 23, 2001) (clarifying that voice providers in line splitting arrangements are not required to be collocated). We note that where a competitive LEC purchases an unbundled xDSL-capable loop terminated to its collocation arrangement to provide data service, it may partner with another competitive LEC to provide voice service. In this situation, the data provider may require a connection to the voice provider’s collocation arrangement.

180. Verizon's interconnection agreement amendment is also consistent with our *Line Sharing Reconsideration Order*, which requires that incumbent LECs minimize service disruptions to existing voice customers undergoing a transition to line-splitting.⁵⁶⁶ For example, where competitive LECs provide data service to existing end user customers and Verizon provides voice service to that customer there is no need to "rearrange" network facilities to provide line-split services.⁵⁶⁷ Because no central office wiring changes are necessary in such a conversion from line sharing to line splitting, Verizon is required under our *Line Sharing Reconsideration Order* to develop a streamlined ordering processes for formerly line sharing competitive LECs to enable migrations between line sharing and line splitting that avoid voice and data service disruption and make use of the existing xDSL-capable loop.⁵⁶⁸ Such a transition from line sharing to line splitting should occur subject only to charges consistent with the Commission's cost methodology as articulated in the *Local Competition First Report and Order*.⁵⁶⁹

181. We disagree with WorldCom's claim that Verizon's OSS does not comply with our *Line Sharing Reconsideration Order* in other respects.⁵⁷⁰ The *Line Sharing Reconsideration Order* does not require Verizon to have implemented an electronic OSS functionality to permit line splitting. Rather, the Commission's *Line Sharing Reconsideration Order* recognizes that a state-sponsored xDSL collaboratives is the appropriate place for Verizon to evaluate how best to

⁵⁶⁶ Verizon's line splitting amendment refers to "existing supporting OSS to order and combine" unbundled network elements necessary for line-split services. *Line Sharing Reconsideration Order* at para. 22. WorldCom likewise asserts that Verizon's contract language suggests that it intends to charge a series of non-recurring charges associated with each unbundled network element to its line-splitting customers that it does not charge to its UNE-P customers. See WorldCom Massachusetts II Reply at 13.

⁵⁶⁷ In the *Line Sharing Reconsideration Order*, the Commission held that "no central office wiring changes are necessary in a conversion from line sharing to line splitting." *Line Sharing Reconsideration Order* at para. 22. Verizon suggests that when competitive LEC serve customers with existing voice service, they may order new unbundled xDSL-capable loops and UNE-P arrangements and then issue a disconnect of the existing voice service to provide line split services. See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 157. Disconnecting a customer's currently-established voice service to enable the transition from line sharing to line splitting would require some disruption of dial tone and may require a change in the voice customers telephone number, a result that is inconsistent with our *Line Sharing Reconsideration Order*. See *Line Sharing Reconsideration Order* at para. 22.

⁵⁶⁸ *Line Sharing Reconsideration Order* at para. 22.

⁵⁶⁹ See *Local Competition First Report and Order*, 11 FCC Red at 15814-84, paras. 625-771. For example, we would expect Verizon to demonstrate why non-recurring charges in addition to those assessed when a competitive LEC orders a UNE-P arrangement are necessary. We cannot agree with Verizon when it states that "if Covad wants to engage in a line splitting arrangement with a voice [competing carrier], it may do so by working with the voice [competing carrier] to order the individual network elements" if such a process would impose unnecessary charges that are not cost-based or would otherwise require disruption of an end user's voice service in the context of a migration from line sharing to line splitting. Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 159.

⁵⁷⁰ WorldCom Massachusetts II Comments at 27.

develop this functionality.⁵⁷¹ For example, Verizon has represented that it is actively working on developing the OSS upgrades necessary to provide for electronic ordering of line-split services in the context of the New York Commission's xDSL collaborative.⁵⁷² We recognize that Verizon has not, to date, implemented the OSS upgrades necessary to electronically process line-splitting orders in a manner that is minimally disruptive to existing voice customers; but that such functionality may require significant software upgrades and testing. It is undisputed that the parties in the New York DSL collaborative commenced discussion of line splitting over a year ago; that in April 2000 Verizon formally posed numerous questions to competitors concerning their business rules for line splitting; and that in August 2000, competitive LECs submitted their initial detailed business rules to Verizon.⁵⁷³ Thus it appears that Verizon has the necessary information to implement the necessary OSS upgrades. Verizon has been able to provide its customers line-shared DSL service for approximately two years. Our *Line Sharing Reconsideration Order* is fulfilled by Verizon's adoption of an implementation schedule for line splitting as directed by the New York Commission that will afford competitors the same opportunities.

182. We note that in response to WorldCom's concerns, Verizon has agreed upon an implementation schedule to offer line splitting-specific OSS capabilities under the supervision of the New York Commission.⁵⁷⁴ In June of this year we expect that Verizon will conduct a preliminary OSS implementation in New York using new OSS functionality to add data service to an existing UNE-P customer. In October, Verizon has committed to implement, in the Verizon East territory including Massachusetts, the new OSS capability necessary to support migrations from line sharing to line splitting arrangements consistent with the business processes defined in the New York DSL collaborative.⁵⁷⁵ Consistent with their plans and with the guidance of the New York DSL collaborative, Verizon plans to offer OSS capability necessary to support UNE-P migrations to line splitting by October 2001.

V. OTHER CHECKLIST ITEMS

A. Checklist Item 1 – Interconnection

183. We conclude, as described below, that Verizon demonstrates that it provides equal-in-quality interconnection on terms and conditions that are just, reasonable, and nondiscriminatory in accordance with the requirements of sections 251(c)(2) and as specified in

⁵⁷¹ *Line Sharing Reconsideration Order* at para. 22 n.41 (“We also encourage participants in state collaboratives and change management processes to develop specific ordering procedures associated with a variety” of line splitting scenarios.)

⁵⁷² Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 157.

⁵⁷³ See New York PSC, Order Granting Clarification, Granting Reconsideration in Part and Denying Reconsideration in Part and Adopting Schedule, Case 00-C-0127 (Issued and Effective January 29, 2001).

⁵⁷⁴ See Verizon Massachusetts II Reply at 30.

⁵⁷⁵ See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at paras. 157.

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

In the Matter of)	
)	
Review of the Section 251 Unbundling)	
Obligations of Incumbent Local Exchange)	CC Docket No. 01-338
Carriers)	
)	
Implementation of the Local Competition)	
Provisions of the Telecommunications Act of)	CC Docket No. 96-98
1996)	
)	
Deployment of Wireline Services Offering)	CC Docket No. 98-147
Advanced Telecommunications Capability)	

**REPORT AND ORDER AND ORDER ON REMAND
AND FURTHER NOTICE OF PROPOSED RULEMAKING**

Adopted: February 20, 2003

Released: August 21, 2003

Comment Date: 30 days after Federal Register publication of this Notice

Comment Reply Date: 60 days after Federal Register publication of this Notice

By the Commission: Chairman Powell and Commissioner Abernathy approving in part, dissenting in part and issuing separate statements; Commissioners Copps and Adelstein approving in part, concurring in part, dissenting in part and issuing separate statements; Commissioner Martin issuing a separate statement.

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APPENDIX A: LIST OF COMMENTERS
APPENDIX B: FINAL RULES

I. INTRODUCTION

1. Seven years ago, Congress enacted the Telecommunications Act of 1996 (1996 Act) for the benefit of the American consumer.¹ This watershed legislation was partially designed to remove the decades-old system of legal monopoly in the local exchange and open that market to competition. The 1996 Act did so by establishing broad interconnection, resale and network access requirements, designed to facilitate multiple modes of entry into the market by intermodal and intramodal service providers. The 1996 Act also sought to reduce the need for regulation in the presence of competition and provide for universal service mechanisms in order to foster the deployment of advanced telecommunications capabilities to all Americans.

2. This Commission and our colleagues in state commissions around the country have devoted enormous amounts of time and resources to implement the Act's market-opening requirements, and the industry has devoted equally large amounts of time and resources to take advantage of the new business opportunities made available by the 1996 Act. Few, if any, other requirements of the 1996 Act have attracted so much regulatory attention, industry effort, or litigation, however, as the requirement under section 251(c)(3) that incumbent local exchange carriers (incumbent LECs) make elements of their networks available on an unbundled basis to new entrants at cost-based rates. Every aspect and application of this extraordinary vehicle for

¹ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56. The 1996 Act amended the Communications Act of 1934, 47 U.S.C. § 151 *et seq.* We refer to these Acts collectively as the "Communications Act" or the "Act."

196. We find that our federal framework, which provides for uniform national rules for some network elements and a more granular approach for others, offers the certainty and stability necessary to enable parties to make investment decisions. This approach is required under *USTA*.⁶¹⁸ Commenters have argued that nothing could create more instability, and be more destructive of investment incentives for both incumbent LECs and competitive LECs, than the establishment of multiple, separate state decisions as to which UNEs have to be offered and under what conditions.⁶¹⁹ In this Order we have balanced the need for a more granular analysis with the need for certainty through a federal unbundling regime. In light of policy reasons and the fact that the D.C. Circuit has found fault with our uniform national rules, we find that the availability of certain network elements may vary between geographic regions. However, the basis on which those more granular determinations will be made is straightforward and predictable. Additionally, we find that the limitations embodied in section 251(d)(3)(B) and (C) will prevent states from taking actions under state law that conflict with our framework and create disincentives for investment.

VI. UNBUNDLING REQUIREMENTS FOR INDIVIDUAL NETWORK ELEMENTS

A. Loops

1. Summary

197. Consistent with our statutory mandate and relevant judicial precedent, we focus on specific market and customer characteristics as informed by the various loop types and capacities that typically serve these markets and customers to undertake the granular inquiry necessary to determine where loop impairment exists.⁶²⁰ In distinguishing among the various types of loop facilities, *i.e.*, DS0 (voice-grade/POTS), DS1, DS3, OCn and dark fiber, we recognize that these facilities, as a practical matter, typically serve distinct classes of customers,⁶²¹ resulting in different economic considerations for competitive carriers seeking to self-deploy.⁶²² Through this approach we are able to more precisely calibrate our rules to ensure that competitive LECs only gain access to unbundled loops where they are impaired under the

⁶¹⁸ See *USTA*, 290 F.3d at 427 (finding that Commission's concept of impairment failed to take account of relevant cost disparities).

⁶¹⁹ Verizon Reply at 51. Verizon also urges the Commission to expeditiously halt existing state efforts to craft expanded unbundling requirements. *Id.* at 53; see also SBC Reply at 71-83.

⁶²⁰ Specifically, the local loop network element is a transmission facility between a distribution frame (or its equivalent) in an incumbent LEC central office and the loop demarcation point at an end-user customer premises. This network element also includes all features, functions and capabilities of such transmission facility, including the NID. It also includes all electronics, optronics, and intermediate devices (including repeaters and load coils) used to establish the transmission path to the end-user customer premises as well as any inside wire owned or controlled by the incumbent LEC that is part of that transmission path. See *infra* note 638.

⁶²¹ See, e.g., SBC Comments at 96-98; NewSouth Reply at 16.

⁶²² As explained in Part VI.A.4.a. below, we make a further distinction in our unbundling analysis for mass market loops based upon the type of loop facility (*e.g.*, copper or fiber).

standard we adopt above, *i.e.*, where they cannot economically self-provision loops and competitive alternatives do not exist.⁶²³ To that end, we conduct separate loop impairment analyses based on loop types and capacity levels, which also consider two relevant customer classes – the mass market and the enterprise market.⁶²⁴

198. With respect to our mass market analysis, we make national impairment determinations for loops based on general economic and operational factors that do not vary significantly by geographic region.⁶²⁵ As we explain more fully below, we find that the technical characteristics of the loop facilities generally deployed for use by mass market customers counsel for adopting rules that take into account the various technologies now used in loops. In crafting our unbundling requirements, we consider other factors, most notably our mandate under section 706 of the Act to promote the rapid deployment of advanced services throughout the nation. Additionally, we reach our findings after full recognition and consideration of intermodal platforms, notably cable and CMRS.

199. Given the steep economic barriers associated with alternative loop deployment that are compounded by various identified operational issues, we require that loops consisting of either all copper or hybrid copper/fiber facilities must be provided on an unbundled basis so that

⁶²³ Our loop unbundling analyses takes into account the relevant customer market typically served by the loop capacity involved. However, we recognize that although each loop type and capacity level may be used predominantly to provide service to a particular customer group, that same loop also may be used to provide service across a range of customer categories. For that reason, though our loop unbundling analysis focuses upon the customer classes most likely to be served by a specific type of loop, the unbundling rules we adopt apply with equal force to every customer served by that loop type. *See infra* paras. 209-10.

⁶²⁴ As described in Part V.B.2.a. above, the mass market consists primarily of residential and similar, very small, business users of analog POTS. The enterprise market is a business customer market of typically medium to large businesses with a high demand for a variety of sophisticated telecommunications services. *See supra* Part V.B.2.a. The record reflects that high-capacity loops, DS1 to OCn, are generally provisioned to enterprise customers, while voice-grade analog loops, DS0 loops, and loops that deploy xDSL services, are used to serve customers typically associated with the mass market. We note, however, that while the enterprise market is comprised of business customers of varying size and capacity requirements, these customers reside, most often, in multiunit premises which are owned or controlled by another entity. Competitive carriers serving multiunit premises face deployment barriers that are not present when a competitive carrier seeks to deploy service to a customer located in a premises that such customer owns or controls. *See infra* Part VI.B.2. (addressing in detail barriers associated with accessing customers in multiunit premises). When customers typically associated with the mass market reside in multiunit premises, carriers seeking to self-deploy their own facilities to serve these customers face the same barriers as when serving multiunit premise-based enterprise customers. Because we find that the barriers faced by requesting carriers in accessing customers in multiunit premises are not unique to enterprise market customers residing in such premises but extend to all classes of customers residing therein, including residential or other mass market tenants, the conclusions we reach for high-capacity loops in the enterprise market apply equally to mass market customers in multiunit premises. This in no way affects or changes the conclusions we reach with respect to DS0 and xDSL capable loops in our mass market analysis.

⁶²⁵ *See, e.g.*, AT&T Reply at 146, 165.

requesting carriers may provide narrowband services over them.⁶²⁶ For these reasons, we also direct incumbent LECs to unbundle stand-alone copper loops and subloops for the provision of broadband service. However, subject to a transition plan discussed below, we do not reinstate the Commission's vacated line sharing rules because we determine that continued unbundled access to stand-alone copper loops and subloops enables a requesting carrier to offer and recover its costs from all of the services that the loop supports, including broadband service.

200. In addition, we find that different policy considerations, as well as different technical considerations, are associated with copper loops, hybrid copper/fiber loops, and FTTH loops. For example, we decline to require incumbent LECs to provide unbundled access to their hybrid loops for the provision of broadband services.⁶²⁷ Similarly, we decline to unbundle loops that consist of FTTH facilities for broadband services. As explained more fully below, this unbundling approach – *i.e.*, greater unbundling for legacy copper facilities and more limited unbundling for next-generation network facilities – appropriately balances our goals of promoting facilities-based investment and innovation against our goal of stimulating competition in the market for local telecommunications services.

201. With respect to our enterprise market analysis, we make national impairment determinations based on loop characteristics that do not vary significantly from area to area. Our conclusions with respect to loop deployment do vary, however, according to the loop type, *i.e.*, dark fiber⁶²⁸ or “lit” fiber,⁶²⁹ and the capacity level of the particular loop. We find that different economic characteristics impact a competitive LEC's ability to self-deploy or utilize wholesale alternatives based on the capacity level of the loop facility demanded by its customer.⁶³⁰

⁶²⁶ As explained below, in overbuild situations where the incumbent LEC elects to retire existing copper loops for FTTH loops, we also require incumbent LECs to make available unbundled access to a 64 kbps transmission path over that FTTH loop so that a competitor may provide narrowband service to that end-user customer.

⁶²⁷ Incumbent LECs must continue to provide unbundled access to the TDM features, functions, and capabilities of their hybrid loops. This will allow competitive LECs to continue providing both traditional narrowband services (*e.g.*, voice, fax, dial-up Internet access) and high-capacity services like DS1 and DS3 circuits.

⁶²⁸ Dark fiber is optical fiber through which no light is transmitted and no signal is carried. It is unactivated deployed fiber that is left dark, *i.e.*, with no necessary equipment, *i.e.*, “opto-electronics” or “optronics” attached to light the fiber to carry a signal to serve customers. *See* NEWTON'S TELECOM DICTIONARY 201 (18th ed. 2002) (definition of Dark Fiber); *see also* UNE Remand Order, 15 FCC Rcd at 3771, para. 162 n.292. Once the optronics are attached to the fiber to make signal transmission possible the dark fiber becomes “lit.” *See* NEWTON'S TELECOM DICTIONARY 538-39 (18th ed. 2002) (definition of Opto-Electronics and Optronics).

⁶²⁹ *Id.*; *see also* NEWTON'S TELECOM DICTIONARY 433 (18th ed. 2002) (definition of Lit Fiber).

⁶³⁰ We also know that alternative transmission technologies such as fixed wireless, satellite and unlicensed wireless may exist as potential enterprise market loop alternatives in limited circumstances and, therefore, consider these alternative transmission capabilities in our impairment analysis where appropriate. *See, e.g.*, BellSouth Comments at 42-44; SBC Reply at 91; Verizon Comments at 118-19.

202. With regard to the highest capacity loop facilities, *i.e.*, OCn loops,⁶³¹ we conclude that no impairment exists on a nationwide basis. At the OCn level, requesting carriers have the ability to economically self-provision their own loops or are able to obtain unbundled dark fiber and light it at the OCn level. With respect to dark fiber loops,⁶³² DS3 loops,⁶³³ and DS1 loops,⁶³⁴ we conclude that requesting carriers are impaired on a location-by-location basis without unbundled access to incumbent LEC loops nationwide. We find, however, that some competitive carriers have been able to deploy certain high-capacity loops to particular customer locations and that some wholesale alternatives also exist at particular customer locations. Because the record does not provide the specific information necessary to identify the precise customer locations

⁶³¹ OCn is an optical interface designed to work with a Synchronous Optical Network (SONET). See NEWTON'S TELECOM DICTIONARY 528 (18th ed. 2002) (definition of OCn). SONET is an optical interface standard for translating electronic communications signals into photonic signals for transmission across fiber optic facilities. Ideally, SONET transmission systems are laid out in a ring formation to provide redundancy. See NEWTON'S TELECOM DICTIONARY 684-85 (18th ed. 2002) (definition of SONET). OCn transmission facilities are deployed as SONET channels having a bandwidth of typically 155.52 Mbps (OC3 or the equivalent capacity of 3 DS3s) and higher, *e.g.*, OC12 (622.08 Mbps); OC48 (2.488 Gbps) etc. See NEWTON'S TELECOM DICTIONARY 527 (18th ed. 2002) (definitions of OC3, OC12, and OC48).

⁶³² In the *UNE Remand Order*, the Commission determined that the loop facility includes dark fiber, stating that both copper and fiber alike represent unused loop capacity therefore dark fiber and extra copper both fall within the loop network element's "facilities, functions, and capabilities." See *UNE Remand Order*, 15 FCC Rcd at 3776, para. 174. The Commission went on to state that there is "no reason to distinguish dark fiber from our general unbundling analysis for loops." *UNE Remand Order*, 15 FCC Rcd at 3785, para. 196. The record contains no basis for departing from this determination.

⁶³³ A DS3 loop is a digital local loop having a total digital signal speed of 44.736 Mbps provided over various transmission media including but not limited to fiber optics, coaxial cable, or radio. DS3 loops can be channelized into 28 DS1 channels. See *infra* note 634. They can also be unchannelized. See NEWTON'S TELECOM DICTIONARY 242 (18th ed. 2002) (defining DS3).

⁶³⁴ A DS1 is a 1.544 Mbps first-level signal in the digital transmission hierarchy. In the time division multiplexing hierarchy of the telephone network, DS1 is the initial level of multiplexing. Traditionally, 24 64 kbps DS0 channels have been multiplexed up to the 1.544 Mbps DS1 rate, with each DS0 channel carrying the digital representation of an analog voice channel. See TELCORDIA, INC., NOTES ON THE NETWORK, TELCORDIA TECHNOLOGIES SPECIAL REPORT, SR-2275, Issue 4, Oct. 2000, Glossary at 46 (TELCORDIA NOTES ON THE NETWORK). DS1 loops are provided over various transmission media and combinations of transmission media, including but not limited to two-wire and four-wire copper, fiber optics, or radio. DS1 loops may be channelized typically into up to 24 DS0 channels of 56/64 kbps each, or unchannelized, *i.e.*, providing a continuous bit stream for data (such as frame relay, ATM, or Internet access) or other customer applications. We note that throughout the record in this proceeding parties use the terms DS1 and T1 interchangeably when describing a symmetric digital transmission link having a total 1.544 Mbps digital signal speed. Carriers frequently use a form of DSL service, *i.e.*, High-bit rate DSL (HDSL), both two-wire and four-wire HDSL, as the means for delivering T1 services to customers. We will use DS1 for consistency but note that a DS1 loop and a T1 are equivalent in speed and capacity, both representing the North American standard for a symmetric digital transmission link of 1.544 Mbps. See NEWTON'S TELECOM DICTIONARY 242 (18th ed. 2002) (definition of DS1); *id.* at 718 (definition of T1); see also ENGINEERING AND OPERATIONS IN THE BELL SYSTEM 198-201 (R.F. Ray Technical ed., 2d ed. 1983) (channelization process for transmission of telecommunications), 369-73 (technical characteristics of DS1 loops), 386-93 (describing T-carrier hierarchy and necessary equipment); TELCORDIA, INC., NOTES ON THE NETWORK, SR-2275, section 7.7 (Dec. 2000) (describing digital data services provided over local loops) at 7-23 (overview of DS hierarchy).

where this deployment has occurred,⁶³⁵ we delegate to state commissions the authority to make findings of fact within the scope of the deployment triggers we define, to identify on a more granular scale where carriers are not impaired without access to incumbent LEC unbundled high-capacity loops.

2. Background

203. Loops in their simplest form are the transmission facilities between a central office and the customer's premises, *i.e.*, "the last mile" of a carrier's network that enables the end-user customer to receive, for example, a telephone call or a facsimile, as well as to originate similar communications.⁶³⁶ Loops were included on the initial list of UNEs in the *Local Competition Order*, and even the incumbent LECs agreed that the loop network element must be unbundled pursuant to sections 251(c)(3) and 251(d)(2) of the Act.⁶³⁷ In the *UNE Remand Order*, the Commission broadened the definition of the loop to include all features, functions, and capabilities of these transmission facilities, including high-capacity loops, dark fiber and all attached electronics (except those used for providing advanced services).⁶³⁸ The Commission also concluded that obtaining all types of loops from alternative, non-incumbent LEC sources, *i.e.*, third party or self-provisioning, would impede competitive entry by materially raising entry costs; delaying entry; and limiting the scope and timeliness of competitor's offerings.⁶³⁹ Accordingly, the Commission applied a one-size-fits-all approach to loops, and ordered

⁶³⁵ We do, however, determine that the record contains sufficient information to enable us to identify appropriate triggers and related criteria that will, after a more particularized analysis, identify the specific customer locations where certain types of high-capacity loop impairment does not exist. To that end, we develop a mechanism for a further level of granular inquiry by state commissions on a customer location-specific basis where our defined triggers exist. We both delegate authority to and direct state commissions to undertake more granular analyses for dark fiber loops, DS3 loops, and DS1 loops at specific customer locations based upon our defined triggers and related criteria for each of these three types of loops, as described below. These more granular impairment analyses may result in non-impairment determinations for one or more of these three types of high-capacity loop facilities at specified customer locations.

⁶³⁶ *Local Competition Order*, 11 FCC Rcd at 15691, para. 380.

⁶³⁷ *Id.* at 15689-90, para. 377; *see also UNE Remand Order*, 15 FCC Rcd at 3771, para. 162 n.292.

⁶³⁸ *UNE Remand Order*, 15 FCC Rcd at 3772, paras. 166-67 nn.300 & 301; *see also* 47 C.F.R. § 51.319(a)(1), which defined loops as:

Local loop. The local loop network element is defined as a transmission facility between a distribution frame (or its equivalent) in an incumbent LEC central office and the loop demarcation point at an end-user customer premises, including inside wire owned by the incumbent LEC. The local loop network element includes all features, functions, and capabilities of such transmission facility. Those features, functions, and capabilities include, but are not limited to, dark fiber, attached electronics (except those electronics used for the provision of advanced services, such as Digital Subscriber Line Access Multiplexers), and line conditioning. The local loop includes, but is not limited to, DS1, DS3, fiber, and other high-capacity loops.

⁶³⁹ *UNE Remand Order*, 15 FCC Rcd at 3772, para. 165.

unbundling of all incumbent LEC loops, from DS0 to OCn and dark fiber, throughout the nation.⁶⁴⁰

204. In the *Triennial Review NPRM*, as part of its overall inquiry about the viability of adopting more granular unbundling rules, the Commission asked whether its impairment analysis should make “service, geographic, capacity or other distinctions to the unbundled loop.”⁶⁴¹ In addition, the Commission asked whether there were meaningful distinctions between those loops capable of providing basic services versus those capable of advanced or broadband services.⁶⁴² Finally, for high-capacity loops (DS1 and above), the Commission sought comment on whether there was a particular capacity level at which new entrants could economically self-deploy.⁶⁴³

3. General Economic Characteristics of Loop Deployment

205. Constructing loop plant is both costly and time consuming, regardless of the type of loop being deployed.⁶⁴⁴ Notably, both the Supreme Court and the D.C. Circuit recognized that incumbent LECs may be required to unbundle loop facilities because they are “very expensive to duplicate.”⁶⁴⁵ Because the distribution portion of the loop serves a specific location,⁶⁴⁶ and installing and rewiring that loop is very expensive, most of the costs of constructing loops are sunk costs. Unless that loop is subsequently purchased by another provider wishing to serve that same location, a carrier’s ability to recover the cost of that loop is generally constrained except in limited circumstances at certain capacity levels. While fixed costs for constructing loops are quite high, economies of scale in deployment can accrue in constructing loops to locations that are geographically close to a carrier’s transport network, assuming other barriers do not preclude

⁶⁴⁰ In the *UNE Remand Order*, the Commission did not engage in a capacity-based analysis beyond confirming that high-capacity loops were included in the definition of the loop. The Commission found that because “the wire facility used for transmission of the traffic is indistinguishable from any other copper wire” there was no reason to modify the definition of loops to describe various categories of capacity. *UNE Remand Order*, 15 FCC Rcd at 3777, para. 176. The Commission, however, did separately consider dark fiber local loops, finding the characteristics to be similar to dark fiber transport (“Because fiber is currently a more significant component of interoffice transport than the loop network element, we discuss aspects of dark fiber common to both elements when we discuss interoffice transport below.”). *UNE Remand Order*, 15 FCC Rcd at 3785-86, para. 198.

⁶⁴¹ *Triennial Review NPRM*, 16 FCC Rcd at 22804, para. 51.

⁶⁴² *Id.* at 22804-05, para. 51.

⁶⁴³ *Id.*

⁶⁴⁴ See, e.g., ALTS *et al.* Comments at 56-57 (stating that fiber deployment costs \$100,000-\$300,000 per mile underground, \$50,000 per mile on poles, and \$10,000 to \$60,000 through pipelines and adding a building averages \$250,000 – and that if the building is more than a mile from the competitive LEC’s existing networks, it can cost more than \$1,000,000 per mile to construct fiber loops in urban areas); WorldCom Comments at 74-75 (stating that it costs approximately \$250,000 for a “building add” and can take six to nine months for a competitive LEC to deploy a new DS1 loop).

⁶⁴⁵ *USTA*, 290 F.3d at 426 (citing *Verizon*, 535 U.S. 467 at n.27).

⁶⁴⁶ This contrasts with the feeder portion of the loop which may serve multiple locations.

construction.⁶⁴⁷ This is especially true in urban areas where the concentration of potential customer locations is very dense.⁶⁴⁸ Conversely, because of long loop lengths required to reach more distant, geographically dispersed customers, loops are more expensive to build in rural areas, raising the average cost per loop for equipment, installation, and maintenance.⁶⁴⁹ In addition to the cost-related barriers discussed above, competitive carriers deploying loops also face difficulties in acquiring municipal and private rights-of-ways as well as gaining building access from owners of multiunit premises.⁶⁵⁰ These additional factors can further affect competitive carriers' ability to sign up customers that need predictability in their business decisions.⁶⁵¹

206. For fiber-based loops, the cost of construction does not vary significantly by loop capacity, *i.e.*, the per-mile cost of building a DS1 loop does not differ significantly from the cost to construct an OCn loop. The most significant portion of the costs incurred result from deploying the physical fiber infrastructure in the ground, rather than from lighting the fiber optical cable.⁶⁵² The ability to recover these construction costs for different loop capacities does, however, vary based on the relevant capacity level of the loop to be provided. Accordingly, a key consideration in our impairment analysis is the loop capacity level at which a competitive entrant can recover its construction costs. Similarly, the ability to overcome other operational barriers to deployment varies based on the capacity of the loop. The record confirms that loop capacity level directly affects the potential revenue stream that can reasonably be obtained to offset construction costs in an economically feasible timeframe.⁶⁵³ Thus, in addition to the barriers a

⁶⁴⁷ See, e.g., AT&T Comments at 134.

⁶⁴⁸ See, e.g., Letter from Douglas A. Dawson, CCG Consulting, (on behalf of 20 "network-based" competitive LECs) to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 6-7 (filed July 17, 2002) (submitting survey-based "State Of CLEC Competition") (CCG July 17, 2002 CLEC Survey *Ex Parte* Letter) (demonstrating that for the six major metropolitan areas surveyed the concentration of competitive LEC loop deployment is in the downtown area); Allegiance Comments at 23.

⁶⁴⁹ In addition, we note that scale economies may particularly affect small businesses.

⁶⁵⁰ See, e.g., AT&T Reply at 174-79 (discussing other barriers linked to the incumbent LECs' historical monopoly that preclude competitive loop deployment independent of cost factors); see also NuVox Comments at 74; KMC Duke Aff. at paras. 7-8 (citing proprietary information), Affidavit of Joseph Polito, SNiP LiNK, Inc. (SNiP LiNK Polito Aff.) at paras. 4-7; Sprint Comments at 22; Letter from Ruth Milkman, Counsel for WorldCom, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 2-3 (filed Oct. 25, 2002) (discussing building access barriers) (WorldCom Oct. 25, 2002 Building Access *Ex Parte* Letter); ALTS *et al.* Comments at 56.

⁶⁵¹ See, e.g., AT&T Reply at 175 (describing how it keeps statistics on "breakage," *i.e.*, instances where it initially won a customer but subsequently lost it due to delay in gaining building access to provision the customer); see also Sprint Comments at 23 ("Customers will not wait the months required by CLECs to acquire permits, cut streets, install additional equipment, engineer, construct, and test new facilities.").

⁶⁵² See, e.g., AT&T Comments at 130; AT&T Reply at 148 (arguing that the cost of loop deployment primarily lies in the structures and rights-of-way, not in the copper or fiber conductor).

⁶⁵³ See, e.g., WorldCom Comments at 76; Letter from Timothy J. Regan, Senior Vice President – Government Affairs, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147, Attach. at 32 (filed Nov. 26, 2002) (Corning Nov. 26, 2002 *Ex Parte* Letter); Corning Comments, App. A at 10 (Cambridge Strategic (continued....))

new entrant faces in deploying loops, we consider the revenue potential associated with particular loop capacity,⁶⁵⁴ as well as the ability to mitigate construction delays that affect provisioning intervals as keys to determining the degree to which an entrant is impaired in deploying a particular loop capacity.

207. Unlike transport facilities, loops generally do not aggregate multiple customers' traffic. As a result, loop impairment is more closely related to the demands of the individual customer served by such loop. In that regard, customer class distinctions are useful in understanding competitive carriers' decisions and economic abilities regarding deployment of loops typically used to serve customers generally associated with that particular class.

208. Consistent with our impairment framework set out above,⁶⁵⁵ our loop analysis considers alternative transmission technologies that are capable of providing transmission to individual customers as alternatives to the incumbent LEC's loop facility. These alternative technologies may use non-wireline platforms to offer other kinds of services to customers, *i.e.*, intermodal competition, such as cable operators providing cable telephony and cable modem service in addition to cable television, or may be used solely to provide telephone and data communications service, such as fixed wireless technologies. As explained above, we will consider whether these alternative technologies permit a requesting carrier to serve the market, either through self-provisioning the necessary transmission capacity to the customer, or by obtaining the transmission capacity on a wholesale basis from other firms deploying that technology.

4. Loop Impairment by Customer Market

209. The record reflects that customers generally associated with the mass market typically use different types of loop facilities than customers generally associated with the enterprise market. We note that very small business customers, like residential customers, typically purchase analog loops, DS0 loops, or loops using xDSL-based technologies. We address the loops provisioned to these customers as part of our mass market analysis. All other business customers – whom we characterize as the enterprise market – typically purchase

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Management Group, *Assessing the Impact of Regulation on Deployment of Fiber to the Home* (2002) (CSMG Study)).

⁶⁵⁴ In considering potential revenue streams from the various types of loops, it is necessary to factor in the ability to enter into and enforce long-term contracts with customers. We have some evidence that certain states have adopted or are considering regulations that limit the ability of carriers to bind a customer to a long-term local service contract (*i.e.*, longer than one year) and associated termination charges. *See, e.g., Missouri Public Service Commission, Southwestern Bell Telephone Company's Proposed Revisions to PSC Mo. No. 26, Long Distance Message Telecommunications Service Tariff*, Report and Order. Case Nos. TT-2002-227 *et al.* (June 27, 2002) (local service terms in excess of one year will not be permitted); California Public Utilities Commission, *Rules Governing Telecommunications Consumer Protection*, Interim Decision, Rulemaking 00-02-004, Rule 3 (June 6, 2002). To the extent such limitations exist, a carrier's ability to rely on a guaranteed long-term revenue stream from a loop to recover sunk construction costs is adversely affected.

⁶⁵⁵ *See supra* Part V.B.

high-capacity loops, such as DS1, DS3, and OCn capacity loops. We address high-capacity loops provisioned to these customers as part of our enterprise market analysis.⁶⁵⁶ We first analyze those loops generally provisioned to mass market customers and then analyze the high-capacity loops generally provisioned to enterprise customers.

210. In considering the different customer markets to inform our understanding of competitive carrier loop deployment, we note that our market classifications allow us to conduct our impairment analyses for the various loop types at a more granular level but are not intended to prohibit the use of UNE loops by customers not typically associated with the respective customer market class. For example, business customers typically associated with the enterprise market may require DS0 lines, particularly if they have remote business locations staffed by only a few employees where high-capacity loop facilities are not required.⁶⁵⁷ Because a competitive carrier faces the same economic characteristics to serve these customers at their remote locations with a DS0 loop that it faces to serve residential customers served by the same loop type, our customer class distinctions are not intended to preclude a competitive LEC from obtaining an unbundled DS0 loop to serve these business customers. Similarly, a competitive LEC faces the same economic considerations in provisioning a DS1 loop to a large business customer typically associated with the enterprise market that it faces in provisioning that same loop type to a very small business or residential customer typically associated with the mass market. Thus, while we adopt loop unbundling rules specific to each loop type, our unbundling obligations and limitations for such loops do not vary based on the customer to be served.

a. Mass Market Loops

(i) Introduction

211. We conclude that requesting carriers seeking to serve the mass market face varying levels of impairment without unbundled access to the transmission path between the central office and the customer premises depending upon whether the loop used to complete this path consists entirely of copper, or consists of a hybrid of fiber and copper cables, and whether a requesting carrier seeks to offer narrowband or broadband services or both. In fact, for those loops consisting of fiber from the central office to the customer premises, *i.e.*, FTTH loops, we find no impairment on a national basis.⁶⁵⁸ Based on our review of the record, which covers the

⁶⁵⁶ We note that through the application of our new impairment standard to high-capacity loops, including impairment analyses based on each particular loop capacity level, we have considered evidence raised by joint petitioners in the High-Capacity Loop and Transport Petition. *See, e.g.*, BellSouth, SBC, and Verizon, Joint Petition for Elimination of Mandatory Unbundling of High-Capacity Loops and Dedicated Transport, CC Docket No. 96-98 (filed Apr. 5, 2001) (High-Capacity Loop and Transport Petition). Because we base our unbundling obligations with respect to high-capacity loops on our findings of impairment and non-impairment according to our new impairment standard, we dismiss the High-Capacity Loop and Transport Petition as moot.

⁶⁵⁷ *See, e.g.*, WorldCom Comments at 14.

⁶⁵⁸ As discussed more fully below, there is an unbundling obligation for narrowband voice services in one FTTH loop deployment scenario, *i.e.*, overbuild deployment in which an incumbent LEC constructs fiber transmission facilities parallel to or in replacement of its existing copper loop plant. *See infra* Part VI.A.4.a.(v)(b).

current deployment of local loops, technological advancements in incumbent LEC outside plant, and the economic barriers and revenue opportunities facing competitive providers today with regard to loops, we conclude that incumbent LECs must provide, as UNEs pursuant to section 251(c)(3), copper loops, including copper loops conditioned to provide xDSL service. As discussed below, we also require incumbent LECs to provide competitive LECs the ability to line split, which allows two competitive LECs to split the loop so that one carrier can provide narrowband service and the other can provide broadband service.

212. As for our unbundling rules related to broadband, we recognize there are special considerations in crafting unbundling rules for loops used to provide broadband service. Broadband deployment is a critical domestic policy objective that transcends the realm of communications. While the development of broadband infrastructure is a fundamental and integral step in ensuring that consumers are able to fully reap the benefits of the information age, even more broadly, it is vital to the long-term growth of our economy as well as our country's continued preeminence as the global leader in information and telecommunications technologies. The Commission's primary regulatory challenge for broadband is to determine how we can help drive the enormous infrastructure investment required to turn the broadband promise into a reality. This challenge is squarely raised in our consideration of unbundling rules for last-mile facilities.

213. With respect to unbundling obligations for facilities used to provide broadband service, we are charged with determining the potential impact of our rules on advanced services, including those supported by broadband deployment and infrastructure investment, as directed by section 706 of the 1996 Act.⁶⁵⁹ For this reason, we craft unbundling rules that provide the right incentives for all carriers, including incumbent LECs, to invest in broadband facilities. Thus, we decline to require unbundling on a national basis of the features, functions, and capabilities of the packetized fiber facilities of incumbent LEC hybrid loops. We require, however, incumbent LECs to provide unbundled access to the time division multiplexing (TDM) features, functions, and capabilities of their hybrid loops on a national basis. Subject to a three-year transition period explained below, we also decline to require incumbent LECs to continue to unbundle the high frequency portion of the loop. Our rules strike the appropriate statutorily required balance between ensuring competitive access and maintaining incentives to invest in next-generation networks.

(ii) Mass Market Loop Types

214. At its most basic level, a local loop that serves the mass market consists of a transmission medium, which almost always includes copper wires of various gauges. The loop may include additional components (*e.g.*, load coils, bridge taps, repeaters, multiplexing equipment) that are usually intended to facilitate the provision of narrowband voice service.

215. As a general matter, incumbent LECs use two local exchange network configurations to connect customers to their switching systems. First, carriers connect customers

⁶⁵⁹ 47 U.S.C. § 157 nt.

directly to a central office via a loop dedicated solely to a particular customer. In this configuration, the local loop consists of a single cable pair – for copper loops, this is often referred to as “home-run copper.”⁶⁶⁰ For the mass market, carriers can use copper loops to provide both narrowband voice service and broadband xDSL services.⁶⁶¹ Providing broadband service requires the use of special equipment, such as DSLAMs⁶⁶² located in the central office (or remote terminals in the incumbent LEC’s outside plant) and xDSL modems or other equipment at the customer’s premises.

216. Second, incumbent LECs deploy “feeder plant” to a centralized location (referred to as a “remote terminal”) where the carrier aggregates “distribution plant,” *i.e.*, copper cable pairs that are used to serve individual customers. In this second configuration, then, the local loop portion of the network consists of two parts, *i.e.*, feeder plant and distribution plant.⁶⁶³ The feeder plant consists of a large number of high-capacity cable pairs to accommodate a large volume of telecommunications traffic. In recent years, carriers have started deploying fiber optic cable in the feeder plant to handle more efficiently the increasing volume of traffic (although some legacy technologies continue to require use of copper feeder plant).⁶⁶⁴ By contrast, the distribution plant consists generally of many copper cable pairs, *i.e.*, one direct connection or transmission path to each customer premises.

⁶⁶⁰ See, e.g., Letter from Stephen C. Gray, President, McLeodUSA, to William Maher, Chief, Wireline Competition Bureau, FCC, CC Docket Nos. 96-98, 98-147, 01-338, 02-33 at 8 (filed Dec. 18, 2002) (McLeodUSA Dec. 18, 2002 *Ex Parte* Letter). McLeod states that customers are served by “a connected-through copper loop, with a direct analog electrical connection between the customer’s network interface and the central office main distribution frame” or one of two types of DLC systems.

⁶⁶¹ Subject to certain distance limitations, a carrier can provide various types of xDSL service over a copper loop with appropriate conditioning. We use the term “xDSL” to refer to DSL as a generic transmission technology, as opposed to a specific type of DSL such as ADSL (asymmetric digital subscriber line), HDSL (high-speed digital subscriber line), UDSL (universal digital subscriber line), VDSL (very-high speed digital subscriber line), and RADSL (rate-adaptive digital subscriber line).

⁶⁶² DSLAMs send the customer’s voice traffic to the public, circuit-switched telephone network and the customer’s data traffic (combined with that of other xDSL users) to a packet-switched data network. See *Line Sharing Order*, 14 FCC Rcd at 20920, para. 9; see also Walter Goralski, ADSL AND DSL TECHNOLOGIES at 252-60 (describing DSLAMs).

⁶⁶³ TELCORDIA NOTES ON THE NETWORK at § 12 (describing LEC distribution networks); AT&T Comments at 184-86; AT&T Reply at 149. We recognize that carriers may categorize their outside plant facilities into three sections, *i.e.*, feeder, distribution, and customer drops. See AT&T Reply at 149. For the purposes of our unbundling analysis, we consider customer drops to be part of an incumbent LEC’s distribution plant.

⁶⁶⁴ WorldCom Comments, Joint Declaration of Tom Stumbaugh and David Reilly (WorldCom Stumbaugh/Reilly Joint Decl.) at paras. 8-10; Letter from Leonard G. Ray, Government Relations Committee Chairman, FTTH Council, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 10 (filed Jan. 8, 2003) (FTTH Council Jan. 8, 2003 FTTH Deployment *Ex Parte* Letter) (noting that fiber feeder optimized the network for voice transmission); Letter from Kimberly Scardino, Senior Counsel, WorldCom, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 96-98, 98-147, 01-338 at 2 (filed Dec. 12, 2002) (WorldCom Dec. 12, 2002 Next-Generation Networks *Ex Parte* Letter).

217. Carriers use digital line carrier (DLC) systems to aggregate the many copper loops that terminate at a remote terminal location,⁶⁶⁵ multiplex such signals onto a fiber or copper feeder loop facility, and transport them to the carrier's central office.⁶⁶⁶ These DLC systems may be integrated directly to the carrier's switch (*i.e.*, Integrated DLC systems) or not (*i.e.*, Universal DLC systems).⁶⁶⁷ Through the use of feeder loop plant and DLC systems, carriers can reduce the costs of constructing, deploying, and maintaining their outside plant.⁶⁶⁸

218. Although originally deployed to manage voice networks, carriers now use DLC systems to provide both voice and data services. Technological improvements have enabled carriers to use DLC systems to deliver broadband services (*e.g.*, ADSL) in addition to narrowband services.⁶⁶⁹ In particular, manufacturers have developed "line cards" that can be

⁶⁶⁵ Although there are different varieties of DLC systems, they typically consist of cross-connect and multiplexing equipment that are housed in remote terminals, which are intended to house a limited amount of equipment. There are three basic types of remote terminals: (1) huts, which are above-ground structures with environmental control capabilities; (2) controlled environmental vaults (CEVs), which are below-ground structures that are accessed through manholes and contain environmental control capabilities; and (3) cabinets, which are above-ground structures that are typically designed as an integrated system. *See Ameritech Corp., Transferor, and SBC Communications, Inc., Transferee, For Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, and 101 of the Commission's Rules*, CC Docket No. 98-141, Second Memorandum Opinion and Order, 15 FCC Rcd 17521, 17539, para. 34 n.94 (2000) (*Pronto Modification Order*) (describing remote terminals).

⁶⁶⁶ Carriers historically deployed local loops on a one-for-one basis, *i.e.*, one direct copper cable pair connecting a customer to the central office. WorldCom Stumbaugh/Reilly Decl. at para. 7. Carriers started using DLC for feeder pair relief in urban areas. *Id.* at para. 9.

