Triennial Review Order, the Commission found that "competing carriers generally cannot self-provide DS1 transport" and that "[a] carrier requiring only DS1-capacity transport between two points typically does not have a large enough presence along a route (generally loop traffic at a central office) to justify incurring the high fixed and sunk costs of self-providing just that DS1 circuit."[354] At the same time, the Commission found that while "DS1 transport is not generally made available on a wholesale basis," it was "our predictive judgment that wholesale provision of DS1 transport will develop as technology improvements make wholesale provision of DS1 circuits economic such that carriers have an incentive to invest in the equipment necessary to provide this capacity service."[355] Indeed, for these reasons, the Commission chose to differentiate DS1 transport from higher-capacity transport by applying only the "wholesale provisioning" test, and not the "self-provisioning" test to DS1 capacity transport.[356] The current record warrants no fundamental departure from this reasoning. Even after several states have conducted a review of alternatives to DS1 transport facilities, on very few routes were wholesale alternatives discovered, and even those were found only in the most competitive markets.[357] Nevertheless, where alternatives to the incumbent LEC's network are available, or are likely to be available, we find that carriers are not impaired without access to the incumbent LEC's transport. Thus, we do not impose on incumbent LECs an unbundling obligation for DS1 transport where we can reasonably infer that alternative wholesale transport services exist or are likely to exist.

127. We reach our conclusion because we find that alternative wholesale transport opportunities at the DS1 level are likely to exist or develop between two such offices. As described above, Tier 1 wire centers are those characterized by very significant competitive facilities presence or potential, as measured by fiber-based collocation and business lines. Between a pair of wire centers, each with very significant competitive facilities deployment or high business line counts, we infer that alternative transport services exist, or could exist, and will likely provide a wholesale alternative to the incumbent LEC's transport facilities. Even in the absence of a wholesale alternative, we find that the presence of such a sufficient number of competitive facilities will protect the interests of end-users. We find that the high level of competitive entry at Tier 1 wire centers signals a lack of impairment, even for DS1 transport facilities for which we find, without additional traffic to aggregate, carriers are unlikely themselves to deploy such facilities. However, where DS1 facilities are or are likely to be available from competitors on a wholesale basis, we find that competing carriers are not impaired without access to these facilities from the incumbent LEC.

128. *Limitation on DS1 Transport.* On routes for which we determine that there is no unbundling obligation for DS3 transport, but for which impairment exists for DS1 transport, we limit the number of DS1 transport circuits that each carrier may obtain on that route