⁶⁶⁷ Universal DLC systems consist of a "central office terminal" and a "remote terminal," *i.e.*, a DLC system in the carrier's central office terminal mirrors the deployment at the remote terminal. Notes on the Network at § 12.6. By contrast, an Integrated DLC system does not require the use of a central office terminal because the DLC system is integrated into the carrier's switch (thus, the naming convention). *Id.* § 12.7; *see also* Letter from David R. Conn, Deputy General Counsel, McLeodUSA, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 96-98, 98-147, 01-338, 02-33 at 8 (filed Nov. 15, 2002) (McLeodUSA Nov. 15, 2002 DLC systems *Ex Parte* Letter); McLeodUSA Dec. 18, 2002 *Ex Parte* Letter at 8; *see also* TELCORDIA NOTES ON THE NETWORK at 2-2 to 2-5 (describing DLC systems).

⁶⁶⁸ TELCORDIA NOTES ON THE NETWORK at § 12.6-12.7.

⁶⁶⁹ WorldCom Stumbaugh/Reilly Decl. at paras. 9-11 (describing technological developments in DLC systems); AT&T Reply at 152-53 (noting that incumbent LECs can upgrade existing DLC systems by replacing the line cards installed in such systems). In their original form, carriers connected DLC systems to copper transmission facilities that comprised the feeder loop plant. The DLC system would convert analog signals transmitted from the customer's premises to digital signals suitable for transmission over the carrier's network. By the late 1990s, carriers were purchasing "Next Generation Digital Loop Carrier" (NGDLC) systems, which were designed for use with fiber optic cable. In addition to the fiber capability, NGDLC systems have more flexible and remote configuration capabilities than their predecessors and, depending on the manufacturer, they may contain additional features like the ability to provide broadband services. *See* Walter Goralski, ADSL AND DSL TECHNOLOGIES, 273 (1998); NEWTON'S TELECOM DICTIONARY 510 (18th ed. 2002) (defining NGDLC systems as "DLC [that] can receive and aggregate large amounts of bandwidth (higher than T-1)"); *see also* Letter from Jim Lamoureux, Senior Counsel, SBC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 1-2 (filed Dec. 12, 2002) (SBC Dec. 12, 2002 *Ex* (continued....))

installed (along with other components) into a DLC system to provide broadband services, or a combination of broadband and narrowband service, to customers served by DLC systems.⁶⁷⁰ By deploying this DSLAM functionality in a DLC system, carriers can serve customers whose copper loop facility would otherwise be too long to support the provision of xDSL service.⁶⁷¹ To do so has generally required incumbent LECs deploying this technology to segregate and minimize the traffic in a different way – that is, carriers dedicate a segment of their feeder plant to serving narrowband voice traffic and another segment to serving broadband traffic.⁶⁷² The feeder loop plant transporting voice traffic connects to the carrier’s switch in its central office (often through intermediate electronics in the central office).⁶⁷³ By contrast, the feeder loop plant transporting the broadband signal terminates at a packet switch (usually referred to as an “optical concentration device” or OCD) also located in the carrier’s central office.⁶⁷⁴

219. In recent years, carriers have started deploying FTTH – that is, using fiber optic cable to replace traditional copper loops. Whereas the use of fiber feeder plant and DLC systems is an augmentation of the existing network and relies on the continued use of copper (albeit to a lesser degree) in the loop plant, FTTH is essentially a broad replacement of the existing loop plant. The use of fiber optic cable requires the deployment of network equipment with different features and capabilities from comparable equipment used for copper cable. As noted above, deployment of FTTH loops – that is, a transmission path consisting entirely of fiber optic cable and associated equipment between the customer’s premises and the central office – remains in its infancy.

220. Carriers use different technologies to transport telecommunications over their networks. As digital transmission technologies replaced analog systems, carriers started using

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Parte Letter) (stating that SBC “considers DLC that provides both time slot interchanger and xDSL functionality as NGDLC.”).

⁶⁷⁰ Alcatel Comments at 26; Catena Comments in CC Dkt. Nos. 02-33, 95-20, and 98-10, at 5 n.7 (describing Catena’s DLC system upgrade); WorldCom Stumbaugh/Reilly Decl. at para. 13; Alcatel Reply at 6; *see Pronto Modification Order*, 15 FCC Rcd at 17523-31, paras. 4-19 (describing SBC’s DLC network architecture used to provide broadband service).

⁶⁷¹ WorldCom Stumbaugh/Reilly Decl. at para. 13.

⁶⁷² *Id.* at para. 15; Letter from W. Scott Randolph, Director – Federal Regulatory Affairs, Verizon, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-337, 01-338, 96-98, 98-147, 02-33 at 10 (filed Sept. 30, 2002) (Verizon Sept. 30, 2002 *Ex Parte* Letter) (submitting diagram showing the use of two parallel feeder loops to provide broadband service through DLC systems).

⁶⁷³ Alcatel Reply at 6 (explaining that voice and data traffic are segregated in the incumbent LEC’s central office).

⁶⁷⁴ AT&T Comments at 187-89; Covad Comments at 65; WorldCom Comments at 108; WorldCom Stumbaugh/Reilly Decl. at para. 13; Letter from Jonathan J. Boynton, Associate Director – Federal Regulatory, SBC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 5 (filed Jan. 15, 2003) (SBC Jan. 15, 2003 *Ex Parte* Letter); Verizon Sept. 30, 2002 *Ex Parte* Letter at 10. Several parties explain that an OCD is equivalent to a main distribution frame. *See, e.g.*, Covad Comments at 65 (noting that the OCD demultiplexes data transmissions from the fiber feeder and distributes the signal to its next destination).

TDM to combine multiple transmission paths onto a single cable.⁶⁷⁵ TDM provides a transmission path by dividing a circuit into time slots and providing a dedicated time slot to an end user for the duration of the call. More recently, carriers have started using packet-switched technologies (*e.g.*, ATM or frame relay) to combine different types of traffic over shared facilities.⁶⁷⁶ By using packet-switched technology, carriers can transmit voice, fax, data, video, and other over a single transmission path at the same time.

221. In light of the foregoing, we find that our unbundling rules for local loops serving the mass market must account for these different loop architectures. Therefore, we craft unbundling rules specific to each different loop type. First, we address our unbundling rules for loops consisting of copper pairs of various gauges and associated electronics (*e.g.*, load coils, repeaters, multiplexers), which we refer to as copper loops. Second, we address our unbundling rules for loops consisting of DLC systems that are fed by fiber optic cable, which we refer to as “hybrid loops.” Finally, we address our unbundling rules for loops consisting entirely of fiber optic cable, which we refer to as FTTH loops.

(iii) Evidence of Loop Deployment

222. The record indicates that deployment of alternative local loop facilities for the purposes of providing telecommunications services to the mass market has been minimal. The record also indicates, however, that there is evidence that other types of network facilities deployed primarily for other purposes (*e.g.*, cable television systems, satellite technologies) can and are increasingly being modified to support the delivery of narrowband and broadband services, particularly telephony and high-speed Internet access services, to the mass market. As a general matter, while these systems are increasingly being used for the delivery of retail narrowband and broadband services (*e.g.*, telephony and high-speed Internet access services), the record indicates that such systems are not being used currently to provide wholesale local loop offerings that might substitute for access to incumbent LECs’ loop facilities.

223. The factual record consists of three parts. First, several parties submitted detailed studies describing local loop deployment and conditions surrounding competitive access to local loops.⁶⁷⁷ Second, many parties described their network operations, experiences, and future

⁶⁷⁵ See, *e.g.*, Walter Goralski, ADSL AND DSL TECHNOLOGIES 77-98 (1998) (describing differences between packet-switched and circuit-switched networks); Walter Goralski, SONET 99-108 (2d. ed. 2000) (describing T-carrier and different multiplexing techniques).

⁶⁷⁶ For example, some carriers use packet-switching technology as the building blocks of their networks. See, *e.g.*, NewSouth Comments at 11-13 (describing use of packet-switching technology in its network).

⁶⁷⁷ See, *e.g.*, BOC UNE Fact Report 2002; Letter from Dee May, Assistant Vice President, Verizon, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 (filed Oct. 23, 2002) (submitting *UNE Rebuttal Report 2002* commissioned by the BOCs); CCG July 17, 2002 CLEC Survey *Ex Parte* Letter. These studies in turn rely on additional evidence to support their conclusions, such as briefings to the investment community, analyst reports, newspaper articles, and trade industry reports. Some commenters argue that unbundling requirements decrease incumbent LECs’ financial rewards from selling future broadband services by increasing the risk of investment, thereby decreasing the amount of investment incumbent LECs will make in broadband infrastructure. See, *e.g.*, Corning Comments at 5-9; HTBC Comments at 28-33, App. A (submitting John Haring and Jeffrey H. Rohlfs, *The* (continued...))

deployment plans in comments and *ex parte* letters.⁶⁷⁸ Finally, the Commission staff has published reports arising from its monitoring of the deployment of advanced telecommunications capability and the development of local competition throughout the country.⁶⁷⁹

224. Relying on these sources, the record shows that incumbent LECs continue to control the vast majority of voice-grade local loops throughout the nation. The Commission staff's recent *Local Telephone Competition December 2002 Report* noted that incumbent LECs served approximately 167.5 million switched access lines, or approximately 88.6 percent of the national market.⁶⁸⁰ The record reflects a significant growth in the amount of fiber incumbent LECs are deploying in the local loop, with most of this deployment occurring in the feeder plant rather than the distribution plant. According to some estimates, upwards of 30 percent of incumbent LEC access lines are now supported by the use of mixed fiber-copper loop facilities.⁶⁸¹

(a) Self-Deployment

225. The record reflects that competitive LECs have not self-deployed alternate copper local loops to provide telecommunications services (or packages of telecommunications and

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Disincentives for ILEC Broadband Deployment Afforded by the FCC's Unbundling Policies (July 16, 2002)); Verizon Comments at 27-32 (submitting Declaration of Alfred E. Kahn and Timothy J. Tardiff); Letter from Matthew J. Tanielian, Vice President – Governmental Relations, ITI – Information Technology Industry Council, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 (filed Apr. 22, 2002) (HTBC Apr. 22, 2002 *Ex Parte* Letter); Letter from W. W. Jordan, Vice President – Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 (filed Oct. 15, 2002) (BellSouth Oct. 15, 2002 *Ex Parte* Letter). By contrast, other commenters argue that unbundling requirements do not decrease the incentives for BOCs to provide broadband services over fiber-fed loops. *See, e.g.*, AT&T Willig Decl. at paras. 15, 175; Letter From Jason D. Oxman, Vice President and Assistant General Counsel, Covad, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 (filed Nov. 22, 2002) (Covad Nov. 22, 2002 *Ex Parte* Letter); Covad Murray Reply Decl. at paras. 99-113; Letter from C. Frederick Beckner III, Counsel for AT&T, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 4 (filed Dec. 6, 2002) (AT&T Dec. 6, 2002 *Ex Parte* Letter).

⁶⁷⁸ *See, e.g.*, ACS Reply at 5-6 (describing market conditions in Alaska); BellSouth Rely, Reply Declaration of Prof. Robert G. Harris (BellSouth Harris Reply Decl.) at paras. 11-21 (submitting projections and market data related to broadband services); New York State Attorney General Reply at 4, 9-11 (describing competitive entry in New York); Letter from Rebecca H. Sommi, Vice President Operations Support, Broadview Networks, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 (filed Oct. 16, 2002) (Broadview Oct. 16, 2002 *Ex Parte* Letter); Letter from Jason Oxman, Vice President and Assistant General Counsel, Covad, to William Maher, Chief, Wireline Competition Bureau, FCC, CC Docket No. 01-338 (filed Oct. 15, 2002) (Covad Oct. 15, 2002 Broadband Deployment *Ex Parte* Letter); Letter from Thomas Jones, Counsel for Allegiance, to William Maher, Chief, Wireline Competition Bureau, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 3-4 (filed Dec. 12, 2002) (Allegiance Dec. 12, 2002 *Ex Parte* Letter).

⁶⁷⁹ *See Seventh Wireless Report 2002; Third Section 706 Report 2002*, 17 FCC Rcd at 2844.

⁶⁸⁰ *Local Telephone Competition December 2002 Report* at Table 1.

⁶⁸¹ Covad Comments at 55 n.105 (citing *Trends in Telephone Service May 2002 Report* at Table 18.3 (21.7% of working telecommunications channels are fiber)); AT&T Reply at 80 (citing *Trends in Telephone Service May 2002 Report* at Table 18.3 (32.5% of working telecommunications channels are fiber)).

other services) to the mass market. Moreover, the record indicates that, in those limited cases where competitors are deploying alternative loop facilities, competitive LECs are using fiber, although such deployment continues to be targeted primarily to serving the enterprise market rather than the mass market. We recognize, however, that potential self-deployment could use existing wireline telephony technologies and facilities or could employ other approaches that bear little or no resemblance to the current network architecture of the incumbent LECs.

226. No party seriously asserts that competitive LECs are self-deploying copper loops to provide telecommunications services to the mass market. Indeed, in the BOC UNE Fact Report 2002, the BOCs provide no evidence that competitive LECs have made any progress towards replicating the incumbent LECs' embedded base of voice-grade copper local loops.⁶⁸² Likewise, no competitive LEC claims to have made, let alone attempted to make, such progress. Competitive LECs generally argue that building new local loops to serve the mass market would be prohibitively expensive.⁶⁸³ Considered as a whole, the record indicates that competitive LECs rely primarily on unbundled local loops to serve the mass market on a nationwide basis.⁶⁸⁴

227. The record demonstrates that current deployment of FTTH for providing telecommunications services to the mass market is still in its infancy.⁶⁸⁵ Corning, for example, presents evidence of FTTH deployment to approximately 26,000 homes and asserts that competitive LECs account for 77 percent of this FTTH deployment to date.⁶⁸⁶ The record shows further that some competitive LECs are self-deploying fiber transmission facilities primarily to serve business customers in downtown locations.⁶⁸⁷ The record also shows that competitive LECs are self-deploying fiber transmission facilities to the mass market in certain circumstances. In particular, competitive LECs are competing in so-called "greenfield" markets, which require entirely new construction of local loops (in addition to the deployment of the necessary switching and other network equipment) to serve new residential communities.⁶⁸⁸ According to at least one

⁶⁸² In their UNE Fact Report, the BOCs rely primarily on intermodal sources to argue that viable alternatives exist to incumbent LEC local loop facilities. We address these arguments below.

⁶⁸³ See Covad Comments at 16-18; AT&T Comments at 132.

⁶⁸⁴ CompTel Reply at 24 (citing statistics compiled by Commission staff showing that competitive LECs serve 23% of the access lines in New York, 14% of the access lines in Texas, and 13% of the access lines in Illinois). Incumbent LECs assert that competitive LECs have deployed on a national basis somewhere between 16 and 23 million loops based on their interpretation of data in E911 databases. See BOC UNE Fact Report 2002 at I-5, II-4, and A-2. We note that CompTel's data, among other competitive LECs', are generally closer to those published by the Commission in the *Local Telephone Competition December 2002 Report*.

⁶⁸⁵ AT&T Reply at 74.

⁶⁸⁶ Corning Reply at 12 (citing *CSMG Study* at 51). In other studies submitted on the record, Corning estimates that competitive LECs account for 68% of the FTTH deployment nationwide. See Corning Nov. 20, 2002 *Ex Parte* Letter at 7.

⁶⁸⁷ CCG July 17, 2002 CLEC Survey *Ex Parte* Letter at 6 (noting that five competitive LECs are deploying fiber in Chicago and four competitive LECs are deploying fiber in Boston and Portland).

⁶⁸⁸ BOC UNE Fact Report 2002 at IV-16.

study, non-incumbent LEC providers (*i.e.*, competitive LECs and municipalities) have deployed 90 percent of current FTTH.⁶⁸⁹ We also note that the Commission staff's *High Speed Services December 2002 Report* found that parties *other than* incumbent LECs deployed 92 percent of FTTH and fixed wireless service lines.⁶⁹⁰

(b) Intermodal Loops

228. The record presents some evidence that intermodal platforms increasingly support the provision of narrowband and broadband services to the mass market. In particular, the record indicates that cable and wireless technologies are currently being used, and will likely increasingly be used, to provide loop substitutes to support services that compete with incumbent local services.⁶⁹¹

229. Cable companies have widely deployed local broadband service in the form of high-speed Internet access offered via cable modem service. As of June 2002, cable companies provided more than 9.1 million high speed lines for Internet access to consumers nationwide and the service is available to more than 70 million homes in the nation.⁶⁹² Some cable companies also have augmented their networks to enable the provision of two-way voice telephony services.⁶⁹³ For such services, the cable infrastructure serves as a replacement for loops. At this time, however, deployment of voice telephony by cable companies has been substantially exceeded by the deployment of cable modem service.⁶⁹⁴ In their *UNE Fact Report*, the BOCs

⁶⁸⁹ FTTH Council Second Reply at 2.

⁶⁹⁰ *High Speed Services December 2002 Report* at Table 5. In that report, staff found that, as of June 2002, carriers provided 6,120 fiber lines capable of supporting data transmissions over 200 kbps in at least one direction. *See id.* at Table 3.

⁶⁹¹ BOC UNE Fact Report 2002 at IV-8 to IV-14. Current estimates are that only 1.7% of U.S. households rely on other technologies to replace their traditional wireline voice service. Allegiance Reply at 35 n.38.

⁶⁹² Cable companies provided 9,172,895 high speed lines for Internet access as of June 30, 2002. *High Speed Services December 2002 Report* at Table 1. *See* Letter from Jason D. Oxman, Vice President and Assistant General Counsel, Covad, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, Declaration of Stephen Siwek and Su Sun (Covad Siwek/Sun Decl.) at paras. 58-59 (filed Nov. 20, 2002) (Covad Nov. 20, 2002 *Ex Parte* Letter). Some parties estimate that cable modem service is available to two-thirds or more of the homes in the nation. BOC UNE Fact Report 2002 at IV-12 n.59 (estimating that cable modem service is available to 70-75 million homes).

⁶⁹³ BellSouth Comments at 64 (noting cable companies upgraded to provide voice in Atlanta, Jacksonville, Miami and Louisville); Letter from Florence M. Grasso, Covad, to Marlene M. Dortch, Secretary, FCC, Docket Nos. 01-338, 96-98, 98-147 at 6 (filed Apr. 19, 2002) (Covad Apr. 19, 2002 *Ex Parte* Letter) (noting cable companies spent \$55 billion to upgrade their facilities).

⁶⁹⁴ As of June 2001, only 1% of all local access lines terminated over coaxial cable facilities. For example, AT&T notes that UNE-P providers in New York alone have as many customers as cable-provided telephony does on a nationwide basis. AT&T Reply at 26.

note that 1.5 million homes⁶⁹⁵ subscribe to cable telephony on a nationwide basis. The record indicates that circuit-switched cable telephony has been deployed in portions of 20 states and is now available to about 10 million households in the United States, or about 9.6 percent of the total households in the nation.⁶⁹⁶ Because companies originally deployed cable television systems for the provision of a one-way mass media service, retrofitting cable infrastructure to support cable telephony and broadband services requires substantial investment and modification.⁶⁹⁷ For those cable operators that have not already augmented their networks to offer cable telephony, which encompasses the majority of the cable networks currently in operation, significant technical and operational issues must still be resolved.⁶⁹⁸ Thus, it is difficult to predict at what point cable telephony will be deployed on a more widespread and ubiquitous basis. In addition, the record reflects that a number of cable operators are delaying their deployment of voice telephony until they are able to deploy such services over a packet-switched platform.

230. The record also shows that narrowband local services are widely available through CMRS providers. As discussed in Part IV above, one study estimates that 64.3 million households (*i.e.*, 61 percent of all U.S. households) use wireless phones.⁶⁹⁹ The record shows that

⁶⁹⁵ BOC UNE Fact Report 2002 at IV-10. There are approximately 108.3 million households in the nation. See Industry Analysis and Technology Division, Wireline Competition Bureau, *Telephone Subscribership in the United States* (Nov. 8, 2002) at Table 1 (*Telephone Subscribership November 2002 Report*).

⁶⁹⁶ BOC UNE Fact Report 2002 at II-11, IV-10 (noting that Cox has the capability to offer cable telephony to “75 to 95 percent” of the consumers in Rhode Island).

⁶⁹⁷ WorldCom Comments at 35-36, Attach. A at 23, 25-27 (Richard A. Chandler, A. Daniel Kelley, David M. Nugent, *The Technology and Economics of Cross-Platform Competition in Local Telecommunications Markets* (Apr. 4, 2002) (HAI Report)). Although precise numbers are difficult to assemble because much of the necessary information is not publicly available, there is substantial evidence in our record concerning actual and projected completion of cable plant upgrades necessary to provide voice and data services. For example, according to a Yankee Group Report, at the end of 2000, 50% of United States households had cable modem service available and this percentage was predicted to exceed 80% by the end of 2005. BellSouth Comments at 39 (citing *Broadband Access Technology: Whose Number is Up?*, Yankee Group Report (Sept. 19, 2001)). BellSouth offered more recent numbers: at the end of 2001, 70% of United States households had cable modem service available. BellSouth Reply at 48 (citing BellSouth Harris Reply Decl. at para. 9).

⁶⁹⁸ For example, potential cable telephony providers must determine how to provide power to the consumer premises equipment (wireline systems utilizing copper facilities already provide power through the same network telephony service is provided, thus ensuring continuous access to telecommunications in the event of power outages) and ensure accurate 911 service. Allegiance Reply at 33. Allegiance notes that incumbent LEC comments rely not on current deployment but on predictions such as whether Comcast will deploy telephony after merger with AT&T and future deployment of IP telephony over cable networks.

⁶⁹⁹ See BOC UNE Fact Report 2002 at IV-12 (citing *Implementation of Section 6002(B) of the Omnibus Budget Reconciliation Act of 1993*, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Sixth Report, 16 FCC Rcd 13350, 13381 n.211 (2001) (*Sixth Wireless Report 2001*)). Wireless phones are now a mass market consumer device used by some 45% of the United States. *Seventh CMRS Report* at 31. One study estimates that 64.3 million households (*i.e.*, 61% of all U.S. households) use wireless phones. *Id.* By contrast, 103.4 million households (*i.e.*, 95.5% of all U.S. households) own and use wireline (continued....)

CMRS, while continuing to be primarily a complementary technology to wireline narrowband service, is growing as a substitute to wireline narrowband service with about three to five percent of CMRS subscribers using their service as a replacement for *primary* fixed voice wireline service.⁷⁰⁰ While this percentage is small, it continues to show increasing growth. Indeed, the Commission recently relied on wireless substitution to support the Track A findings in two section 271 proceedings where residential customers in New Mexico and Nevada had replaced their landline phones with wireless ones.⁷⁰¹ In addition, the record demonstrates that, although promising, wireless CMRS connections in general do not yet equal traditional landline local loops in their quality, their ability to handle data traffic, and their ubiquity.⁷⁰² Finally, the record indicates that CMRS is not yet capable of providing broadband services to the mass market – although a growing number of wireless carriers make available Internet access, such access is generally limited to transmissions of 25 to 66 kbps.⁷⁰³

231. The record indicates that, at present, fixed wireless and satellite services remain nascent technologies, with limited availability, when used to provide broadband services to the mass market. Although current satellite services may be available in all 50 states, their transmission capabilities remain limited and their mass market services have few subscribers.⁷⁰⁴ For example, combined, satellite and fixed wireless provide broadband services to approximately 200,000 customers nationwide.⁷⁰⁵ In addition, recent financial difficulties of fixed wireless

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telephones. *Telephone Subscribership November 2002 Report* at Table 1. BellSouth Comments at 64 (arguing wireless is a substitute for wireline).

⁷⁰⁰ See *Seventh CMRS Report* at 32 n.208; see also BOC UNE Fact Report 2002 at IV-12 (citing *Sixth Wireless Report 2001*, 16 FCC Rcd at 13381 n.211).

⁷⁰¹ See *Application by SBC Communications Inc., Nevada Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Authorization to Provide In-Region, InterLATA Services in Nevada*, WC Docket No. 03-10, Memorandum Opinion and Order, 18 FCC Rcd 7196, 7206, para. 18 (2003) (*SBC Nevada 271 Order*); *Application by Qwest Communications International, Inc. for Authorization to Provide In-Region, InterLATA Services in New Mexico, Oregon and South Dakota*, WC Docket No. 03-11, Memorandum Opinion and Order, 18 FCC Rcd 7325, 7336 n.53 (2003) (*Qwest New Mexico 271 Order*); see also *In the Matter of Application of BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Provision of In-Region, Interlata Services in Louisiana*, CC Docket No. 98-121, Memorandum Opinion and Order, 13 FCC Rcd 20599, 20606, 20622-23, paras. 11, 29-33 (1998) (*BellSouth Louisiana II 271 Order*) (finding that PCS can be a substitute for wireline service).

⁷⁰² BellSouth Comments at 41 (stating that wireless is “[not] very effective in transmitting large amount of data at high speed.”). AT&T points out, for example, that wireless service is engineered to provide only roughly 70% call completion rate while wireline call completion rates exceed 99%. AT&T Reply at 25; see also *id.* at 162-63.

⁷⁰³ *Seventh CMRS Report* at 53-54. By the end of 2001, approximately eight to ten million people accessed the Internet through their wireless telephones, up from 2 to 2.5 million the year before. *Id.* at 53.

⁷⁰⁴ See, e.g., WorldCom Comments at 4, 47, Attach. A at 76-78.

⁷⁰⁵ See *High Speed Services December 2002 Report* at Table 3.

carriers suggest the potential to use such services as substitutes for local loops used to serve the mass market is limited, at least for the short term.⁷⁰⁶

232. Finally, we note that other technologies that can substitute for loops in providing narrowband and broadband service are currently under development. For example, some companies are experimenting with delivering narrowband voice service via power lines.⁷⁰⁷ Such technologies have not been deployed beyond an experimental basis (*e.g.*, technical trials) at this time.

(c) Third-Party Offerings

233. The record indicates that no third parties are effectively offering, on a wholesale basis, alternative local loops capable of providing narrowband or broadband transmission capabilities to the mass market.⁷⁰⁸ This includes intermodal platforms such as cable and satellite that have no statutory or regulatory obligation comparable to the unbundling requirements of section 251(c).⁷⁰⁹ We note that, in their various reports and other submissions, the incumbent LECs have not demonstrated that third parties are offering alternate local loop transmission on a wholesale basis.

(iv) Unbundling Analysis

234. We engage in a balancing test in determining our unbundling requirements for mass market local loops. We recognize, of course, that impairment remains our statutory touchstone. We do not rely exclusively, however, on an impairment analysis to make our unbundling determination. We retain the flexibility under our section 251(d)(2) "at a minimum" authority to consider other factors. We use this flexibility sparingly. However, we believe that the goal of swift and ubiquitous broadband deployment is so important to the United States that we consider the statutory goals outlined in section 706 and how they relate to broadband as additional factors when considering loops. In addition, we also consider the comparative weight of the costs versus benefits of unbundling and the effect of intermodal competition.⁷¹⁰ As explained below, based on our analysis of impairment and evaluation of other factors, we adopt

⁷⁰⁶ See Sprint Comments at 24-25; *see also* Covad Siwek/Sun Decl. at paras. 49-57 & Schedule 5 (arguing that consumers are not buying satellite broadband because it does not work well in inclement weather, requires unobstructed view of southern sky, and is too expensive); Letter from Florence Grasso, Covad, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 6 (filed Oct. 21, 2002) (Covad Oct. 21, 2002 *Ex Parte* Letter).

⁷⁰⁷ See Committee on Broadband Last Mile Technology, Computer Science and Telecommunications Board, National Research Council, BROADBAND: BRINGING HOME THE BITS 135-36 (2002).

⁷⁰⁸ Covad Comments at 35 (no copper alternative); *see also* Access Integrated Networks Reply at 13; Allegiance Reply at 32-33 (contending that incumbent LEC arguments are based on predictions and speculation rather than actual marketplace conditions).

⁷⁰⁹ Covad Comments at 36-37 (arguing cable, wireless satellite and competitive fiber are not capable of providing xDSL quality or ubiquity); *see* AT&T Reply at 95-98, 161-63; WorldCom Reply at 87.

⁷¹⁰ See *supra* Part V.D.

loop unbundling rules for the mass market that ensure competitive access through extensive unbundling of the legacy copper loop facilities while promoting incentives to invest in next-generation network facilities and equipment through more limited unbundling of fiber-based loop facilities.

235. We conclude that requesting carriers seeking to serve the mass market face varying levels of impairment on a national basis without unbundled access to the transmission path between the central office and the customer premises depending upon whether the loop used to complete this path consists entirely of copper, or consists of a hybrid of fiber and copper cables, and whether a requesting carrier seeks to offer narrowband or broadband services or both. Pursuant to our section 251(d)(2) unbundling standard, we consider generally whether the potential revenue opportunity exceeds the costs, taking into consideration the relevant entry barriers – *i.e.*, scale economies, sunk costs, first-mover advantages, and barriers within the control of the incumbent LEC – and evidence of actual marketplace conditions.

236. Because of the importance of broadband to the American public and telecommunications users generally, we also consider other factors, foremost among these our obligation to ensure adequate incentives for infrastructure investment under section 706 of the Telecommunications Act of 1996, under our “at a minimum” authority in section 251(d)(2). For copper loops, we find on a national basis that requesting carriers are impaired without access to these loops, including copper subloops, because their absence is likely to make entry uneconomic.⁷¹¹ For other types of loops (*i.e.*, FTTH loops and hybrid fiber/copper loops used in packet-based transmissions), however, we recognize that additional revenue opportunities associated with increased bandwidth capabilities may alleviate, in direct proportion to the level of fiber deployment, at least some of these entry barriers. Moreover, our obligation to ensure adequate infrastructure investment incentives pursuant to section 706 supports limitations on the unbundling of fiber-based loops. Finally, the existence of intermodal competition for mass market broadband services reduces the need for more extensive unbundling rules.

(a) Impairment

237. The costs of local loops serving the mass market are largely fixed and sunk. By fixed we mean that these costs are largely insensitive to the number of customers being served.⁷¹² Much of the cost applies whether a carrier serves a single residential customer or ten thousand

⁷¹¹ In its *Verizon* decision, the Supreme Court stated that “the most costly and difficult part of [replicating the incumbent LEC’s network] would be laying down the ‘last mile’ of feeder wire, the local loop, to the thousands (or millions) of terminal points in individual houses and businesses.” *Verizon*, 535 U.S. at 490-91. Indeed, in its *USTA* decision, the D.C. Circuit quotes the following passage from this Supreme Court decision in its discussion of cost disparities: “entrants may need to share some facilities that are *very expensive to duplicate* (say, loop elements) in order to be able to compete in other, *more sensibly duplicable* elements (say, digital switches or signal-multiplexing technology).” *USTA*, 290 F.3d at 426 (citing *Verizon*, 535 U.S. at 510 n.27) (emphasis added by D.C. Circuit).

⁷¹² Covad Comments at 28; AT&T Reply at 150, 154-55 (citing AT&T Comments, Attach. B, Declaration of Richard N. Clarke (AT&T Clarke Decl.) at para. 23); WorldCom Reply at 14-18 (citing WorldCom Reply, Attach. A, Declaration of Mark T. Bryant (WorldCom Bryant Reply Decl.) at paras. 3, 5-14).

residential customers: that carrier must secure rights-of-way, dig trenches or place poles, and run wire underground or along poles.⁷¹³ Such deployment costs are also sunk. That is, local loop facilities are not fungible because they cannot be used for any other purpose if the investment fails.⁷¹⁴ If a new entrant overbuilds to serve a mass market customer and loses that customer to another carrier, the new entrant cannot economically redeploy that loop to another location. Its investment might be lost unless it could find a purchaser for its redundant loops. This is true regardless of whether the new entrant was providing narrowband or broadband service, or both. A carrier will not deploy mass market loops unless it knows in advance that it will have customers that will generate sufficient revenues to allow it to recover its sunk loop investment.⁷¹⁵ This certainty could most easily be achieved through long-term service contracts and a large, guaranteed customer base. In contrast to the enterprise market, however, long-term contracts are not commonplace in the mass market for either the narrowband or the broadband services and we have no information in our record to indicate that consumers ordinarily would accept such terms.⁷¹⁶ As new entrants, competitive LECs do not enjoy a large guaranteed subscriber base that would provide a predictable source of funding to offset their local loop deployment costs.⁷¹⁷ For these reasons, we find that the costs of self-provisioning mass market loop facilities are demonstrably greater than those faced universally by new entrants in other industries.⁷¹⁸

238. Incumbent LECs also enjoy first-mover advantages that work with the steep costs noted above to compound the entry barriers associated with local loop deployment. When the incumbent LECs installed most of their loop plant, they had exclusive franchises and, as such,

⁷¹³ See Covad Comments at 28 (arguing that incumbents could afford such massive fixed costs because they had 100% of the market share when they constructed their loop plant); WorldCom Reply at 63 (citing WorldCom Bryant Reply Decl. at para. 11). We note that fixed costs may strongly affect small businesses because, among other things, they likely serve fewer customers. See *supra* Part V.B. for a discussion of the relationship between fixed costs and scale economies.

⁷¹⁴ AT&T Reply at 144; WorldCom Reply at 16.

⁷¹⁵ NuVox Comments at 74-75; AT&T Reply at 154 (citing AT&T Willig Reply Decl. at paras. 21-22, 26, 39); see also Covad Reply at 16 (arguing that there are no "uncommitted entrants" because of the extremely high sunk costs in constructing loop plant).

⁷¹⁶ The record reflects that mass market customers typically purchase services offered over voice-grade loops on a month-to-month basis at relatively low prices. Compared to higher-capacity loops demanded by other customer classes, loops serving the mass market require less complex technology. Nevertheless, replicating a single loop for a mass market customer is prohibitively expensive due to the relatively low revenue per loop as compared to the cost of construction. This factor, coupled with the market's predominant use of short-term customer commitments, equates to a very low profit margin per loop, especially for new entrants. Moreover, loops for mass market customers exhibit substantial economies of scale, in that the larger the number of loops provisioned in a given area, the lower the average cost of provisioning each loop.

⁷¹⁷ As noted earlier in this Order, large sunk costs make it more difficult to ramp up to scale and, therefore, overcome a scale economies problem. See *supra* Part V.B.

⁷¹⁸ AT&T Comments at 127; Covad Reply at 15-18; WorldCom Reply at 14-18 (citing WorldCom Bryant Reply Decl. at paras. 3, 5-14).

the record shows that they secured rights-of-way at preferential terms and at minimal costs.⁷¹⁹ By contrast, our record shows that new entrants have no such advantage.⁷²⁰ Even if a competitive LEC obtains speedy resolution of rights-of-way issues, it may still experience delays involved with constructing new loop plant. Incumbent LECs, of course, experience no such delays when providing narrowband or broadband services over their legacy copper loops. Because these loops are already deployed, they are available immediately for providing narrowband services (*i.e.*, voice, fax, dial-up Internet access) and available after performing any necessary line conditioning for providing broadband service. Furthermore, competitive LECs are also faced with the problem of overcoming the incumbent LECs' established brand name recognition for providing reliable service in order to convince (potentially reluctant) mass market customers to change carriers.

239. According to several commenters, due to the high fixed costs described above, the incumbents LECs designed their networks to minimize the extent to which they must modify their loop plant when adding new customers or services.⁷²¹ Accordingly, when incumbent LECs construct loops, they typically add several spare wire pairs to the customer's location because the cost of these spare wires is small in comparison to the cost of adding these pairs at a later date.⁷²² This design lowers the incumbent LECs' cost of adding customers. Incumbent LECs achieved low average costs because historically they have served 100 percent of demand in any given area. Their investments were recovered, in most cases, through regulated rates and an authorized rate

⁷¹⁹ See, e.g., Covad Comments at 28 (stating that incumbents often obtained rights-of-way through the use of the states' eminent domain power); AT&T Willig Decl. at paras. 62-63 (arguing that as the first mover, incumbents received rights-of-way from local governments with only minimal transaction costs because the residents in that neighborhood or municipality otherwise would not receive any telecommunications services).

⁷²⁰ See WorldCom Comments at 33 (contending that competitive LECs have been hindered in their ability to install their own loops by "municipal ordinances that have imposed excessive, non-cost based fees on access to rights-of-way and have also delayed such access through unnecessary and cumbersome application procedures and bonding requirements."). Although section 224 of the Act imposes nondiscriminatory access obligations on incumbent LECs with respect to their poles, ducts, conduits, and rights-of-ways, we note that such access does not eliminate the transaction costs or first-mover advantages described above. 47 U.S.C. § 224.

⁷²¹ See AT&T Reply at 149.

⁷²² See *id.* (stating that "a customer drop may contain six pairs of wires rather than two because the carrying costs of the extra capacity are small compared to the cost of deploying additional capacity later (*e.g.*, to add a second or third line)"); see also AT&T Reply at 150 n.101 (explaining the incumbent LECs' use of bridged tap and additional transmission electronics to maximize the use of the existing plant); WorldCom Reply at 15 (citing WorldCom Bryant Reply Decl. at paras. 11-14; AT&T Clarke Decl. at para. 23) (arguing that "once a cable route is established, there are only small incremental structure costs to serving additional customer lines located along the route.").

of return.⁷²³ For a new entrant to match or even come close to the incumbent LECs' economies of scale, at a minimum, it would have to capture quickly a significant percentage of the market.⁷²⁴

240. We recognize, however, that the deployment of next-generation network facilities and equipment – that is, fiber optic cables and equipment used to provide packet-based services – affects our analysis. Although some of the entry barriers exist for both all-copper and all-fiber loops (e.g., the costs are both fixed and sunk, and such deployment is characterized by scale economies),⁷²⁵ the revenue opportunities are significantly greater for fiber-based construction. The record indicates that carriers can earn significant returns on their fiber-based investment by providing a suite of services ranging from traditional voice to full-motion video.⁷²⁶ In fact, the potential rewards of fiber deployment may offset the likelihood that competitive LECs will view entry as uneconomic. In addition, the barriers faced in deploying fiber loops, as opposed to existing copper loops, may be similar for both incumbent LECs and competitive LECs.⁷²⁷ Both incumbent and competitive LECs must purchase fiber and the associated equipment, negotiate access to the necessary rights-of-way, obtain any necessary government permits, hire skilled labor, and manage their construction projects in order to deploy fiber loops. Moreover, by some estimates, competitive LECs enjoy advantages that incumbent LECs do not have, such as lower labor costs and superior back office systems.⁷²⁸

⁷²³ AT&T Reply at 150 (citing AT&T Reply, Tab C, Declaration of Anthony Fea and Anthony Giovannucci (AT&T Fea/Giovannucci Reply Decl.) at paras. 6-7).

⁷²⁴ See, e.g., AT&T Reply at 157 (arguing that even with an “aggressive” market share of 30%, the new entrant’s loop investments per line costs would exceed the incumbent’s by 45 to 87% and its monthly loop costs would exceed the incumbent’s by 39 to 65%).

⁷²⁵ Covad Comments at 27 (arguing that xDSL “signals are no easier or cheaper to replicate than loops carrying POTS”); WorldCom Reply at 15 (citing AT&T Clarke Decl. at para. 23).

⁷²⁶ Corning Comments at 19-20 (asserting that incumbent and competitive LECs are on equal footing for FTTH deployment). Corning and the FTTH Council estimate that FTTH loops allow revenue opportunities of approximately \$33 per subscriber compared to \$18 per subscriber for xDSL-based services. Letter from Timothy J. Regan, Senior Vice President, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket 01-338, Attach. at 33 (filed Nov. 26, 2002) (Corning Nov. 26, 2002 FTTH Deployment *Ex Parte* Letter).

⁷²⁷ See, e.g., Verizon Reply at 40 n.117 (arguing that both incumbents and competitive LECs must incur and recover the costs of obtaining franchises and construction permits, and building out fiber loops). Similarly, as discussed earlier in this Order, incumbent LECs’ first-mover advantages would be greatly reduced in greenfield situations. See *supra* Part V.B.

⁷²⁸ Corning estimates construction accounts for more than 50% of FTTH deployment costs. Letter from Timothy J. Regan, Senior Vice President, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, Attach. 2 at 9 (filed Nov. 20, 2002) (Corning Nov. 20, 2002 FTTH Deployment *Ex Parte* Letter). Corning further explains that labor is “the largest component” of construction costs, and that competitive LECs enjoy an advantage. *Id.*, Attach. 2 at 10-11. See *CSMG Study* at 14 (noting that competitive LEC FTTH construction costs for labor are lower than those of incumbent LECs); BOC Shelanski Reply Decl. at para. 3; see also Verizon Reply at 42.

(b) Other Considerations

241. As we have stated elsewhere, broadband deployment is a critical policy objective that is necessary to ensure that consumers are able to fully reap the benefits of the information age.⁷²⁹ In this regard, we weigh how our rules related to broadband deployment address other policy considerations. In particular, we seek to encourage investment in next-generation network architecture suitable for delivering advanced telecommunications capability throughout the nation. We also look to promote the potential of broadband in a minimally regulated environment in accordance with the deregulatory intent of the 1996 Act. Finally, we seek to unleash the innovation that has been characteristic of the computer and software industries. We expect to develop unbundling rules that serve these broad goals so that consumers ultimately benefit from a ubiquitous, efficient, nationwide broadband deployment.

242. *Section 706.* In determining what our unbundling rules for loops used for broadband services should be, we also are guided by the goals of, and our obligations under, section 706 of the 1996 Act.⁷³⁰ Section 706 directs the Commission to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans” by using regulatory measures that “promote competition in the local telecommunications market” and “remove barriers to infrastructure investment.”⁷³¹ Through its “at a minimum” language, section 251(d)(2) provides the Commission with the discretion to consider factors in addition to impairment before requiring unbundling.⁷³² We find that this discretion is appropriately exercised by evaluating whether unbundling of local loops used to provide broadband services to the mass market is consistent with our section 706 mandate. In particular, we consider whether our unbundling requirements encourage the deployment of advanced telecommunications capability to all Americans by, among other things, promoting competition in the local market, promoting facilities-based deployment, promoting the delivery of innovative advanced services offerings, and removing barriers to infrastructure investment. In addition, we note that section 706 promotes the deployment of “high-speed, switched, broadband

⁷²⁹ See, e.g., *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Universal Service Obligations of Broadband Providers*, CC Docket Nos. 02-33, 95-20, 98-10, Notice of Proposed Rulemaking, 17 FCC Rcd 3019 (2002) (*Wireline Broadband NPRM*); *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services*, CC Docket No. 01-337, Notice of Proposed Rulemaking, 16 FCC Rcd 22745, 22747, para. 4 (2001) (*Dom/Non-Dom NPRM*).

⁷³⁰ 47 U.S.C. § 157 nt.

⁷³¹ *Id.*

⁷³² With regard to the Commission’s authority to “consider other elements” under the “at a minimum” language, the Court of Appeals for the D.C. Circuit has stated, “[w]e assume in favor of the Commission that is so.” *USTA*, 290 F.3d at 425.

telecommunications capability,” which counsels in favor of measures aimed at spurring the deployment of packet-switching technologies.⁷³³

243. Upgrading telecommunications loop plant is a central and critical component of ensuring that deployment of advanced telecommunications capability to all Americans is done on a reasonable and timely basis and, therefore, where directly implicated, our policies must encourage such modifications. Although a copper loop can support high transmission speeds and bandwidth, it can only do so subject to distance limitations and its broadband capabilities are ultimately limited by its technical characteristics.⁷³⁴ The replacement of copper loops with fiber will permit far greater and more flexible broadband capabilities.⁷³⁵ Although both the material used in the transmission path and the attached equipment work together to enable broadband capabilities, the record shows that, of the two, it is the upgrade to the transmission path (the loop) that is, by far, the more costly, complex, and risky endeavor.

244. In establishing our unbundling requirements, we consider our section 706 mandate in light of the technical characteristics of local loops. As we discuss in more detail below, we determine that our obligation to ensure the deployment of advanced telecommunications capability under section 706 warrants different approaches with regard to existing loop plant and new loop plant. With existing copper loops, all investment in advanced telecommunications capability is necessarily limited to the equipment, not the transmission facility. Therefore, our obligation to encourage infrastructure investment tied to legacy loops is more squarely driven by facilitating competition and promoting innovation. Because the incumbent LEC has already made the most significant infrastructure investment, *i.e.*, deployed the loop to the customer’s premises, we seek, through our unbundling rules, to encourage both intramodal and intermodal carriers (in addition to incumbent LECs) to enter the broadband mass market and make infrastructure investments in equipment. In addition, we seek to promote the deployment of equipment that can unleash the full potential of the embedded copper loop plant so that consumers can experience enhanced broadband capabilities before the mass deployment of fiber loops. We expect that more innovative products and services will follow the deployment of new loop plant and associated equipment. With new loop plant, however, encouraging infrastructure investment must be balanced between ensuring that incumbent LECs retain adequate incentives to upgrade their loop plant and ensuring that competition continues to drive the deployment of innovative broadband services. These considerations come into play most acutely in determining

⁷³³ 47 U.S.C. § 157 nt. Section 706 defines “advanced telecommunications capability” as “high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”

⁷³⁴ *Line Sharing Order*, 14 FCC Rcd at 20919, para. 8 n.9.

⁷³⁵ BROADBAND: BRINGING HOME THE BITS, *supra* note 707, at 129-30; Corning Comments at 2; Letter from Timothy Regan, Senior Vice President, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, FTTH Council Attach. at 28 (filed Jan. 29, 2003) (Corning Jan. 29, 2003 *Ex Parte* Letter).

the appropriate unbundling requirements for loops used to provide broadband service to the mass market.⁷³⁶

245. *Intermodal Competition.* Upon review of the extensive record on intermodal competition compiled in this proceeding, we determine that, although the existence of intermodal loops does not warrant a finding of no impairment, such competition is a factor to consider in establishing our unbundling requirements. We have discussed the competitive characteristics of intermodal loops in preceding paragraphs. Indeed, the broadband competition posed by cable operators in the mass market supports our decision to refrain from unbundling requirements on the features, functions, and capabilities of certain types of loops. Similarly, the state of intermodal competition, including competition from wireless telephony, in the mass market for narrowband services supports our approach to unbundling the legacy loops of incumbent LECs. Neither wireless nor cable has blossomed into a full substitute for wireline telephony. In addition, because wireless does not yet demonstrate the technical characteristics necessary to provide broadband services, unbundling incumbent LEC legacy loops is necessary for mass market consumers to realize the benefits of competition both for narrowband and broadband services, as well as both combined as a bundle.

246. There appear to be a number of promising access technologies on the horizon⁷³⁷ and we expect intermodal platforms to become increasingly a substitute for wireline voice telephony services and for wireline broadband services. As we continue to assess impairment in the future, we recognize that the increased presence of viable alternative platforms may help increase competitive alternatives, both retail and wholesale, in the narrowband and broadband mass markets. The presence of such alternatives in the future may enable us to find that requesting carriers are no longer impaired in their ability to compete without access to incumbent LEC loops.⁷³⁸

(v) Specific Unbundling Requirements for Mass Market Loops

247. In this section, we address the specific unbundling requirements for mass market loops. We address the requirements based on the three primary types of local loops noted above, *i.e.*, copper loops, FTTH loops, and hybrid fiber/copper loops.

⁷³⁶ We note that one party, Corning, requested that the Commission forbear from imposing on incumbent LECs the resale requirements set forth in section 251(c)(4) for FTTH loops. Corning Comments at 31-33. Obviously, Corning's request is outside the scope of this proceeding and, thus, we will not address it in this Order.

⁷³⁷ See, e.g., *Third Section 706 Report 2002*, 17 FCC Red at 2877-80, paras. 79-88 (describing other potential intermodal platforms capable of providing broadband service).

⁷³⁸ We note that the impairment standard set forth in section 251 is different from, and does not prejudice, the standard we use to assess a carrier's dominant or non-dominant status. See *Dom/Non-Dom NPRM*.

(a) Legacy Networks

248. *Stand-Alone Copper Loops.* As discussed above, we find that requesting carriers are generally impaired on a national basis without unbundled access to an incumbent LEC's local loops, whether they seek to provide narrowband or broadband services, or both.⁷³⁹ However, we determine that unbundled access to conditioned, stand-alone copper loops (which, of course, may be shared between two competitive LECs as discussed below) is sufficient to overcome such impairment for the provision of broadband services. Consequently, we find that, subject to the grandfather provision and transition period explained below, incumbent LECs do not have to unbundle the HFPL for requesting telecommunications carriers.

249. With more than 6 million kilometers of copper cable deployed, it is clear that copper remains the predominant loop type serving the mass market⁷⁴⁰ and no party seriously asserts that stand-alone copper loops should not be unbundled in order to provide services to the mass market.⁷⁴¹ To address the impairment discussed above, we conclude that incumbent LECs must provide unbundled access to local loops comprised of copper wire.⁷⁴² That is, incumbent LECs shall provide, as a UNE, access to the complete transmission path comprised of a copper local loop between the central office and the customer's premises. The copper loop network element is a single local loop, including all intermediate devices (*e.g.*, repeaters, load coils) used to establish the transmission path. Consistent with the definition the Commission adopted in the *UNE Remand Order*, this complete transmission path between the incumbent LEC's main distribution frame (or its equivalent) in its central office and the demarcation point at the customer's premises⁷⁴³ also includes the features, functions, and capabilities of the copper loop.⁷⁴⁴ We include within this network element all local loops comprised of copper cable, including two- and four-wire analog voice-grade loops, digital loops (*e.g.*, DS0s and ISDN lines) and two- and four-wire loops conditioned to transmit the digital signals needed to provide xDSL service. Consistent with their obligation to provide unbundled local loops on just, reasonable, and

⁷³⁹ See our discussion of the high fixed and sunk costs, large economies of scale, and operational barriers such as rights-of-way, *supra* Part VI.A.4.a(iv)(a).

⁷⁴⁰ See *Statistics of Communications Common Carriers September 2002 Report* at Table 2.2.

⁷⁴¹ See, *e.g.*, SBC Reply at 109 (stating that competitive LECs have "ample opportunity to offer voice and data over the legacy network" and can "access the copper distribution subloop at the first accessible point in the ILEC's network . . . and use it to provision DSL service."). In addition, we note that some commenters assumed continued unbundling of loops to support their argument that UNE-P is unnecessary. See, *e.g.*, Verizon Reply at 113 (arguing that UNE-P is unnecessary because a competitive LEC could simply "use hot cuts and a UNE-L strategy to serve mass market customers.").

⁷⁴² To be clear, we require incumbent LECs to unbundle both existing copper loops and copper loops as they are newly deployed.

⁷⁴³ As discussed below, this also includes any inside wire owned by the incumbent LEC. See *infra* Part VI.B.2 (discussing inside wire).

⁷⁴⁴ As noted above, the Act defines the term "network element" as "a facility or equipment used in the provision of a telecommunications service. Such term also includes features, functions, and capabilities that are provided by means of such facility or equipment." 47 U.S.C. § 153(29).

nondiscriminatory terms and conditions, incumbent LECs must provide the requesting carriers with nondiscriminatory access to the same detailed information about the loop that is available to the incumbent LEC in the same time intervals it is provided to the incumbent LEC's retail operations.⁷⁴⁵ We note that our requirements for stand-alone copper loops apply to both copper loops that are in active service and those that are deployed in the network as spares.⁷⁴⁶

250. The practical effect of this unbundling requirement is to ensure that requesting carriers have access to the copper transmission facilities they need in order to provide narrowband or broadband services (or both) to customers served by copper local loops. We understand that this unbundling obligation may require an incumbent LEC to provide the functionality available in certain equipment, as well as to remove the functionality from other equipment (*i.e.*, to condition the loop), in order to provide a complete transmission path between its main distribution frame (or equivalent) and the demarcation point at the customer's premises.⁷⁴⁷ As noted elsewhere in this Order, we find that line conditioning constitutes a form of routine network modification that must be performed at the competitive carrier's request to ensure that a copper local loop is suitable for providing xDSL service.⁷⁴⁸

251. *Line Splitting.* We find that when competitive carriers opt to take an unbundled stand-alone loop, the incumbent LEC must provide the requesting carrier with the ability to engage in line splitting arrangements. We use the term "line splitting" to describe the scenario where one competitive LEC provides narrowband voice service over the low frequency of a loop and a second competitive LEC provides xDSL service over the high frequency portion of that same loop. The Commission previously found that existing rules require incumbent LECs to

⁷⁴⁵ See *supra* Part VI.1 (discussing incumbent LECs' OSS obligations); see also *UNE Remand Order*, 14 FCC Rcd at 3884-87, paras. 426-31 (requiring incumbent LECs to provide, among other things, the composition of the loop material; the existence, location and type of any electronic or other equipment on the loop; the loop length; the wire gauge(s) of the loop; and the electrical parameters of the loops); *Line Sharing Order*, 14 FCC Rcd at 20958-73, paras. 96-130; 47 C.F.R. § 51.319(g).

⁷⁴⁶ These requirements also include the obligation to condition the spare pair so that the requesting carrier may provide xDSL service. As Qwest points out, when incumbent LECs construct new loop plant, they frequently overlay fiber facilities that supplement existing loops. Qwest Comments at 45; see Alcatel Comments at 16 (noting that, when incumbent LECs deploy fiber loops, competitive LECs would continue to maintain access to legacy copper transmission facilities). Thus, the construction of new facilities does not in itself alter a competitive LEC's ability to use the incumbent LEC's network. Qwest explains that it "does not proactively remove copper facilities in the case of an overlay" so that requesting carriers should be able to continue providing service in these circumstances. Qwest Comments at 45-46.

⁷⁴⁷ As discussed in Part VI.A. *infra*, we readopt incumbent LECs' line conditioning obligations. The Commission noted in its *Line Sharing Order* that devices such as load coils and bridged taps interfere with the provision of xDSL service and, absent a certain showing by the incumbent LEC to the relevant state commission, must be removed at the request of the competitive LEC. See *Line Sharing Order*, 14 FCC Rcd at 20952-54, paras. 83-86. We determine that, upon the competitive LEC's request, incumbent LECs must similarly condition unbundled stand-alone loops to make them xDSL-compatible.

⁷⁴⁸ We also require such conditioning for the HFPL consistent with the grandfather provision and transition period described below. See *Line Sharing Order*, 14 FCC Rcd at 20952-54, paras. 83-87.

permit competing carriers to engage in line splitting where a competing carrier purchases the whole loop and provides its own splitter to be collocated in the central office.⁷⁴⁹ We reaffirm those requirements but, for purposes of clarity and ensuring regulatory certainty, we find that it is appropriate to adopt line splitting-specific rules.

252. Included among these rules is the requirement that incumbent LECs modify their OSS in such a manner as to facilitate line splitting. We also readopt the Commission rules requiring incumbent LECs to provide access to physical loop test access points on a nondiscriminatory basis for the purpose of loop testing, maintenance, and repair activities, and allowing incumbent LECs to maintain control over the loop and splitter equipment and functions in certain circumstances. We do not anticipate that the incumbent LECs will have any difficulty implementing such an obligation because the Commission required as much from them in its *Line Sharing Reconsideration Order*.⁷⁵⁰ Furthermore, so long as the unbundled loop-switch combination is permitted in a particular state, the rules make clear that incumbent LECs must permit competitive LECs providing voice service through that arrangement to line split with another competitive LEC.⁷⁵¹ As the Commission did before, we encourage incumbent LECs and competitors to use existing state commission collaboratives and change management processes to address OSS modifications that are necessary to support line splitting.⁷⁵²

⁷⁴⁹ See *Application by SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in Texas*, CC Docket No. 00-65, Memorandum Opinion and Order, 15 FCC Rcd 18354, 18515-16, paras. 324-25 (2000) (*SWBT Texas 271 Order*); *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, Third Report and Order on Reconsideration in CC Docket No. 98-147, Fourth Report and Order on Reconsideration in CC Docket No. 96-98, Third Further Notice of Proposed Rulemaking in CC Docket No. 98-147, Sixth Further Notice of Proposed Rulemaking in CC Docket No. 96-98, 16 FCC Rcd 2101, 2109-14, paras. 16-26 (2001) (*Line Sharing Reconsideration Order*). These Orders expressly determined that rules 51.307(c) (requiring incumbent LECs to provide unbundled access to a UNE in a manner that “allows the requesting telecommunications carrier to provide any telecommunications service that can be offered by means of that network element”) and 51.309(a) (prohibiting an incumbent LEC from imposing “limitations, restrictions, or requirements on . . . the use of unbundled network elements that would impair the ability of a requesting telecommunications carrier to offer a telecommunications service in the manner” the requesting carrier intends) require incumbent LECs to permit line splitting.

⁷⁵⁰ See *Line Sharing Reconsideration Order*, 16 FCC Rcd at 2111, para. 20 (requiring incumbent LECs to make all necessary network modifications, including providing nondiscriminatory access to OSS necessary for pre-ordering, ordering, provisioning, maintenance and repair, and billing for loops used in line splitting arrangements). For the reasons explained herein, we grant WorldCom’s request for clarification that requesting carriers may engage in line splitting. MCI WorldCom Petition for Clarification, CC Docket No. 96-98 at 10 (filed Feb. 17, 2000) (MCI WorldCom Feb. 17, 2000 Petition for Clarification).

⁷⁵¹ Again, the Commission required this in an earlier Order. See *Line Sharing Reconsideration Order*, 16 FCC Rcd at 2110-11, para. 19.

⁷⁵² See *id.* at 2111-12, para. 21. We note with support the work already performed by state commissions in this area and we encourage states to continue overseeing and participating in such collaboratives. See, e.g., New York Department Comments at 6-7. Some commenters claimed that BOCs reject competitive LEC xDSL orders because the BOCs are not the local voice provider and they refuse to coordinate the HFPL order with the voice competitive LEC. See, e.g., WorldCom Comments, Declaration of Ian Graham (WorldCom Graham Decl.) at para. 33. We do (continued....)

253. *Unbundled Access to Copper Subloops.* We require incumbent LECs to provide unbundled access to their copper subloops, *i.e.*, the distribution plant consisting of the copper transmission facility between a remote terminal and the customer's premises.⁷⁵³ We conclude that our impairment finding extends to copper subloops because they are part and parcel of the local loop plant of incumbent LECs – requesting carriers face precisely the same barriers to entry for a subloop as with a copper loop that extends from the incumbent LEC's central office to the customer's premises. Indeed, we note that several incumbent LECs argue that accessing copper subloops provides competitive LECs with sufficient access to the loop for the provision of the services that they seek to provide.⁷⁵⁴ Consistent with our section 706 goal to spur deployment of advanced telecommunications capability, we do not require incumbent LECs to provide access to their fiber feeder loop plant on an unbundled basis as a subloop UNE. As explained below, in light of our decision to refrain from unbundling the packetized capabilities of incumbent LECs, incumbent LECs will provide access to their fiber feeder plant only to the extent their fiber feeder plant is necessary to provide a complete transmission path between the central office and the customer premises when incumbent LECs provide unbundled access to the TDM-based capabilities of their hybrid loops. We encourage parties to negotiate access arrangements that would facilitate competitive LEC access to copper subloops. Specifically, we expect that incumbent LECs will develop wholesale service offerings for access to their fiber feeder to ensure that competitive LECs have access to copper subloops. Of course, the terms and conditions of such access would be subject to sections 201 and 202 of the Act.⁷⁵⁵

254. We define the copper subloop UNE as the distribution portion of the copper loop that is technically feasible to access at terminals in the incumbent LEC's outside plant (*i.e.*, outside its central offices), including inside wire.⁷⁵⁶ We find that any point on the loop where technicians can access the cable without removing a splice case constitutes an accessible terminal. As HTBC points out, a non-exhaustive list of these points includes the pole or pedestal, the serving area interface (SAI), the NID itself, the MPOE, the remote terminal, and the

(Continued from previous page) _____

expect incumbent LECs to implement, in a timely fashion, "practical and reasonable measures" to enable competitive LECs to line split. *Id.*

⁷⁵³ Letter from Derek R. Khlopin, High Tech Broadband Coalition, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, Attach. at 2 (filed Feb. 14, 2003) (HTBC Feb. 14, 2003 *Ex Parte* Letter) (submitting proposed rule language).

⁷⁵⁴ Qwest Comments at 46; SBC Comments at 53-54; Verizon Comments at 89 n.296.

⁷⁵⁵ For example, incumbent LECs could develop, and provide pursuant to sections 201/202 of the Act, telecommunications services that are similar to the special access services they already provide. Such services would, in effect, offer competitive LECs access to the shared fiber feeder plant (and any necessary cross-connections or similar functions) in order to obtain access to equipment in a remote terminal or to the copper subloop itself. We note that at least one incumbent LEC has supported making available wholesale broadband service offerings because such arrangements would make commercial sense. *See, e.g.*, Verizon Comments at 82 (arguing that incumbent LECs should be permitted to offer wholesale broadband services in lieu of unbundling its broadband network equipment and facilities). *But see* WorldCom Reply at 120-21 (criticizing Verizon's proposal).

⁷⁵⁶ HTBC Feb. 14, 2003 *Ex Parte* Letter at 2 (submitting proposed rule language).

feeder/distribution interface. To facilitate competitive LEC access to the copper subloop UNE, we require incumbent LECs to provide, upon a site-specific request, access to the copper subloop at a splice near their remote terminals.⁷⁵⁷ With respect to the copper subloop, in addition to providing greater specificity of access points consistent with the HTBC proposal, we readopt our previous requirements for providing unbundled access to subloop UNEs. Unlike our previous subloop unbundling rules, however, the rules we adopt herein do not require incumbent LECs to provide unbundled access to their feeder loop plant as stand-alone UNEs, thereby limiting incumbent LEC subloop unbundling obligations to their distribution loop plant.

255. *High Frequency Portion of the Loop.* Although we make the whole copper loop and the copper subloop available to requesting carriers as UNEs, along with the ability to engage in line splitting, some parties have requested that we also make available the high frequency portion of the copper loop. For reasons we discuss below, we decline to do so except as specified on a grandfathered basis. As an initial matter, we use the term “line sharing” to describe when a competing carrier provides xDSL service over the same line that the incumbent LEC uses to provide voice service to a particular end user, with the incumbent LEC using the low frequency portion of the loop and the competing carrier using the HFPL. Continued access to the incumbent LEC’s conditioned, stand-alone copper loops and subloops enables a requesting carrier to offer and recover its costs from all of the services that the loop supports, including xDSL service.⁷⁵⁸ Commenters have not argued that it is technically infeasible to provide xDSL service over a stand-alone copper loop nor have they argued that it is technically infeasible to provide xDSL service over a line split loop (*i.e.*, a loop that is shared by two competitive LECs – one offering voice service and the second offering xDSL service). Advocates for reinstating unbundled access to the HFPL instead offer various economic and operational reasons for why they would be impaired without such access, generally reiterating the same reasons that were offered in the Commission’s original line sharing proceeding in 1999.⁷⁵⁹

256. As we noted above, the D.C. Circuit vacated these rules and directed the Commission to apply some limiting standard rationally related to the goals of the Act.⁷⁶⁰ The D.C. Circuit stated that the Commission must weigh the costs associated with unbundling in making its section 251(d)(2) determinations.⁷⁶¹ More generally, the D.C. Circuit explained that

⁷⁵⁷ *Id.*

⁷⁵⁸ Moreover, as explained above, the Commission reaffirms the incumbent LECs’ obligation to permit line splitting so that a competitive LEC seeking only to offer xDSL service (*i.e.*, a data LEC) may partner with a voice-only competitive LEC to provide the service – xDSL – that the data LEC offered under the Commission’s now-vacated rules.

⁷⁵⁹ *Line Sharing Order*, 14 FCC Red at 20931-38, paras. 38-53.

⁷⁶⁰ *USTA*, 290 F.3d at 429 (citing *Iowa Utils. Bd.*, 525 U.S. at 386-88). The D.C. Circuit also cautioned the Commission against imposing the costs of unbundling if doing so would not bring on a significant enhancement of competition. *Id.*

⁷⁶¹ *Id.* at 429.

the Commission must make an effort to balance these costs against the benefits of unbundling.⁷⁶² It is against this backdrop that the Commission makes its decision on line sharing.

257. In its *Line Sharing Order*, the Commission found that competitive LECs were impaired without unbundled access to the HFPL because, among other things, purchasing a stand-alone loop would be too costly for carriers seeking to offer only broadband service.⁷⁶³ It also determined that requiring these carriers to offer voice service in order to provide xDSL service would impose on them the cost of providing circuit-switched voice services, which includes the development of marketing, billing, and customer care infrastructure to serve the needs of voice customers.⁷⁶⁴ In addition, the Commission found no evidence that requesting carriers could obtain the HFPL from another competitive LEC (*i.e.*, what the Commission subsequently termed “line splitting”).⁷⁶⁵

258. As an initial matter, we disagree with the Commission's prior finding that competitive LECs are impaired without unbundled access to the HFPL because purchasing a stand-alone loop would be too costly for carriers seeking to offer a broadband service. Whereas in the *Line Sharing Order*, the focus was only on the revenues derived from an individual service, our focus is on the all potential revenues derived from using the full functionality of the loop. As stated above, the impairment standard we adopt today considers whether *all* potential revenues from entering a market exceed the costs of entry, taking into account consideration of any advantages a new entrant may have.⁷⁶⁶ Thus, in the instant case, we take into the account the fact that there are a number of services that can be provided over the stand-alone loop, including voice, voice over xDSL (*i.e.*, VoDSL), data, and video services. In so doing, we conclude that the increased operational and economic costs of a stand-alone loop (including costs associated with the development of marketing, billing, and customer care infrastructure) are offset by the increased revenue opportunities afforded by the whole loop.

259. Moreover, we can no longer find that competitive LECs are unable to obtain the HFPL from other competitive LECs through line splitting. For example, the largest non-incumbent LEC provider of xDSL service, Covad, recently announced plans to offer ADSL service to “more of AT&T’s 50 million consumer customers” through line splitting.⁷⁶⁷ In

⁷⁶² *Id.* at 427, 429.

⁷⁶³ *Line Sharing Order*, 14 FCC Rcd at 20932-35, paras. 39-43.

⁷⁶⁴ *Id.* at 20936, para. 48.

⁷⁶⁵ *Id.* at 20938, para. 53.

⁷⁶⁶ *See supra* para. 84.

⁷⁶⁷ *See* Covad Communications, *AT&T and Covad Extend Residential DSL Relationship*, Press Release (dated Jan. 6, 2003) <http://www.covad.com/companyinfo/pressroom/pr_2003/010603_press.shtml> (stating that this agreement will enable more of AT&T’s 50 million consumer customers to obtain xDSL service through Covad’s network, which itself covers more than 40 million households and businesses nationwide). We thus do not find credible Covad’s argument that the Commission’s previous finding, that there are no third-party alternatives to the incumbent LEC’s HFPL, remains valid. *See* Covad Comments at 42.

addition, in the 1999 *Line Sharing Order*, the Commission relied on the marketplace conditions present at the time to justify, at least partially, its decision to unbundle the HFPL. Specifically, the Commission noted the nascency of local competition and the lack of viable alternatives for a provider of broadband services.⁷⁶⁸ Although we recognize that these circumstances have not been completely reversed, significant strides have been made by competitors in the local market. Competitors now serve more than three times the number of voice customers that were served in 1999.⁷⁶⁹ Moreover, the conditions for further competitive entry are much better established as evidenced by the Commission's approval of 43 section 271 applications, which requires the Commission to find that the local telephone market is open to competition in a particular state, since 1999.⁷⁷⁰ Since some incumbent LECs have thus far refused to provide xDSL service to customers that obtain voice service from a competitive LEC, by necessity, any of the over 11 million voice customers served by competitive LECs who seek xDSL service would have to obtain that service from a competing carrier.⁷⁷¹

260. We find that allowing competitive LECs unbundled access to the whole loop and to line splitting but not requiring the HFPL to be separately unbundled creates better competitive incentives than the alternatives. This is largely due to the difficulties in pricing the HFPL as a separate element. As we explained in the *Line Sharing Order*, the same physical loop is used for multiple services, and there is no single correct method for allocating loop costs among these services and the HFPL.⁷⁷² Pricing the HFPL thus creates a dilemma: either incumbent LECs are allowed to over-recover their loop costs by fully charging for both the HFPL and the low frequency portion of the loop, or competitive LECs are allowed to purchase the HFPL at a price of roughly zero.⁷⁷³ Following our pricing rules, most states did the latter.⁷⁷⁴ The result is that competitive LECs purchasing only the HFPL have an irrational cost advantage over competitive LECs purchasing the whole loop and over the incumbent LECs. In contrast, allowing competitive LECs unbundled access to the whole loop and to line splitting but not requiring the

⁷⁶⁸ See, e.g., *Line Sharing Order*, 14 FCC Rcd at 20938, 20939-40, paras. 53, 56.

⁷⁶⁹ See *Local Telephone Competition December 2002 Report* at Table 2 (comparing 3.4 million mass market customers in December 1999 with over 11 million mass market customers in June 2002). We also note that several voice providers, AT&T and WorldCom, subsequently purchased the assets of two former data LECs: NorthPoint and Rhythms NetConnections, respectively. See, e.g., WorldCom Reply, Reply Declaration of Ian Graham (WorldCom Graham Reply Decl.) at para. 1.

⁷⁷⁰ We note that in 1999, only one state, New York, had been granted section 271 authority. Since then, the Commission has approved section 271 applications in 42 other states (including the District of Columbia).

⁷⁷¹ See *Local Telephone Competition December 2002 Report* at Table 2. As noted by WorldCom, the need for line splitting is likely to grow as penetration by competitive voice providers increases. WorldCom Comments at 104.

⁷⁷² *Line Sharing Order*, 14 FCC Rcd at 20975, para. 138; see also *Intercarrier Compensation NPRM*, 16 FCC Rcd at 9625, para. 39 (describing generally the difficulties associated with allocating common costs among services).

⁷⁷³ *Line Sharing Order*, 14 FCC Rcd at 20975, para. 137.

⁷⁷⁴ See, e.g., Covad Dec. 27, 2002 *Ex Parte* Letter at 6 (noting that 73% of the states in which Covad does business have approved a zero rate for the HFPL). See also *CALLS Order*, 15 FCC Rcd at 13001, para. 98 (stating that, as of 2000, the Commission was unaware of any incumbent LEC allocating any loop costs to ADSL service).

HFPL to be separately unbundled puts competitive LECs using only the HFPL in a more fair competitive position with respect to other competitive LECs and to the incumbent LECs. Each carrier faces the same loop costs and, if it wishes, each can partner with another carrier to provide service over the HFPL alone or the low frequency portion of the loop alone as it wishes.

261. We expressly reject the Commission's earlier finding that "line sharing will level the competitive playing field"⁷⁷⁵ In fact, rules requiring line sharing may skew competitive LECs' incentives toward providing a broadband-only service to mass market consumers, rather than a voice-only service or, perhaps more importantly, a bundled voice and xDSL service offering. In addition, readopting our line sharing rules on a permanent basis would likely discourage innovative arrangements between voice and data competitive LECs and greater product differentiation between the incumbent LECs' and the competitive LECs' offerings. We find that such results would run counter to the statute's express goal of encouraging competition and innovation in all telecommunications markets.

262. Furthermore, in vacating the Commission's line sharing rules, the D.C. Circuit found that the Commission failed to consider the relevance of broadband competition coming from cable and, to a lesser extent, satellite providers.⁷⁷⁶ The Commission staff's *High Speed Services December 2002 Report* shows that, nationally, cable modem service is the most widely used means by which the mass market obtains broadband service.⁷⁷⁷ Indeed, two reports show that the gap between cable modem and ADSL subscribership continues to widen.⁷⁷⁸

263. As discussed earlier, the Commission also has acknowledged the important broadband potential of other platforms and technologies, such as third generation wireless, satellite, and power lines.⁷⁷⁹ Although cable modem's lead in broadband deployment is not dispositive in our impairment analysis,⁷⁸⁰ the fact that broadband service is actually available through another network platform and may potentially be available through additional platforms helps alleviate any concern that competition in the broadband market may be heavily dependent upon unbundled access to the HFPL. Indeed, as noted by Allegiance, the existence of some

⁷⁷⁵ *Line Sharing Order*, 14 FCC Rcd at 20930-31, para. 35.

⁷⁷⁶ *USTA*, 290 F.3d at 428.

⁷⁷⁷ See *High Speed Services December 2002 Report* at Table 5 (noting that cable modem service is provided over nine million lines, which is approximately 57% of all high-speed lines).

⁷⁷⁸ Compare Industry Analysis and Technology Division, Wireline Competition Bureau, *High Speed Services July 2002 Report* at Table 5 (noting that the difference in number of high-speed lines served by cable modem service and ADSL service was 3.11 million as of December 2001) with *High Speed Services December 2002 Report* at Table 5 (noting that the difference in number of high-speed lines served by cable modem service and ADSL service was 4.07 million as of June 2002).

⁷⁷⁹ See, e.g., *Third Section 706 Report 2002*, 17 FCC Rcd at 2877-81, paras. 79-88.

⁷⁸⁰ See *supra* Part V.B. (discussing intermodal alternatives in the general impairment Part of this Order).

measure of intermodal alternatives in the residential market lessens the benefits of unbundling.⁷⁸¹ Given that the whole loop is available, on an unbundled basis, we find that the costs of unbundling the HFPL outweigh the benefits when taking into account the skewed entry incentives discussed above. Moreover, we anticipate that the Commission's decisions in this Order and other proceedings will encourage the deployment of new technologies providing the mass market with even more broadband options.⁷⁸²

264. *Line Sharing Transition.* We recognize that a number of competitive LECs have relied on the existence of line sharing to provide broadband service to end users since the adoption of the *Line Sharing Order*. These carriers have built internal systems to order the HFPL from incumbent LECs and have designed products that depend on line sharing as an input. In order to ensure that these carriers have adequate time to implement new internal processes and procedures, design new product offerings, and negotiate new arrangements with incumbent LECs to replace line sharing, we adopt a three-year transition period for new line sharing arrangements of requesting carriers.⁷⁸³ In addition, until the next biennial review, a proceeding that will

⁷⁸¹ See Letter from Thomas Jones, Counsel for Allegiance, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 2 (filed Feb. 13, 2003) (Allegiance Feb. 13, 2003 *Ex Parte* Letter).

⁷⁸² Chairman Powell claims that our decision on line sharing contains some compromises, which, he contends, are improper. *Chairman Powell Statement* at 15-16. There is nothing improper about our decision. The Commission is composed of five people, each of whom sometimes has a different view of the right answer. When that occurs, it is essential to work together to find common ground, or else the agency cannot function. Compromise is inherently part of that process, and "good public policy often must be[] a balanced compromise of conflicting values and judgments." Separate Statement of Commissioner Michael K. Powell, *Review of the Commission's Regulations Governing Attribution of Broadcast and Cable/MDS Interests*, Report and Order, 14 FCC Rcd 12559, 12669 (1999); see also Separate Statement of Commissioner Michael K. Powell, *1998 Biennial Regulatory Review Spectrum Aggregation Limits for Wireless Telecommunications Carriers*, Report and Order, 15 FCC Rcd. 9219, 9296-97 (1999) ("Well, this time we are not doing much to modify or eliminate the rule and I do not agree with all of the findings and competitive analysis in the item. . . . Most importantly, in the spirit of compromise, the item recognizes three things that I find somewhat comforting in my decision today to support the item."). In fact, "compromise . . . is within the Commission's purview," *Interstate Natural Gas Ass'n v. FERC*, 285 F.3d 18, 36 (D.C. Cir. 2002), so long as an "agency articulate[s] a satisfactory explanation for its action including a rational connection between the facts found and the choice made." *Ass'n of American Railroads v. Surface Transp. Bd.*, 161 F.3d 58, 66 (D.C. Cir. 1998) (quoting *Michigan Consol. Gas Co. v. FERC*, 883 F.2d 117, 120-21 (D.C. Cir. 1989)) (quotation marks omitted). Here, we have offered a detailed justification of our actions. Specifically, as discussed, the Commission's previous decision to require line sharing was unequivocally vacated by the D.C. Circuit; the Commission's earlier assessment of costs and revenues from the local loop failed to consider all potential revenues; competitive LECs are now able to obtain the HFPL from other competitive LECs through line splitting; the Commission's previous line sharing rule created warped incentives, because there is no single correct method for allocating the costs attributable to the HFPL; and cable television providers, who are not subject to line sharing obligations, serve a majority of the current residential broadband customers, while incumbent LECs have only a fraction of this market share.

⁷⁸³ In response to the transition mechanism for line sharing voted on February 20th, the dissent raised some concerns regarding aspects of the transition for existing customers that had not been previously discussed. Separate Statement of Commissioner Kathleen Q. Abernathy, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, CC Docket Nos. 01-338, 96-98, 98-147, FCC 03-36 (rel. Feb. 20, 2003) ("I am also troubled by the majority's decision to establish a three-year transition period for the elimination of line sharing. I believe that the majority should own up to the fact that, by cutting off data LECs' access to line sharing, it has shut down residential (continued....)

commence in 2004, we grandfather all existing line sharing arrangements unless the respective competitive LEC, or its successor or assign, discontinues providing xDSL service to that particular end-user customer. During this interim period, we direct incumbent LECs to charge competitive LECs the same price for access to the HFPL for those grandfathered customers that they charged prior to the effective date of this Order. Consistent with our stated policy goal of preventing harm to consumers caused by a discontinuance of service, we conclude that establishing a grandfathering rule is necessary to prevent consumers who currently rely on line sharing from losing their broadband service.⁷⁸⁴ This interim grandfathering rule will help alleviate the impact of such a significant rule change on end-user customers.⁷⁸⁵ Consistent with

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broadband competition over the copper loop. Any talk of a glide path is fanciful, because, in all likelihood, there will regrettably be no providers left to participate in a transition three years from now.”); Separate Statement of Chairman Michael K. Powell, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, CC Docket Nos. 01-338, 96-98, 98-147, FCC 03-36 (rel. Feb. 20, 2003) (“By some estimates, 40% of DSL providers use line shared inputs. The decision to kill off this element and replace it with a transition of higher wholesale prices will lead quite quickly to higher retail prices for broadband consumers . . .”). As the Commission has concluded in other contexts, “some of those concerns were well thought out and prompted the majority to rethink its position and further explain its rationale. Those steps improved this Order --and in turn resulted in a higher quality product for the American people. At the end of the day that should be the goal of all the Commissioners.” Joint Statement of Chairman Michael Powell and Commissioner Kathleen Q. Abernathy, *Amendment of Parts 2 and 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, ET Docket No. 98-206, RM-9147, RM-9245, Memorandum Opinion and Order and Second Report and Order, 17 FCC Rcd 9614, 9807 (2002) (*Joint Statement of Chairman Powell and Commissioner Abernathy on Northpoint*). Those concerns prompted the majority to address the status of existing customers and further explain its rationale. The interim grandfathering rule we adopted improved this Order, responds to the dissenters’ call for the need to strengthen the glide path we set forth on February 20th, and further ameliorates the immediate impact of our decision on retail prices for broadband consumers. In addition, immediate change of existing service may be unnecessary in light of frequent broadband customer churn and our effort to reevaluate the extent that grandfathered customers remain prior to the end of the three-year transition in the context of our next biennial review. While ideally we would engage in the dialogue at an earlier stage, “continuous improvement of our items is the right thing to do.” See *id.*; see also *infra* note 1396.

⁷⁸⁴ See *e.spire Application to Discontinue Domestic and International Telecommunications Services*, Order, Comp. File No. 592, 17 FCC Rcd 14785, para. 1 (WCB 2002) (denying application to discontinue telecommunications service because such action would disrupt service to consumers); *Rhythms Link Inc. Section 63.71 Application to Discontinue Domestic Telecommunications Services*, Order, NSD File No. W-P-D-517, 16 FCC Rcd 17024, 17025, paras. 4, 13 (CCB 2001) (granting application to discontinue telecommunications service after determining that Rhythms gave proper notice to its customers, which resulted in most affected customers being migrated to other carriers without a service interruption).

⁷⁸⁵ We note that both Qwest and Verizon suggested some form of grandfathering line sharing customers. For example, Qwest proposed grandfathering existing locations for line sharing. Qwest Comments at 44-45. Although Qwest’s proposal was premised on the D.C. Circuit upholding the Commission’s line sharing rules, we find that a modification of this proposal to address current marketplace conditions is appropriate. *Id.* at 45 n.115. Namely, instead of permitting competitive LECs to continue obtaining unbundled access to the HFPL at all current locations, which presumably would allow requesting carriers to add new subscribers served out of those locations, we limit this proposal to existing customers only. Even after issuance of the *USTA* decision, Verizon suggested grandfathering existing competitive LEC xDSL customers served over line shared loops. See Letter from William P. Barr, Verizon, to Michael Powell, Chairman, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 5 (filed Jan. 17, 2003) (Verizon Jan. 17, 2003 *Ex Parte* Letter) (noting that “[a]s a purely transitional measure . . . existing [line sharing] customers could (continued....)

our findings set forth above in Part V.E, if a decision taken pursuant to state law after this Order becomes effective were to require line sharing obligations, any party that believes such decision is inconsistent with the limits of section 251(d)(3)(B) and (C) may seek a declaratory ruling from this Commission.⁷⁸⁶

265. The three-year transition period for new line sharing arrangements will work as follows. During the first year, which begins on the effective date of this Order, competitive LECs may continue to obtain new line sharing customers through the use of the HFPL at 25 percent of the state-approved recurring rates or the agreed-upon recurring rates in existing interconnection agreements for stand-alone copper loops for that particular location.⁷⁸⁷ During the second year, the recurring charge for such access for those customers will increase to 50 percent of the state-approved recurring rate or the agreed-upon recurring rate in existing interconnection agreements for a stand-alone copper loop for that particular location. Finally, in the last year of the transition period, the competitive LECs' recurring charge for access to the HFPL for those customers obtained during the first year after release of this Order will increase to 75 percent of the state-approved recurring rate or the agreed-upon recurring rate for a stand-alone loop for that location.⁷⁸⁸ After the transition period, any new customer must be served through a line splitting arrangement, through use of the stand-alone copper loop, or through an arrangement that a competitive LEC has negotiated with the incumbent LEC to replace line sharing.⁷⁸⁹ We strongly encourage the parties to commence negotiations as soon as possible so that a long-term arrangement is reached and reliance on the shorter-term default mechanism that we describe above is unnecessary.

266. The purpose of this transition is to minimize disruption to the customers that obtain xDSL service through line shared loops and to provide a reasonable glide path to competitive LECs currently availing themselves of this UNE. The Commission has established

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be grandfathered for some period of time."'). As a practical matter, because of the churn rates associated with this industry, we find that our grandfathering requirement described above is not without end.

⁷⁸⁶ See *supra* Part V.E for our discussion of the role of the states.

⁷⁸⁷ We determine that it is appropriate to permit requesting carriers to continue obtaining new customers during the first year of the transition. This augmented customer base will enable requesting carriers, especially data LECs, to continue their day-to-day operations while modifying their business plans and working to preserve access arrangements with incumbent LECs. See Letter From Jason D. Oxman, Vice President and Assistant General Counsel, Covad, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 2 (Covad Feb. 24, 2003 *Ex Parte* Letter).

⁷⁸⁸ After this third year, competitive LECs will not have unbundled access to the HFPL, pursuant to section 251(c)(3), to provide those customers obtained after the Order became effective xDSL service over line shared loops. That is, after this third year, the recurring charge for the HFPL increases to 100% of the recurring charge for a stand-alone loop.

⁷⁸⁹ By new customers, we mean any customer obtained during the three-year transition period or after the three-year transition period. New customers do not include, however, those line sharing customers who have been grandfathered, as described above in para. 264.

transition periods of this length in the past. For example, in establishing a three-year interim intercarrier compensation regime for ISP-bound traffic, the Commission stated that it would be “prudent to avoid a ‘flash cut’ to a new compensation regime that would upset the legitimate business expectations of carriers and their customers.”⁷⁹⁰ We find that a similar approach is required here. It is entirely appropriate to fashion a transition period of sufficient length to enable competitive LECs to move their customers to alternative arrangements and modify their business practices and operations going forward.⁷⁹¹

267. As one commenter noted in describing the Commission’s authority to establish interim rates for unbundled local circuit switching, in combination with other elements, inherent in the Commission’s authority to establish transitional rules is its authority to establish transitional rates.⁷⁹² Section 201(b) gives the Commission broad authority to adopt the transition mechanism set forth in this Part and nothing in that provision limits our authority with respect to rates. Indeed, we agree with those commenters that contend that a transitional rate is often the most effective means by which to implement a “glide path from one regulatory/pricing regime to another.”⁷⁹³ The incremental approach we adopt here will encourage requesting carriers either to migrate their customers to the whole loop in an orderly manner or to reach agreement, if it is desired, with the incumbent LEC to continue access to the HFPL on different terms and conditions.

268. In order to implement the line sharing transition plan described above, we find that it is necessary to reinstate certain rules concerning the HFPL.⁷⁹⁴ Specifically, we define the HFPL as the frequency range above the voiceband on a copper loop facility that is being used to carry analog circuit-switched voiceband transmissions.⁷⁹⁵ The features, functions, and capabilities of the HFPL network element are those that establish a complete transmission path on the frequency range above the one used to carry analog circuit-switched voice transmissions between the incumbent LEC’s distribution frame (or its equivalent) in its central office and the demarcation point at the customer’s premises, and includes any inside wire owned by the

⁷⁹⁰ *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996: Intercarrier Compensation for ISP-Bound Traffic*, CC Docket Nos. 96-98, 99-68, Order on Remand and Report and Order, 16 FCC Rcd 9151, 9186-87, paras. 77-78 (2001) (*ISP Remand Order*).

⁷⁹¹ See, e.g., Letter from Susan Guyer and Michael Glover, Verizon, to William F. Maher, Chief, Wireline Competition Bureau, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 4 (filed Jan. 10, 2003).

⁷⁹² See Letter from Gary L. Phillips, Counsel for SBC, to Michael K. Powell, Chairman, FCC, CC Docket No. 01-338 at 2 (filed Dec. 19, 2002) (SBC Dec. 19, 2002 *Ex Parte* Letter) (citing the Commission’s *ISP Remand Order*).

⁷⁹³ *Id.*

⁷⁹⁴ To be clear, although the D.C. Circuit referred broadly to vacating the *Line Sharing Order*, it did not address the Commission’s spectrum management rules or that portion of the Order in its decision. Consequently, the Commission finds that these rules were unaffected by the *USTA* decision and therefore do not need to be readopted because they remain in effect. See, e.g., 47 C.F.R. §§ 51.230-233. Finally, we find no reason to modify these rules in this Order.

⁷⁹⁵ 47 C.F.R. § 51.319(h)(1); *Line Sharing Order*, 14 FCC Rcd at 20926-27, para. 26.

incumbent LEC. Incumbent LECs must condition loops to enable requesting carriers to access the HFPL.⁷⁹⁶ Finally, incumbent LECs must provide physical loop test access points on a nondiscriminatory basis for the purposes of loop testing, maintenance, and repair activities.⁷⁹⁷

269. In addition, incumbent LECs are only required to provide access to the HFPL if the incumbent LEC is providing, and continues to provide, analog circuit-switched voiceband services on the particular loop over which the requesting carriers seeks access to provide ADSL service.⁷⁹⁸ In the event that the customer ceases purchasing voice service from the incumbent LEC, either the new voice provider or the xDSL provider, or both, must purchase the full stand-alone loop to continue providing xDSL service. Finally, as the Commission found before, incumbent LECs may also maintain control over the loop and splitter equipment and functions.⁷⁹⁹

270. *Low Frequency Portion of the Loop.* We disagree with CompTel that we should separately unbundle the low frequency portion of the loop, which is the portion of the copper local loop used to transmit voice signals.⁸⁰⁰ We conclude that unbundling the low frequency portion of the loop is not necessary to address the impairment faced by requesting carriers because we continue (through our line splitting rules) to permit a narrowband service-only competitive LEC to take full advantage of an unbundled loop's capabilities by partnering with a second competitive LEC that will offer xDSL service.

271. *Retirement of Copper Loops and Copper Subloops.* As we note below in our discussion of FTTH loops, we decline to prohibit incumbent LECs from retiring copper loops or copper subloops that they have replaced with fiber. Instead, we reiterate that our section 251(c)(5) network modification disclosure requirements (with the minor modifications also noted below in that same discussion) apply to the retirement of copper loops and copper subloops.⁸⁰¹ In

⁷⁹⁶ *Line Sharing Order*, 14 FCC Rcd at 20952-54, paras. 83-87; 47 C.F.R. § 51.319(h)(5). Included among the incumbent LECs' conditioning requirements that we reinstate is the requirement that, after determining that conditioning a loop will significantly degrade the voiceband service offered by the incumbent LEC on that loop, the incumbent LEC must either locate another loop and migrate its voice service to that loop while providing the requesting carrier with access to the HFPL, or demonstrate to the relevant state commission that the loop cannot be conditioned without significantly degrading the voiceband service and no alternative loop exists to which the customer's voiceband service can be moved to enable line sharing. *See* 47 C.F.R. § 51.319(h)(5)(ii); *see also infra* Part VII.D (discussing modifications to the existing network).

⁷⁹⁷ *See Line Sharing Order*, 14 FCC Rcd at 20964-67, paras. 111-18; 47 C.F.R. § 51.319(h)(7).

⁷⁹⁸ *Line Sharing Order*, 14 FCC Rcd at 20947, para. 72; 47 C.F.R. § 51.319(h)(3). Finally, we also readopt our finding contained in the *Line Sharing Order* that if an incumbent LEC disconnects a customer's voice service in accordance with applicable law, then the competitive LEC must purchase the entire loop to continue providing that customer with xDSL service. *Line Sharing Order*, 14 FCC Rcd at 20947-48, para. 73.

⁷⁹⁹ *Id.* at 20949-50, paras. 76-79.

⁸⁰⁰ CompTel Comments at 43-45.

⁸⁰¹ *See* 47 U.S.C. § 251(c)(5) (specifying network disclosure requirements); 47 C.F.R. §§ 51.324-.335.

addition, any state requirements that currently apply to an incumbent LEC's copper loop or copper subloop retirement practices will continue to apply.

(b) Next-Generation Networks

272. Although we require the unbundling of legacy technology used over hybrid loops, we decline to attach unbundling requirements to the next-generation network capabilities of fiber-based local loops, *i.e.*, those loops that make use of fiber optic cables and electronic or optical equipment capable of supporting truly broadband transmission capabilities based on the analysis described earlier in this subsection. We expect that this decision to refrain from unbundling incumbent LEC next-generation networks – which is based on our evaluation of an extensive record developed over more than two years – will stimulate facilities-based deployment in two ways. First, with the certainty that their fiber optic and packet-based networks will remain free of unbundling requirements, incumbent LECs will have the opportunity to expand their deployment of these networks, enter new lines of business, and reap the rewards of delivering broadband services to the mass market. Thus, we conclude that relieving incumbent LECs from unbundling requirements for these networks will promote investment in, and deployment of, next-generation networks. Second, with the knowledge that incumbent LEC next-generation networks will not be available on an unbundled basis, competitive LECs will need to continue to seek innovative network access options to serve end users and to fully compete against incumbent LECs in the mass market. The end result is that consumers will benefit from this race to build next generation networks and the increased competition in the delivery of broadband services.

(i) FTTH Loops

273. We conclude that requesting carriers are not impaired without access to FTTH loops,⁸⁰² although we find that the level of impairment varies to some degree depending on whether such loop is a new loop or a replacement of a pre-existing copper loop.⁸⁰³ With a limited exception for narrowband services, our conclusion applies to FTTH loops deployed by incumbent LECs in both new construction and overbuild situations. Only in fiber loop overbuild situations where the incumbent LEC elects to retire existing copper loops must the incumbent LEC offer unbundled access to those fiber loops, and in such cases the fiber loops must be

⁸⁰² By "FTTH loop," we mean a local loop consisting entirely of fiber optic cable (and the attached electronics), whether lit or dark fiber, that connects a customer's premises with a wire center (*i.e.*, from the demarcation point at the customer's premises to the central office). See Corning Nov. 20, 2002 *Ex Parte* Letter at 2 (submitting proposed definition of FTTH loop).

⁸⁰³ Alcatel Comments at 15-16; Corning Comments at 22-26 (arguing that no impairment exists for FTTH loops); Corning Nov. 26, 2002 *Ex Parte* Letter, Attach. 1 at 17-21, 78-89, Attach. 2 at 7-10; HTBC Comments at 40-41. We therefore disagree with those parties who argue we should require unbundling of FTTH loops. See ALTS *et al.* Comments at 82 (contending that the Commission should require incumbent LECs to provide unbundled access to "broadband fiber"); CompTel Comments at 40-42; Covad Comments at 54-58 (arguing that the Commission should unbundle fiber loops).

unbundled for narrowband services only. Incumbent LECs do not have to offer unbundled access to newly deployed or “greenfield” fiber loops.

274. FTTH loop deployment is still in its infancy. Corning notes, for example, that only 47 communities throughout the nation currently enjoy widespread FTTH deployment.⁸⁰⁴ The record demonstrates that mass market FTTH loops are used almost entirely for providing broadband services (or broadband in conjunction with narrowband services) at this time, and that carriers are not deploying such loops to provide narrowband services alone.⁸⁰⁵ The record further indicates that FTTH loops display several economic and operational entry barriers in common with copper loops – that is, the costs of FTTH loops are both fixed and sunk, and deployment is expensive.⁸⁰⁶ The record also shows, however, that the potential rewards from FTTH deployment are significant. Corning notes, for example, that carriers will be able to earn a substantially greater return on their FTTH investment by offering voice, data, video, and other services.⁸⁰⁷ Thus, we find that the substantial revenue opportunities posed by FTTH deployment help ameliorate many of the entry barriers presented by the costs and scale economies.

275. With respect to new FTTH deployments (*i.e.*, so-called “greenfield” construction projects), we note that the entry barriers appear to be largely the same for both incumbent and competitive LECs – that is, both incumbent and competitive carriers must negotiate rights-of-way, respond to bid requests for new housing developments, obtain fiber optic cabling and other materials, develop deployment plans, and implement construction programs.⁸⁰⁸ Indeed, the record indicates that competitive LECs are currently leading the overall deployment of FTTH loops after having constructed some two-thirds or more of the FTTH loops throughout the nation.⁸⁰⁹ Competitive LECs’ active participation in deploying FTTH loops demonstrates that

⁸⁰⁴ Letter from Timothy Regan, Senior Vice President, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket 01-338 at 5 (filed Dec. 20, 2002) (Corning Dec. 20, 2002 FTTH *Ex Parte* Letter).

⁸⁰⁵ Deployment of FTTH loop plant enables a carrier to provide both narrowband voice and broadband services – in essence, voice telephony becomes an application provided over an integrated network. *See* Corning Comments at 2 (asserting that FTTH allows carriers to provide narrowband voice service, full motion video, and high speed data transfers simultaneously), 16-18; FTTH Council Comments at 1; HTBC Comments at 6-8, 14-17.

⁸⁰⁶ *See* Corning Nov. 20, 2002 *Ex Parte* Letter, Attach. at 7-10 (estimating costs involved with deploying FTTH loops).

⁸⁰⁷ Corning Nov. 26, 2002 *Ex Parte* Letter, Attach. at 33. Corning indicates that, through FTTH deployment, carriers could reasonably earn a return of \$33 per subscriber, compared to \$18 for ADSL deployment and \$21 for cable modem service. *Id.*

⁸⁰⁸ Some parties contend that competitive LECs actually have a competitive advantage in deploying FTTH loops because their labor costs are generally lower. *See* Corning Comments at 4; Corning Jan. 29, 2003 *Ex Parte* Letter at 19; Corning Nov. 20, 2002 *Ex Parte* Letter, Attach. 2 at 10. In addition, some parties argue that FTTH loop costs are declining because of the cost of the necessary attached electronics is dropping. Corning Comments at 13, n. 33. BellSouth notes that competitive LECs have “a mandatory right to access the rights-of-way of [incumbent LECs] and presumptive rights to access other utility rights-of-way.” BellSouth Comments at 68-69.

⁸⁰⁹ Corning Comments at 5; HTBC Comments at 42 (asserting that competitive LECs and incumbent LECs are on equal footing for deploying FTTH loops); Corning Reply at 12; Letter from Jeffrey S. Linder, Counsel for Corning, (continued....)

carriers are not impaired if we refrain from unbundling these loops.⁸¹⁰ Thus, we conclude that incumbent LECs do not have a first-mover advantage that would compound any barriers to entry in this situation. In addition, we conclude that incumbent LECs have no advantages concerning the sunk costs of greenfield FTTH loops – both incumbent LECs and competitive LECs are faced with the same issue in their deployment of such loops. As a result of our analysis, we do not require incumbent LECs to provide unbundled access to new FTTH loops for either narrowband or broadband services.⁸¹¹

276. We recognize that one FTTH deployment scenario, *i.e.*, overbuild deployment in which an incumbent LEC constructs fiber transmission facilities parallel to or in replacement of its existing copper plant, merits slightly different treatment than greenfield FTTH deployments. Although the record indicates that this scenario is largely theoretical, at least today, the evidence suggests that impairment would not exist for two reasons. First, as with greenfield deployments, competitive and incumbent LECs largely face the same obstacles in deploying overbuild FTTH loops, although incumbent LECs still enjoy an established customer base. Both competitive LECs and incumbent LECs must obtain materials, hire the necessary labor force, and construct the fiber transmission facilities. Second, we note that the revenue opportunities associated with deploying any type of FTTH loop are far greater than for services provided over copper loops. Besides providing narrowband services like voice, fax, and dial-up Internet access, competitive LECs could also deploy a wide-array of video and other broadband applications over such FTTH loops.⁸¹² In fact, broadband platforms enabled by the deployment of FTTH loops will likely

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to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, Attach 1 at 2 (filed Feb. 6, 2003) (Corning Feb. 6, 2003 *Ex Parte* Letter); Letter from Larry Aiello, President and Chief Executive Officer, Corning Cable Systems, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 3 (filed Feb. 3, 2003) (noting that competitive LECs have deployed 68% of the existing FTTH deployment to date) (Corning Feb. 3, 2003 *Ex Parte* Letter); Letter from Derek R. Khlopin, HTBC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 4 (filed Jan. 14, 2003) (arguing that competitive LECs are not impaired without access to FTTH loops) (HTBC Jan. 14, 2003 *Ex Parte* Letter); Letter from Timothy J. Regan, Senior Vice President, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, Attach. 2 at 7 (filed Jan. 29, 2003) (Corning Jan. 29, 2003 FTTH *Ex Parte* Letter). Corning estimates that competitive LECs have deployed FTTH loops to 44,890 homes, that small incumbent LECs have deployed FTTH loops to 3,600 homes, that the BOCs have deployed FTTH loops to some 400 homes, and that municipalities have deployed FTTH loops to about 18,100 homes. Corning Jan. 29, 2003 FTTH *Ex Parte* Letter, Attach. at 7.

⁸¹⁰ Corning Jan. 29, 2003 FTTH *Ex Parte* Letter at 6-7.

⁸¹¹ By FTTH loop, we mean a loop consisting entirely of fiber optic cable between the main distribution frame (or its equivalent) and the demarcation point at the customer's premises. We recognize that other "fiber-in-the-loop" network architectures exist, such as "fiber to the curb" (FTTC), "fiber to the node" (FTTN), and "fiber to the building" (FTTB). See Telcordia, Inc., NOTES ON FIBER-IN-THE-LOOP (FITL), SR-Notes-Series-10, Issue 1 at 5-1 to 6-17 (Jul. 2001). Our definition of FTTH loops excludes such intermediate fiber deployment architectures. For purposes of our unbundling rules, we consider any loop consisting of fiber optic and copper cable to be a hybrid loop.

⁸¹² See Corning Comments at 2; HTBC Comments at 15-16 (describing services that can be offered over FTTH loops); CSMG Study at 10 (describing key revenue drivers for FTTH loops), 18-24 (comparing revenue opportunities for xDSL-based networks and FTTH networks); Corning Nov. 26, 2002 *Ex Parte* Letter at 28.

enable a variety of new services and applications, competing directly with the market-leading cable broadband offerings and the broadband offerings potentially provided by other technological platforms, such as satellite and wireless, thereby weakening the case for unbundling. Thus, the potential rewards for deploying overbuild FTTH loops are distinctly greater than those associated with deploying copper loops and thus present a different balance when weighed against the barriers to entry.

277. We agree with Corning and Verizon, however, that in a FTTH overbuild situation we must ensure continued access to an unbundled transmission path suitable for providing narrowband services to customers served by FTTH loops.⁸¹³ The record indicates that deployment of overbuild FTTH loops could act as an additional obstacle to competitive LECs seeking to provide certain services to the mass market. By its nature, an overbuild FTTH deployment enables an incumbent LEC to replace and ultimately deny access to the already-existing copper loops that competitive LECs were using to serve mass market customers. In this regard, incumbent LECs potentially have an entry barrier within their sole control (*i.e.*, the decision to replace pre-existing copper loops with FTTH). In order to ensure continued narrowband access in this situation, incumbent LECs have the option to either (1) keep the existing copper loop connected to a particular customer after deploying FTTH;⁸¹⁴ or (2) in situations where the incumbent LEC elects to retire the copper loop, it must provide unbundled access to a 64 kbps transmission path over its FTTH loop.⁸¹⁵ Under the first option, we do not require incumbent LECs to incur relief and rehabilitation costs for that loop unless a competitive LEC requests unbundled access to it and such loop is placed back into service. We conclude that these measures counteract any obstacles competitive LECs face in overbuild FTTH situations much like other provisions of the Act offset certain entry barriers. We note that this is a very limited requirement intended only to ensure continued access to a local loop suitable for

⁸¹³ Letter from Timothy J. Regan, Senior Vice President, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 2 (filed Feb. 5, 2003) (Corning Feb. 5, 2003 FTTH Overbuild *Ex Parte* Letter); Verizon Jan. 17, 2003 *Ex Parte* Letter at 7 (asserting that incumbent LECs should only have to provide unbundled access to a 64 kbps transmission path over their fiber transmission facilities).

⁸¹⁴ Corning Feb. 5, 2003 FTTH Overbuild *Ex Parte* Letter at 2 (proposing policy recommendations related to overbuild FTTH); Corning Feb. 6, 2003 *Ex Parte* Letter at 5; Letter from Timothy J. Regan, Senior Vice President, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 2 (filed Feb. 13, 2003) (proposing overbuild FTTH policies) (Corning Feb. 13, 2003 *Ex Parte* Letter); Letter from Leonard G. Ray, Government Relations Committee Chairman, FTTH Council, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 2-3 (filed Feb. 13, 2003).

⁸¹⁵ See Letter from Timothy J. Regan, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, Attach. 3 at 1 (providing key definitions); Verizon Jan. 17, 2003 *Ex Parte* Letter at 7 (asserting that incumbent LECs should only have to provide unbundled access to a 64 kbps transmission path over their fiber transmission facilities). A key part of the HTBC proposal is ensuring that competitive LECs maintain access to “all existing non-packet loop capabilities over hybrid fiber/copper facilities.” Letter from Derek R. Khlopin, HTBC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, Attach. 1 at 1 (filed Jan. 24, 2003) (HTBC Jan. 24, 2003 Khlopin *Ex Parte* Letter). As an example, HTBC states that “DS-Is provided over TDM facilities would remain subject to a Section 251 impairment analysis.” *Id.*

providing narrowband services to the mass market in situations where an incumbent LEC has deployed overbuild FTTH and elected to retire the pre-existing copper loops.

278. As noted above, section 706 informs our policymaking as we determine what unbundling rules, if any, should apply to FTTH loops.⁸¹⁶ All parties agree that FTTH loops meet the definition of advanced telecommunications capability,⁸¹⁷ and so we determine that promoting the deployment of FTTH loops is particularly important in light of our section 706 mandate. Simply put, delivering broadband service is impossible without a transmission path to the customer's premises that supports broadband capabilities. While copper loops enable carriers to deliver xDSL-based broadband services, FTTH loops significantly enhance the broadband capabilities a carrier can deliver to consumers. Thus, we determine that, particularly in light of a competitive landscape in which competitive LECs are leading the deployment of FTTH, removing incumbent LEC unbundling obligations on FTTH loops will promote their deployment of the network infrastructure necessary to provide broadband services to the mass market.⁸¹⁸

279. We further agree with Corning that our FTTH policy adopted herein should not adversely affect competitive LECs for several reasons.⁸¹⁹ First, competitive LECs have demonstrated that they can self-deploy FTTH loops and are doing so at this time. Second, competitive LECs can continue to use resale as a means for serving mass market customers after incumbent LECs deploy FTTH loops. Finally, competitive LECs can continue to have unbundled access to existing copper facilities, to the extent such facilities are available.

280. For these reasons, we disagree with AT&T that we should further study issues surrounding the deployment of FTTH loops used to serve the mass market.⁸²⁰ The record contains sufficient information concerning the current deployment of FTTH loops and the economic barriers surrounding such deployment, as well as a number of studies and projections of future FTTH deployment.⁸²¹

281. *Retirement of Copper Loops.* We decline to impose a blanket prohibition on the ability of incumbent LECs to retire any copper loops or subloops they have replaced with FTTH

⁸¹⁶ Section 706(a) of the Telecommunications Act of 1996. *See* Corning Comments at 10-11 (arguing that the Commission should consider section 706 in crafting its unbundling framework); HTBC Comments at 43-44.

⁸¹⁷ *See, e.g.*, Corning Comments at 2, 11-13; HTBC Comments at 5.

⁸¹⁸ Corning Comments at 3, 10-14; SBC Reply at 55-60; Letter from Jeffrey S. Linder, Counsel for Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, Attach. at 6 (filed Jan. 31, 2003) (estimating that unbundling relief will increase FTTH deployment by a factor of 6.2).

⁸¹⁹ *See* Corning Feb. 6, 2003 *Ex Parte* Letter at 5.

⁸²⁰ AT&T Reply at 74 (advocating that the Commission study FTTH deployment issues further before determining what unbundling requirements, if any, apply to FTTH loops used to serve the mass market).

⁸²¹ *See* Corning Nov. 26, 2002 *Ex Parte* Letter, Attach. at 29-33 (describing revenue opportunities), 42-45 (describing competitive LEC ability to self-deploy FTTH loops); *CSMG Study* at 10-14 (providing overview of study conclusions).

loops. Several parties also propose extensive rules that would require affirmative regulatory approval prior to the retirement of any copper loop facilities.⁸²² We find that such a requirement is not necessary at this time because our existing rules, with minor modifications, serve as adequate safeguards.⁸²³ Pursuant to the Act and the Commission's rules, incumbent LECs must provide public notice of any network change that will affect a competing carrier's performance or ability to provide service.⁸²⁴ Because the retirement of copper loop plant is a network modification that affects the ability of competitive LECs to provide service,⁸²⁵ we clarify that incumbent LECs must provide notice of such retirement in accordance with our rules. Thus, incumbent LECs must disclose among other things the planned date for retiring a copper loop and a description of the reasonably foreseeable impact of the planned changes.⁸²⁶ Such notifications will ensure that incumbent and competitive carriers can work together to ensure the competitive LECs maintain access to loop facilities.

282. Consistent with the proposals of Corning and HTBC, we modify our network modification rules with respect to the retirement of copper loops.⁸²⁷ Specifically, when a copper loop is retired and replaced with a FTTH loop, we allow parties to file objections to the incumbent LEC's notice of such retirement. Consistent with our existing network disclosure rules, such oppositions must be filed with the Commission and served on the incumbent LEC within nine business days from the release of the Commission's public notice.⁸²⁸ Unless the copper retirement scenario suggests that competitors will be denied access to the loop facilities

⁸²² Allegiance Comments at 25; California Commission Comments at 18 (proposing rule requiring incumbent LEC to maintain copper plant); Letter from Timothy J. Regan, Corning, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 9 (filed Nov. 27, 2002) (Corning Nov. 27, 2002 *Ex Parte* Letter) (arguing that incumbent LECs should have the option of retiring or selling copper plant where FTTH is deployed); HTBC Comments at 36-37 (proposing measures regarding incumbent LEC retirement of legacy copper plant); TIA Comments at 17-18 (proposing rule to prohibit incumbent LECs from retiring copper loops unless they allow access to broadband facilities); AT&T Reply at 216-19 (asserting that a home-run copper loop may be of inferior quality).

⁸²³ See Verizon Jan. 17, 2003 *Ex Parte* Letter at 7 (arguing that a duty to maintain two networks would impose additional costs).

⁸²⁴ 47 U.S.C. § 251(c)(5); 47 C.F.R. §§ 51.325-.335. This disclosure requirement applies to the retirement of both feeder plant and distribution plant.

⁸²⁵ See, e.g., Sprint Comments at 45 (arguing that a competitive LEC could be stranded after an incumbent LEC upgrades its loop plant); *Supra* Comments at 10-13.

⁸²⁶ See 47 C.F.R. § 51.327.

⁸²⁷ Corning Feb. 6, 2003 *Ex Parte* Letter at 7 (proposing a 90-day application process before the Commission with respect to the retirement of any copper loops); Letter from Derek R. Khlopin, HTBC, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 3 (filed Jan. 23, 2003) (HTBC Jan. 23, 2003 *Ex Parte* Letter) (stating that HTBC's proposal would prohibit incumbent LECs "from retiring the existing copper loop absent permission from the Commission.").

⁸²⁸ Objections to both short and long-term notices should be made in accordance with section 51.333(c) of the Commission's rules. Moreover, incumbent LECs may respond to such objections in accordance with section 51.333(d) of the Commission's rules. See 47 C.F.R. § 51.333(c)-(d).

required under our rules, we will deem all such oppositions denied unless the Commission rules otherwise upon the specific facts and circumstances of the case at issue within 90 days of the Commission's public notice of the intended retirement.

283. We note that, with respect to network modifications that involve copper loop retirements, the rules we adopt herein differ in two respects from the notification rules that apply to other types of network modifications.⁸²⁹ First, we establish a right for parties to object to the incumbent LEC's proposed retirement of its copper loops for both short-term and long-term notifications as outlined in Part 51 of the Commission's rules. By contrast, our disclosure rules for other network modifications permit oppositions only for instances involving short-term notifications.⁸³⁰ Second, we establish a mechanism to deny such objections automatically unless the Commission rules otherwise within 90 days of the Commission's public notice of the intended retirement. As a practical matter, this mechanism redefines the short-term notice rules for a subset of network modifications, *i.e.*, retirement of copper loops that are replaced by FTTH loops, and means that incumbent LECs must file their disclosures for copper loop retirements at least 91 days prior to their planned retirement date.

284. As a final matter, we stress that we are not preempting the ability of any state commission to evaluate an incumbent LEC's retirement of its copper loops to ensure such retirement complies with any applicable state legal or regulatory requirements. We also stress that we are not establishing independent authority based on federal law for states to review incumbent LEC copper loop retirement policies. We understand that many states have their own requirements related to discontinuance of service, and our rules do not override these requirements. We expect that the state review process, working in combination with the Commission's network disclosure rules noted above, will address the concerns noted by Corning and others regarding the potential impact of an incumbent LEC retiring its copper loops.

(ii) Hybrid Loops

285. Hybrid loops represent an important step towards the deployment of a fiber-based network capable of supporting a wide array of advanced telecommunications and other services. Several incumbent LECs note that they pursue their construction and network modification projects in incremental ways – first, deployment of fiber in the feeder plant and associated equipment like DLC systems (often with line cards capable of providing xDSL services), followed by fiber-to-the-curb, followed by FTTH.⁸³¹ In light of this practice, we view our task with respect to hybrid loops as determining an unbundling approach that addresses impairment, but also aligns business incentives with the explicit congressional goal of promoting the rapid deployment of advanced services.

⁸²⁹ These modified network notification requirements apply only to the retirement of copper loops and copper subloops, but not to the retirement of copper feeder plant.

⁸³⁰ See 47 C.F.R. § 51.333(c)-(d).

⁸³¹ See Verizon Nov. 22, 2002 *Ex Parte* Letter at 1.

286. In making our unbundling determination for hybrid loops, we consider both impairment and, through our section 251(d)(2) “at a minimum” authority, additional factors. As noted above, we find that competitive LECs are impaired on a national basis without unbundled access to a transmission path when seeking to provide service to the mass market. We further find that this impairment at least partially diminishes with the increasing deployment of fiber. In addition, we retain the flexibility to determine the unbundling approach that best addresses the impairment in a manner that advances other goals of the Act. In this regard, balanced against impairment, we evaluate three primary factors to determine the most appropriate unbundling requirements for hybrid loops. First, we consider the costs of unbundling, *i.e.*, whether refraining from unbundling requirements will stimulate facilities-based investment and promote the deployment of advanced telecommunications infrastructure. Second, we consider the effect of alternatives to mandating unbundled access to the hybrid loops of incumbent LECs. In particular, we consider whether unbundled access to subloops, spare copper loops, and the non-packetized portion of incumbent LEC hybrid loops, as well as remote terminal collocation, offer suitable alternatives to an intrusive unbundling approach. Finally, we consider the state of intermodal competition in crafting our unbundling approach. As explained further below, after balancing these three primary factors against our impairment findings, we adopt a national approach that relieves incumbent LECs of unbundling requirements for the next-generation network capabilities of their hybrid loops, while at the same time ensures requesting carriers have access to the transmission facilities they need to serve the mass market.

287. We discuss our unbundling rules for hybrid loops below. These rules vary depending upon whether a competitive LEC seeks access for the provision of broadband or narrowband services. Therefore, our discussion is separated into two parts in order to clearly reflect this important distinction.

288. *Broadband Services.* We decline to require incumbent LECs to unbundle the next-generation network, packetized capabilities of their hybrid loops to enable requesting carriers to provide broadband services to the mass market.⁸⁵² AT&T, WorldCom, Covad, and others urge the Commission to extend our unbundling requirements to the packet-based and fiber optic portions of incumbent LEC hybrid loops. We conclude, however, that applying section 251(c) unbundling obligations to these next-generation network elements would blunt the deployment of advanced telecommunications infrastructure by incumbent LECs and the incentive for competitive LECs to invest in their own facilities, in direct opposition to the express statutory goals authorized in section 706. The rules we adopt herein do not require incumbent LECs to unbundle any transmission path over a fiber transmission facility between the central office and the customer’s premises (including fiber feeder plant) that is used to transmit packetized

⁸⁵² As noted above in our description of the record evidence, incumbent LECs have deployed, and are continuing to deploy, a substantial amount of “hybrid loops,” *i.e.*, local loops consisting of both copper and fiber optic cable (and associated electronics, such as DLC systems). Incumbent LECs appear to be at various stages of fiber deployment and have chosen a number of FITL architectures (*e.g.*, FTTC, FTTN) and hybrid loops. Thus, we treat such intermediate deployments of fiber as hybrid loops because they consist of both copper and fiber optic cable.

information.⁸³³ Moreover, the rules we adopt herein do not require incumbent LECs to provide unbundled access to any electronics or other equipment used to transmit packetized information over hybrid loops, such as the xDSL-capable line cards installed in DLC systems or equipment used to provide passive optical networking (PON) capabilities to the mass market.⁸³⁴

289. Although packetized fiber capabilities will not be available as UNEs, incumbent LECs remain obligated, however, to provide unbundled access to the features, functions, and capabilities of hybrid loops that are not used to transmit packetized information. Thus, as discussed more specifically in the Enterprise Loops section, consistent with the proposals of HTBC, SBC, and others, incumbent LECs must provide unbundled access to a complete transmission path over their TDM networks to address the impairment we find that requesting carriers currently face.⁸³⁵ This requirement ensures that competitive LECs have additional means with which to provide broadband capabilities to end users because competitive LECs can obtain DS1 and DS3 loops, including channelized DS1 or DS3 loops and multiple DS1 or DS3 loops for each customer.

290. Section 706 requires the Commission to encourage deployment of advanced telecommunications capability by using, among other things, “methods that remove barriers to infrastructure investment.”⁸³⁶ Unbundling access to hybrid loops in the manner adopted herein – that is, limiting the requesting carrier’s access to the TDM portion of the hybrid loop and precluding unbundled access to the packet-based networks (and associated fiber transmission facilities) of incumbent LECs – promotes our section 706 goals in two ways. First, it limits access to the (in many cases) newly deployed fiber transmission facility, and thereby gives incumbent LECs an incentive to deploy fiber (and associated next-generation network equipment, such as packet switches and DLC systems) and develop new broadband offerings for

⁸³³ See Letter from Robert Holleyman, HTBC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 (filed Jan. 24, 2003) (HTBC Jan. 24, 2003 *Ex Parte* Letter); Letter from Veronica O’Connell, Director, HTBC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 (filed Feb. 7, 2003) (HTBC Feb. 7, 2003 *Ex Parte* Letter); HTBC Feb. 14, 2003 *Ex Parte* Letter. Because we decline to require unbundling of packet-switching equipment, we deny WorldCom’s petitions for reconsideration and clarification requesting that we unbundle packet-switching equipment, DSLAMs, and other equipment used to deliver DSL service. MCI WorldCom Petition for Reconsideration, CC Docket No. 96-98 at 2-18 (filed Feb. 17, 2000) (MCI WorldCom Feb. 17, 2000 Petition for Reconsideration); MCI WorldCom Feb. 17, 2000 Petition for Clarification at 2, 13.

⁸³⁴ See HTBC Feb. 14, 2003 *Ex Parte* Letter at 1-4.

⁸³⁵ HTBC Feb. 7, 2003 *Ex Parte* Letter at 2 (advocating a requirement to unbundle “non-packet loop capabilities” only); SBC Jan. 24, 2003 *Ex Parte* Letter at 12-13 (describing proposal to ensure competitive LECs have unbundled access to TDM and non-packet capabilities of SBC’s networks); Letter from Jonathan J. Boynton, Associate Director, SBC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 5 (filed Jan. 15, 2003) (SBC Jan. 15, 2003 Broadband *Ex Parte* Letter) (explaining that competitive LECs will have continued unbundled access to “non packet fiber” feeder plant combined with copper distribution plant).

⁸³⁶ Section 706(a) of the Telecommunications Act of 1996. See Corning Comments at 10-11 (arguing that the Commission should consider section 706 in crafting its unbundling framework); CompTel Comments at 26 (arguing that the Commission should use section 706 to expand unbundling obligations); HTBC Comments at 42-45; SBC Reply at 95-96.

mass market consumers free of any unbundling requirements.⁸³⁷ Although incumbent LECs have been deploying fiber feeder plant for some time, such deployment was generally limited to the purpose of increasing network efficiency for the provision of narrowband services rather than enhancing network capabilities to deliver broadband services. In addition, fiber feeder deployment (and the broadband capabilities attendant to such deployment) is far from ubiquitous. Moreover, incumbent LECs have not widely deployed the next-generation networking equipment (e.g., DLC systems with xDSL-capable line cards) needed to deliver broadband services to mass market customers served by hybrid loops.⁸³⁸ Second, by prohibiting access to the packet-based networks of incumbent LECs, we expect that our rules will stimulate competitive LEC deployment of next-generation networks. Because competitive LECs will not have unbundled access to the packet-based networks of incumbent LECs, they will need to continue to seek innovative access options, including the deployment of their own facilities necessary for providing broadband services to the mass market.

291. In making our unbundling determination, we are also guided by the availability of other loop alternatives within the networks of incumbent LECs. In particular, we determine that unbundled access to incumbent LEC copper subloops adequately addresses the impairment competitive LECs face so that intrusive unbundling requirements on incumbent LEC packetized fiber loops facilities is not necessary. Unbundled access to subloops also better promotes our section 706 goals than unbundling incumbent LEC packetized fiber loops. In particular, subloop access promotes competitive LEC investment in next-generation network equipment (e.g., packet switches, remote DSLAMs, etc.) and transmission facilities (e.g., fiber loop facilities built to points in incumbent LEC networks closer to the home). Furthermore, unbundled subloop access furthers our goal of promoting innovation because it enables competitive LECs to differentiate their product and service offerings from those of the incumbent LEC. In addition to subloop unbundling, as discussed more fully below, we require incumbent LECs to continue providing unbundled access to the TDM-based features, functions, and capabilities of their hybrid loops where impairment exists. As discussed above, in addition to subloop unbundling, the availability of TDM-based loops, such as DS1s and DS3s, provide competitive LECs with a range of options for providing broadband capabilities. We therefore find that competitive LECs retain alternative methods of accessing loop facilities in hybrid loop situations and disagree with WorldCom and others concerning the appropriate unbundling requirements for the next-generation broadband features, functions, and capabilities of hybrid loops.⁸³⁹

⁸³⁷ See Corning Jan. 29, 2003 *Ex Parte* Letter at 12 (estimating that FTTH deployment will reach 31% of U.S. households if no unbundling requirements apply to incumbent LECs, but only 5% of U.S. households if unbundling requirements apply); *CSMG Study* at 26-28, 30 (concluding that incumbent LECs will deploy more FTTH loops if relieved from unbundling obligations).

⁸³⁸ Indeed, some incumbent LECs contend that the regulatory environment has deterred their deployment of such equipment. See, e.g., SBC Reply at 96-104.

⁸³⁹ WorldCom Dec. 12, 2002 Next-Generation Networks *Ex Parte* Letter at 3 (arguing that, without unbundled access to hybrid loops, competitive LECs will not be able to serve certain customers).

292. We are also informed in our analysis by the state of intermodal competition for broadband service.⁸⁴⁰ As noted above, cable companies have made significant inroads in providing broadband service to the mass market, but these same companies have made less progress in the market for traditional narrowband services. For example, cable companies have widely deployed broadband service in the form of high-speed Internet access offered via cable modem service, but cable telephony deployment is still in its infancy. According to a Commission staff report, more consumers continue to obtain their high speed Internet access by cable modem service than by xDSL, and the rate of growth for cable modem subscribership continues to outpace the rate of growth for xDSL subscribership (*i.e.*, since the period June to December 2001, cable modem subscribership for high speed Internet access increased 55 percent versus an increase of only 35 percent for xDSL-based subscribership).⁸⁴¹ A primary benefit of unbundling hybrid loops – that is, to spur competitive deployment of broadband services to the mass market – appears to be obviated to some degree by the existence of a broadband service competitor with a leading position in the marketplace.⁸⁴² We therefore tailor our unbundling requirements to most effectively address those services that are not yet fully subject to competition (*i.e.*, narrowband services in the mass market) rather than the broadband services that are currently provided in a competitive environment.

293. Several parties have advocated drawing a bright line between “old” and “new” investment in network architectures and using such a division to articulate our unbundling requirements.⁸⁴³ Others contend that we should make no such distinction.⁸⁴⁴ Based on our

⁸⁴⁰ See SBC Reply at 95; Allegiance Feb. 13, 2003 *Ex Parte* Letter at 2 (asserting that the Commission should consider the existence of an intermodal competitor with a leading position in the market).

⁸⁴¹ *High Speed Services December 2002 Report* at Table 2 (noting that cable companies provide 6.8 million lines capable of providing at least 200 kbps in both direction, compared to only 1.8 million xDSL lines). The *High Speed Services December 2002 Report* notes the percentage change of growth. For coaxial cable services providing at least 200 kbps in both directions, cable companies provided 4.394 million lines as of December 2001. This number increased to 6.819 million lines by June 2002. By comparison, wireline carriers provided 1.369 million such lines as of December 2001 and a total of 1.852 million such lines by June 2002. Thus, not only do cable companies provide more high speed lines capable of providing at least 200 kbps in both directions than xDSL-based carriers, but cable companies continue to outpace xDSL-based carriers in terms of the rate of growth of such subscribership. See *id.* at Table 2; see also *id.* at Table 1 (noting that cable companies provide 9.1 million cable modem-based lines compared to 5.1 million ADSL-based lines provided by LECs); see also Covad Siwek/Sun Decl. at paras 58-59. As a result, cable companies’ leading position in providing broadband services to the mass market appears to be increasing rather than leveling off.

⁸⁴² Allegiance Feb. 13, 2003 *Ex Parte* Letter at 2 (asserting that the Commission should consider the existence of an intermodal competitor with a leading position in the market).

⁸⁴³ See, e.g., Alcatel Comments at 15-17; SBC Reply at 109; Verizon Jan. 10, 2003 *Ex Parte* Letter at 6-7 (proposing a line drawn on voice-grade versus broadband capability); Verizon Nov. 22, 2002 *Ex Parte* Letter at 4.

⁸⁴⁴ AT&T Reply at 216-19 (advocating “unified loops” theory and arguing that home-run copper is not sufficient to address impairment); Covad Reply at 46-54; WorldCom Reply at 111-13 (advocating in support of unbundling all the features, functions, and capabilities of loops, including those provided by means of DLC systems and packet-switching equipment); Letter from Jonathan Askin, General Counsel, ALTS, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 5 (filed Feb. 13, 2003) (ALTS Feb. 13, 2003 *Ex Parte* Letter) (arguing that the Commission should not limit access to capacity on any fiber-fed loop plant); Letter from Jonathan Askin, General (continued....)

evaluation of impairment, as informed by the two factors noted above, we determine that drawing such a bright line is practical, if the line is drawn between legacy technology and newer technology. In fact, we conclude that such a line is best drawn based on technological boundaries rather than transmission speeds, bandwidth, or some other factor – the technical characteristics of packet-switched equipment versus TDM-based equipment, for example, are well-known and understood by all members of the industry.

294. We stress that the line drawing in which we engage does not eliminate the existing rights competitive LECs have to obtain unbundled access to hybrid loops capable of providing DS1 and DS3 service to customers.⁸⁴⁵ These TDM-based services – which are generally provided to enterprise customers rather than mass market customers – are non-packetized, high-capacity capabilities provided over the circuit switched networks of incumbent LECs. To provide these services, incumbent LECs typically use the features, functions, and capabilities of their networks as deployed to date – *i.e.*, a transmission path provided by means of the TDM form of multiplexing over their digital networks – or certain capabilities of multi-use integrated equipment (*e.g.*, integrated line cards deployed in DLC systems).⁸⁴⁶ Incumbent LECs remain obligated to comply with the nondiscrimination requirements of section 251(c)(3) in their provision of loops to requesting carriers, including stand-alone spare copper loops, copper subloops, and the features, functions, and capabilities for TDM-based services over their hybrid loops. In this regard, we prohibit incumbent LECs from engineering the transmission capabilities of their loops in a way that would disrupt or degrade the local loop UNEs (either hybrid loops or stand-alone copper loops) provided to competitive LECs. To ensure competitive LECs receive the transmission path within the parameters we establish, we determine that any incumbent LEC practice, policy, or procedure that has the effect of disrupting or degrading access to the TDM-based features, functions, and capabilities of hybrid loops for serving the customer is prohibited under the section 251(c)(3) duty to provide unbundled access to loops on just, reasonable, and nondiscriminatory terms and conditions.⁸⁴⁷

295. Finally, in balancing potential impairment against our obligations under section 706, we conclude that the costs associated with unbundling these packet-based facilities outweigh the potential benefits. A number of parties have argued that unbundling requirements deter the incentive of incumbent LECs to take risks and deploy fiber-based networks because

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Counsel, ALTS, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 3 (filed Jan. 31, 2003) (ALTS Jan. 31, 2003 *Ex Parte* Letter) (advocating in support of unbundling requirements on fiber-fed loop plant).

⁸⁴⁵ HTBC Feb. 7, 2003 *Ex Parte* Letter at 2; SBC Jan. 24, 2003 *Ex Parte* Letter.

⁸⁴⁶ In their submissions in this proceeding, incumbent LECs demonstrate that they typically segregate transmissions over hybrid loops onto two paths, *i.e.*, a circuit-switched path using TDM technology and a packet-switched path (usually over an ATM network). *See, e.g.*, SBC Jan. 15, 2003 *Ex Parte* Letter at 4 (providing diagram to illustrate that its network architecture consists of a TDM-based portion and a packet-switched portion).

⁸⁴⁷ Notwithstanding our prohibition against disrupting or degrading unbundled access to the TDM capabilities of hybrid loops, incumbent LECs may remove copper loops from their plant so long as they comply with our Part 51 network notification requirements, as amended by this Order, and any applicable state law.

they would face reduced returns on their investment.⁸⁴⁸ We recognize that, particularly in the realm of next-generation network capabilities, unbundling requirements could have the unintended effect of blunting innovation because such an approach would largely lock competitive LECs to the technological choices of the incumbent LECs. We therefore consider the effect of other approaches, such as the subloop access and remote terminal collocation requirements, discussed above, on stimulating the deployment of advanced telecommunications infrastructure. For these reasons, we conclude that it is consistent with our section 706 mandate to promote investment in infrastructure by refraining from unbundling incumbent LECs' next-generation network facilities and equipment.

296. *Narrowband Services.* With respect to providing unbundled access to hybrid loops for a requesting carrier to provide narrowband service,⁸⁴⁹ we require incumbent LECs to provide an entire non-packetized transmission path capable of voice-grade service (*i.e.*, a circuit equivalent to a DS0 circuit) between the central office and customer's premises. Pursuant to this requirement, competitive LECs will be able to obtain access to UNE loops comprised of the feeder portion of the incumbent LEC's loop plant, the distribution portion of the loop plant, the attached DLC system, and any other attached electronics used to provide a voice-grade transmission path between the customer's premises and the central office.⁸⁵⁰ Consistent with the access requirements for broadband services noted above, we limit the unbundling obligations for narrowband services to the TDM-based features, functions, and capabilities of these hybrid loops. Incumbent LECs may elect, instead, to provide a homerun copper loop rather than a TDM-based narrowband pathway over their hybrid loop facilities if the incumbent LEC has not removed such loop facilities.⁸⁵¹

297. We recognize that providing unbundled access to hybrid loops served by a particular type of DLC system, *e.g.*, Integrated DLC systems, may require incumbent LECs to implement policies, practices, and procedures different from those used to provide access to loops served by Universal DLC systems.⁸⁵² These differences stem from the nature and design of

⁸⁴⁸ See Corning Comments at 7-9.

⁸⁴⁹ Narrowband services include traditional voice, fax, and dial-up modem applications over voice-grade loops.

⁸⁵⁰ As discussed below, we do not require incumbent LECs to maintain or retain copper loops if they have deployed fiber replacements. Incumbent LECs have the option of either providing competitive LECs with unbundled access to a voice-grade channel over a hybrid loop or, to the extent a copper loop exists, the existing copper loop.

⁸⁵¹ As Qwest points out, when incumbent LECs construct new loop plant, they frequently overlay fiber facilities that supplement existing loops. Qwest Comments at 45; Alcatel Comments at 16 (noting that, when incumbent LECs deploy fiber loops, competitive LECs would continue to maintain access to legacy copper transmission facilities). Thus, the construction of new facilities does not in itself alter a competitive LEC's ability to use the incumbent's network. Qwest Comments at 45. Qwest explains that it "does not proactively remove copper facilities in the case of an overlay" so that requesting carriers should be able to continue providing service in these circumstances. Qwest Comments at 45-46.

⁸⁵² McLeodUSA Dec. 18, 2002 *Ex Parte* Letter at 10-11; Letter from Joan Marsh, Director, Federal Government Affairs, AT&T, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 2-3 (filed Dec. 4, 2002) (AT&T Dec. 4, 2002 *Ex Parte* Letter) (describing operational issues related to providing unbundled access to (continued....))

Integrated DLC architecture. Specifically, because the Integrated DLC system is integrated directly into the switches of incumbent LECs (either directly or through another type of network equipment known as a “cross-connect”) and because incumbent LEC’s typically use concentration as a practice for engineering traffic on their networks, a one-for-one transmission path between an incumbent’s central office and the customer premises may not exist at all times. Even still, we require incumbent LECs to provide requesting carriers access to a transmission path over hybrid loops served by Integrated DLC systems.⁸⁵³ We recognize that in most cases this will be either through a spare copper facility or through the availability of Universal DLC systems.⁸⁵⁴ Nonetheless even if neither of these options is available, incumbent LECs must present requesting carriers a technically feasible method of unbundled access.⁸⁵⁵

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loops served by DLC systems using a GR-303 interface, *i.e.*, integrated DLC systems, and proposing some solutions); McLeodUSA Nov. 15, 2002 *Ex Parte* Letter at 1.

⁸⁵³ See SBC Jan. 15, 2003 *Ex Parte* Letter at 3; SBC Jan. 24, 2003 *Ex Parte* Letter, Attach. 2 at 3-4.

⁸⁵⁴ See Letter from Jim Lamoureux, Senior Counsel, SBC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 at 1 (filed Dec. 10, 2002) (SBC Dec. 10, 2002 *Ex Parte* Letter) (describing DLC deployment in SBC’s region). SBC explains that, for 99.88% of SBC’s lines served over Integrated DLC, competitive LECs have access to Universal DLC or spare copper facilities as alternatives to the transmission path over SBC’s Integrated DLC system. *Id.*

⁸⁵⁵ We recognize that it is technically feasible (though not always desirable for either carrier) to provide unbundled access to hybrid loops served by Integrated DLC systems. Incumbent LECs can provide unbundled access to hybrid loops served by integrated DLC systems by configuring existing equipment, adding new equipment, or both. See McLeodUSA Dec. 18, 2002 *Ex Parte* Letter 10-11. Qwest explains, for example, that it can provide a UNE loop over Integrated DLC systems by using a “hairpin” option, *i.e.*, configuring a “semi-permanent path” and disabling certain switching functions. See Qwest Nov. 13, 2002 *Ex Parte* Letter at 23 (describing “hairpin” solution to providing UNE loop over Integrated DLC system); see also Telcordia, Inc., NOTES ON THE NETWORKS, SR-2275, Issue 4, 12.13.2.1 (Oct. 2000) (describing means for incumbent LECs to provide unbundled loops to competitive LECs over integrated DLC systems). In addition, we understand that some Integrated DLC systems can simulate Universal DLC systems. See Telcordia, Inc., NOTES ON FIBER-IN-THE-LOOP (FITL), SR-Notes-Series-10, Issue 1, 2.3 (Jul. 2001) (noting that many modern Integrated DLC systems “can operate in UDLC mode.”). Frequently, unbundled access to Integrated DLC-fed hybrid loops can be provided through the use of cross-connect equipment, which is equipment incumbent LECs typically use to assist in managing their DLC systems. McLeodUSA Nov. 15, 2002 DLC systems *Ex Parte* Letter at 10-11 (describing use of cross-connect equipment to provide unbundled loops over Integrated DLC systems); *Pronto Modification Order*, 15 FCC Rcd at 17565-66, App. B, C (showing that SBC typically uses a cross-connect in its network to establish the connection between the feeder loop plant and its circuit and packet switches); Verizon July 19, 2002 *Ex Parte* Letter at 3 (showing that Verizon typically uses central office terminations and cross-connects). McLeodUSA explains that an incumbent LEC can configure most Integrated DLC systems to assign requesting carriers “individual interface groups” that assist in establishing a complete transmission path between the central office and the customer’s premises. In this way, incumbent LECs can provide Integrated DLC-fed hybrid loops on an unbundled basis. McLeodUSA Dec. 18, 2002 *Ex Parte* Letter at 10. In addition, McLeodUSA further explains that manufacturers either already account for an incumbent LEC’s regulatory obligations in designing equipment (and software used to upgrade that equipment) or are planning to do so. *Id.* at 11 n.15.

b. Enterprise Market Loops**(i) Record Evidence**

298. The record contains a wealth of evidence to inform our enterprise market loop analyses. First, it reflects that competitive LECs have deployed fiber that enables them to reach customers entirely over their own loop facilities.⁸⁵⁶ When competitive LECs self-deploy fiber they predominantly do so at the OCn-level.⁸⁵⁷ In addition, the record shows that competitors have built fiber loops to buildings that carry a significant portion of the competitive traffic in certain MSAs.⁸⁵⁸ In contrast, the record contains little evidence of self-deployment, or availability from alternative providers, for DS1 loops.⁸⁵⁹ As for DS3 loops, evidence of self-deployment and wholesale availability is somewhat greater than for DS1s and is directly related to location-

⁸⁵⁶ Both competitive LECs and incumbent LECs report that approximately 30,000, *i.e.*, between 3% to 5%, of the nation's commercial office buildings are served by competitor-owned fiber loops. *See, e.g.*, ALTS *et al.* Comments at 52 (citing to WorldCom Comments, CC Docket Nos. 96-98 at 7 (filed June 11, 2001) (WorldCom June 11, 2001 High-capacity Comments)); Sprint Comments at 23-24; WorldCom Comments at 74-76; *see also* BOC UNE *Rebuttal Report* at iv, 44; Letter from Ruth Milkman, Counsel for WorldCom, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 3 (filed Oct. 30, 2002) (discussing high-capacity transmission facility deployment) (WorldCom Oct. 30, 2002 *Ex Parte* Letter); AT&T Comments at 152 (citing proprietary information); Cbeyond *et al.* Comments, CC Docket 96-98 at 23 (filed June 11, 2001) (Cbeyond *et al.* June 11, 2001 High-capacity Comments) (citing confidential information in attached Affidavit of Michael P. Duke, KMC Telecom, Inc. (KMC Duke June 11, 2001 High-capacity Aff.) at para. 5); NuVox *et al.* Comments, Affidavit of Nicholas D. Jackson, TDS Metrocom, Inc. (TDS Jackson Aff.) at para. 6; El Paso *et al.* Comments at 16. Competitive carriers indicate that most of these commercial office buildings are carrier hotels or large office buildings. *See, e.g.*, ALTS *et al.* Comments at 52; WorldCom June 11, 2001 High-capacity Comments at 9; El Paso *et al.* Comments at 16. Some commenters indicate that other facilities-based competitive LECs may have self-deployed high-capacity loops, but have not submitted comments in this proceeding. *See, e.g.*, SBC Comments at 102; Verizon Comments at 117.

⁸⁵⁷ *See, e.g.*, ALTS *et al.* Comments at 52; CCG July 17, 2002 CLEC Survey *Ex Parte* Letter at 6-7; WorldCom Comments at 76; WorldCom Fleming Decl. at para. 10; NewSouth Reply at 17.

⁸⁵⁸ *See, e.g.*, BOC UNE *Rebuttal Report* at 45 (relating this figure to a typical Tier-I MSA but stating that New York, San Francisco, Washington, D.C., and Los Angeles account for 40% of all data revenue nationwide).

⁸⁵⁹ Based on the record as a whole, for DS1 loops and some DS3 loops, overbuilding to enterprise customers that require services over these facilities generally does not present sufficient opportunity for competitors to recover their costs and, therefore, may not be economically feasible. *See, e.g.*, Covad Reply at 56; AT&T Jan. 14, 2003 *Ex Parte* Letter at para. 3 n.5; Letter from Joan Marsh, Director, Federal Government Affairs, AT&T, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147, Attach. B (filed Nov. 25, 2002) (AT&T Nov. 25, 2002 *Ex Parte* Letter) (providing loop build/no-build cost analysis); WorldCom Comments at 7; WorldCom Fleming Decl. at para. 10; Allegiance Reply at 38; NewSouth Reply at 17. In limited cases where evidence exists that a competitive LEC is serving customers via their own DS1 loops, the record suggests this is largely because these competitive LECs have *already* self-provisioned OCn level capacity to that specific location and other deployment barriers have not precluded them from using that capacity to serve other customers at lower loop capacity levels at that same location. *See* Letter from Joan Marsh, Director, Governmental Affairs, AT&T, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, at para. 2 (AT&T Jan. 14, 2003 *Ex Parte* Letter); WorldCom June 11, 2001 High-capacity Comments at 8 (citing confidential information) and Attach. B, Proprietary and Confidential Declaration of Jay Slocum (WorldCom Slocum Decl.) at paras. 3-6.

specific criteria.⁸⁶⁰ Indeed, competitive LECs agree that at a three DS3 loop capacity level of demand, it is economically feasible to self-deploy,⁸⁶¹ and record evidence reveals that both AT&T and WorldCom have self-provisioned DS3 circuits to many customer locations.⁸⁶²

299. The record also contains extensive, albeit contradictory, evidence regarding the degree to which competitors rely on the incumbent LEC's facilities versus their own to provision loops to their customers. According to the BOC UNE Fact Report 2002, market statistics show that competitive LECs are now serving between 13 and 20 million business lines off their own switches – yet they have obtained only about 1.5 million unbundled loops to serve business customers.⁸⁶³ The BOCs conclude that competitive LECs are, therefore, serving the remaining 85-95 percent of those 13-20 million self-switched business lines using “alternative facilities” instead of unbundled loops.⁸⁶⁴ In addition, the BOCs state that virtually all of the high-capacity unbundled loops that competitive LECs have purchased in the BOC territories are DS1 loops and that competitive LECs have purchased only 140 unbundled DS3 loops, and not a single unbundled loop above a DS3 level.⁸⁶⁵ The BOCs reason that these figures reflect that competitive LEC fiber networks are now so extensive in urban markets that they readily can be – and routinely are – extended as needed to pick up additional traffic from new customers in

⁸⁶⁰ See, e.g., WorldCom Fleming Decl. at para. 10 (when customer demand is projected at several DS3s or optical level capacity a self-build decision is made); WorldCom Comments at 7 (customers in a building must commit to at least three DS3 circuits before it is economically viable to extend fiber to that building); AT&T Comments at 134 (a competitive LEC can only self-deploy to a location with enormous demand, the smallest of which would be at the OC3 level); AT&T Nov. 25, 2002 *Ex Parte* Letter at 3 (the amount of committed traffic to support construction of loops for large business customers is about three DS3s, i.e., an OC3), and Attach. B at 9 (at least three DS3s worth of demand is required before a facility build can generally be proven as financially prudent). The record also contains some evidence that DS3 loop services may be available from alternative providers other than the incumbent LECs in some buildings where competitive capacity to the building has already been provisioned at the OCn level. See Sprint Comments at 23-24; Letter from John E. Benedict, Senior Attorney, Sprint, to Marlene H. Dortch, Secretary, FCC, CC Docket 01-338, 96-98, 98-147, Attach. at 1 (filed Oct. 16, 2002) (Sprint Oct. 16, 2002 *Ex Parte* Letter); WorldCom Comments at 16; KMC Duke June 11, 2001 High-capacity Aff. at para. 5 (citing confidential information); SBC Reply at 143 (citing AT&T Comments at 150 n.10 (citing confidential information)); WorldCom Slocum Decl. at paras. 3-6; AT&T Reply at 185 (citing CCG July 17, 2002 CLEC Survey *Ex Parte* Letter at 6 & Table 3); NuVox *et al.* Comments at 7.

⁸⁶¹ See *supra* note 860.

⁸⁶² See SBC Reply at 143 (citing AT&T Comments at 150 n.10 (confidential information)); WorldCom Slocum Decl. at paras. 3-6; see also CCG Jul. 17, 2002 CLEC Survey *Ex Parte* Letter (indicating that competitive loop capacity has been deployed into buildings but not indicating at what capacity level customers are served in those buildings).

⁸⁶³ BOC UNE Fact Report 2002 at IV-1 through IV-4.

⁸⁶⁴ The BOCs also claim that competitive LECs have deployed approximately 1,800 fiber “networks” in the 150 largest MSAs. BOC UNE Fact Report 2002 at I-3.

⁸⁶⁵ BOC UNE Fact Report 2002 at IV-6. Specifically, the BOC UNE Fact Report 2002 states that competitive LECs have purchased a total of 72,000 high-capacity loops UNEs – all but 140 of which are DS1s. *Id.*

adjacent buildings, or down the block, and on outward from there.⁸⁶⁶ According to the BOCs, once a competitive LEC deploys its initial fiber ring, extending that fiber incrementally to new customers is comparatively inexpensive.⁸⁶⁷

300. Competitive LECs strongly disagree with the BOCs' figures on line deployment, claiming these numbers are far less reliable than the data the Commission itself collects to measure competitive LEC deployment and the level of local competition.⁸⁶⁸ Competitive carriers point to our own statistics which reveal that competitive LECs serve fewer than 9 million business lines nationwide, *i.e.*, not the 13 to 20 million lines that the incumbent LECs claim.⁸⁶⁹ They further claim that this discrepancy is due in large part to the BOCs' inclusion of special access lines as alternative facilities in the BOC UNE Fact Report 2002.⁸⁷⁰ Further, these commenters correctly note that the Commission staff's *Local Competition Report*, which calculates approximately 8.9 million voice-grade equivalent (VGE) lines for competitive LECs, explicitly indicates that it does not count special access lines as competitive LEC self-provisioned or "alternative provided" lines.⁸⁷¹ The BOCs acknowledge the inclusion of special access lines in their data, thus accounting for the approximate 15.8 million VGE differential from the Commission's *Local Competition Report*.⁸⁷²

301. Finally, the record indicates that various types of alternative transmission technologies to high-capacity local loops, *i.e.*, fixed-wireless, unlicensed-wireless, and satellite facilities, have been deployed in limited circumstances at certain locations.⁸⁷³ The record, however, does not indicate the extent to which these alternative transmission technologies have

⁸⁶⁶ See BOC UNE Fact Report 2002 at IV-4.

⁸⁶⁷ *Id.*

⁸⁶⁸ See, e.g., El Paso *et al.* Comments at 16-18 & n.68 (citing numerous other competitive LEC comments).

⁸⁶⁹ AT&T Reply, Declaration of C. Michael Pfau (AT&T Pfau Reply Decl.) at paras. 2, 12-14 (describing how the incumbent LECs' methods for determining the number of competitive loops deployed substantially overstates the actual number by including, *inter alia*, leased special access circuits and other "flawed" assumptions). See Covad Reply 55; AT&T Reply at 182-85; NuVox *et al.* Reply at 42; WorldCom Comments at 76 (arguing that even in the most competitive market in the country, incumbent LECs have seven times more fiber than competitive LECs do).

⁸⁷⁰ See, e.g., AT&T Pfau Reply Decl. at paras. 14 (indicating that his experience recognizes that a much greater proportion of circuits are bought as special access).

⁸⁷¹ See *Local Competition June 2002* at 1 n.2, <<http://www.fcc.gov/web/iatd/stats.html>>.

⁸⁷² See *BOC UNE Rebuttal Report* at 45 (acknowledging that special access lines are, indeed, included in their numbers). In evaluating the extent to which competitive LECs have self-provisioned, the Commission has instructed competitive carriers to exclude local services provisioned over special access facilities in their reported data. See *supra* note 871. Because the Commission places little weight on the availability of special access in its impairment analysis, we do not rely on evidence that includes such lines.

⁸⁷³ See, e.g., BellSouth Comments at 42-43; SBC Comments at 91; Verizon Comments at 118.

been deployed or where they are available on a wholesale basis.⁸⁷⁴ Nevertheless, it appears that, in certain circumstances, such technologies have been used by competitive LECs as alternatives to incumbent LEC unbundled high-capacity loops.⁸⁷⁵ Incumbent LECs report that competitive carriers can often deploy fixed wireless connections more quickly and cheaply than fiber, and that free space optics, *i.e.*, laser-guided high-bandwidth connections to a fiber backbone, is now a viable technology.⁸⁷⁶ Competitive LECs, however, question the extent to which this deployment is widespread and point to certain technical limitations of such technologies.⁸⁷⁷

(ii) Impairment Analysis

(a) Operational and Economic Barriers to Serving the Enterprise Market

302. Enterprise market customers demand reliable services that include customized products, significant customer care, and enhanced security features.⁸⁷⁸ Moreover, they prefer a single provider capable of meeting all their needs at each of their business locations which may be in multiple locations in different parts of the city, state or country.⁸⁷⁹ The economics of serving a particular enterprise customer at each of its business' facilities may be very different depending on the location of the facility.⁸⁸⁰ Small to medium-sized business customers generally demand services at the DS1, and to a lesser extent, DS3 capacities.⁸⁸¹ Competitive LECs meet

⁸⁷⁴ See, e.g., ALTS *et al.* Comments at 45; Allegiance Comments at 19-22; Allegiance Reply at 36; AT&T Fea/Giovanucci Reply Decl. at 21 n.19; WorldCom June 11, 2001 High-capacity Comments at 13-14; Covad Comments at 49-50; Sprint Comments at 24-25; TDS Jackson Aff. at para. 9.

⁸⁷⁵ See *Local Telephone Competition December 2002 Report*; see also Allegiance Comments at 20-21; Sprint Comments at 25; Verizon Comments at 118.

⁸⁷⁶ See, e.g., Verizon Comments at 118 (stating that fixed wireless and free space optics is available for high-capacity links); SBC Reply at 91 (fixed wireless and satellite are broadband options for small business users).

⁸⁷⁷ See, e.g., Sprint Comments at 24-25 (indicating its significant experience with fixed wireless and noting its limitations and delayed development); TDS Jackson Aff. at para. 9 (indicating wireless loop alternatives are too costly, not available in TDS markets, and are not sufficiently robust platforms for TDS services); WorldCom June 11, 2001 High-capacity Comments, Attach. D, Affidavit of A. Daniel Kelley & Richard A. Chandler (WorldCom Kelley & Chandler June 11, 2001 High-capacity Aff.) at paras. 38-45 (arguing that there have been abortive attempts by competitors to provide high-capacity access to business customers using several fixed wireless technologies). We note that fixed wireless alternatives require Commission issued licenses and are subject to the availability of limited spectrum resources.

⁸⁷⁸ See, e.g., GCI Reply at 20.

⁸⁷⁹ See, e.g., WorldCom Comments at 13-18; Covad Reply at 57.

⁸⁸⁰ *Id.* The loop capacity impairment approach we adopt today accommodates the need to serve a single enterprise customer at multiple locations because it recognizes that it may only be economical to build at the primary location where the loop capacity demanded is very high, enabling the competitive LEC to obtain unbundled lower capacity loops to serve the customer's other business locations.

⁸⁸¹ See, e.g., NewSouth Reply at 16 (DS1 loops serve smaller businesses and DS3 and OCn serve larger businesses); NuVox *et al.* Reply at 39-41 (T1 facilities serve innovative bundled service offerings efficiently to small (continued...))

these demands by providing packages of services, carrying both voice and data traffic, sold under month-to-month or short-term contracts.⁸⁸² In contrast, larger enterprise customers demand extensive services using multiple DS3s or OCn loops typically offered under long-term arrangements which guarantee a substantial revenue stream over the life of the contract.⁸⁸³

303. Because the cost to self-deploy local loops at any capacity is great,⁸⁸⁴ and the cost to deploy fiber does not vary based on capacity,⁸⁸⁵ a competitive LEC that plans to self-deploy its own facilities must target customer locations where there is sufficient demand from a potential customer base, usually a multiunit premises location, to generate a revenue stream that could recover the sunk construction costs of the underlying loop transmission facility, including laying the fiber and attaching the requisite optronics to light the fiber.⁸⁸⁶ For competitive LECs deploying a very high-capacity loop facility to a particular customer location, the revenue commitment relative to the cost of constructing that loop facility may result in a positive profit margin for that single customer location, making it economically feasible from a profitability perspective, to self-provision in that particular case.⁸⁸⁷ Even when the customer demand at a certain location may support self-deployment from a pure cost recovery perspective, however, there are other obstacles that must be overcome before such self-deployment can effectively occur.⁸⁸⁸ These other barriers include the inability to obtain reasonable and timely access to the customer's premises both in laying the fiber to the location and getting it into the building

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and medium business customers); Allegiance Reply at 35-36 (a significant segment of business customers are small and medium-sized enterprises that use DS1 capacity services).

⁸⁸² See, e.g., ITC/Deltacom Aug. 16, 2001 Petition at 1-2; NewSouth Comments at 5; Affidavit of Edward J. Cadieux, NuVox (NuVox Cadieux Jan. 24, 2003 Aff.) at paras. 4-5, in Letter from Steven A. Augustino, Counsel for NuVox *et al.*, to William Maher, Chief, Wireline Competition Bureau, FCC, CC Docket No. 01-338, 96-98, 98-147 (filed Jan. 24, 2003); see also Letter from Kimberly Scardino, Senior Counsel, WorldCom, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 3 (filed Jan. 31, 2003) (WorldCom Jan. 31, 2003 *Ex Parte* Letter).

⁸⁸³ *Id.*

⁸⁸⁴ In discussing the general economic characteristics of loop deployment above, we noted that loop construction costs do not vary by the capacity of the loop and that the ability to recover the high fixed and sunk costs is the key factor to considering impairment. We also observed that loop impairment is closely related to the demands of the individual customer served by such loop and the capacity level of the loop provided. See *supra* Part VI.A.3.

⁸⁸⁵ See *supra* Part VI.A.3.; see also Letter from Stephen W. Crawford, General Counsel, El Paso Global Networks, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 1 (filed Feb. 5, 2003) (El Paso Feb. 5, 2003 *Ex Parte* Letter).

⁸⁸⁶ See, e.g., Allegiance Comments at 23; WorldCom Comments at 76; AT&T Reply at 145; see also TDS Jackson Aff. at para. 8.

⁸⁸⁷ *Id.*; see also TDS Jackson Aff. at paras. 8-10.

⁸⁸⁸ See, e.g., El Paso *et al.* Comments at 20-21.

thereafter,⁸⁸⁹ as well as convincing customers to accept the delays and uncertainty associated with deployment of alternative loop facilities.⁸⁹⁰

304. The record reflects that constructing local loops generally takes between 6-9 months without unforeseen delay.⁸⁹¹ Competitive LECs describe numerous ways in which further delay affecting construction decisions and deployment occurs. These delays can be attributable to securing rights-of-way from local authorities which is necessary before competitive LECs can dig up streets to lay fiber. Often, carriers must engage in lengthy negotiations with local authorities over the ability to use the public rights-of-way.⁸⁹² Similarly, obtaining building and zoning permits adds further delay as local authorities often conduct extensive inquiries into the planned construction activity of the competitive carrier.⁸⁹³ Moreover, commenters note that many local jurisdictions impose construction moratoriums which prevent the grant of a franchise agreement to construct new fiber facilities in the public rights-of way.⁸⁹⁴

305. In addition to delays associated with gaining access to rights-of-ways and permits from local or municipal authorities, competitive LECs face additional barriers with regard to serving multiunit premises due to difficulties and sometimes outright prohibitions in gaining building access.⁸⁹⁵ Although multiunit premises could present substantial economic opportunities for competitors, if the entity or individual controlling access to the premises does not allow a competitor to reach its customer residing therein (or places unreasonable burdens on the competitive LEC as a condition of entry), the competitive LEC may be unable to serve its

⁸⁸⁹ See, e.g., ALTS *et al.* Comments at 56 (discussing other barriers competitive LECs face in self-deployment); AT&T Reply at 174-79.

⁸⁹⁰ See, e.g., Sprint Comments at 23; AT&T Reply at 175. Competitive LECs argue that they can not feasibly construct loop facilities and justify the fixed and sunk costs that self-provisioning will entail in advance of securing firm customer commitments guaranteeing the likelihood of cost recovery. See, e.g., NuVox *et al.* Comments at 74; AT&T Reply at 176-77; Supra Comments at 7. This barrier to entry can be exacerbated when states adopt service quality rules that require local service providers to be in a position to provision service within a specified number of days after a customer signs up for service. See, e.g., Ohio Admin Code Ch. 4901 § 1-5-20 (C); 220 ILCS 5 § 13-712; 83 ILAC § 730.540.

⁸⁹¹ See, e.g., ALTS *et al.* Comments at 58; WorldCom Comments at 75 (citing WorldCom Fleming Decl.).

⁸⁹² Because of the expense and delay associated with filing a preemption petition, carriers rarely avail themselves of section 253(c) of the Act. See 47 U.S.C. § 253(c).

⁸⁹³ See, e.g., ALTS *et al.* Comments at 23-24. Incumbent LECs argue, however, that actual competitive LEC deployment undermines these arguments. See, e.g., SBC Reply at 156.

⁸⁹⁴ See, e.g., ALTS *et al.* Comments at 42, 50, 56, 58; see also New York Department Comments at 4. Incumbent carriers, however, generally argue that competitive LECs are not impaired by rights-of-way costs and delays. BellSouth argues that mandatory access to rights-of-way means that there are not generally extreme delays caused by disputes, and competitive LECs can turn to the accelerated docket if need be. BellSouth Comments at 68-69.

⁸⁹⁵ See, e.g., AT&T Reply at 175 (stating that the time to negotiate building access arrangements can be up to 18 months); see also WorldCom Oct. 25, 2002 Building Access *Ex Parte* Letter.

customer via its own facilities,⁸⁹⁶ even where a competitive carrier may be ready, willing, and otherwise able to self-deploy the loop.⁸⁹⁷

306. In conducting our impairment analysis, we give substantial weight to the cost of constructing a loop facility in relation to the ability of the competitive carrier to recover those costs over time, *i.e.*, where the traffic volume and associated revenue potential from the loop facility allow a carrier to earn a return necessary to sustain its operations at that location. We do, however, consider other factors affecting competitive LEC loop deployment, including access to public and private rights-of-way and multiunit premises access, that incumbent LECs have not or do not similarly face as a result of their first-mover advantage. Altogether, these factors directly influence the ability of competitive carriers to raise capital to deploy service to customers using their own loop facilities in a timely manner. The record reflects that these barriers can be overcome at certain loop capacity levels and certain service locations as we explain below.⁸⁹⁸

(b) General Framework

307. We organize our analysis of high-capacity loops based on capacity level because it is a more reliable indicator of the economic abilities of a requesting carrier to utilize third-party alternatives, or to self-deploy. At the same time, we recognize that operational and economic concerns will vary depending on the geographic market served. We find that the extent of competitive deployment of high-capacity loop facilities can vary tremendously by geographic area. More specifically, the barriers to entry requesting carriers face are most precisely identified on each geographic route serving a particular customer location. Where our record permits, however, we distill general characteristics of high-capacity loop deployment on a national level sufficient to make nationwide determinations of impairment and non-impairment. Where the record indicates impairment and that only with more granular evidence could a finding of non-impairment be made, we establish triggers to identify non-impairment based on customer location-specific evidence.

⁸⁹⁶ See, e.g., AT&T Reply at 178-79. Verizon argues that, in the interim, competitive LECs can purchase special access services or use wireless or “free-space optics” loop in the interim during construction of the loop. Verizon Comments at 120-23. Competitive LECs, however, question the extent to which these wireless modes are available for use on an interim basis. See *supra* Part VI.A.4.a.(iii)(b). As for Verizon’s suggestion that the use of special access services is sufficient, the Commission has stated it does not factor the availability of incumbent LEC’s special access services into its loop impairment analysis. See *supra* Part V.B.1.d.(ii).

⁸⁹⁷ See, e.g., ALTS *et al.* Comments at 56-58; WorldCom Oct. 25, 2002 Building Access *Ex Parte* Letter; AT&T Reply at 175. We address building access-related barriers to loop deployment in greater detail below in our subloop and NID unbundling analyses, particularly, with respect to the Inside Wire Subloop. We expect that the subloop and NID unbundling rules that we adopt today will substantially mitigate the adverse impact of many of the building access-related barriers requesting carriers face with respect to serving customers in multiunit premises, particularly where the incumbent LEC’s network extends beyond the minimum point of entry at the premises and the wiring in the building is owned and controlled by the incumbent LEC. Moreover, the Commission still has an open proceeding, WT Docket No. 99-217, related to building access. See *Competitive Networks Order*, 15 FCC Red 22983.

⁸⁹⁸ See *supra* para. 298; see also Allegiance Comments at 23; ALTS *et al.* Comments at 58.

308. In conducting our impairment analyses for the various types of high-capacity loops, we first consider evidence of whether competitive LECs have self-deployed such loop facilities, on either an intermodal or intramodal basis, to provide retail services to enterprise market customers.⁸⁹⁹ In our analysis, we recognize that a variety of alternative high-capacity loop transmission technologies, in various stages of development and use, are offered to enterprise customers in certain locations as potential alternatives to their traditional high-capacity loops, *i.e.*, different types of fixed-wireless, *e.g.*, 38 GHz, LMDS, MMDS, and 24 GHz; satellite facilities; and unlicensed wireless.⁹⁰⁰ As we have indicated above,⁹⁰¹ evidence of self-deployment demonstrates better than any other kind of evidence what business decisions competitive carriers have *actually* made regarding the feasibility to deploy facilities without relying on the incumbent LEC. This evidence shows us, as a practical matter, that competitive LECs have been able to surmount barriers to entry with respect to that particular loop deployment. We then consider the extent of this deployment, whether it occurs or could occur on a nationwide basis, or is more limited in scope. Next we look at the extent to which wholesale alternatives to the incumbent LEC's unbundled loops are available to competitive LECs to provision high-capacity loops to their customers. We consider whether these alternatives, including alternative transmission technologies, are available ubiquitously or only in certain places.

309. We note that our consideration of alternative loop technologies in the enterprise market analysis differs from our consideration of intermodal alternatives in our mass market analysis. Different approaches are warranted because of the differences in how these technologies are deployed in these markets based on their suitability to individual customers, as well as the likelihood these technologies could be self-provisioned or made available to competitive carriers on a wholesale basis.⁹⁰² In the enterprise market, companies are able to target individual buildings and customers and determine which technology is the optimal means of reaching each customer. On the other hand, in the mass market where revenues are small, customers are typically served in large groups, using uniform technologies and mass marketing and provisioning techniques to minimize the cost of serving each customer.⁹⁰³ As such, creating mechanisms to identify intermodal alternatives on an individual customer basis in the mass market is impractical, whereas it is feasible, in certain cases, in the enterprise market.

⁸⁹⁹ *Iowa Utils. Bd.*, 525 U.S. at 389 (noting that the Commission must consider the availability of elements "outside the incumbent's network" when applying the "impair" standard). *See also* JTFA Jan. 29, 2003 *Ex Parte* Letter, Attach. at 1 (noting that the question is whether elements are available from sources other than incumbent LEC).

⁹⁰⁰ *See, e.g.*, BellSouth Comments at 42-43; SBC Comments at 91; Verizon Comments at 118; *see also* ALTS *et al.* Comments at 45; Allegiance Comments at 19-22; Allegiance Reply at 36; AT&T Fea/Giovannucci Reply Decl. at 21.

⁹⁰¹ *See supra* Part V.B.

⁹⁰² *See supra* Part V.B.1.d.(ii); *see also supra* Part VI.A.4.a.(iv).

⁹⁰³ Thus, those technologies that can only be used for accessing certain customers and require equipment installation at the customer location, such as fixed wireless, have only proven to be economically viable for customers found in the enterprise market.

310. We find that certain types of alternative loop technologies could be made available on a wholesale basis to competitive carriers for providing high-capacity loop services to particular building locations in the enterprise market. Providers of viable intermodal alternatives to mass market customers have shown no inclination to provide access to competing carriers to serve their customers, nor would we expect them to.⁹⁰⁴ With respect to the ability of a competitive LEC to self-provision high-capacity loops using alternative loop technologies, there are substantial differences between the mass market and the enterprise market. For example, one of the mass market's major alternative loop technologies, cable telephony, is only available to cable TV companies that, because of their unique economic circumstances of first-mover advantages⁹⁰⁵ and scope economies,⁹⁰⁶ have access to the customer that other competitive carriers lack. Other technologies, such as fixed wireless, have not proven to be viable or deployable on a mass market scale. This contrasts with the enterprise market, where the record reflects that alternative technologies are available to some degree at certain locations that might be used by competitive carriers to provide high-capacity loops to enterprise customers.

(c) Capacity-based Impairment Findings

(i) Dark Fiber Loops

311. We find on a national basis that requesting carriers are impaired at most customer locations without access to dark fiber loops. Dark fiber, unlike "lit" fiber, is unused fiber within an existing fiber optic cable that has not yet been activated through optronics to render it capable of carrying communications services.⁹⁰⁷ Users of unbundled dark fiber loops, similar to users of dark fiber transport,⁹⁰⁸ provide the electronic equipment necessary to activate the dark fiber strands to provide services.⁹⁰⁹ While the underlying capacity level of a strand of dark fiber is comparable in total capacity to an OCn loop, we address dark fiber loops separately from OCn loops due to economic and operational characteristics that distinguish dark fiber from "lit"

⁹⁰⁴ A provider that has privileged access to a single mass market customer potentially will lose the customer if it provides wholesale access to a potential competitor.

⁹⁰⁵ These companies had the advantage of beginning with exclusive franchises and a captive market. These advantages are not available to other entrants.

⁹⁰⁶ Scope economies exist when the cost of providing a service is lower when combined with other services. The cost of providing cable telephony to customers is lower for cable TV companies because they also provide video services to those customers.

⁹⁰⁷ See *supra* note 628 (definition of dark fiber).

⁹⁰⁸ See *infra* Part VI.C.4.c.(i).

⁹⁰⁹ By itself, dark fiber has virtually unlimited capacity. It is the electronics that define the capacity. See *El Paso* Feb. 5, 2003 *Ex Parte* Letter at 2; see also AT&T Comments at 130; Letter from Thomas Jones, Counsel for Conversent Communications, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 1-2 (filed Dec. 24, 2002) (*Conversent* Dec. 24, 2002 *Ex Parte* Letter).

fiber.⁹¹⁰ We make our determination of impairment based on the high sunk costs associated with deploying high-capacity loop facilities and lack of evidence showing alternatives at specific customer locations.

312. Dark fiber exists in a carrier's network as unused fiber available because that carrier has deployed fiber in the first instance for the express purpose of lighting certain strands of it to serve a particular customer location.⁹¹¹ The "dark" fiber strands, however, remain unlit. Dark fiber loop construction, like loops generally, involves substantial fixed and sunk costs. The primary costs associated with fiber deployment lie in the substantial sunk costs associated with physically laying the fiber cable.⁹¹² In addition, there are other barriers that must be overcome before deployment can effectively occur.⁹¹³ These other barriers include the inability to obtain reasonable and timely access to the customer's premises both in laying the fiber to the location and getting it into the building thereafter,⁹¹⁴ as well as convincing customers to accept the delays and uncertainty associated with deployment of alternative loop facilities.⁹¹⁵ It is only when a competitive LEC has sufficient demand for "lit" fiber to a particular customer location to enable it to recover the fixed and sunk costs of the fiber deployment that it is economically feasible for that competitor to deploy fiber to that location.⁹¹⁶ When a fiber build decision is made, carriers

⁹¹⁰ For example, competitive providers that use unbundled dark fiber claim that it can offer a higher level of service than "lit" transmission because unbundled dark fiber integrates more efficiently into their networks by reducing the number of failure points and by providing the competing carrier with greater ability to test for quality and maintenance. See *Conversent Comments* at 7; Letter from Scott Sawyer, Vice President - Regulatory Affairs, Conversent Communications, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 3 (filed Oct. 10, 2002) (Conversent Oct. 10, 2002 *Ex Parte* Letter). Other competitive carriers indicate that dark fiber gives them greater control over their own network components which is an important aspect of their competitive service offerings. See Letter from Lawrence R. Freedman, Counsel for Norlight, to Marlene Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 3 (filed Dec. 30, 2002) (Norlight Dec. 30, 2002 *Ex Parte* Letter). In the *UNE Remand Order*, we recognized that the characteristics of dark fiber do not vary between loop and transport deployment. Because dark fiber is more extensively used in transport, we discuss its characteristics in more detail below in our discussion of dark fiber transport and do not repeat such discussion here other than to indicate that the characteristics of dark fiber described therein pertain to dark fiber loops as well. See *infra* Part VI.C.4.c.(i). Any operational or provisioning requirements associated with incumbent LEC provisioning of unbundled dark fiber transport apply equally to provisioning unbundled dark fiber loops. See *id.*, para. 385 (discussing issues associated with dark fiber access and granting states the flexibility to establish reasonable limitations and technical parameters).

⁹¹¹ Competitive carriers indicate that they, unlike the incumbent LEC, can not build fiber loop plant until they have secured a substantial customer base and revenue stream. See Letter from Robert J. Aamoth, Counsel for Dominion Telecom, to Michael K. Powell, Chairman, FCC, CC Docket No. 01-338 at 4 (filed Jan. 28, 2003) (Dominion Jan. 28, 2003 Aamoth *Ex Parte* Letter); see also *El Paso et al. Comments* at 9.

⁹¹² See *supra* Part VI.A.3 (discussing loop construction costs); see also *El Paso Feb. 5, 2003 Ex Parte Letter* at 1.

⁹¹³ See, e.g., *El Paso et al. Comments* at 20-21.

⁹¹⁴ See, e.g., *ALTS et al. Comments* at 56 (discussing other barriers competitive LECs face in self-deployment); *AT&T Reply* at 174-79.

⁹¹⁵ See *supra* note 890.

⁹¹⁶ See *infra* Part VI.A.4.b.(i) (stating that evidence that the specific level of demand must be OCn or 3 DS3s of capacity into a particular customer location to justify competitive loop deployment); see also *supra* note 911.

take advantage of the fact that they are already incurring substantial fixed costs to obtain the rights-of way, dig up the streets, and trench the cable, to lay more fiber than they immediately need. Once the significant fiber construction cost is incurred,⁹¹⁷ the record reflects that it is relatively easy and inexpensive to install fiber strands in excess of current demand at that time to maximize the use of the conduit and avoid the need to incur duplicate costs to retrench the same location in the future if demand for additional fiber facilities occurs.⁹¹⁸ As such, incumbent LECs are the largest source of intracity dark fiber nationwide as a result of their “first-mover” fiber deployment to the majority of customer locations.⁹¹⁹ This sharply contrasts with the availability of competitive dark fiber loops, which is necessarily limited by the economic barriers inherent in deploying alternative fiber loops, generally, except to certain customer locations.⁹²⁰

313. Because it is generally not economically feasible to deploy duplicate fiber loop facilities, the record reflects that a number of facilities-based competitive LECs rely on incumbent LEC unbundled dark fiber to provision “last-mile” services to small and medium-sized customers, particularly in rural, unserved, or underserved areas of the country.⁹²¹ These users of unbundled dark fiber provide the necessary optronics⁹²² and collocations that are preconditions to activating the fiber to serve customers. These carriers extensively deploy their own network facilities, *e.g.*, switches, transport, and the necessary optronics to light dark fiber to enable the provision of competitive high-capacity local service to end users in direct competition with the incumbent LEC.⁹²³ These competitive LECs argue that they seek to construct their own fiber loops all the way to the customer if economically feasible to self-deploy, but that in many areas the level of demand is not sufficient to warrant overbuilding the dark fiber already available

⁹¹⁷ See *supra* Part VI.A.3 (discussing loop construction costs); see also *El Paso et al.* Comments at 20-21.

⁹¹⁸ See, *e.g.*, *El Paso et al.* Comments at attached TPUC testimony at 8 (indicating an industry average of a “mere” \$1.00 per foot to increase fiber placement from a 72 fiber strand cable to the next standard 144 size fiber strand cable); see also *Norlight Dec. 30, 2002 Ex Parte Letter* at 5.

⁹¹⁹ See *Norlight Dec. 30, 2002 Ex Parte Letter* at 5 (the first carrier to lay fiber to a particular location will lay significantly more than it will need because the incremental cost of burying additional fibers is negligible; requiring competitors to construct duplicate facilities where there is already excess capacity in place is precisely the inefficiency the *USTA* court instructed the Commission to avoid).

⁹²⁰ See *supra* note 905.

⁹²¹ See, *e.g.*, *Dominion Jan. 28, 2003 Aamoth Ex Parte Letter* at 4 (dark fiber loops are especially critical because they are often located in areas where few or no competitors presently serve customers; eliminating unbundled dark fiber loops would deprive hundreds of businesses in Tier II and III cities from receiving competitive service); *Norlight Dec. 30, 2002 Ex Parte Letter* at 5 (in smaller rural markets where dark fiber exists there typically is no demand or expected growth in demand to warrant additional facilities); *Norlight Comments* at 2-4 (*Norlight* serves Tier II and III cities where the incumbent LEC is the only option other than cost prohibitive self-deployment to extend competitive service to customers).

⁹²² We note that the cost of electronics, such as those used to activate dark fiber, are not sunk costs like fiber construction costs because they can be moved from one location to another location upon exit from a particular location.

⁹²³ See, *e.g.*, *Norlight Dec. 30, 2002 Ex Parte Letter* at 2.

from incumbent LECs.⁹²⁴ Because it is not economically feasible to self-deploy to many enterprise market customer locations, particularly less densely populated areas, unbundled dark fiber loops enable competitive carriers to build facilities-based networks to serve customers at those locations⁹²⁵ with the least reliance on the incumbent LEC's facilities.⁹²⁶ We find that dark fiber loops allow competing carriers to provide services without incurring many of the high sunk costs of self-deploying the loop facility, but still require significant investment in collocation and optronics. We expect that unbundling of dark fiber loops will encourage construction of alternative facilities because it will provide facilities-based carriers the means of obtaining the last-mile facility necessary to serve customers over competitive networks comprised largely of facilities other than the incumbent LEC's. The availability of dark fiber loops increases the ability of facilities-based competitive LECs to reduce their reliance on unbundled "lit" high-capacity loops at locations where dark fiber loops are available to them, encouraging investment in the optronics necessary to light the fiber.⁹²⁷ Moreover, unbundling dark fiber enables the Commission to limit unbundling obligations with respect to certain high-capacity "lit" loops as we discuss below.

314. In most areas, competing carriers are unable to self-deploy and have no alternative to the incumbent LEC's facility.⁹²⁸ However, the record indicates that competitive LECs have been able to self-deploy fiber to some customer locations, although the record does not reveal the specific locations of such deployment.⁹²⁹ For this reason, we delegate to the states the authority to collect and analyze more specific evidence of loop deployment on a customer location basis, applying a uniform national trigger that measures self-provisioning to determine customer

⁹²⁴ *Id* at 5. Carriers also note that in these more rural areas it actually may be less costly to both in time and dollars to self-deploy fiber than in more urban areas, but the level of demand to a customer location may simply be too low to justify the cost of installing duplicative facilities. *Id* at 3.

⁹²⁵ *See, e.g.*, Dominion Jan. 28, 2003 Aamoth *Ex Parte* Letter at 2; Norlight Dec. 30, 2002 *Ex Parte* Letter at 5.

⁹²⁶ *See, e.g.*, Letter from Joshua M. Bobeck, Counsel for El Paso Global Networks, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, 96-98, 98-147 at 2 (filed Oct. 4, 2002) (El Paso Oct. 4, 2002 *Ex Parte* Letter) (dark fiber is the UNE that is closest to 100% facilities-based competition).

⁹²⁷ *See* Letter from Stephen W. Crawford, General Counsel, El Paso Networks, and Scott Sawyer, Vice President and Counsel, Conversent Communications, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147, Attach. at 1 (filed Nov. 26, 2002) (El Paso/Conversent Nov. 26, 2002 *Ex Parte* Letter).

⁹²⁸ *See supra* note 856; *see also* Letter from Brad E. Mutschelknaus, Counsel for OnFiber Communications, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, 96-98, 98-147 at 2 (filed Feb. 6, 2003) (OnFiber Feb. 6, 2003 *Ex Parte* Letter) (asserting that the vast expense associated with deploying dark fiber precludes self-provisioning and prevents any kind of alternative market from developing).

⁹²⁹ *See supra* note 856; *see also* Letter from Patrick J. Donovan, Counsel for El Paso Networks LLC, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338 (filed Jan. 22, 2003) (El Paso Jan. 22, 2003 *Ex Parte* Letter); Letter from Ann D. Berkowitz, Project Manager – Federal Affairs, Verizon, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 19 (filed Jan. 31, 2003) (discussing competition for special access) (Verizon Jan. 31, 2003 Special Access *Ex Parte* Letter); Norlight Dec. 30, 2002 *Ex Parte* Letter at 2.

locations where competitive carriers are not impaired without access to incumbent LEC unbundled dark fiber loops.⁹³⁰

(ii) OCn Loops

315. We find that requesting carriers are not impaired on a nationwide basis without access to unbundled “lit” OCn loops because the barriers relating to the deployment of OCn “lit” loops can be overcome through self-deployment at the OC3 and above level, the use of unbundled dark fiber, or the use of “lit” DS3s.⁹³¹ Record evidence reflects competitive deployment of loops at the OCn level and competitive carriers confirm they are often able to economically deploy these facilities to the large enterprise customers which use them.⁹³² Further, there does not appear to be any evidence of demand for incumbent LEC OCn level unbundled loops.⁹³³ Competitive LECs have deployed OCn capacity to some commercial buildings nationwide, including Tier II and Tier III markets.⁹³⁴ We find this evidence of deployment

⁹³⁰ See *infra* Part VI.A.4.b.(ii)(d) (discussing in detail the state reviews on a customer-location specific basis applying the defined Self-Provisioning Trigger and Competitive Wholesale Facilities Trigger).

⁹³¹ OCn circuits range from OC3 to OC192. The smallest common OCn capacity circuit, an OC3, is comparable in capacity to 3 DS3s, 84 DS1s, or 2016 voice-grade loops. Our impairment finding for OCn level loops differs from our finding for dark fiber loops as the economics of deploying “lit” fiber at the OCn level differs from deploying dark fiber at a comparable capacity level. While the construction-related costs in laying the fiber are the same, the ability to recover these sunk costs differs if considered as distinct types of loop facilities. As we noted in our discussion of dark fiber loops above, dark fiber is unused deployed fiber along a particular route that is not associated with a specific potential revenue stream from a known customer at the time of construction. See *supra* para. 312. A competitive LEC does not deploy dark fiber to use in self-provisioning high-capacity local service to customers *unless* that competitive LEC already has sufficient customer demand at a “lit” fiber level, *i.e.*, at the OCn or 3 DS3 level, to recover the sunk costs of the fiber construction. See *supra* note 911; see also Dominion Jan. 28, 2003 Aamoth *Ex Parte* Letter at 4. In other words, competitive carriers can not economically deploy dark fiber on a stand-alone basis for self-deployment purposes without an associated “lit” fiber demand. While carriers deploying OCn fiber loops must necessarily first deploy dark fiber and then attach the requisite optronics to activate the fiber for service capability at the OCn level, carriers deploying fiber to meet a particular customer demand for OCn capacity are viewed as deploying an OCn loop to serve that customer rather than deploying dark fiber to serve that customer.

⁹³² See, *e.g.*, WorldCom Fleming Decl. at para. 10 (when customer demand is projected at several DS3s or optical level capacity a self-build decision is made); Letter from Ruth Milkman, Counsel for WorldCom, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-338, 96-98, 98-147, Attach. at 5 (filed Oct. 7, 2002) (WorldCom Oct. 7, 2002 *Ex Parte* Letter) (for self-deployment to be feasible, the demand must be for at least multiple DS3s); AT&T Comments at 134 (a competitive LEC can only self-deploy to a location with enormous demand, *i.e.*, the smallest of which would be at the OC3 level); AT&T Nov. 25, 2002 *Ex Parte* Letter at 2 (the amount of committed traffic to support construction of loops for large business customers is about 3 DS3s, *i.e.*, an OC3), and Attach. B at 9 (at least 3 DS3s worth of demand is required before a facility build can generally be proven as financially prudent).

⁹³³ See *supra* para. 299 (BOCs state that not a single unbundled loop above a DS3 level has been purchased).

⁹³⁴ See KMC Duke June 11, 2001 High-capacity Aff. at para. 3 (naming the Tier III markets they serve with their own facilities); CCG July 17, 2002 CLEC Survey *Ex Parte* Letter (explaining that the six metropolitan areas chosen to represent competitive LEC loop buildout – Albany, Augusta, Boston, Chicago, Corpus Christi, and Portland – represent a broad cross section of populations and business concentrations); see also WorldCom Oct. 30, 2002 *Ex Parte* Letter.

persuasive in demonstrating that competitive LECs can often overcome the barriers associated with loop deployment at the OCn level.

316. Commenters indicate that services offered over OCn loops produce revenue levels which can justify the high cost of loop construction, providing the opportunity for competitive LECs to offset the fixed and sunk costs associated with the loop construction. Large enterprise customers purchasing services over OCn loops⁹³⁵ enter into long-term contracts committing to revenue streams and associated early termination charges that provide the ability for carriers to recover their substantial non-recurring “set-up” or construction costs.⁹³⁶ Customers obtaining services at the OCn level also understand that transitioning such services to a new provider is not an overnight process. Because of their level of business planning sophistication, as a practical matter, they begin the process of seeking a new or alternative service provider well in advance of their actual need for the service.⁹³⁷ Accordingly, they are more receptive to the inherent provisioning delays associated with constructing these high-capacity loops to meet their particular needs than smaller business customers served by lower capacity loops.⁹³⁸ Competitive carriers deploying fiber at the OCn capacity level are therefore able to accommodate provisioning delays and additional expense at the start of the construction process, mitigating obstacles to self-deploying they may face in gaining access to public and private rights-of-way.⁹³⁹

317. Furthermore, enterprise customers requiring OCn level capacity are often located in multiunit premises where they may have the ability to exert greater influence over building

⁹³⁵ We recognize that large enterprise customers may also have remote business locations that do not require the capacity of an OCn loop. We reiterate that we do not tailor our rules to restrict or limit unbundling based on the size or class of the customer served. A large enterprise customer’s particular loop capacity demand at a given service location is determined by multiple factors unique to that customer’s needs at that specific location, rather than the size of that customer. Merely because large enterprise customers are typically the only type of customer that purchase OCn capacity loops does not equate to the fact that OCn loops are the only type of loop such customers demand.

⁹³⁶ See *supra* note 932; see also Declaration of Alfred E. Kahn and William E. Taylor, RM No. 10593 at 32-33 (discussing generally how long-term contracts and associated termination penalties are used to ensure cost recovery) in Verizon Jan. 31, 2003 Special Access *Ex Parte* Letter. Long-term contracts are used to minimize risk exposure and stabilize construction costs over time when the seller incurs heavy sunk costs as part of a transaction. *Id.*

⁹³⁷ If this customer’s competitive OCn loop is to be provisioned at their current business location, we understand they will generally begin the process of looking at alternative service providers months in advance of the expiration date of their current contract for service, which will usually include a provision for month-to-month service thereafter for as long as needed. If service is to be provided at a brand new location that the customer is moving to, or having built, at an OCn level of capacity, decisions regarding which service provider will provision that service will similarly be made months before occupancy. Each of these scenarios mitigates the impact of the lead time to build new loops with respect to serving these customers.

⁹³⁸ See, e.g., Sprint Comments at 23; WorldCom Fleming Decl. at paras. 9-10.

⁹³⁹ To the extent these initial obstacles are in the form of unreasonably high costs for rights-of-way access, competitive LECs deploying fiber to serve customers at the OCn level are better able to overcome these barriers as the revenues associated with OCn capacity service contracts are quite high. See generally AT&T Comments at 134; WorldCom Comments at 76; see also TDS Jackson Aff. at para. 8.

access because: (1) their operations are so substantial that they own the premises outright; (2) they control the access to the premise; or (3) they have sufficient influence over the landlord/building owner to overcome building access impairments the competitive provider may encounter due to the amount of leased occupancy space for which this enterprise customer has committed.⁹⁴⁰

318. Competitive carriers requiring OCn capacity “lit” loops to serve customers will also have the ability to purchase dark fiber, including unbundled dark fiber loops, and attach their own optronics to activate such loops to serve their customers at those locations where unbundled dark fiber is available. In circumstances where competitive LECs may be unable to self-deploy the underlying OCn fiber loop, the record demonstrates that there is no impairment with respect to obtaining and attaching the requisite optronics necessary to light dark fiber at the OCn level to provide service. Based on record evidence that self-deployment of the loop transmission facility at the OCn level is generally feasible, it necessarily follows that the lesser cost of self-providing just the optronics to light the fiber at the OCn level is economically feasible. While we recognize that dark fiber may not be available at every customer location nationwide, a competitive carrier may also access “lit” loops. Because the record demonstrates, however, that competitive carriers routinely self-deploy when customer demand is three DS3s (or optical capacity) as discussed further below, we limit the availability of “lit” DS3 loops to a maximum of two unbundled DS3 loops per carrier at each customer location.⁹⁴¹

319. Finally, as we have noted, at least in the BOC regions, the record reflects that competitive LECs have not obtained unbundled loops at the OCn level.⁹⁴² Thus, there are few, if any, transition issues with regard to OCn loops. In the event a competitive LEC of which we are not aware is currently providing service over an unbundled OCn loop, the transition scheme that we have adopted herein governs such situation.⁹⁴³

(iii) DS3 Loops

320. We make a national finding that requesting carriers are impaired on a customer-location-specific basis without access to unbundled DS3 loops. The inability to recover the significant fixed and sunk construction costs of DS3 loops, coupled with the additional barriers to loop deployment associated with accessing rights-of-way; obtaining and paying for building access; and other service provisioning delays impair the ability of requesting carriers to self-provision single DS3 loops.⁹⁴⁴ Unlike deployment at even the lowest OCn level, the record

⁹⁴⁰ See, e.g., AT&T Reply at 174-77.

⁹⁴¹ See *infra* para. 321.

⁹⁴² See *supra* para. 299.

⁹⁴³ See *supra* Part VIII.D (addressing the transition process adopted herein).

⁹⁴⁴ See *supra* Part VI.A.3 for a discussion of the general economic characteristics of loop deployment. Because the cost of constructing a fiber loop facility does not vary to any significant degree with loop capacity, to economically justify a particular loop construction expenditure, a competitive carrier must have some reasonable expectation of being able to recover its cost over time.

indicates that a single DS3 loop, generally, can not provide a sufficient revenue opportunity to overcome these barriers.⁹⁴⁵ Because our impairment analysis rests most heavily on the ability of a self-deploying carrier to recover its sunk and fixed costs, the inability to recover such costs at a single DS3 level results in impairment. In finding impairment based on the inability to recover sunk costs, we find that the other economic and operational barriers faced by competitive LECs in self-deploying loops generally, *i.e.*, difficulties in acquiring municipal and private rights-of-ways as well as gaining building access from owners of multiunit premises,⁹⁴⁶ exist for competitive LECs with respect to single DS3 loop deployment.⁹⁴⁷

321. Despite the economic barriers that a competitive LEC faces in deploying single DS3 loops, the record indicates that some carriers have been able to overcome these barriers when providing multiple DS3s to a specific customer location.⁹⁴⁸ Because the record does not, however, provide sufficient evidence to determine the specific factors that make such deployment feasible at these locations, we are unable to conclude with any precision exactly where requesting carriers would not be similarly impaired without access to unbundled DS3 loops.⁹⁴⁹ Similarly, the record reflects a small but potentially growing wholesale alternative DS3 loop market.⁹⁵⁰ Once again, however, the record in this proceeding does not specify exactly

⁹⁴⁵ See *supra* note 860. The potential revenue stream associated with a customer commitment for a single DS3 loop is far less than the revenue stream associated with an OCn loop, yet the cost to construct the loop facility is the same. At the smallest OCn level, *i.e.*, OC3, there are 2,016 voice-grade equivalent lines. A single DS3 is equivalent to 672 voice-grade equivalent lines. A simple comparison of the relative voice-grade equivalent lines demonstrates that a customer commitment in terms of potential revenue stream for a DS3 is many times smaller than that of an OC3 loop. Accordingly, it takes a longer period of time for a competitive LEC to recover its costs of deploying a single DS3 loop facility.

⁹⁴⁶ See, *e.g.*, AT&T Reply at 174-79 (discussing other barriers linked to the incumbent LECs' historical monopoly that preclude competitive loop deployment independent of cost factors); see also NuVox *et al.* Comments at 74; KMC Duke Aff. at paras. 7-9 (citing proprietary information); SNiP LiNK Polito Aff. at paras. 3-7; Sprint Comments at 22; Letter from Ruth Milkman, Counsel for WorldCom, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 2 (filed Oct. 25, 2002) (discussing building access barriers) (WorldCom Oct. 25, 2002 Building Access *Ex Parte* Letter); ALTS *et al.* Comments at 56.

⁹⁴⁷ See *supra* Part VI.A.3. for evidence of the existence of the other operational barriers to DS3 loop capacity deployment.

⁹⁴⁸ The record indicates that some competitive carriers have economically self-deployed DS3 capacity loops to certain customer locations where the aggregate demand for DS3 capacity at those locations is *three* or more. See *supra* note 860; see also Letter from David L. Lawson, Counsel for AT&T to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 02-33 at 1 n.2 (filed Feb. 3, 2003) (AT&T Feb. 3, 2003 Lawson *Ex Parte* Letter) (citing AT&T Nov. 25, 2002 *Ex Parte* Letter indicating competitors can economically self-deploy at 3 DS3s worth of traffic).

⁹⁴⁹ Indeed, we note that competitive carriers do not have an incentive to volunteer such information in our record. The record does provide sufficient information to enable us to impose a limitation on the number of DS3 unbundled loops that a requesting carrier can obtain to any single customer location. See *infra* para. 324.

⁹⁵⁰ See AT&T Comments at 150 n.110 (citing confidential information that indicates that some of its DS3 level loop capacity is obtained from non-incumbent LEC sources).

where this deployment has occurred. Therefore, as discussed below, we delegate to the states the authority to collect and analyze more specific evidence of DS3 loop deployment on a customer location-specific basis, applying uniform national triggers that measure self-provisioning or wholesale alternative availability to determine customer locations where competitive carriers are not impaired without access to incumbent LEC unbundled DS3s.⁹⁵¹

322. If, as the incumbent LECs argue, “a small number of buildings in each metropolitan area typically account for a large fraction of the traffic,”⁹⁵² we expect that the triggers that we adopt today will provide incumbent LECs substantial relief from their unbundling obligations while simultaneously ensuring that competitive carriers get unbundled high-capacity loop access only where they are unable to economically self-deploy or use alternative facilities.⁹⁵³

323. In finding that competitive carriers are impaired without unbundled access to DS3 loops, we disagree with incumbent LECs’ claims that market evidence of DS3 deployment in certain situations demonstrates that, in *all* situations, traffic and revenue potential justify a nationwide finding of DS3 non-impairment. The limited record evidence we have of self-deployment does not permit such broad extrapolation.

324. *Limitation on Multiple Unbundled DS3 Loops.* Finally, consistent with our finding of no impairment at the OCn loop capacity level, and because the record confirms that it is economically possible to self-deploy at a three DS3 loop level to a particular customer location, we limit an incumbent LEC’s unbundling obligation to a total of two DS3s per requesting carrier to any single customer location.⁹⁵⁴ We find that as a carrier approaches customer demand for three DS3s of capacity at a particular customer location, it is feasible for that carrier to self-deploy its own high-capacity facilities. Our unbundled DS3 loop quantity

⁹⁵¹ See *infra* Part VI.A.4.b.(ii)(d) (discussing in detail the state reviews on a customer-location specific basis applying the defined Self-Provisioning Trigger and Competitive Wholesale Facilities Trigger).

⁹⁵² *BOC UNE Rebuttal Report* at 45.

⁹⁵³ One commenter indicates that 200 to 300 out of 15,000 multiunit premises in a typical Tier-I MSA generate 80% of the data revenues. *Id.* Verizon indicates a Tier I MSA is typically defined as an MSA with a population of one million or more. See Verizon Jan. 31, 2003 Special Access *Ex Parte* Letter at 13 n.62.

⁹⁵⁴ We note that our unbundled DS3 loop cap is smaller than the unbundled DS3 transport cap. See *infra* Part VI.C.4.c.(ii). The unbundled DS3 loop cap is based on record evidence indicating the feasibility of DS3 loop self-deployment at a 3 DS3 level. Indeed, AT&T’s record evidence indicates economic feasibility at about 2.75 DS3s or 77 DS1s worth of traffic. See AT&T Jan. 14, 2003 *Ex Parte* Letter at 4 (citing AT&T Nov. 25, 2002 *Ex Parte* Letter, Attach. B). Once a competitive carrier’s customer demand at a location exceeds 2 DS3 loops, the competitive carrier should plan to self-deploy DS3 capacity to that customer location. The record evidence for the self-provisioning feasibility level for DS3 transport varies, but because it generally is within a higher range than for DS3 loops, establishing the DS3 transport limit at a higher number is appropriate.

limit is location specific, maintaining consistency with our impairment conclusions about OCN capacity loop deployment,⁹⁵⁵ as well as DS3 loop deployment.

(iv) DS1 Loops

325. We find that requesting carriers generally are impaired without access to unbundled DS1 loops.⁹⁵⁶ The record contains little evidence of competitive LECs' ability to self-deploy single DS1 capacity loops⁹⁵⁷ and scant evidence of wholesale alternatives for serving customers at the DS1 level.⁹⁵⁸ Commenters expressly state that a competitive carrier would not construct its own DS1 or lower capacity loops.⁹⁵⁹ Indeed, incumbent LECs recognize a distinction between provisioning DS1 level loops and other higher capacity loops.⁹⁶⁰ The record shows that requesting carriers seeking to serve DS1 enterprise customers face extremely high economic and operational barriers in deploying DS1 loops to serve these customers.⁹⁶¹

⁹⁵⁵ We have noted that the lowest common OCN capacity standard, OC3, is equivalent to three DS3 circuits in terms of capacity. *See supra* note 931.

⁹⁵⁶ DS1 loops will be available to requesting carriers, without limitation, regardless of the technology used to provide such loops, *e.g.*, two-wire and four-wire HDSL or SHDSL, fiber optics, or radio, used by the incumbent LEC to provision such loops and regardless of the customer for which the requesting carrier will serve unless otherwise specifically indicated. *See supra* Part VI.A.4.a.(v) (discussing FTTH). The unbundling obligation associated with DS1 loops is in no way limited by the rules we adopt today with respect to hybrid loops typically used to serve mass market customers. *See supra* Part VI.A.4.a.(v)(b)(i).

⁹⁵⁷ We note that at least two competitive LECs have provided evidence that indicates that they self-provide some DS1 capacity loops to certain customer locations. *See supra* note 859. It is important to note, however, that this evidence of self-provisioning has been possible where that same carrier is already self-provisioning OCN or a 3 DS3 level of loop capacity to that same customer location. Thus, this evidence does not support the ability to self-deploy stand-alone DS1 capacity loops nor does it impact our DS1 impairment finding. *See* AT&T Comments at 150 n.10 (citing confidential information); WorldCom Slocum Decl. at paras. 3-6.

⁹⁵⁸ *See* Covad Reply at 56 (discussing no alternative DS1 capacity providers); NewSouth Comments at 13-17; NewSouth Reply at 17; WorldCom Comments at 74; AT&T Jan. 14, 2003 *Ex Parte* Letter at 2; WorldCom Oct. 30, 2002 *Ex Parte* Letter; AT&T Feb. 3, 2003 Lawson *Ex Parte* Letter at 13. The record indicates that even competitive carriers that have deployed their own loop facilities do not have the back office support systems in place that are necessary to offer any excess capacity on a wholesale basis to other competitive LECs. *See, e.g.*, KMC Duke Aff at para. 13 (discussing what systems are necessary to wholesale service to other carriers).

⁹⁵⁹ *See* AT&T Jan. 14, 2003 *Ex Parte* Letter at 3 n.5; Covad Comments at 47; Allegiance Reply at 38.

⁹⁶⁰ SBC Comments at 100-01; SBC Reply at 156 (recognizing that impairment may exist for certain DS1 loops and proposing a carve-out).

⁹⁶¹ *See supra* Part VI.A.4.b.(ii)(a) for a discussion of the economic and operational barriers to DS1 loop capacity deployment. The record indicates that many competitive carriers providing DS1 capacity loops to enterprise market customers serve the small to medium-sized segment of this market which is characterized as typically underserved by incumbent LECs. Indeed, many of these competitive LECs, which are themselves small to medium size businesses, have entered the competitive telecommunications market specifically to serve these smaller business customers requiring primarily DS1 level capacity. The DS1 loop unbundling rule we adopt today recognizes the dependency that smaller business customers and carriers have on DS1 capacity loops and accommodates those needs consistent with our impairment framework. *See also* NuVox Cadieux Jan. 24, 2003 *Ex Parte* Aff. (for general discussion of (continued....))

Customers demanding services over DS1 loops possess significantly different economic characteristics for competitive carriers than large enterprise market customers. In particular, small and medium enterprise customers served by DS1 loops provide much lower revenue opportunities than large enterprise market customers and, generally, resist long-term contract obligations.⁹⁶² These factors lead to a greater potential to change providers on a more frequent basis, *i.e.*, churn, resulting in the inability of competitive LECs to rely on a long-term DS1 revenue stream, as they can with much higher loop capacity demands. Taken together, these factors make it economically infeasible for competitive LECs to deploy DS1 loops, which require the same significant sunk and fixed construction costs as higher capacity loops.

326. While DS1 loops are typically used to serve small to medium-sized business customers associated with the enterprise market, they are also used to serve customers associated with the mass market. Although we recognize different characteristics between these two markets, *e.g.*, enterprise customers are more concentrated in urban locations, in multiunit premises, and demand greater variety and higher quality services than mass market customers, the economics of constructing DS1 loop facilities to serve these different customer classes are not significantly different. The average revenue available per customer in either of these markets is very low relative to larger enterprise market customers using higher capacity loops.⁹⁶³ While we recognize that retail business customer rates are typically higher than residential rates, the record reflects that the revenues generated from small and medium enterprise customers are not sufficient to make self-deploying DS1 loops economically feasible from a cost recovery perspective.⁹⁶⁴ As we have stated, our impairment findings rely most heavily on the economic feasibility of competitive LECs to self-deploy and recover sunk costs.⁹⁶⁵ Competitive LECs do not have the ability to recover sunk costs in self-deploying DS1 loops. Furthermore, the other economic and operational barriers faced by competitive LECs in self-deploying loops generally, *e.g.*, the inability to obtain reasonable and timely access to the customer's premises both in laying the fiber to the location and bringing it into a building thereafter,⁹⁶⁶ as well as convincing customers to accept the delays and uncertainty associated with deployment of alternative loop

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serving small to medium business customers with DS1 capacity); NuVox *et al.* Comments, attached Profiles & Affidavits; Covad Reply at 54; NewSouth Reply at 16-17; Allegiance Reply at 36-38.

⁹⁶² See, *e.g.*, NewSouth Reply at 18 (discussing the lower traffic volumes and revenue potential that can be generated from a DS1); see also TDS Jackson Aff. at para. 10.

⁹⁶³ This fact can be most easily demonstrated by simply comparing voice-grade line equivalents, *i.e.*, a single DS1 is equivalent to 24 voice-grade lines whereas 3 DS3s (the number of DS3 capacity loops where self-provisioning begins to be economically feasible) is equivalent to 2016 voice-grade equivalents.

⁹⁶⁴ See *supra* note 962.

⁹⁶⁵ See *supra* para. 206.

⁹⁶⁶ See, *e.g.*, AT&T Reply at 174-79; ALTS *et al.* Comments at 56 (discussing, generally, some of the other barriers competitive LECs face to self-deployment).

facilities exist with DS1 loop self-deployment.⁹⁶⁷ Indeed, because the ability to absorb the additional “costs” associated with these other economic and operational barriers over time becomes increasingly more difficult at lower loop capacity levels, these barriers impact the ability to self-deploy at a DS1 level to an even greater extent than at higher loop capacity levels.⁹⁶⁸

327. Because the record does not demonstrate that carriers can economically self-provision at the DS1 level, we do not delegate to the states the authority to consider DS1 loop impairment on a location-specific basis based on a self-provisioning trigger.⁹⁶⁹ On the other hand, although the record indicates little evidence of wholesale alternative DS1 loop capacity, evidence of alternative providers at the DS3 and higher capacity levels suggests that there may be specific locations where competitive carriers have deployed fiber and could offer excess capacity at the DS1 loop level. Thus, we recognize the possibility that non-incumbent LEC DS1 loop alternatives may be available now or in the near future at particular customer locations. As explained below, we delegate to the states the authority to collect and analyze more specific evidence of wholesale alternatives to DS1 loops on a customer location-specific basis, applying a uniform national trigger that measures the availability of wholesale competitive alternatives to determine customer locations where competitive carriers are not impaired without access to incumbent LEC unbundled DS1s.⁹⁷⁰

(d) Location-Specific Review Conducted By States Applying Federal Triggers

328. In making affirmative impairment findings on a nationwide basis for dark fiber loops, DS3 loops, and DS1 loops, we recognize that limited alternative deployment has occurred at particular customer locations not specified in our record for certain of these high-capacity loop types which could lead to a finding of no impairment for that loop type at that location. Thus, for these loop types, a more granular impairment analysis should be applied on a customer-by-customer location basis. To that end, we delegate to states a fact-finding role to identify where competing carriers are not impaired without unbundled high-capacity loops pursuant to two triggers. If a state commission finds that the federal triggers for a finding of non-impairment have been satisfied for a specific type of high-capacity loop at a particular customer location, the incumbent LEC will no longer be required to unbundle that loop type at that location according to the transition schedule adopted by the state commission.⁹⁷¹ Incumbent LECs must make the unbundled high-capacity loops for which we find impairment on a nationwide basis available to

⁹⁶⁷ See *supra* Part VI.A.3., Part VI.A.4.b(ii)(a) for evidence of the existence of the other operational barriers to DS1 loop capacity deployment.

⁹⁶⁸ See *supra* para. 315 (discussing the ability to absorb these costs at the OCn loop level).

⁹⁶⁹ See *infra* Part VI.A.4.b(ii)(d) (discussing in detail the state reviews on a customer-location specific basis) and para. 334 (describing why states will not apply the Self-Provisioning Trigger to DS1).

⁹⁷⁰ See *infra* Part VI.A.4.b(ii)(d) (discussing in detail the Competitive Wholesale Facilities Trigger).

⁹⁷¹ See *infra* Part VIII.D (discussing the transition process).

qualifying requesting carriers except at those customer locations where a state commission's granular review has confirmed that no impairment exists and unbundling is no longer required. In the event a state commission declines to exercise the authority we delegate to it, a party may petition this Commission to conduct such analysis.⁹⁷²

329. We establish two different types of triggers to identify the specific customer locations where there may be no impairment for the high-capacity loops we identify below and the incumbent LEC unbundling obligation can be eliminated at that customer location: 1) where a specific customer location is identified as being currently served by two or more unaffiliated competitive LECs with their own loop transmission facilities at the relevant loop capacity level (Self-Provisioning Trigger); or 2) where two or more unaffiliated competitive providers have deployed transmission facilities to the location and are offering alternative loop facilities to competitive LECs on a wholesale basis at the same capacity level (Competitive Wholesale Facilities Trigger). Although both triggers focus on whether there are two alternative loop providers at a particular customer location, they are different because the Competitive Wholesale Facilities Trigger can be satisfied by alternative loop providers that have deployed their own facilities *or* by alternative providers that are using unbundled network elements but otherwise satisfy the "wholesaling" requirement of the Competitive Wholesale Facilities Trigger. For example, unbundled dark fiber loops obtained from the incumbent LEC and activated by the alternative provider through attaching its own optronics to offer wholesale "lit" loop capacity may be used to satisfy the Competitive Wholesale Facilities Trigger to remove the unbundling obligation for DS3 and DS1 loops at a particular customer location. Unbundled dark fiber loops, however, may not be used to satisfy the Self-Provisioning Trigger. It is possible, however, that the Self-Provisioning Trigger could, in some circumstances, overlap with the Competitive Wholesale Facilities Trigger. On the other hand, the Competitive Wholesale Facilities Trigger will capture loop alternatives even where barriers have prevented competitive LECs from entirely deploying their own facilities⁹⁷³ These triggers, tailored to respond to specific record evidence demonstrating that self-deployment is economically feasible or competitive alternatives are available at particular customer locations, will identify those locations where a more granular analysis is required to overcome the finding of impairment.⁹⁷⁴

⁹⁷² See *supra* Part V.E.2 (discussing the role of the states).

⁹⁷³ See *infra* paras. 333, 340. Thus, while a particular customer location may not satisfy the Self-Provisioning trigger because one or both of the alternative providers "lights" unbundled dark fiber to self-provide loops to customers at that location, these providers could satisfy the Competitive Wholesale Facilities Trigger at that location to eliminate loop unbundling requirements.

⁹⁷⁴ We establish the number of competitors to the incumbent LEC necessary to satisfy each trigger for high-capacity loops subject to a finding of impairment at two in order to ensure that multiple competitive entry at each location is feasible. See *USTA*, 290 F.3d at 427. Limiting our high-capacity loop triggers to only one competitor runs the risk of failing to accommodate unusual circumstances unique to that single provider that may not reflect the ability of other competitors to similarly deploy. Establishing a higher number, for example three, would likely render our high-capacity loop triggers meaningless for the many customer locations where the potential aggregate customer demand would never support more than two competitive alternatives to the incumbent LEC. Moreover, establishing the trigger at too high a number could discourage competitive buildout because would-be competitive facilities-based (continued....)

330. We establish the number of competitors to the incumbent LEC necessary to satisfy each trigger for high-capacity loops subject to a finding of impairment at two in order to ensure that multiple competitive entry at each location is feasible.⁹⁷⁵ We choose a lower threshold for our high-capacity loops self-provisioning trigger than we did for the self-provisioning triggers for transport and switching (*i.e.*, two versus three) for two reasons. First, we are taking into consideration the more limited ability of the market to support multiple carriers providing their own loops to a particular location, compared to the demand available to support multiple carriers using their own self-provisioned transport and switching. Unlike both transport and switching, few customers can be served over a single loop facility, and the traffic of multiple customers is generally not aggregated over loops. Thus, establishing a higher number, for example three, would likely render our high-capacity loop triggers meaningless for the many customer locations where the potential aggregate customer demand would never support more than two facilities-based competitive alternatives to the incumbent LEC.⁹⁷⁶ Second, we are concerned that this limited demand could provide a greater disincentive to build out any alternative loops if the trigger were set at three. The more limited demand for loops means that there is a lesser likelihood that a third competitive provider would build out to a particular location. This, in turn, creates a greater disincentive for the first and second providers to build out to the location, because if the trigger were set at three, they will likely have to compete against unbundled incumbent LEC loop facilities at TELRIC-based prices for a significant period of time.

331. We choose these specific triggers because we find that: (1) evidence of actual deployment indicates barriers to entry can be overcome; and (2) the availability of competitive wholesale alternatives eliminates impairment for competitive LECs. Eliminating unbundling obligations where no impairment exists furthers the goals of the Act by ensuring that the availability of unbundled network elements at cost-based rates does not discourage the deployment of facilities by competitive LECs where such deployment is economically feasible.

(i) Self-Provisioning Trigger

332. *Trigger Defined.* Where two or more competitive LECs have self-provisioned loop transmission facilities, either intermodal⁹⁷⁷ or intramodal facilities, to a particular customer location at the loop capacity level for which the state impairment analysis is being conducted,

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providers would know that two additional competitors would have to first deploy their own facilities before unbundled loop facilities at TELRIC-based prices would no longer be available at that location.

⁹⁷⁵ See *USTA*, 290 F.3d at 427.

⁹⁷⁶ Moreover, limiting our high-capacity loop triggers to only one competitor runs the risk of failing to accommodate unusual circumstances unique to that single provider that may not reflect the ability of other competitors to similarly deploy.

⁹⁷⁷ See *supra* Part V.B.1.d.(ii) (describing intermodal alternatives generally, and factors affecting differences in the extent to which various intermodal alternatives are considered); Part VI.A.3. *supra* (describing how intermodal alternatives are considered for loops generally); paras. 308-309 *supra* (describing how intermodal alternatives are considered for enterprise market loops).

competitive LECs are not impaired without access to unbundled incumbent LEC loops at that capacity level at those particular customer locations.⁹⁷⁸ This determination involves a finding that there are two competitive LECs that have existing facilities in place serving customers at that location over the relevant loop capacity level.⁹⁷⁹ If the state commission makes a finding of no impairment based on the application of the Self-Provisioning Trigger, it is not necessary to separately apply the Competitive Wholesale Facilities Trigger.

333. *Trigger Applied.* In conducting its proceeding with respect to the Self-Provisioning Trigger, the state commission must verify that the two competitive providers identified to satisfy this trigger are unaffiliated with the incumbent LEC and each other.⁹⁸⁰ In addition, the facilities these competitors use must be their *own facilities* and not facilities owned or controlled by one of the other two providers to the premises, *i.e.*, the incumbent LEC and the other competitive provider. To be clear, a competitive LEC using the special access facilities of the incumbent LEC or the transmission facilities of the other competitive provider in the building would *not* satisfy the definition of a self-provisioning competitor for purposes of satisfying the trigger. We find, however, that when a competitive carrier has obtained dark fiber on a long-term indefeasible-right-of-use (IRU) basis, that dark fiber facility can be counted as a separate, unaffiliated facility for self-provisioning determination purposes.⁹⁸¹

334. *Special Considerations For Dark Fiber and DS1 Loops.* When applying the Self-Provisioning Trigger to eliminate an incumbent LEC's requirement to unbundle dark fiber loops at a particular customer location, the mere existence of two unaffiliated competitive providers (in addition to the incumbent LEC) that have deployed fiber to that location, *whether or not they are offering dark fiber to other carriers to serve end-user customers at that location*, will satisfy the Self-Provisioning Trigger for dark fiber loops and require a finding of no impairment at that

⁹⁷⁸ If two or more competitive LECs have been able to economically self-deploy at a particular location at the loop capacity level being considered by the state, based on information contained in the record, we determine that the barriers to self-deployment at that customer location for that loop capacity level are likely able to be similarly overcome by other competitive entrants.

⁹⁷⁹ For example in applying the Self-Provisioning Trigger to DS3 loops, the state commission must determine that two or more competitive LECs provide DS3 loops *over their own facilities* to customers at that particular customer location.

⁹⁸⁰ We use the term affiliated and affiliate as the Act defines "affiliate." Section 3 of the Act defines the term "affiliate" as "a person that (directly or indirectly) owns or controls, is owned or controlled by, or is under common ownership or control with, another person. For purposes of this paragraph, the term 'own' means to own an equity interest (or the equivalent thereof) of more than 10 percent." 47 U.S.C. § 153(1).

⁹⁸¹ For purposes of the "own facilities" prong of the Self-Provisioning Trigger, a competitive carrier that has obtained dark fiber transmission facilities from the incumbent LEC on a long-term IRU basis will be considered to operate its own unaffiliated facilities. We believe that dark fiber IRU type contracts protect against short-term gaming by the incumbent LEC. Moreover, we do not want to foreclose incumbent LECs from negotiating long term dark fiber leases with competitive LECs. To be clear, however, because we want to be certain of the independent ownership of the loop transmission facilities, we find that loop transmission facilities transferred on an IRU basis is limited only to dark fiber and does not include "lit" fiber IRUs obtained from the incumbent LEC or the other provider.

location. Therefore, we do not apply a wholesale trigger to unbundled dark fiber loops because such trigger would necessarily overlap with the Self-Provisioning Trigger.⁹⁸² Because there is little record evidence demonstrating that carriers construct facilities to serve customers exclusively at the DS1 level, as well as the lack of economic evidence showing such self-deployment is possible, the Self-Provisioning Trigger *will not* be applied to DS1 loops.

335. *State Analytical Flexibility.* In applying the Self-Provisioning Trigger to high-capacity loops, we find that actual competitive deployment is the best indicator that requesting carriers are not impaired, and therefore emphasize that this quantitative trigger is the primary vehicle through which non-impairment findings will be made. We recognize, however, that this high-capacity loop trigger measures only the existence of *actual* deployed competitive alternatives at a customer location rather than whether that particular customer location *could* be economically served by competitive carriers through deployment of alternative loop transmission facilities. Thus, when conducting its customer location specific analyses, a state must consider and may also find no impairment at a particular customer location even when this trigger has not been facially met *if* the state commission finds that no material economic or operational barriers at a customer location preclude competitive LECs from economically deploying loop transmission facilities to that particular customer location at the relevant loop capacity level. In making a determination that competitive LECs *could* economically deploy loop transmission facilities at that location at the relevant capacity level, the state commission must consider various factors affecting the ability to economically deploy at that particular customer location. These factors include: evidence of alternative loop deployment at that location; local engineering costs of building and utilizing transmission facilities; the cost of underground or aerial laying of fiber or copper; the cost of equipment needed for transmission; installation and other necessary costs involved in setting up service; local topography such as hills and rivers; availability of reasonable access to rights-of-way; building access restrictions/costs; availability/feasibility of similar quality/reliability alternative transmission technologies at that particular location.

336. In other circumstances, by contrast, state commissions may believe notwithstanding satisfaction of this trigger for a particular customer location, that continued access to unbundled loops at the capacity level under analysis should be maintained at the customer location because impairment, in fact, remains due to the existence of a barrier to further competitive facilities deployment at that location. An example of such a situation might be where a municipality has imposed a long-term moratorium on granting additional rights-of way permits along the routes necessary to serve the particular customer location.⁹⁸³ In these circumstances, a state commission may file a petition for waiver with the Commission to maintain the incumbent LEC's unbundling obligation at that location until the barrier identified in the waiver petition no longer exists.

⁹⁸² Because dark fiber loops are not typically retail offerings like "lit" loops, it is necessary to modify somewhat the application of the Self-Provisioning Trigger for dark fiber loops to ensure that the granular state analyses include all those locations where at least two alternative carriers to the incumbent LEC have deployed fiber.

⁹⁸³ This example is provided for illustrative purposes only and is not meant to be exclusive or dispositive.

(ii) Competitive Wholesale Facilities Trigger

337. *Trigger Defined.* Where competitive LECs have two alternative choices (apart from the incumbent LEC's network) to purchase wholesale high-capacity loops, including intermodal alternatives, at a particular premises, we conclude that impairment does not exist at that location for that type of high-capacity loop.⁹⁸⁴ Specifically, where the relevant state commission determines that two or more unaffiliated alternative providers, including alternative transmission technology providers that offer an equivalent wholesale loop product at a comparable level of capacity, quality, and reliability, have access to the entire multiunit customer premises, and offer the specific type of high-capacity loop over their own facilities on a widely available wholesale basis to other carriers desiring to serve customers at that location, then incumbent LEC loops at the same loop capacity level serving that particular building will no longer be unbundled.⁹⁸⁵ Similar to including dark fiber IRUs as facilities that satisfy the "own facilities" prong of the Self-Provisioning Trigger,⁹⁸⁶ dark fiber IRUs also satisfy the "own facilities" prong of the Competitive Wholesale Facilities Trigger. Furthermore, in addition to dark fiber IRUs, we also include the use of dark fiber obtained on any other lease/purchase basis, *including obtaining it from the incumbent LEC on an unbundled basis*,⁹⁸⁷ as long as the alternative provider has attached its own optronics to "light" the dark fiber in order to make "lit" fiber loops available to competitive LECs on a wholesale basis.⁹⁸⁸

338. *Trigger Applied.* In evaluating the two competitive wholesale loop providers, states should not undertake a financial viability analysis with respect to each provider. However, there should be some reasonable expectation that these providers are operationally capable of

⁹⁸⁴ For example, in applying the Competitive Wholesale Facilities Trigger to DS3 loops, the state must find that two alternative providers to the incumbent LEC offer wholesale DS3 loops to competitive LECs at that particular customer location.

⁹⁸⁵ While the record indicates little evidence of wholesale DS1 loop capacity presently, evidence of some alternative providers at the DS3 and higher capacity levels suggests that there may be specific locations where competitive carriers have deployed fiber and might offer unused capacity at the DS1 loop level. Because we expect our loop unbundling rules to encourage greater facilities-based deployment where it is economically feasible, it is not unreasonable to accommodate the possibility that non-incumbent LEC DS1 loop alternatives may be available now or in the near future at particular customer locations. By accommodating this possibility in the trigger mechanism we craft today, we seek to ensure that our DS1 loop unbundling rules are not in conflict with *USTA*.

⁹⁸⁶ See *supra* note 981.

⁹⁸⁷ By counting wholesale loop offerings over dark fiber UNEs, an incumbent LEC could be relieved of its unbundling obligation at a specific loop capacity level at certain customer locations even where no other "alternative" fiber has been deployed, but where alternatives to incumbent LEC unbundled "lit" loops are nevertheless available.

⁹⁸⁸ Similarly, as we determine in our dark fiber transport requirements, when applying this trigger to dark fiber loop impairment, the state may ensure that dark fiber wholesalers have sufficient quantity of dark fiber available. See *infra* para. 416.

continuing to provide wholesale loop capacity to that customer location.⁹⁸⁹ We recognize that, while the record indicates that there are presently a limited number of alternative wholesale loop providers serving multiunit premises, we anticipate that a competitive wholesale market will continue to develop, particularly where competitive LECs have already deployed fiber and seek to derive revenue from excess capacity. We expect this granular trigger to encourage alternative high-capacity transmission providers to deploy more facilities and offer them on a wholesale basis, creating a more robust competitive market for high-capacity loop facilities to many areas nationwide.

(iii) State Action Under Both Triggers

339. We expect states to complete their initial reviews applying the triggers and other analysis discussed above within nine months from the effective date of this Order. Unbundled DS1, DS3, and dark fiber loops will remain available to all customer locations until the state commission determines that unbundled loops at particular capacities serving specific customer locations are no longer required. States that conduct this review need only address specific customer locations for which there is relevant evidence in the proceeding that the customer location satisfies one of the triggers or the potential deployment analysis specified in this Part.⁹⁹⁰ To the extent that a state commission does not complete its proceedings in this nine month period,⁹⁹¹ aggrieved parties may file a petition with this Commission demonstrating a state's failure to act pursuant to the procedures we outline today.⁹⁹² We expect that states will require an appropriate period for competitive LECs to transition from any unbundled loops that the state finds should no longer be unbundled.

340. After completion of their initial reviews, we expect state commissions to conduct further granular reviews, pursuant to the procedures the state commissions adopt, to identify additional customer locations that satisfy the triggers. Such proceedings shall be completed

⁹⁸⁹ We note that carriers operating under chapter 11 bankruptcy are still capable of providing service while they reorganize their operations. Relatedly, in the case of a chapter 7 liquidation, the physical transmission facility assets of a competitive provider will continue to exist at that location as the purchaser of those assets will likely provide similar wholesale service or use such facilities to self-provide retail service. Under either scenario, the triggers which resulted in a finding of no impairment at that location will continue to be met. *See infra* Part VI.C.4. (discussing similar financial viability issues with respect to wholesale transport providers).

⁹⁹⁰ *See supra* para. 335.

⁹⁹¹ By "complete," we mean that a state commission, upon receiving sufficient evidence, has an affirmative obligation to review the relevant evidence associated with any customer location submitted by an interested party, and to apply the trigger and any other analysis specified in this Part to such evidence.

⁹⁹² As discussed above, if a state fails to act, we set forth procedures for the Commission to step into the role of the state. *See supra* Part V.E. (discussing the role of the states).

within six months of the filing of a petition or other pleading submitted in accordance with the prescribed state commission procedures.⁹⁹³

(e) **Other Loop Unbundling Proposals.**

341. Commenters have proposed various alternatives to the method we have adopted herein for conducting our loop impairment analysis and reaching our resulting conclusions. To the extent the methods we use and the conclusions we reach differ from those proposed, we expressly decline to incorporate them herein. We note, however, that we agree with the proposals of SBC and other commenters that the Commission distinguish among loop types and make capacity-based distinctions. The analysis we have undertaken has, indeed, distinguished not only among the various loop capacities, *e.g.*, DS0, DS3, OCn, but also the type of loop technology where appropriate, *e.g.*, “lit” fiber, dark fiber, copper, as well as the customer market class typically served by such loops. Through our approach, we recognize the different economic characteristics of serving customers demanding services provided over different loop capacity levels, eliminating or limiting unbundling obligations accordingly.⁹⁹⁴ We disagree with SBC,⁹⁹⁵ Verizon,⁹⁹⁶ and BellSouth⁹⁹⁷ to the extent each proposes that we base our loop unbundling analyses and conclusions consistent with our special access pricing flexibility rules.⁹⁹⁸ Evidence of competitive LECs’ ability to self-deploy local loop facilities or have wholesale non-incumbent LEC alternative loop facilities available to them is the proper inquiry in our loop impairment analysis. This analysis serves a host of statutory goals beyond the goal of the *Pricing Flexibility Order*, which is limited to protecting consumers from anticompetitive pricing. While each of

⁹⁹³ Subsequent to the initial review, states have the flexibility to adopt reasonable and timely procedures for the periodic collection and evaluation of evidence indicating the satisfaction of the loop triggers at additional customer locations to remove unbundling obligations. For example, a state may decide to include self-reporting information regarding alternative loop deployment in an annual or semi-annual report, either as an independent obligation or as part of the competitive carriers’ periodic filing obligations. Alternatively, a state may decide to accept evidence of alternative deployment through petitions filed during prescribed filing windows or through rulemaking proceedings. Regardless of the procedures adopted, however, states that conduct further reviews must complete their evaluation of the evidence and reach a determination within six months of the filing of a petition or other pleading filed pursuant to the state procedures.

⁹⁹⁴ As we have noted above, we expect that the triggers that we adopt today for use by the states will provide incumbent LECs substantial relief from their unbundling obligations while simultaneously ensuring that competitive carriers get unbundled high-capacity loop access only where they are unable to economically self-deploy or use alternative facilities. *See supra* para. 322.

⁹⁹⁵ *See, e.g.*, SBC Comments at 101 (proposing a DS1 trigger at two or more fiber-based collocators, serving 15,000+ business lines, and \$150,000 or more per month in special access revenues and no unbundling at all above the DS1 level).

⁹⁹⁶ *See, e.g.*, Verizon Comments at 119-20 (proposing, generally, the elimination of high-capacity loop unbundling where the incumbent LEC has obtained pricing flexibility for special access circuits).

⁹⁹⁷ *See, e.g.*, BellSouth Comments at 67 n.240 (stating it makes no sense to find impairment where BellSouth has obtained pricing flexibility for special access circuits).

⁹⁹⁸ *See Pricing Flexibility Order*, 14 FCC Rcd at 14221.

these pricing flexibility proposals vary somewhat, they are consistent in arguing that wherever and whenever incumbent LECs have received pricing flexibility for special access services, unbundled high-capacity loops, to some degree, should not be required.⁹⁹⁹ Incumbent LECs have received special access pricing flexibility in numerous MSAs throughout their regions, based almost exclusively on meeting the *Pricing Flexibility Order's* triggers based on special access revenues.¹⁰⁰⁰ As we note below in our transport unbundling analysis, because the special access revenue triggers require only a single collocated competitor to purchase substantial amounts of special access in a concentrated area, this test provides little, if any, indication that even that competitor has been able to widely, if at all, self-deploy alternative loop facilities in that area.¹⁰⁰¹ Evidence of self-deployment of transport facilities is not necessarily evidence of the economic ability of a competitive LEC to self-deploy loops. Moreover, the presence of a single competitive LEC's collocated transport facility as a trigger for purposes of protecting consumers from anticompetitive pricing, *i.e.*, the purpose of our pricing flexibility rules, is not sufficient evidence that facilities-based competitive entry into a market at the local loop level is economically feasible. Under a special access pricing flexibility trigger, such as suggested by incumbent LECs, DS1 loops would no longer be unbundled in many large geographic areas nationwide. This conclusion would clearly contravene our unbundling mandate due to the pervasive competitive LEC impairment at the DS1 loop level resulting from an economic inability to self-deploy and limited available wholesale alternatives. Similarly, we reject geographic zone distinctions for analyzing impairment for high-capacity local loops.¹⁰⁰² Like we find in rejecting a pricing flexibility approach, the record simply does not contain evidence that loop impairment/non-impairment determinations can be appropriately made on a zone basis due

⁹⁹⁹ Phase I pricing flexibility related to special access revenue is triggered on an MSA basis when wire centers accounting for at least 30% of (non-channel termination) special access revenues have at least one competitor that has collocated using non-incumbent transport. Phase II pricing flexibility related to special access revenues is triggered on an MSA basis when wire centers accounting for at least 65% of (non-channel termination) special access revenues have at least one competitor that has collocated using non-incumbent transport.

¹⁰⁰⁰ See Letter from Jake E. Jennings, NewSouth, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98 at 2 (filed Dec. 12, 2002) (NewSouth Dec. 12, 2002 *Ex Parte* Letter) (describing details of where and how BellSouth has received special access pricing flexibility); see also BellSouth Oct. 15, 2002 Transport and Loop *Ex Parte* Letter, Attach. at 5 (stating that BellSouth has received Phase I and Phase II special access pricing flexibility in 100% of its national top 150 MSAs); Verizon Dec. 17, 2002 *Ex Parte* Letter at 7 (stating that Verizon has pricing flexibility in 37% of its wire centers); Letter from Cronan O'Connell, Vice President – Federal Regulatory, Qwest, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147, Attach. at 5 (filed Oct. 11, 2002) (Qwest Oct. 11, 2002 Transport *Ex Parte* Letter) (stating that Qwest has been granted pricing flexibility in 33 of its 45 MSAs, many of which are not national top 100 MSAs).

¹⁰⁰¹ Covad Reply at 57-58 (arguing SBC's proposal of two or more fiber-based collocators is no indication that competitive networks serve any more than a limited number of buildings in the area, much less the wire center's entire service area).

¹⁰⁰² Incumbent LECs argue that the Commission should consider geographic distinctions, such as MSAs or even individual wire centers, for some or all UNEs, where there are differing levels of alternatives. See, *e.g.*, BellSouth Reply at 11-12 (arguing that the appropriate geographic market for the impairment analysis is the MSA). Competitive carriers, however, argue that there is no geographic area or market anywhere in the United States today where a geographic consideration would find no-impairment for any UNE. See, *e.g.*, NuVox *et al.* Comments at 53.

to the location-specific factors which impact impairment determinations at most high-capacity loop levels.

342. Finally, several commenters argue that the Commission should remove or modify its unbundling obligations for incumbent LECs based on evidence of adequate incumbent LEC performance in provisioning network elements.¹⁰⁰³ These parties argue that incumbent LECs should be required to demonstrate certain levels of compliance with existing unbundling performance measurements, such as section 271 performance metrics, for a commercially reasonable period of time prior to any removal of an unbundling obligation.¹⁰⁰⁴ Commenters suggest such a rule would provide incentives to incumbent LECs to comply with their performance obligations.¹⁰⁰⁵ The record, however, does not reveal that incumbent LEC performance has a significant, if any, direct relationship to the ability of competitive LECs to economically self-deploy local loops. Rather, the record demonstrates that competitive LEC deployment is primarily driven by general economic considerations. While these economic considerations are influenced by factors which the incumbent LEC did not, or does not, similarly face, *i.e.*, its historical ability to maximize scale economies and benefit from first-mover advantages, these factors are not so related to performance measurement compliance that consideration of such compliance would inform our impairment analysis.

B. Subloops For Multiunit Premises Access and NIDs

1. Background

343. In the *Triennial Review NPRM*,¹⁰⁰⁶ the Commission sought comment on whether it should maintain unbundling requirements for subloops¹⁰⁰⁷ and NIDs.¹⁰⁰⁸ A subloop is a smaller included segment of an incumbent LEC's local loop plant, *i.e.*, a portion of the loop from some

¹⁰⁰³ See, e.g., CompTel Comments at 86-87; NARUC Comments at 10.

¹⁰⁰⁴ See, e.g., CompTel Comments at 86-87; Maine CLEC Coalition Comments at 5-7; see also Pennsylvania Commissioner Wilson Comments at 8 (arguing that although the Commission should not remove unbundling obligations based on UNE or special access performance data, the states should have the authority to do so).

¹⁰⁰⁵ *Id.*

¹⁰⁰⁶ *Triennial Review NPRM*, 16 FCC Rcd at 22803, para. 48.

¹⁰⁰⁷ Subloops were first included in the list of specific UNEs in the *UNE Remand Order* as a means of providing competitive carriers "maximum flexibility to interconnect their own facilities" to various accessible points within the incumbent LEC's outside loop plant closer to a customer's premises. Subloops were defined as "any portion of the loop that is technically feasible to access at terminals in the incumbent LEC's outside plant, including inside wire." *UNE Remand Order*, 15 FCC Rcd at 3801, para. 234; see also 47 C.F.R. § 51.319(a)(2).

¹⁰⁰⁸ NIDs were included in the initial set of UNEs and defined as "a cross-connect device used to connect loop facilities to inside wiring." *Local Competition Order*, 11 FCC Rcd at 15697, para. 392. The Commission later modified the definition of a NID to be more flexible and technology neutral, recognizing that its rules enabled methods other than just a cross-connect device for interconnecting customer premises wiring with the incumbent LEC's loop distribution plant. *UNE Remand Order*, 15 FCC Rcd at 3790, para. 207; see also 47 C.F.R. § 51.319(b).

conversion.¹⁹⁶² Competitors have commented broadly that no termination liabilities should apply to any conversions from special access to UNEs.¹⁹⁶³ While much of their focus appears directed toward those penalties triggered by long-term contracts, including stand-alone loop facilities, we are not persuaded to grant them relief from termination liabilities for special construction.¹⁹⁶⁴

VIII. REMAINING ISSUES

A. Section 271 Issues

1. Background

649. As detailed above, section 251 of the Act is the source of incumbent LECs' unbundling obligations. Section 251(c)(3) requires all incumbent LECs (including BOCs) to provide "nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory."¹⁹⁶⁵ Section 251(d)(2) directs the Commission to determine whether access to particular proprietary elements is *necessary* and whether the unavailability of non-proprietary elements would *impair* a competitor's ability to provision service.¹⁹⁶⁶ These section 251 obligations are referenced and incorporated as obligations of BOCs under section 271(c)(2)(B)(ii) of the Act.¹⁹⁶⁷

650. Section 271 establishes both the procedures by which a BOC may apply to provide interLATA services in one of its in-region states and the substantive standards by which that application must be judged. In particular, section 271(c)(2)(B) of the Act specifies the "competitive checklist" of access and interconnection requirements that BOCs must meet before

¹⁹⁶² Accordingly, the incumbent LEC concerns about lack of compensation are misplaced. *See, e.g.*, Qwest Comments at 40 ("Qwest agrees to undertake this construction only because the CMRS providers promised to compensate Qwest the tariffed price for these circuits. Qwest would not have constructed, nor would it have been obligated under the Commission's rules to construct, the circuits at the non-compensatory rates demanded by the CMRS providers.") (citations omitted).

¹⁹⁶³ *See, e.g.*, NuVox *et al.* Reply at 52 ("As part of this [fresh look] proposal, all special access circuits (whether equivalent to standalone UNEs, EELs or some other UNE combination) should be subject to conversion without termination penalties or imposition of nonrecurring charges other than a cost-based conversion charge designed exclusively to recover administrative expenses associated with converting associated billing from special access to UNE billing."); ALTS *et al.* Comments at 103 ("Furthermore, the FCC should mandate that no termination liability charges are to be assessed to CLECs converting circuits to UNE pricing.")

¹⁹⁶⁴ We address the specific issue of granting "fresh look" relief for conversions of EELs ordered during the vacatur of the Commission's combination rules in Part VIII.C. below.

¹⁹⁶⁵ 47 U.S.C. § 251(c)(3).

¹⁹⁶⁶ *Id.* § 252(d)(2). We note that to the extent an incumbent LEC is providing network elements pursuant to section 251(c)(3), section 252(d)(1) further requires that it provide such elements at rates that are nondiscriminatory and cost-based. *Id.* § 252(d)(1).

¹⁹⁶⁷ *Id.* § 271(c)(2)(B)(ii).

they are allowed to offer in-region long-distance services.¹⁹⁶⁸ Four of these checklist items relate to network elements in earlier orders the Commission has deemed to be UNEs under the standards of section 251(c)(3). In particular, checklist items 4 through 6 and 10 require: “[l]ocal loop transmission from the central office to the customer’s premises, unbundled from local switching or other services;”¹⁹⁶⁹ “[l]ocal transport from the trunk side of a wireline local exchange carrier switch unbundled from switching or other services;”¹⁹⁷⁰ “[l]ocal switching unbundled from transport, local loop transmission, or other services,”¹⁹⁷¹ and “[n]ondiscriminatory access to databases and associated signaling necessary for call routing and completion.”¹⁹⁷²

651. In the *Triennial Review NPRM*, the Commission sought comment on how the access requirements specified in the section 271 competitive checklist relate to the unbundling requirements derived from sections 251(c)(3) and 251(d)(2). The Commission first noted its conclusion in the *UNE Remand Order* that BOCs must continue to provide access to those network elements described in checklist items 4-6 and 10, even if such access is not mandated under section 251 (and checklist item 2).¹⁹⁷³ The Commission also concluded, in that Order, that market prices should be permitted to prevail for such network elements, rather than requiring forward-looking prices.¹⁹⁷⁴ The *Triennial Review NPRM* sought additional comment on these conclusions, on “how to evaluate a checklist item where there is no unbundling requirement for the network element that corresponds to that checklist item, and on the appropriateness of evaluating a tariffed service that corresponds to that network element.”¹⁹⁷⁵

652. Some commenters seek to alter the Commission’s determination in the *UNE Remand Order* that section 271 establishes a separate BOC access obligation for network elements no longer listed under section 251(c)(3) and its conclusion that the marketplace, rather than our TELRIC methodology, should determine the price for delisted network elements under section 271. For example, Verizon argues that once the Commission has determined that a network element is not necessary under section 251(d)(2), the corresponding checklist item

¹⁹⁶⁸ *Id.* § 271(c)(2)(B).

¹⁹⁶⁹ *Id.* § 271(c)(2)(B)(iv).

¹⁹⁷⁰ *Id.* § 271(c)(2)(B)(v).

¹⁹⁷¹ *Id.* § 271(c)(2)(B)(vi).

¹⁹⁷² *Id.* § 271(c)(2)(B)(x).

¹⁹⁷³ We note that section 271(c)(2)(B)(ii)’s requirement that BOCs provide nondiscriminatory access to network elements is referred to herein as checklist item 2.

¹⁹⁷⁴ *UNE Remand Order*, 15 FCC Rcd at 3906, para. 473, *see also Triennial Review NPRM*, 16 FCC Rcd at 22814, para. 72.

¹⁹⁷⁵ *Triennial Review NPRM*, 16 FCC Rcd at 22814, para. 72; *see also Bell Atlantic New York 271 Order*, 15 FCC Rcd at 4126-27, para. 340.

should be construed as being satisfied.¹⁹⁷⁶ Several competitive carriers counter that section 271 requires BOCs to provide access to loops, switching, transport, and signaling regardless of impairment under section 251.¹⁹⁷⁷ Z-Tel further argues that competitors are entitled to access to loops, switching, transport, and signaling at TELRIC rates, even if the Commission were to remove these items from the list of UNEs under section 251.¹⁹⁷⁸ For the reasons outlined below, we reaffirm that BOCs have an independent obligation, under section 271(c)(2)(B), to provide access to certain network elements that are no longer subject to unbundling under section 251, and to do so at just and reasonable rates.

2. Discussion

653. *Independent Access Obligation.* For reasons set forth below, we continue to believe that the requirements of section 271(c)(2)(B) establish an independent obligation for BOCs to provide access to loops, switching, transport, and signaling regardless of any unbundling analysis under section 251.

654. First, the plain language and the structure of section 271(c)(2)(B) establish that BOCs have an independent and ongoing access obligation under section 271. Checklist item 2 requires compliance with the general unbundling obligations of section 251(c)(3) and of section 251(d)(2) which cross-references section 251(c)(3).¹⁹⁷⁹ Checklist items 4, 5, 6, and 10 separately impose access requirements regarding loop, transport, switching, and signaling,¹⁹⁸⁰ without mentioning section 251. Had Congress intended to have these later checklist items subject to section 251, it would have explicitly done so as it did in checklist item 2.¹⁹⁸¹ Moreover, were we to conclude otherwise, we would necessarily render checklist items 4, 5, 6, and 10 entirely redundant and duplicative of checklist item 2 and thus violate one of the enduring tenets of

¹⁹⁷⁶ Verizon Comments at 66-67. Verizon argues, in the alternative, that the Commission should forbear from applying checklist items (4) through (6) and (10) "once the corresponding elements no longer need to be unbundled under section 251(d)(2)." Verizon Petition for Forbearance of the Verizon Telephone Companies Pursuant to Section 160(c), CC Docket 01-338 at 3 (filed July 29, 2002). We do not address Verizon's forbearance petition in this *Triennial Review* proceeding. Rather, we will address the petition separately consistent with the procedures outlined in section 10 of the Act.

¹⁹⁷⁷ ALTS *et al.* Comments at 117-18; NuVox *et al.* Comments at 115-16; CompTel Comments at 20; UNE-P Coalition Comments at 17; Z-Tel Comments at 4-15.

¹⁹⁷⁸ Z-Tel Comments at 7; *see also* UNE-P Coalition Reply at 37 (noting that the "Coalition agrees with Z-Tel . . .").

¹⁹⁷⁹ *See* 47 U.S.C. § 271(c)(2)(B)(ii).

¹⁹⁸⁰ *See* 47 U.S.C. § 271(c)(2)(B)(iv), (v), (vi), (x).

¹⁹⁸¹ *Bates v. U.S.*, 522 U.S. 23, 29-30 (1997) (stating that "[w]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.") (internal quotation marks omitted). As such, our decision is entitled to deference because the interpretation involves matters about which the Act is silent. *Chevron*, 467 U.S. at 843.

statutory construction: to give effect, if possible, to every clause and word of a statute.¹⁹⁸² Verizon asserts that an interpretation of the Act that recognizes the independence of sections 271 and 251(d)(2) places these sections in conflict with each other.¹⁹⁸³ We disagree. Verizon's reading of section 271 would provide no reason for Congress to have enacted items 4, 5, 6, and 10 of the checklist because checklist item 2 would have sufficed.

655. Second, it is reasonable to interpret section 251 and 271 as operating independently. Section 251, by its own terms, applies to *all* incumbent LECs, and section 271 applies only to BOCs, a subset of incumbent LECs.¹⁹⁸⁴ In fact, section 271 places specific requirements on BOCs that were not listed in section 251. These additional requirements reflect Congress' concern, repeatedly recognized by the Commission and courts, with balancing the BOCs' entry into the long distance market with increased presence of competitors in the local market.¹⁹⁸⁵ Before the 1996 Act's passage, the BOCs, the local progeny of the once-integrated Bell system, were barred by the terms of the MFJ from entering certain lines of business, including providing interLATA services.¹⁹⁸⁶ The ban on BOC provision of long distance services was based on the MFJ court's determination that such a restriction was "clearly necessary to preserve free competition in the interexchange market."¹⁹⁸⁷ The protection of the interexchange market is reflected in the fact that section 271 primarily places in each BOC's hands the ability to determine if and when it will enter the long distance market. If the BOC is unwilling to open its local telecommunications markets to competition or apply for relief, the interexchange market remains protected because the BOC will not receive section 271 authorization. The same historical underpinning, however, is not relevant to section 251, which is a mandatory provision designed to ensure a minimum level of openness in the local market. Therefore, we reject Verizon's claim that any interpretation of section 271 that recognizes its independence from section 251 would improperly single out BOCs for treatment different from other incumbent LECs.¹⁹⁸⁸ As explained above, recognizing an independent obligation on BOCs under section

¹⁹⁸² See *United States v. Menasche*, 348 U.S. 528, 538-39 (1955).

¹⁹⁸³ Verizon Comments at 67; Verizon Reply at 54-55.

¹⁹⁸⁴ This fact alone demonstrates that section 271 is not dependent on section 251 because a more limited set of carriers was made subject to the demands of section 271. It is consistent with norms of statutory construction that section 251 as a general statutory provision does not control the more specific section 271. See *Gozlon-Peretz v. United States*, 498 U.S. 395 (1991) (a specific provision controls over one of a more general application).

¹⁹⁸⁵ Section 271 is the direct progeny of the Modification of Final Judgment (MFJ) that contained the terms of the settlement of the Department of Justice's antitrust suit against AT&T. See *United States v. Western Elec. Co.*, 552 F. Supp. 131 (D.D.C. 1982), *aff'd sub nom., Maryland v. United States*, 460 U.S. 1001 (1983). The MFJ sought to avoid the emergence of an unregulated telecommunications monopoly by imposing specific line-of-business restrictions that explicitly barred the BOCs from providing service for calls that occurred between LATAs. Although the Telecommunications Act of 1996 generally superseded the MFJ, section 271 conditionally continued the interLATA line-of-business restriction in the form of the competitive checklist.

¹⁹⁸⁶ The MFJ contained the terms of the settlement of the Department of Justice's antitrust suit against AT&T. See *id.*

¹⁹⁸⁷ *Id.* at 188.

271 would by no means be inconsistent with the structure of the statute. Section 271 was written for the very purpose of establishing specific conditions of entry into the long distance that are unique to the BOCs. As such, BOC obligations under section 271 are not necessarily relieved based on any determination we make under the section 251 unbundling analysis.¹⁹⁸⁹

656. *Prices, Terms and Conditions.* It is a different question, however, as to what pricing standard applies to network elements that are unbundled by BOCs solely because of the requirements set forth in section 271. Where there is no impairment under section 251 and a network element is no longer subject to unbundling, we look to section 271 and elsewhere in the Act to determine the proper standard for evaluating the terms, conditions, and pricing under which a BOC must provide the checklist network elements. Contrary to the claims of some commenters, TELRIC pricing for checklist network elements that have been removed from the list of section 251 UNEs is neither mandated by statute nor necessary to protect the public interest. Rather, Congress established a pricing standard under section 252 for network elements unbundled pursuant to section 251 *where impairment is found to exist*. Here, however, we are discussing the appropriate pricing standard for these network elements where there is no impairment. Under the no impairment scenario, section 271 requires these elements to be unbundled, but not using the statutorily mandated rate under section 252. As set forth below, we find that the appropriate inquiry for network elements required only under section 271 is to assess whether they are priced on a just, reasonable and not unreasonably discriminatory basis – the standards set forth in sections 201 and 202.¹⁹⁹⁰

657. By their own terms, neither section 252(d)(1) nor section 271(c)(2)(B) requires that the section 252(d)(1) pricing standard be applied to checklist network elements. Section 252(d)(1) provides the pricing standard “for network elements for purposes of [section 251(c)(3)],”¹⁹⁹¹ and does not, by its terms, apply to network elements that are required only under section 271. Indeed, section 252(d)(1) is quite specific that it only applies for the purposes of implementation of section 251(c)(3) – meaning only where there has been a finding of impairment with regard to a given network element. Moreover, as noted above, while checklist item 2 provides that a BOC must provide access to UNEs “in accordance with the requirements of sections 251(c)(3) and 252(d)(1),” the checklist items establishing the specific, separate network element obligations do not contain this language. We disagree with Z-Tel’s argument that the cross-reference in checklist item 2 should be read into the later checklist items, and is

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¹⁹⁸⁸ Verizon Comments at 67; Verizon Reply at 54-55.

¹⁹⁸⁹ We decline to require BOCs, pursuant to section 271, to combine network elements that no longer are required to be unbundled under section 251. Unlike section 251(c)(3), items 4-6 and 10 of section 271’s competitive checklist contain no mention of “combining” and, as noted above, do not refer back to the combination requirement set forth in section 251(c)(3).

¹⁹⁹⁰ 47 U.S.C. §§ 201, 202.

¹⁹⁹¹ *Id.* § 252(d)(1).

implicit in them.¹⁹⁹² Reading this language into these provisions would change their plain meaning, and Z-Tel offers no indication that this is what Congress intended. Moreover, we reject Z-Tel's argument that the cross-references were omitted simply to conserve space or to avoid repetition.¹⁹⁹³ To the contrary, we find Congress' decision to omit cross-references particularly meaningful in this instance: half of the checklist items contain explicit cross-references to other statutory provisions, and it is reasonable to conclude that Congress would have inserted a cross-reference into items 4-6 and 10 had that been its intention.

658. We also decline to use section 271, as suggested by Z-Tel, to broaden the unbundling obligations of section 251. Z-Tel notes that section 251(d)(2) directs the Commission to consider "impair[ment]" "at a minimum" in determining which network elements must be unbundled, and thus argues that the Commission may require unbundling pursuant to section 251 and 252 even in the absence of an impairment finding.¹⁹⁹⁴ In analyzing section 252(d)(2) the D.C. Circuit in *USTA* determined that the "at a minimum" language potentially could justify the imposition of unbundling obligations under that provision even in the "absence" of impairment.¹⁹⁹⁵ However, the *USTA* decision contained key limitations to the exercise of such authority. In order to apply the "at a minimum" language in the absence of impairment, the *USTA* court required that the Commission "point to something a bit more concrete than its belief in the beneficence of the widest unbundling possible."¹⁹⁹⁶ Were we to accept Z-Tel's argument, we would again impose a virtually unlimited standard to unbundling, based on little more than faith that more unbundling is better, regardless of context. Checklist items 4 through 6 and 10 do not require us to impose unbundling pursuant to section 251(d)(2). Rather, the checklist independently imposes unbundling obligations, but simply does so with less rigid accompanying conditions.

659. In interpreting section 271(c)(2)(B), we are guided by the familiar rule of statutory construction that, where possible, provisions of a statute should be read so as not to create a conflict.¹⁹⁹⁷ So if, for example, pursuant to section 251, competitive entrants are found not to be "impaired" without access to unbundled switching at TELRIC rates, the question becomes whether BOCs are required to provide unbundled switching at TELRIC rates pursuant to section 271(c)(2)(B)(vi). In order to read the provisions so as not to create a conflict, we conclude that section 271 requires BOCs to provide unbundled access to elements not required to be unbundled under section 251, but does not require TELRIC pricing. This interpretation allows us to reconcile the interrelated terms of the Act so that one provision (section 271) does not

¹⁹⁹² Letter from Christopher J. Wright, Counsel for Z-Tel, to Marlene H. Dortch, Secretary, FCC, CC Docket 01-338 at 11 (filed Dec. 20, 2002) (Z-Tel Dec. 20, 2002 *Ex Parte* Letter).

¹⁹⁹³ Z-Tel Dec. 20, 2002 *Ex Parte* Letter at 11.

¹⁹⁹⁴ Z-Tel Comments at 17.

¹⁹⁹⁵ *USTA*, 290 F.3d at 425.

¹⁹⁹⁶ *Id.*

¹⁹⁹⁷ See *Washington Market Co. v. Hoffman*, 101 U.S. 112 (1879).

gratuitously reimpose the very same requirements that another provision (section 251) has eliminated.

660. We reject arguments by Z-Tel and certain other competitive LECs that the proper way to reconcile any such conflict is to find that our section 251 impairment determinations with respect to unbundled local loops, switching and transport would apply only to non-BOC incumbent LECs.¹⁹⁹⁸ Z-Tel's argument posits that particular network elements enumerated in the section 271 checklist are the "core" elements, and thus concludes that while the standards in section 251 would still apply to all carriers as to any network elements not mentioned in the checklist, section 271 requirements (as construed by Z-Tel) would supercede section 251 standards as to the most critical network elements delineated by Congress. We think that this reading of the two provisions is illogical. BOCs control 85.9 percent of incumbent LEC local switched access lines.¹⁹⁹⁹ Of the remaining lines, 11.6 percent of the lines are served by certain rural telephone companies that section 251(f) expressly exempts from the unbundling obligations set forth in 251(c). So, under the Z-Tel interpretation of sections 251 and 271, Z-Tel would have section 251(c), which is arguably the most important market-opening provision of the Act, apply to a mere 2.5 percent of incumbent LEC lines on the issues and facilities that matter most to local competition.²⁰⁰⁰ The section 271 checklist cannot be read to have such a broad effect – while it does set forth particular conditions Congress wished to impose on entry into the in-region interLATA market, Congress could not have intended the checklist to render section 251 itself superfluous.

661. Our recognition that pricing pursuant to section 252 does not apply to network elements that are not required to be unbundled is consistent with the Commission's general approach in the *UNE Remand Order*, and has been applied – apparently with no adverse effect – with respect to access to directory assistance and operator services. The Commission removed directory assistance and operator services from the list of UNEs in the *UNE Remand Order*.²⁰⁰¹ These network elements, like loops, transport, switching and signaling databases, are separately listed in the competitive checklist.²⁰⁰² Accordingly, as explained in subsequent section 271 orders, access to directory assistance and operator services remains a condition of long distance entry – but the standard applicable to rates and conditions is not derived from sections 251 and 252.²⁰⁰³ We note that no party has sought to overturn this aspect of the seventeen section 271 orders that have applied this analysis since directory assistance and operator services were removed from the list of section 251 UNEs, and no party has suggested in this proceeding that

¹⁹⁹⁸ Z-Tel Comments at 7-8.

¹⁹⁹⁹ *Federal Universal Service Support Mechanisms Fund Size Projections for the First Quarter 2003*, Submitted by the Universal Service Administrative Company (filed Nov. 1, 2002).

²⁰⁰⁰ *Id.*

²⁰⁰¹ *UNE Remand Order*, 15 FCC Rcd at 3891-92, paras. 441-42.

²⁰⁰² See 47 U.S.C. § 271(c)(2)(B)(vii)(II)-(III).

²⁰⁰³ See, e.g., *SWBT Texas 271 Order*, 15 FCC Rcd at 18527, para. 348.

the Commission's interpretation of the statute has produced a perverse policy impact with respect to a BOC's provision of these network elements.

662. We note, however, that in the *UNE Remand Order* the Commission stated that “[i]f a checklist network element is unbundled, the applicable prices, terms and conditions are determined in accordance with sections 251 and 252. If a checklist network element does not satisfy the unbundling standards in section 251(d)(2), the applicable prices, terms and conditions for that element are determined in accordance with sections 201(b) and 202(a).”²⁰⁰⁴ We reach essentially the same result here, but we clarify our reasoning below.

663. The Supreme Court has held that the last sentence of section 201(b), which authorizes the Commission “to prescribe such rules and regulations as may be necessary in the public interest to carry out the provisions of this Act,” empowers the Commission to adopt rules that implement the new provisions of the Communications Act that were added by the Telecommunications Act of 1996.²⁰⁰⁵ Section 271 is such a provision.²⁰⁰⁶ Thus, the pricing of checklist network elements that do not satisfy the unbundling standards in section 251(d)(2) are reviewed utilizing the basic just, reasonable, and nondiscriminatory rate standard of sections 201 and 202 that is fundamental to common carrier regulation that has historically been applied under most federal and state statutes, including (for interstate services) the Communications Act.²⁰⁰⁷ Application of the just and reasonable and nondiscriminatory pricing standard of sections 201 and 202 advances Congress's intent that Bell companies provide meaningful access to network elements.

664. Whether a particular checklist element's rate satisfies the just and reasonable pricing standard of section 201 and 202 is a fact-specific inquiry that the Commission will undertake in the context of a BOC's application for section 271 authority or in an enforcement proceeding brought pursuant to section 271(d)(6). We note, however, that for a given purchasing carrier, a BOC might satisfy this standard by demonstrating that the rate for a section 271 network element is at or below the rate at which the BOC offers comparable functions to similarly situated purchasing carriers under its interstate access tariff, to the extent such analogues exist. Alternatively, a BOC might demonstrate that the rate at which it offers a section 271 network element is reasonable by showing that it has entered into arms-length agreements with other, similarly situated purchasing carriers to provide the element at that rate.

²⁰⁰⁴ *UNE Remand Order*, 15 FCC Red at 3905, para. 470.

²⁰⁰⁵ *Iowa Utils. Bd.*, 525 U.S. at 377-81.

²⁰⁰⁶ The Court found that this grant of authority was “unaffected by” the jurisdictional limitation regarding intrastate matters that was contained in section 2(b) of the 1934 Act. *Id.* at 379. The Court found that since new sections 251 and 252 applied to interstate as well as intrastate matters, section 201(b) authorized the Commission to adopt rules implementing the full scope of those provisions. *Id.* at 379-81.

²⁰⁰⁷ See 47 U.S.C. §§ 201(b), 202(a). Therefore, we reject the argument of Z-Tel that section 252(d)(1) is the only basis for the Commission to evaluate checklist elements not required to be unbundled under section 251.

665. *Post Entry Requirements.* In the event a BOC has already received section 271 authorization, section 271(d)(6) grants the Commission enforcement authority to ensure that the BOC continues to comply with the market opening requirements of section 271. In particular, this section provides the Commission with enforcement authority where a BOC “has ceased to meet any of the conditions required for such approval.”²⁰⁰⁸ We conclude that for purposes of section 271(d)(6), BOCs must continue to comply with any conditions required for approval, consistent with changes in the law. While we believe that section 271(d)(6) established an ongoing duty for BOCs to remain in compliance, we do not believe that Congress intended that the “conditions required for such approval” would not change with time. Absent such a reading, the Commission would be in a position where it was imposing different backsliding requirements on BOCs solely based on date of section 271 entry, rather than based on the law as it currently exists. We reject this approach as antithetical to public policy because it would require the enforcement of out-of-date or even vacated rules.

666. Two commenters in this proceeding ask the Commission to adopt special procedural vehicles for re-examining section 271 authorizations, in light of potential rule changes that would change a BOC’s obligations under section 251. First, Z-Tel asserts that the Commission must revisit every section 271 authorization to consider “[a]ny significant change to the availability of the UNE platform.”²⁰⁰⁹ Second, Talk America asks the Commission to adopt a procedure that would freeze in place a BOC’s unbundling obligations under section 251, at least pending a review of potential backsliding under section 271(d)(6).²⁰¹⁰ Specifically, Talk America contends that, for a BOC that has previously received section 271 authorization, the “anti-backsliding” requirements of section 271(d)(6) would require it to continue providing unbundled local switching (and UNE-P) at TELRIC prices in the event it is no longer required to do so under section 251. Talk America suggests that any rule change that lessens a BOC’s obligation to provide access to unbundled switching could decrease the level of facilities-based competition in either residential or business markets, thereby potentially causing a “backsliding” violation under section 271(d)(6) to the extent the BOC relied on UNE-P based competition to support its showing under section 271(c)(1)(A) (Track A). Accordingly, to address this risk of this type of “backsliding,” Talk America would require BOCs to file a petition with the Commission – *before* they may be permitted to cease providing switching and UNE-P at TELRIC-based rates – demonstrating the existence of facilities-based competition from carriers that do not rely in any material part on the availability of unbundled local switching or UNE-P at TELRIC-based rates.²⁰¹¹

²⁰⁰⁸ 47 U.S.C. § 271(d)(6).

²⁰⁰⁹ Z-Tel Comments at 83-84.

²⁰¹⁰ Letter from Brad A. Mutschelknaus, Counsel for Talk America and Broadview Networks, to Marlene H. Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147 at 15 (filed Dec. 6, 2002) (Talk America/Broadview Networks Dec. 6, 2002 *Ex Parte* Letter); *see also* Letter from Brad A. Mutschelknaus, Counsel for Talk America, to Marlene H. Dortch, Secretary, FCC, CC Docket 01-338 at 3 (filed Dec. 30, 2002) (Talk America Dec. 30, 2002 *Ex Parte* Letter).

²⁰¹¹ Talk America Dec. 30, 2002 *Ex Parte* Letter at 3.

667. We decline to adopt the extraordinary procedural steps requested by Z-Tel and Talk America. With respect to Talk America's proposal, by reexamining whether a BOC continues to qualify for "Track A" *before* conditions change in the market ignores the reality that competitors may take steps to retain customers served by UNE-P. For example, it is entirely possible that a competitive LEC may transition customers from UNE-P to an arrangement using unbundled loops combined with its own switching – thereby retaining the same level of facilities-based competition. Accordingly, the before-the-fact review proposed by Talk America would necessarily require speculation and would hold a BOC to a higher standard than under its initial section 271 application. Finally, there is no suggestion that the procedure proposed by Talk America is necessary to detect discrimination or bad conduct – indeed, the harm alleged by Talk America would result from a BOC's *compliance with* federal unbundling rules. Accordingly, we do not believe the public interest warrants adoption of this special procedural step. For similar reasons, we decline Z-Tel's request to "revisit" every section 271 authorization to consider changes regarding UNE-P.

B. Clarification of TELRIC Rules

1. Background

668. Section 252(d)(1) of the Act provides that rates for interconnection and unbundled elements shall be "based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element" and "may include a reasonable profit."²⁰¹² In the *Local Competition Order*, the Commission adopted guidelines to be applied by state commissions when they are called on to arbitrate disputes regarding the prices for interconnection and UNEs pursuant to section 252(d).²⁰¹³ Specifically, the Commission adopted a forward-looking economic cost methodology, which it called "Total Element Long Run Incremental Cost" or "TELRIC." The Supreme Court affirmed the Commission's TELRIC rules in *Verizon v. FCC*.²⁰¹⁴

669. Based on the Commission's finding that prices in a competitive market will tend towards long-run incremental cost,²⁰¹⁵ the TELRIC methodology is designed to derive prices for particular elements in the incumbent LEC's network that "replicate[], to the extent possible," what the incumbent LEC would be able to charge in a competitive market.²⁰¹⁶ Specifically, TELRIC equates the current market value of the existing network of an incumbent telecommunications provider with the cost the incumbent LEC would incur today if it built a

²⁰¹² 47 U.S.C. § 252(d)(1).

²⁰¹³ *Local Competition Order*, 11 FCC Rcd at 15515, para. 29. The Commission also concluded that rates for reciprocal compensation under section 252(d)(2) should be based on the same principles. *Id.* at 16023, para. 1054.

²⁰¹⁴ *Verizon*, 535 U.S. at 467.

²⁰¹⁵ *Local Competition Order*, 11 FCC Rcd at 15845, para. 675.

²⁰¹⁶ *Id.* at 15846, para. 679.

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

In the Matter of)	
)	
Application by BellSouth Corporation,)	
BellSouth Telecommunications, Inc., and)	WC Docket No. 02 – 307
BellSouth Long Distance, Inc., for)	
Authorization To Provide In-Region,)	
InterLATA Services in Florida and Tennessee)	
)	
)	

MEMORANDUM OPINION AND ORDER

Adopted: December 18, 2002

Released: December 19, 2002

By the Commission: Chairman Powell and Commissioner Copps issuing separate statements;
Commissioner Adelstein not participating.

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APPENDIX A – LIST OF COMMENTERS**APPENDIX B – FLORIDA PERFORMANCE DATA****APPENDIX C – TENNESSEE PERFORMANCE DATA****APPENDIX D – STATUTORY REQUIREMENTS****I. INTRODUCTION**

1. On September 20, 2002, BellSouth Corporation and its subsidiaries, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc. (collectively, BellSouth) filed an application pursuant to section 271 of the Communications Act of 1934, as amended,¹ for authority to provide in-region, interLATA service originating in the states of Florida and Tennessee.² We grant BellSouth's application in this Order based on our conclusion that BellSouth has taken the statutorily required steps to open its local exchange markets in these states to competition. BellSouth therefore becomes the first Bell Operating Company (BOC) to obtain section 271 authority for interLATA service throughout its region.³

2. In ruling on BellSouth's application, we wish to acknowledge the effort and dedication of the Florida Public Service Commission (Florida Commission) and the Tennessee

¹ We refer to the Communications Act of 1934, as amended, as the Communications Act or the Act. See 47 U.S.C. §§ 151 *et seq.*

² See *Joint Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Provision of In-Region, InterLATA Services in Florida and Tennessee*, WC Docket No. 02-307 (filed Sept. 20, 2002) (BellSouth Application); see also *Comments Requested on the Joint Application by BellSouth Corporation for Authorization under Section 271 of the Communications Act to Provide In-Region InterLATA Service in the States of Florida and Tennessee*, WC Docket No. 02-307, Public Notice, 17 FCC Red 17435 (Wireline Comp. Bur. 2002).

³ See *Joint Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Provision of In-Region, InterLATA Services in Alabama, Kentucky, Mississippi, North Carolina, and South Carolina*, WC Docket No. 02-150, Memorandum Opinion and Order, 17 FCC Red 17595 (2002) (*BellSouth Multistate Order*); *Joint Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Provision of In-Region, InterLATA Services in Georgia and Louisiana*, CC Docket No. 02-35, Memorandum Opinion and Order, 17 FCC Red 9018 (2002) (*BellSouth Georgia/Louisiana Order*).

BellSouth has committed itself to making capacity information available to competitive LECs in a form similar to that provided to the Commission.⁴⁵¹

h. Training, Technical Assistance, and Help Desk Support

131. As we did in the *BellSouth Georgia/Louisiana* and the *BellSouth Multistate Orders*, we find that BellSouth adequately assists competing carriers in their use of available OSS functions.⁴⁵² We reject Network Telephone's assertion that BellSouth's "Care Team" service is inadequate because Network Telephone provides no evidence that BellSouth has failed to enable Network Telephone to understand, implement, and use all of the OSS functions available to them.⁴⁵³ In fact, the record shows that from April 17–19, 2002, seventeen BellSouth employees traveled to Florida to meet with Network Telephone to discuss operational assistance issues.⁴⁵⁴ An outcome of this meeting was the discussion of a single point of contact ("SPOC") for Network Telephone on operational issues. If Network Telephone believes that BellSouth has failed to uphold its responsibilities in these areas, it may either avail itself of the change management plan's dispute resolution process or initiate an enforcement proceeding. However, given the lack of substantiating evidence in this proceeding, we find that BellSouth's showing in this area is the same as, if not better than, that which we found sufficient to meet the requirements of section 271 in the *BellSouth Georgia/Louisiana* and the *BellSouth Multistate Orders*.

V. OTHER CHECKLIST ITEMS

A. Checklist Item 4 - Unbundled Local Loops

132. Section 271(c)(2)(B)(iv) of the Act requires that a BOC provide "[l]ocal loop transmission from the central office to the customer's premises, unbundled from local switching or other services."⁴⁵⁵ Based on the evidence in the record, we conclude, as did the state commissions,⁴⁵⁶ that BellSouth demonstrates that it provides unbundled local loops in accordance with the requirements of section 271 and our rules. As in past section 271 orders, our conclusion

⁴⁵¹ BellSouth Nov. 20 *Ex Parte* Letter – #1 at 5-6.

⁴⁵² See *BellSouth Multistate Order* 17 FCC at 17712-13, para. 208; *BellSouth Georgia/Louisiana Order*, 17 FCC at 9132, para. 198.

⁴⁵³ Network Telephone Comments at 11-12. Network Telephone states that the Care Team cannot quickly provide answers to complicated questions, that deadlines are missed, that team members do not have the appropriate level of expertise, and that the Care Team does not have access to the appropriate personnel at BellSouth. *Id.* at 11.

⁴⁵⁴ See BellSouth Ruscilli/Cox Reply Aff. at paras. 54-58.

⁴⁵⁵ 47 U.S.C. § 271(c)(2)(B)(iv). The Commission has defined the loop as a transmission facility between a distribution frame, or its equivalent, in an incumbent LEC central office, and the demarcation point at the customer premises. Dark fiber and loop conditioning equipment are among the features, functions, and capabilities of the loop. *UNE Remand Order*, 15 FCC Red at 3772-73, paras. 166-67 n.301. See Appendix D at paras. 48-52.

⁴⁵⁶ See Florida Commission Comments – Hearing at 123-24; Tennessee Authority Comments at 33-34.

is based on our review of BellSouth's performance for all loop types, including voice grade loops, xDSL-capable loops, high capacity loops, and digital loops, as well as our review of BellSouth's hot cut, line-sharing, and line splitting processes. We note that, as of July 31, 2002, BellSouth states that it had provisioned 166,168 loops in Florida and 50,886 loops in Tennessee.⁴⁵⁷

133. Consistent with our prior section 271 orders, we do not address in detail aspects of BellSouth's loop performance where there is little, if any, dispute in the record that BellSouth's performance complies with the parity and benchmark measures established in the relevant states.⁴⁵⁸ As in past section 271 proceedings, in the course of our review we look for patterns of systemic performance disparities that have resulted in competitive harm or that otherwise have denied new entrants a meaningful opportunity to compete.⁴⁵⁹ Although several parties have raised issues with respect to BellSouth's loop performance,⁴⁶⁰ our own review of the record shows that BellSouth's performance overall has been satisfactory. Thus, we do not engage in detailed discussion of BellSouth's loop performance. Instead we focus on concerns raised by commenters, where the record indicates significant discrepancies between BellSouth's performance for its competitors and BellSouth's performance for its own retail operations.

134. *Voice Grade Loops.* We find, as did the state commissions,⁴⁶¹ that BellSouth provisions voice grade loops to competitors in a nondiscriminatory manner. BellSouth generally meets the benchmark and parity standards for order processing timeliness, installation timeliness, installation quality, and maintenance and repair timeliness and quality of voice grade loops in Florida and Tennessee, with few exceptions.⁴⁶² We find that the exceptions to BellSouth's

⁴⁵⁷ See BellSouth Application at 84.

⁴⁵⁸ See, e.g., *BellSouth Georgia/Louisiana Order*, 17 FCC Rcd at 9144, para. 219; *Verizon Connecticut Order*, 16 FCC Rcd at 14151-52, para. 9.

⁴⁵⁹ See, e.g., *Verizon Massachusetts Order*, 16 FCC Rcd at 9055-56, para. 122. We note that in its comments, AT&T lists various performance metrics missed by BellSouth. Although AT&T relates some of these missed metrics to alleged competitive impact, much of what AT&T lists demonstrates nothing more than isolated instances, or instances of near-compliance that, as we have found in previous orders, have no competitive impact. Accordingly, we decline to make a finding of noncompliance based upon AT&T's unsubstantiated allegations. See generally *AT&T Norris Decl.* However, the draft order fully treats those portions of the Norris Declaration that correlate BellSouth performance data to any competitive impact alleged by AT&T in its comments. See also *supra* n.201.

⁴⁶⁰ See, e.g., Covad Comments at 25-29; KMC Comments at 15-17.

⁴⁶¹ See Florida Commission Comments – Hearing at 123-24; Tennessee Authority Comments at 33-34.

⁴⁶² See, e.g., Florida/Tennessee B.1.12.8 – B.1.12.9 (FOC Timeliness – Partially Mechanized – 10 Hours, 2 Wire Analog Loops); Florida/Tennessee B.2.18.8 – B.2.18.9 (% Missed Installation Appointments, 2 Wire Analog Loops); Tennessee B.2.19.8 – B.2.19.9 (% Provisioning Troubles Within 30 Days, 2 Wire Analog Loops); Tennessee B.3.1.8 – B.3.1.9 (Missed Repair Appointments, 2 Wire Analog Loops); Florida/Tennessee B.3.4.8 – B.3.4.9 (% Repeat Troubles Within 30 Days, 2 Wire Analog Loops).

generally nondiscriminatory performance are not competitively significant.⁴⁶³ We therefore find that a finding of checklist compliance is warranted despite these exceptions. Should BellSouth's performance in this area deteriorate, we will pursue appropriate enforcement action.

135. *Hot Cut Activity.* We find, as did the state commissions,⁴⁶⁴ that BellSouth is providing voice grade loops through hot cuts in accordance with the requirements of checklist item 4.⁴⁶⁵ As in the Georgia/Louisiana proceeding, Mpower alleges that BellSouth's failure to provide an adequate frame due time (FDT) process violates BellSouth's obligation to provide nondiscriminatory access to OSS and to unbundled loops.⁴⁶⁶ The Commission did not find

⁴⁶³ BellSouth missed several months under an order processing timeliness benchmark (95% within 3 hours). See Florida B.1.9.8 (FOC Timeliness – Mechanized, 2 Wire Analog Loops)(indicating misses in June, July and August). However, competitive LECs experienced an average of 95.08% within 3 hours for the relevant period. Although BellSouth also missed parity from May-Sept. in Florida under a provisioning timeliness metric (the order completion interval metric), we note that its performance under another measure of installation timeliness, the percent missed installation appointments metric, indicates parity performance throughout the relevant period. See Florida B.2.1.9.1.4 (Order Completion Interval, 2 Wire Analog Loops Non-Design/Dispatch) (indicating a disparity from May-Sept.); see also Florida B.2.18 (% Missed Installation Appointments, 2 Wire Analog Loops). In previous orders, we have found the percent missed installation appointments metric more persuasive under comparable circumstances. See, e.g., *Bell Atlantic New York Order*, 15 FCC Red at 4063-66, paras. 205-10. BellSouth also suggests that some disparity under the order completion interval metric may be attributable to the fact that competitive LEC orders are scheduled based on the standard ordering guide which carries a minimum four-day interval, while the retail analogue for the majority of these orders is residence and business type plain old telephone service (POTS) orders that are scheduled on the due date calculator, and may be completed in less than a day. BellSouth Varner Aff., Ex. PM-2 at para.139. BellSouth missed parity in Florida for three months under a provisioning quality measure. See Florida B.2.19.9.1.4 (% Provisioning Troubles Within 30 Days, 2 Wire Analog Loops). We give little weight to this reported performance failure, however, in light of BellSouth's explanation that the misses correspond to a small number of trouble reports that do not provide a valid comparison to the retail analogue. The low competitive LEC volume of 9 in September makes it difficult to draw further conclusions regarding the data. BellSouth Varner Aff., Ex. PM-2 at para.143. BellSouth also missed several months under a maintenance and repair measure. See Florida B.3.2.9.1 (Customer Trouble Report Rate, 2 Wire Analog Loops, Non-Design/Dispatch). However, BellSouth still provided over 97% trouble-free services under this measurement, and the difference in the trouble report rate for competitive LEC lines was less than 1% higher than the BellSouth retail analogue. BellSouth Varner Aff., Ex. PM-2 at para. 148. Therefore, we find that that reported performance failure has little, if any, competitive impact. Finally, we note that BellSouth missed three months in Florida under the missed appointments metric for non-dispatch orders. See Florida B.3.1.9.2 (Missed Repair Appointments, 2 Wire Analog Loops, Non-Design/Non-Dispatch). BellSouth states that two of the six missed appointments in May were missed by less than thirty minutes each, and the other four were due to improper order close-out procedures associated with a multi-trouble order for the same customer. BellSouth further states that two of the eighteen total missed appointments in July were closed as Tested OK/ Found OK, and fifteen of the remaining 16 missed appointments were the result of 2 multiple troubles. BellSouth Varner Aff., Ex. PM-2 at para.147. We are persuaded by BellSouth's explanations for these performance disparities and find that they have little, if any, competitive impact.

⁴⁶⁴ See Florida Commission Comments – Hearing at 123-24; Tennessee Authority Comments at 33-34.

⁴⁶⁵ See generally Appendices B and C.

⁴⁶⁶ See Mpower Comments at 12-13.

Mpower's arguments persuasive in the *BellSouth Georgia/Louisiana Order*,⁴⁶⁷ and Mpower provides no new evidence to support its claim in the instant proceeding. Accordingly, we dismiss Mpower's allegations.

136. *Digital Loops.* We find, as did the state commissions,⁴⁶⁸ that BellSouth's performance with respect to digital loops complies with checklist item 4.⁴⁶⁹ We recognize, however, that BellSouth's performance in Florida with respect to one installation timeliness measure – the order completion interval metric (dispatch) – was out of parity from May through September.⁴⁷⁰ BellSouth explains, however, that within the mix of competitive LEC orders under this measurement, more than half were for unbundled digital channel (UDC) circuits, which are designed circuits requiring approximately 10 days for completion as compared to the retail analogue which is heavily weighted toward ADSL circuits requiring approximately 4 days to complete.⁴⁷¹ Due to BellSouth's explanation, we do not find that the disparity in BellSouth's performance under this metric raises an issue of checklist noncompliance. In addition, the data under another installation timeliness metric – percent missed installation appointments – shows that BellSouth provisioned digital loops in a timely fashion during the relevant period.⁴⁷² In these circumstances, as in previous orders, we conclude that BellSouth's performance under the order completion interval metric has not denied competitive LECs a meaningful opportunity to compete in Florida.⁴⁷³

137. Contrary to the argument propounded by KMC, we conclude that BellSouth's provisioning and maintenance and repair performance for digital loops warrants a finding of checklist compliance.⁴⁷⁴ Although BellSouth's installation quality measure for digital loops – the percentage of provisioning troubles within 30 days – was out of parity in Florida from May to

⁴⁶⁷ See *BellSouth Georgia/Louisiana Order*, 17 FCC Red at 9146, para. 222.

⁴⁶⁸ See Florida Commission Comments – Hearing at 123-24; Tennessee Authority Comments at 33-34.

⁴⁶⁹ BellSouth missed several months under an order processing timeliness benchmark (85% within 10 hours). See Florida B.1.12.14 (FOC Timeliness – Partially Mechanized – 10 Hours) (Other Design). This category comprises several loop types, including digital and high capacity loops. However, competitive LECs experienced an average of 87.03% within 10 hours for the relevant period. Thus, we do not find these misses to be competitively significant. Should BellSouth's performance in this area deteriorate, we will pursue appropriate enforcement action.

⁴⁷⁰ The order completion interval metric measures the amount of time it takes BellSouth to actually provide service on the orders it receives from competitive LECs and its own customers. See Florida B.2.1.18.1.1 (Order Completion Interval, Digital Loops <DS1/<10 Circuits/Dispatch) (indicating intervals of 8.89, 7.64, 7.77, 8.24, and 7.99 days for competitive LECs and 4.77, 3.69, 3.58, 3.27, and 3.17 days for BellSouth's retail operations).

⁴⁷¹ See *BellSouth Varner Aff.*, Ex. PM-2 at para. 151. BellSouth also states that UDC circuits are not offered as retail products. *Id.*

⁴⁷² See Florida B.2.18.18.1.1 (% Missed Installation Appointments, Digital Loops <DS1/<10 Circuits/Dispatch).

⁴⁷³ See, e.g., *BellSouth Multistate Order*, 17 FCC Red at 17729-30, para. 240.

⁴⁷⁴ KMC Comments at 15-17.

September,⁴⁷⁵ BellSouth demonstrates that the majority of these misses were caused by defective plant facilities, central office wiring problems, or incidents where trouble reports were resolved as “tested OK/found OK”.⁴⁷⁶ Specifically, BellSouth provides the number of total trouble reports for each month that would be classified under the above categories of troubles, and explains how troubles under these categories often do not reflect the quality of the installation performed by BellSouth.⁴⁷⁷ BellSouth further states that it is retraining plant technicians on proper testing and order turn-up procedures.⁴⁷⁸ We agree that several troubles reported under this measure appear to be attributed to causes other than BellSouth’s provisioning process, and accordingly find that BellSouth’s performance in this area satisfies checklist item 4.

138. Similarly, BellSouth’s maintenance and repair performance for digital loops was generally in parity during the applicable period.⁴⁷⁹ This performance constitutes checklist compliance notwithstanding that one measure of that performance – the customer trouble report rate – was out of parity in Florida and Tennessee throughout much of the relevant period.⁴⁸⁰

⁴⁷⁵ See Florida B.2.19.18.1.1 (% Provisioning Troubles within 30 Days, Digital Loops<DS1/<10 Circuits/Dispatch) (indicating trouble rates from May to September of 7.22%, 6.61%, 6.99%, 8.28%, and 6.96% for competitive LECs, and rates of 4.63%, 4.63%, 5.18%, 4.81%, and 4.03% for BellSouth retail).

⁴⁷⁶ See BellSouth Varner Aff., Ex. PM-2 at para. 154.

⁴⁷⁷ For example, BellSouth explains that incidents of defective plant facilities may occur after BellSouth has installed and tested the facility when a cable gets wet or foreign voltage finds its way onto the facility. Letter from Kathleen B. Levitz, Vice President – Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 02-307 at 4 (filed Nov. 13, 2002)(BellSouth Nov. 13 *Ex Parte* Letter – #2). Furthermore, troubles that fall under the tested OK/found OK category would also not appear to indicate that there was an actual problem with the quality of the installation performed by BellSouth. As BellSouth describes, the tested OK/found OK category includes competitive LEC reported troubles where a technician conducts tests in either the repair center, the central office or outside, and finds that the loop is operating without a problem. See Letter from Kathleen B. Levitz, Vice President – Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 02-307 at 3 (filed Nov. 18, 2002)(BellSouth Nov. 18 *Ex Parte* Letter – #1). BellSouth shows that when tested OK/found OK reports are removed from the percent provisioning troubles in 30 days metric, the competitive LEC results from May-Sept. are reduced to 6.4%, 5.8%, 6.2%, 7.4% and 5.8% respectively. *Id.* at 2.

⁴⁷⁸ See BellSouth Varner Aff., Ex. PM-2 at para. 154.

⁴⁷⁹ See BellSouth Varner Aff., Ex. PM-33; BellSouth Varner Reply Aff., Ex. PM-15; Letter from Kathleen B. Levitz, Vice President – Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 02-307 (filed Nov. 21, 2002) (BellSouth Nov. 21 *Ex Parte* Letter – #1) (listing BellSouth’s disaggregated performance under the % Missed Repair Appointments, Maintenance Average Duration, and % Repeat Troubles within 30 Days metrics for digital and high capacity loops). We note that while BellSouth has provided disaggregated maintenance and repair data for digital loops, the Florida interim and Tennessee measurements do not have established metrics for this data. Disaggregated metrics are included under the Florida permanent measurements.

⁴⁸⁰ See *Id.* (listing BellSouth’s disaggregated performance under the Customer Trouble Report Rate, Digital Loops<DS1/Dispatch in Florida/Tennessee) (out of parity in Florida and Tennessee from May through September); *id.* (listing BellSouth’s disaggregated performance under the Customer Trouble Report Rate, Digital (continued....)

BellSouth states that in spite of this disparity, 95 percent of the competitive LEC circuits for dispatch and non-dispatch digital loop orders were trouble-free during the relevant period.⁴⁸¹ Because the overall trouble report rate for digital loops that BellSouth provided competitive LECs was low during the relevant period, we find that these disparities lack competitive significance.⁴⁸² Moreover, contrary to KMC's assertions, BellSouth was consistently in parity, with very few repeat troubles, with regard to its measure for repeat troubles within 30 days of maintenance or repair of digital loops.⁴⁸³

139. *High Capacity Loops.* We find, as did the state commissions,⁴⁸⁴ that BellSouth's performance with respect to high capacity loops complies with checklist item 4.⁴⁸⁵ We reach this conclusion despite the fact that BellSouth's performance with respect to some provisioning metrics – including the percentage of missed installation appointments and the percentage of troubles found within 30 days of installation – is out of parity for several months during the applicable period.⁴⁸⁶ As we discuss below, however, this performance does not warrant a finding of checklist noncompliance. Isolated cases of performance disparity, especially when the margin of disparity is small, generally will not result in a finding of checklist noncompliance.⁴⁸⁷

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Loops<DS1/Non-Dispatch in Florida/Tennessee) (out of parity in Florida from May through September, and out of parity in Tennessee in May); *see also* KMC Comments at 16.

⁴⁸¹ BellSouth Reply at 42; BellSouth Varner Reply Aff. at para. 150.

⁴⁸² BellSouth missed parity with regard to digital loops requiring dispatch in Florida from May through September with customer trouble rates of 1.34%, 1.49%, 1.74%, 1.57%, and 1.40% for competitive LECs, and rates of 0.26%, 0.28%, 0.34%, 0.36%, and 0.28% for BellSouth retail; BellSouth also missed parity in Tennessee from May through September with customer trouble rates of 1.11%, 1.14%, 1.10%, 1.49%, and 0.95% for competitive LECs, and rates of 0.34%, 0.37%, 0.44%, 0.44%, and 0.40% for BellSouth retail. *See* BellSouth Varner Aff., Ex. PM-33; BellSouth Varner Reply Aff., Ex. PM-15; BellSouth Nov. 21 *Ex Parte* Letter – #1. BellSouth missed parity with respect to non-dispatch digital loops in Florida from May through September with customer trouble rates of 0.66%, 0.55%, 0.47%, 0.57%, and 0.49% for competitive LECs, and rates of 0.35%, 0.28%, 0.32%, 0.33%, and 0.31% for BellSouth retail; BellSouth only missed parity in Tennessee in May with a customer trouble rate of 0.71% for competitive LECs, and a rate of 0.32% for BellSouth retail. *See* BellSouth Varner Aff., Ex. PM-33; BellSouth Varner Reply Aff., Ex. PM-15; BellSouth Nov. 21 *Ex Parte* Letter – #1; *see also* *BellSouth Georgia/Louisiana Order*, 17 FCC Red at 9150, para. 230. Should BellSouth's performance in this area deteriorate, we will pursue appropriate enforcement action.

⁴⁸³ *See* KMC Comments at 16-17; *but see* BellSouth Varner Aff., Ex. PM-33; BellSouth Varner Reply Aff., Ex. PM-15; BellSouth Nov. 21 *Ex Parte* Letter – #1 (listing BellSouth's disaggregated performance under the % Repeat Troubles within 30 Days metrics for digital and high capacity loops); BellSouth Varner Reply Aff. at para. 151.

⁴⁸⁴ *See* Florida Commission Comments – Hearing at 123-124; Tennessee Authority Comments at 33-34.

⁴⁸⁵ *See generally* Appendices B and C; *see also supra* n.469.

⁴⁸⁶ *See* Florida/Tennessee B.2.18.19.1.1 (% Missed Installation Appointments, Digital Loops \geq DS1/<10 Circuits/Dispatch); Florida/Tennessee B.2.19.19.1.1 (% Provisioning Troubles within 30 Days, Digital Loops \geq DS1/<10 Circuits/Dispatch).

⁴⁸⁷ *See* *BellSouth Georgia/Louisiana Order*, 17 FCC Red at 9144, para. 219; *Verizon Massachusetts Order*, 16 FCC Red at 9055-56, para. 122; *Verizon Pennsylvania Order*, 16 FCC Red at 17468-69, para. 90 (finding that even (continued....))

140. First, we recognize that BellSouth's performance with respect to the missed installation appointments metric was out of parity in Florida and Tennessee for several months during the relevant period.⁴⁸⁸ BellSouth states that there were only 29 missed appointments in Florida under the missed installation appointment metric from May through July for over 1,200 orders, and that the majority of these missed due dates were caused by facility issues where installation of the loop required the construction of additional facilities.⁴⁸⁹ Given that the majority of installation appointments were met, and that BellSouth's overall loop performance is satisfactory, we do not find that lack of parity under the missed installation appointments metric for high capacity loops warrants a finding of noncompliance in Florida and Tennessee for checklist item 4.

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"poor" performance with regard to high capacity loops did not warrant a finding of checklist noncompliance for all loop types where high capacity loops represented only a small percentage of all loops ordered by competitors in a state). High capacity loops appear to represent approximately 3.5% and 7.6% of the unbundled loops provisioned to competitive LECs in Florida and Tennessee, respectively. See BellSouth Application App. A, Vol. 3a, Tab F, Affidavit of W. Keith Milner (BellSouth Milner Aff.) at paras. 96, 98.

⁴⁸⁸ See Florida B.2.18.19.1.1 (% Missed Installation Appointments, Digital Loops \geq DS1/<10 Circuits/Dispatch) (indicating missed installation appointment rates from May to September of 2.16%, 1.81%, 3.15%, 4.01%, and 4.37% for competitive LECs, and rates of 0.60%, 0.00%, 1.30%, 0.69%, and 1.33% for BellSouth retail); Tennessee B.2.18.19.1.1 (% Missed Installation Appointments, Digital Loops \geq DS1/<10 Circuits/Dispatch) (indicating missed installation appointment rates in May, June, August and September of 6.77%, 9.17%, 7.25%, and 6.38% for competitive LECs, and rates of 2.93%, 4.22%, 3.14%, and 1.98% for BellSouth retail). KMC argues that BellSouth's loop assignment practices are discriminatory, and result in a greater percentage of competitive LEC high capacity loop orders being "held, pending facility" and placed in jeopardy status. KMC Comments at 11; see also Letter from Andrew M. Klein, Counsel to KMC, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 02-307, Attach. at 6 (filed Dec. 5, 2002) (KMC Dec. 5 *Ex Parte* Letter). According to KMC, BellSouth's jeopardy performance in Georgia and Louisiana has also declined in recent months. See KMC Dec. 5 *Ex Parte* Letter, Attach. at 7-8. KMC states that this high percentage of jeopardies under BellSouth's facility assignment approach leads to more missed appointments for competitive LECs. KMC Comments at 14; KMC Reply at 8. BellSouth, however, explains that the difference in the percentage of competitive LEC and BellSouth orders placed in jeopardy status is primarily a reflection of the fact that competitive LECs are targeting business customers in customer locations that are typically heavily congested and capacity constrained, whereas BellSouth's retail orders are more widely distributed across a statewide area. See Letter from Kathleen B. Levitz, Vice President – Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 02-307 at 1-2 (filed Dec. 11, 2002)(BellSouth Dec. 11 *Ex Parte* Letter – #1). According to BellSouth, the percentage of jeopardies issued for competitive LEC orders in Georgia and Louisiana has increased, but BellSouth notes that jeopardies for BellSouth retail have also increased to an even greater degree than for competitive LEC orders. BellSouth Dec. 11 *Ex Parte* Letter – #1 at 3. BellSouth states that despite the issuance of jeopardies in Florida and Tennessee, many orders were still completed as scheduled. BellSouth Varner Reply Aff. at paras. 127, 129. *But see* Letter from Andrew M. Klein, Counsel to KMC, Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 02-307 at 1 (filed Dec. 17, 2002) (KMC Dec. 17 *Ex Parte* Letter). In addition, BellSouth states that the majority of missed appointments that did occur were not caused by discriminatory practices, but instead were due to the fact that the competitive LEC orders were placed to end-users where facility projects were required to meet the demand. BellSouth Varner Reply Aff. at para. 129. We note that BellSouth's performance reflected by another measure of installation timeliness – the order completion interval metric – indicates parity in both states for all relevant months. See Florida/Tennessee B.2.1.19.1.1 (Order Completion Interval, Digital Loops \geq DS1/<10 Circuits/Dispatch).

⁴⁸⁹ See BellSouth Varner Aff., Ex. PM-2 at para. 153.

141. Next, KMC argues that BellSouth fails to achieve parity under the provisioning quality metric measuring the percentage of troubles found within 30 days of high capacity loop installation.⁴⁹⁰ BellSouth states that in Florida the majority of the misses were caused by defective plant facilities, central office wiring problems or incidents where trouble reports were resolved as tested OK/found OK.⁴⁹¹ BellSouth also specifically states that in Tennessee, forty percent of the reports were closed as no trouble found, while the remainder were equally spread between outside facilities and equipment within the central office.⁴⁹² As discussed above, we agree that several troubles reported under this measure appear to be attributed to causes other than BellSouth's own provisioning process. Data provided by BellSouth show for example that 13 of the 39 total trouble reports reported in September for high capacity loops in Florida fell under the category of loops that actually were tested OK or found OK.⁴⁹³ Given this evidence, and recognizing BellSouth's generally acceptable performance for other categories of loops, we find that BellSouth's performance is in compliance with checklist item 4.⁴⁹⁴

142. KMC also contends that BellSouth's maintenance and repair performance for high capacity loops precludes a finding of checklist compliance.⁴⁹⁵ In particular, KMC points to BellSouth's performance under the percentage of repeat troubles within 30 days and the customer trouble report rate.⁴⁹⁶ With respect to BellSouth's performance under the repeat troubles metric in Florida and Tennessee, we find that contrary to KMC's claim, results during the relevant period indicate nondiscriminatory performance for BellSouth's maintenance and

⁴⁹⁰ KMC Comments at 15-16. As with missed appointments, KMC suggests that the high percentage of jeopardies under BellSouth's facility assignment approach contributes to the greater number of provisioning troubles. See *supra* n.488; KMC Reply at 8-9. See also Florida/Tennessee B.2.19.19.1.1 (% Provisioning Troubles within 30 Days, Digital Loops \geq DS1/ $<$ 10 Circuits/Dispatch) (BellSouth missed parity in Florida in May, July, August and September with trouble rates of 11.17%, 10.57%, 9.93%, and 12.04% for competitive LECs, and rates of 6.89%, 5.41%, 6.36%, and 2.07% for BellSouth retail; BellSouth missed parity in Tennessee in May, July, August, and September with trouble rates of 19.23%, 14.41%, 18.92%, and 16.58% for competitive LECs, and rates of 5.51%, 6.63%, 3.52%, and 3.92% for BellSouth retail). Performance under these measures is within the range accepted in previous BellSouth applications.

⁴⁹¹ See BellSouth Varner Aff., Ex. PM-2 at para. 154; see also BellSouth Dec. 11 *Ex Parte* Letter – #1 at 5-6. But see KMC Dec. 17 *Ex Parte* Letter at 3.

⁴⁹² See BellSouth Varner Aff., Ex. PM-3 at para. 149.

⁴⁹³ See BellSouth November 13 *Ex Parte* Letter – #2 at 4. BellSouth shows that when tested OK/found OK reports are removed from the percent provisioning troubles in 30 days metric, the competitive LEC results in May, July, August and September are reduced to 8.6%, 7.3%, 6.5%, and 8.0% respectively. BellSouth Nov. 18 *Ex Parte* Letter – #1.

⁴⁹⁴ Should BellSouth's performance in this area deteriorate, we will pursue appropriate enforcement action.

⁴⁹⁵ KMC Comments at 17.

⁴⁹⁶ KMC Comments at 16-17. As with missed appointments, KMC suggests that the high percentage of jeopardies under BellSouth's facility assignment approach contributes to the greater number of customer trouble reports. See *supra* n.488; KMC Reply at 8-9.

repair of high capacity loops.⁴⁹⁷ The customer trouble report rate, however, was out of parity in Florida and Tennessee throughout the relevant period.⁴⁹⁸ BellSouth states that one explanation for this disparity is that the retail analogue for these circuits includes many interoffice circuits that use fiber facilities running between central offices at the DS-3 level, and which are less complex, and thus less prone to the technical problems that give rise to customer trouble reports, than the DS-1 competitive LEC circuits that have additional circuit equipment.⁴⁹⁹ BellSouth also states that, in spite of the performance disparity, 95 percent of the competitive LEC circuits for dispatch and non-dispatch high capacity loop orders were trouble free during the relevant period.⁵⁰⁰ Because the overall trouble report rate for high capacity loops that BellSouth provided competitive LECs was low during the relevant period, we find that these disparities lack competitive significance, and that BellSouth's maintenance and repair performance for high capacity loops warrants a finding of checklist compliance.⁵⁰¹

⁴⁹⁷ See BellSouth Varner Aff., Ex. PM-33; BellSouth Nov. 21 *Ex Parte* Letter – #1 (listing BellSouth's disaggregated performance under the % Repeat Troubles Within 30 Days metric for digital and high capacity loops) (indicating parity performance from May-Sept. for dispatch/non-dispatch high capacity loop orders in Tennessee, and parity performance for every month during the relevant period except August for dispatch/non-dispatch high capacity loop orders in Florida). See also BellSouth Dec. 11 *Ex Parte* Letter – #1 at 7.

⁴⁹⁸ See BellSouth Varner Aff., Ex. PM-33; BellSouth Varner Reply Aff., Ex. PM-15; BellSouth Nov. 21 *Ex Parte* Letter – #1 (listing BellSouth's disaggregated performance under the Customer Trouble Report Rate, Digital Loops>=DS1/Dispatch in Florida/Tennessee) (out of parity in Florida and Tennessee from May through September); *id.* (discussing BellSouth's disaggregated performance under the Customer Trouble Report Rate, Digital Loops>=DS1/Non-Dispatch in Florida/Tennessee) (out of parity in Florida and Tennessee from May through September); see also KMC Comments at 9, 16 (stating that despite the fact that in most cases high capacity loops constitute a small percentage of overall loops provided, the out of parity trouble rate for high capacity loops affects a competitive LEC customer base equivalent to between 156,240 and 4,374,720 voice grade lines depending on whether all of the 6,510 circuits are on DS-1 or DS-3 high capacity loops).

⁴⁹⁹ See BellSouth Varner Reply Aff. at para. 150. BellSouth also notes that KMC's argument regarding the voice grade line equivalent for these high capacity loops assumes that each DS-1 and DS-3 is completely full, which is not the case. See BellSouth Varner Reply Aff. at para. 150.

⁵⁰⁰ BellSouth Reply at 42; BellSouth Varner Reply Aff. at para. 150; see also BellSouth Dec. 11 *Ex Parte* Letter – #1 at 6.

⁵⁰¹ BellSouth missed parity with regard to high capacity loops requiring dispatch in Florida from May through September with customer trouble rates of 3.55%, 3.34%, 3.59%, 3.10%, and 3.03% for competitive LECs, and rates of 0.26%, 0.28%, 0.34%, 0.36%, and 0.28% for BellSouth retail; BellSouth also missed parity in Tennessee from May through September with customer trouble rates of 3.30%, 3.03%, 4.40%, 3.91%, and 3.25% for competitive LECs, and rates of 0.34%, 0.37%, 0.44%, 0.44%, and 0.40% for BellSouth retail. See BellSouth Varner Aff., Ex. PM-33; BellSouth Varner Reply Aff., Ex. PM-15; BellSouth Nov. 21 *Ex Parte* Letter – #1. BellSouth missed parity with respect to non-dispatch high capacity loops in Florida from May through September with customer trouble rates of 1.44%, 1.32%, 1.44%, 1.26%, and 1.31% for competitive LECs, and rates of 0.35%, 0.28%, 0.32%, 0.33%, and 0.31% for BellSouth retail; BellSouth missed parity in Tennessee from May through September with customer trouble rates of 1.38%, 1.48%, 1.43%, 1.60%, and 1.46% for competitive LECs, and rates of 0.32%, 0.32%, 0.35%, 0.38%, and 0.28% for BellSouth retail. See BellSouth Varner Aff., Ex. PM-33; BellSouth Varner Reply Aff., Ex. PM-15; BellSouth Nov. 21 *Ex Parte* Letter – #1; see also *BellSouth Georgia/Louisiana Order*, 17 FCC Red at 9150, para. 230.

143. AT&T asserts that BellSouth fails to satisfy checklist item 4 because it fails to provide a reasonable and cost-based method of converting special access DS-1 circuits to TELRIC-priced unbundled loops.⁵⁰² Specifically, AT&T states that BellSouth's conversion process requires the issuance of a disconnect order for the special access DS-1 in addition to a new connect order for the UNE loop, risking disruption of service.⁵⁰³ AT&T further states that BellSouth does not dispute AT&T's right to convert the special access circuit to an unbundled loop, only the process of conversion.⁵⁰⁴ In response, BellSouth argues that its interconnection agreement provides only for the conversion of special access to UNE combinations and does not provide for, or require, conversions of access or tariffed services to stand-alone UNEs.⁵⁰⁵ Based on the limited factual record, and the time constraints associated with section 271 proceedings, we find that this competitive LEC-specific dispute is more appropriately addressed in an adjudicatory proceeding in the appropriate forum. Thus we find that a finding of checklist compliance is warranted despite AT&T's allegations.

144. *Line Sharing.* We find, as did the state commissions,⁵⁰⁶ that BellSouth offers nondiscriminatory access to the high frequency portion of the loop in Florida and Tennessee.⁵⁰⁷ BellSouth has provisioned 2,850 line sharing arrangements in Florida and 931 line sharing arrangements in Tennessee, as of July 2002.⁵⁰⁸ We recognize that BellSouth's performance in Florida and Tennessee, with respect to one installation timeliness measure – the order completion interval metric (dispatch) – was out of parity for several months.⁵⁰⁹ We note, however, that the data under another installation timeliness metric – percent missed installation appointments – shows that BellSouth generally provisioned line shared loops in a timely fashion

⁵⁰² AT&T Comments at 19-20.

⁵⁰³ AT&T Comments at 19-20. AT&T also suggests that current single order alternatives are cost prohibitive. *Id.* at 20.

⁵⁰⁴ AT&T Comments at 19 n.13.

⁵⁰⁵ BellSouth Ruscilli/Cox Reply Aff. at para. 25. BellSouth submits that its project management offer to facilitate the conversion of special access to stand-alone UNEs goes beyond its obligations. BellSouth Ruscilli/Cox Reply Aff. at paras. 26-27.

⁵⁰⁶ See Florida Commission Comments – Hearing at 123-24; Tennessee Authority Comments at 33-34.

⁵⁰⁷ The D.C. Circuit recently stated that “the *Line Sharing Order* must be vacated and remanded.” *USTA v. FCC*, 290 F.3d 415, 429 (D.C. Cir. 2002). The court also stated that it “grant[ed] the petitions for review[] and remand[ed] the *Line Sharing Order* . . . to the Commission for further consideration in accordance with the principles outlined.” *Id.* at 430. We are addressing the line sharing rules as part of our *Triennial Review Proceeding*. See *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 16 FCC Rcd 22781, 22805, paras. 53-54 (2001).

⁵⁰⁸ See BellSouth Application at 97.

⁵⁰⁹ See Florida B.2.1.7.3.1 (Order Completion Interval, <6 Circuits/Dispatch); Florida B.2.1.7.3.2 (Order Completion Interval, <6 Circuits/Non-Dispatch); Tennessee B.2.1.7.3.2 (Order Completion Interval, <6 Circuits/Non-Dispatch).

during the relevant period.⁵¹⁰ Accordingly, we find that BellSouth's provisioning of line-shared loops satisfies checklist item 4. Should BellSouth's performance in this area deteriorate, we will pursue appropriate enforcement action.

145. Covad raises issues regarding BellSouth's performance under the percent provisioning troubles within 30 days of installation, the maintenance average duration, and the percent repeat troubles within 30 days metrics.⁵¹¹ BellSouth states that despite the disparity under the provisioning troubles within 30 days of installation metric, the results indicate a very high incidence of trouble reports that were resolved as tested OK/found OK in Florida for both dispatch and non-dispatch orders.⁵¹² BellSouth further states that misses in Tennessee under the maintenance average duration metric are again largely due to delays caused by a very high incidence of trouble reports closed as tested OK/found OK.⁵¹³ Given the totality of circumstances, we conclude that BellSouth's performance under these metrics is consistent with satisfactory performance of this checklist item. We also note that despite Covad's claims of discriminatory performance under the percent repeat troubles within 30 days metric, BellSouth achieved parity under this metric for all relevant months in Tennessee, and all but one month in Florida.⁵¹⁴

146. *UNE ISDN Loops.* We find, as did the state commissions,⁵¹⁵ that BellSouth provides ISDN loops to competitors in a nondiscriminatory manner. BellSouth's performance

⁵¹⁰ See Florida B.2.18.7.1.1 (% Missed Installation Appointments, Line Sharing/<10 Circuits/Dispatch); Florida B.2.18.7.1.2 (% Missed Installation Appointments, Line Sharing/<10 Circuits/Non-Dispatch); Tennessee B.2.18.7.1.2 (% Missed Installation Appointments, Line Sharing/<10 Circuits/Dispatch).

⁵¹¹ Covad Comments at 25-29. As in prior section 271 orders, performance data relative to competitive LECs on an aggregate basis is the most persuasive evidence of whether a BOC meets the checklist requirements. See, e.g., *BellSouth MultiState Order*, 17 FCC Red at 17727, para. 237; *BellSouth Georgia/Louisiana Order*, 17 FCC Red at 9148, para. 226. Thus, although Covad claims that its data show discriminatory performance, allegedly anomalous results for a single carrier in this instance are insufficient to rebut BellSouth's evidence demonstrating checklist compliance. If evidence becomes available to the Commission in the future sufficient to show systemic performance disparities, we will pursue appropriate enforcement action.

⁵¹² BellSouth Reply at 40; BellSouth Varner Reply Aff. at para. 143 (indicating that 39% of the troubles for dispatch line sharing orders were closed as tested OK/found OK in May, 23% in June, 50% in July, and 31% in August). BellSouth states that when tested OK/found OK reports are removed from this metric for non-dispatch line sharing orders in Florida, the results in May, June, July, and August are 4.6%, 9.6%, 5.4% and 4.5% respectively. BellSouth Varner Reply Aff. at para.144. BellSouth also states that when tested OK/found OK reports are removed from Tennessee results, the percentage of troubles within 30 days are quite small. BellSouth Reply at 41; BellSouth Varner Reply Aff. at para. 144 (indicating that results under this metric would have been 2.8% and 4.2% respectively if the tested OK/found OK reports are removed for July and August).

⁵¹³ BellSouth Reply at 41; BellSouth Varner Reply Aff. at para. 146. As noted above, troubles that fall under the tested OK/found OK category would not appear to indicate that there was an actual problem with the quality of the installation performed by BellSouth. See *supra* n.477.

⁵¹⁴ See BellSouth Reply at 41.

⁵¹⁵ See Florida Commission Comments – Hearing at 123-24; Tennessee Authority Comments at 33-34.

data demonstrate that, for the most part, it met the relevant benchmarks and parity standards,⁵¹⁶ notwithstanding that the data reveal some performance issues with respect to ordering and a maintenance and repair measure. First, with respect to the order processing timeliness metric, Firm Order Confirmation (FOC) timeliness, we recognize that BellSouth's performance misses the relevant benchmarks for partially mechanized orders for several months.⁵¹⁷ BellSouth explains that the volumes decreased to such low levels in recent months that to meet the 85 percent in 10-hours benchmark in any given month, BellSouth could not miss more than four LSRs in Florida and could not miss any LSRs in Tennessee.⁵¹⁸ BellSouth adds that steps have been taken to improve performance, such as the implementation of new computer tools and periodic operational reviews.⁵¹⁹ Given this, and the fact that the order volumes were low for this submetric, we find that that these performance discrepancies are not competitively significant. We also reject AT&T's claim that BellSouth's performance for the percentage of jeopardy notices for mechanized ISDN loops, which is out of parity throughout the relevant period in Florida and Tennessee, demonstrates BellSouth's noncompliance with this checklist item.⁵²⁰ We believe that BellSouth's failing to meet the parity standard for such jeopardy notices has little competitive impact because BellSouth ultimately provisioned the ISDN loop in a timely manner.⁵²¹ Should BellSouth's performance in this area deteriorate, we will pursue appropriate enforcement action.

⁵¹⁶ See, e.g., Florida/Tennessee B.2.1.6.3.1 (Order Completion Interval, UNE ISDN/<6 Circuits/Dispatch); Florida/Tennessee B.2.18.6.1.1 (% Missed Installation Appointments, UNE ISDN/<10 Circuits/Dispatch).

⁵¹⁷ See Florida B.1.12.6 (FOC Timeliness – Partially Mechanized – 10 hours, ISDN Loops (UDN, UDC)) (in Florida, BellSouth missed the 85% within 10 hours benchmark from June-Sept., the results are 82.05%, 70.83%, 80.95%, 83.33%, respectively); Tennessee B.1.12.6 (FOC Timeliness – Partially Mechanized – 10 hours, ISDN Loops (UDN, UDC)) (in Tennessee, BellSouth missed the 85% within 10 hours benchmark in June and July, the results are 81.82% and 80.00%, respectively). We note that AT&T generally comments about BellSouth's performance in Florida and Tennessee with respect to the FOC timeliness partially mechanized submetric. AT&T Norris Decl. at paras. 18, 51; see also *supra* n.201.

⁵¹⁸ BellSouth Varner Reply Aff. at paras. 160-61. Volumes dropped off substantially after May 2002 in Florida and Tennessee. In Florida, on average, from June-Sept., there were approximately 25 orders a month. In Tennessee, for these same months, there were approximately 7 orders a month, on average. See Florida/Tennessee B.1.12.6 (FOC Timeliness – Partially Mechanized – 10 hours, ISDN Loops (UDN, UDC)).

⁵¹⁹ BellSouth Varner Reply Aff. at para. 161.

⁵²⁰ See AT&T Norris Decl. at paras. 20, 56; Florida B.2.5.6 (% Jeopardies - Mechanized, UNE ISDN) (out of parity in May-Sept.); Tennessee B.2.5.6 (% Jeopardies - Mechanized, UNE ISDN) (out of parity in May, July-Sept.).

⁵²¹ Jeopardy notices warn competitive LECs that BellSouth may miss an installation appointment. BellSouth Varner Aff., Ex. PM-2 at para. 141. In its reply, BellSouth points out that AT&T failed to mention that BellSouth met almost all of the % Missed Installation Appointment metrics and added that "the jeopardy percentage was not indicative of whether the appointment was actually made." BellSouth Varner Reply Aff. at para. 129. BellSouth met or exceeded the missed installation appointment submetric with one minor exception in Florida. See Florida B.2.18.6.1.1 (% Missed Installation Appointments, UNE ISDN/<10 Circuits/Dispatch).

147. Finally, even though BellSouth's data reveal some performance disparities with respect to the maintenance and repair of ISDN loops, BellSouth's overall performance in this area complies with checklist item 4. Specifically, BellSouth was out of parity with respect to the customer trouble report rate for several months in Florida.⁵²² BellSouth states that a large proportion of the reported troubles were due to defective cable pairs or circuit cards that had to be "reseated."⁵²³ BellSouth adds that with respect to the circuit cards, the problem may be attributable to a customer's defective modem or computer⁵²⁴ and claims that its performance is excellent when viewing the metric from the converse perspective – trouble-free lines – which is 97 percent for both wholesale and retail customers.⁵²⁵ The record shows that BellSouth has not identified any persistent problems and seeks ways to improve performance by holding monthly Outside Plant Improvement committees aimed at addressing these types of problems.⁵²⁶ Moreover, the disparity between BellSouth retail and competitive LEC performance is small for this submetric.⁵²⁷ Accordingly, we find that BellSouth's performance overall for ISDN loops warrants a finding of checklist compliance.

B. Checklist Item 11 – Number Portability

148. Section 271(c)(2)(B)(xi) of the Act requires a BOC to comply with the number portability regulations adopted by the Commission pursuant to section 251.⁵²⁸ Section 251(b)(2) requires all LECs "to provide, to the extent technically feasible, number portability in accordance with requirements prescribed by the Commission."⁵²⁹ Based on the evidence in the

⁵²² See Florida B.3.2.6.1 (Customer Trouble Report Rate, UNE ISDN/Dispatch) (out of parity May-Sept.). However, we note that BellSouth met or exceeded the parity standard for metrics measuring the percentage of missed repairs, maintenance average duration, and the percentage of repeat troubles with two minor exceptions. See Florida B.3.3.6.2 (Maintenance Average Duration, UNE ISDN/Non-Dispatch) (out of parity in June and September); Florida B.3.4.6.1 (% Repeat Troubles within 30 days, UNE ISDN/Dispatch) (out of parity in June).

⁵²³ BellSouth Application at 95; BellSouth Varner Reply Aff. at para. 164; Letter from Kathleen B. Levitz, Vice President – Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 02-307 at 2 (filed Nov. 12, 2002) (BellSouth Nov. 12 *Ex Parte* Letter). BellSouth explains that when a circuit card has to be "reseated" this means that a technician removes a plug-in card associated with an ISDN line and then reinserts that card into the same slot. BellSouth Nov. 12 *Ex Parte* Letter at 2.

⁵²⁴ *Id.* According to BellSouth, a defective modem or computer may seize the line but does not release when the transmission is complete. *Id.* As a result, the line is unavailable. *Id.*

⁵²⁵ BellSouth Varner Reply Aff. at para. 162.

⁵²⁶ *Id.* at para. 164.

⁵²⁷ Florida B.3.2.6.1 (Customer Trouble Report Rate, UNE ISDN/Dispatch) (generally equal to or less than 1.5% difference between BellSouth retail and wholesale performance).

⁵²⁸ 47 U.S.C. § 271(c)(2)(B)(xi).

⁵²⁹ 47 U.S.C. § 251(b)(2).

attachments in any case where such matters are regulated by a State.”¹⁵⁹ As of 1992, nineteen states, including Connecticut, had certified to the Commission that they regulated the rates, terms, and conditions for pole attachments.¹⁶⁰

D. Checklist Item 4 – Unbundled Local Loops

48. Section 271(c)(2)(B)(iv) of the Act, item 4 of the competitive checklist, requires that a BOC provide “[l]ocal loop transmission from the central office to the customer’s premises, unbundled from local switching or other services.”¹⁶¹ The Commission has defined the loop as a transmission facility between a distribution frame, or its equivalent, in an incumbent LEC central office, and the demarcation point at the customer premises. This definition includes different types of loops, including two-wire and four-wire analog voice-grade loops, and two-wire and four-wire loops that are conditioned to transmit the digital signals needed to provide service such as ISDN, ADSL, HDSL, and DS1-level signals.¹⁶²

49. In order to establish that it is “providing” unbundled local loops in compliance with checklist item 4, a BOC must demonstrate that it has a concrete and specific legal obligation to furnish loops and that it is currently doing so in the quantities that competitors demand and at an acceptable level of quality. A BOC must also demonstrate that it provides nondiscriminatory access to unbundled loops.¹⁶³ Specifically, the BOC must provide access to any functionality of the loop requested by a competing carrier unless it is not technically feasible

¹⁵⁹ *Id.* § 224(c)(1). The 1996 Act extended the Commission’s authority to include not just rates, terms, and conditions, but also the authority to regulate nondiscriminatory access to poles, ducts, conduits, and rights-of-way. *Local Competition First Report and Order*, 11 FCC Rcd at 16104, para. 1232; 47 U.S.C. § 224(f). Absent state regulation of terms and conditions of nondiscriminatory attachment access, the Commission retains jurisdiction. *Local Competition First Report and Order*, 11 FCC Rcd at 16104, para. 1232; 47 U.S.C. § 224(c)(1); *see also Bell Atlantic New York Order*, 15 FCC Rcd at 4093, para. 264.

¹⁶⁰ *See States That Have Certified That They Regulate Pole Attachments*, Public Notice, 7 FCC Rcd 1498 (1992); 47 U.S.C. § 224(f).

¹⁶¹ 47 U.S.C. § 271(c)(2)(B)(iv).

¹⁶² *Local Competition First Report and Order*, 11 FCC Rcd at 15691, para. 380; *UNE Remand Order*, 15 FCC Rcd at 3772-73, paras. 166-67, n.301 (retaining definition of the local loop from the *Local Competition First Report and Order*, but replacing the phrase “network interconnection device” with “demarcation point,” and making explicit that dark fiber and loop conditioning are among the features, functions and capabilities of the loop).

¹⁶³ *SWBT Texas Order*, 15 FCC Rcd at 18481-81, para. 248; *Bell Atlantic New York Order*, 15 FCC Rcd at 4095, para. 269; *Second BellSouth Louisiana Order*, 13 FCC Rcd at 20637, para. 185.

to condition the loop facility to support the particular functionality requested. In order to provide the requested loop functionality, such as the ability to deliver xDSL services, the BOC may be required to take affirmative steps to condition existing loop facilities to enable competing carriers to provide services not currently provided over the facilities. The BOC must provide competitors with access to unbundled loops regardless of whether the BOC uses digital loop carrier (DLC) technology or similar remote concentration devices for the particular loops sought by the competitor.

50. On December 9, 1999, the Commission released the *Line Sharing Order*, which introduced new rules requiring BOCs to offer requesting carriers unbundled access to the high-frequency portion of local loops (HFPL).¹⁶⁴ HFPL is defined as “the frequency above the voiceband on a copper loop facility that is being used to carry traditional POTS analog circuit-switched voiceband transmissions.” This definition applies whether a BOC’s voice customers are served by copper or by digital loop carrier equipment. Competing carriers should have access to the HFPL at either a central office or at a remote terminal. However, the HFPL network element is *only* available on a copper loop facility.¹⁶⁵

51. To determine whether a BOC makes line sharing available consistent with Commission rules set out in the *Line Sharing Order*, the Commission examines categories of performance measurements identified in the *Bell Atlantic New York* and *SWBT Texas Orders*. Specifically, a successful BOC applicant could provide evidence of BOC-caused missed installation due dates, average installation intervals, trouble reports within 30 days of installation, mean time to repair, trouble report rates, and repeat trouble report rates. In addition, a successful BOC applicant should provide evidence that its central offices are operationally ready to handle commercial volumes of line sharing and that it provides competing carriers with nondiscriminatory access to the pre-ordering and ordering OSS functions associated with the provision of line shared loops, including access to loop qualification information and databases.

52. Section 271(c)(2)(B)(iv) also requires that a BOC demonstrate that it makes line splitting available to competing carriers so that competing carriers may provide voice and data service over a single loop.¹⁶⁶ In addition, a BOC must demonstrate that a competing carrier, either alone or in conjunction with another carrier, is able to replace an existing UNE-P

¹⁶⁴ See *Line Sharing Order*, 14 FCC Rcd at 20924-27, paras. 20-27; see also n.63 at C-12 *supra*.

¹⁶⁵ See *Deployment of Wireline Services offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order on Reconsideration in CC Docket No. 98-147, Fourth Report and Order on Reconsideration in CC Docket No. 96-98, 16 FCC Rcd 2101, 2106-07, para. 10 (2001).

¹⁶⁶ See generally *SWBT Texas Order*, 15 FCC Rcd at 18515-17, paras. 323-329 (describing line splitting); 47 C.F.R. § 51.703(c) (requiring that incumbent LECs provide competing carriers with access to unbundled loops in a manner that allows competing carriers “to provide any telecommunications service that can be offered by means of that network element”).

configuration used to provide voice service with an arrangement that enables it to provide voice and data service to a customer. To make such a showing, a BOC must show that it has a legal obligation to provide line splitting through rates, terms, and conditions in interconnection agreements and that it offers competing carriers the ability to order an unbundled xDSL-capable loop terminated to a collocated splitter and DSLAM equipment, and combine it with unbundled switching and shared transport.¹⁶⁷

E. Checklist Item 5 – Unbundled Local Transport

53. Section 271(c)(2)(B)(v) of the competitive checklist requires a BOC to provide “[l]ocal transport from the trunk side of a wireline local exchange carrier switch unbundled from switching or other services.”¹⁶⁸ The Commission has required that BOCs provide both dedicated and shared transport to requesting carriers.¹⁶⁹ Dedicated transport consists of BOC transmission facilities dedicated to a particular customer or carrier that provide telecommunications between wire centers owned by BOCs or requesting telecommunications carriers, or between switches owned by BOCs or requesting telecommunications carriers.¹⁷⁰ Shared transport consists of transmission facilities shared by more than one carrier, including the BOC, between end office switches, between end office switches and tandem switches, and between tandem switches, in the BOC’s network.¹⁷¹

¹⁶⁷ See *SWBT Kansas/Oklahoma Order*, 16 FCC Rcd at 6348, para. 220.

¹⁶⁸ 47 U.S.C. § 271(c)(2)(B)(v).

¹⁶⁹ *Second BellSouth Louisiana Order*, 13 FCC Rcd at 20719, para. 201.

¹⁷⁰ *Id.* A BOC has the following obligations with respect to dedicated transport: (a) provide unbundled access to dedicated transmission facilities between BOC central offices or between such offices and serving wire centers (SWCs); between SWCs and interexchange carriers points of presence (POPs); between tandem switches and SWCs, end offices or tandems of the BOC, and the wire centers of BOCs and requesting carriers; (b) provide all technically feasible transmission capabilities such as DS1, DS3, and Optical Carrier levels that the competing carrier could use to provide telecommunications; (c) not limit the facilities to which dedicated interoffice transport facilities are connected, provided such interconnections are technically feasible, or restrict the use of unbundled transport facilities; and (d) to the extent technically feasible, provide requesting carriers with access to digital cross-connect system functionality in the same manner that the BOC offers such capabilities to interexchange carriers that purchase transport services. *Id.* at 20719.

¹⁷¹ *Id.* at 20719, n.650. The Commission also found that a BOC has the following obligations with respect to shared transport: (a) provide shared transport in a way that enables the traffic of requesting carriers to be carried on the same transport facilities that a BOC uses for its own traffic; (b) provide shared transport transmission facilities between end office switches, between its end office and tandem switches, and between tandem switches in its network; (c) permit (continued...)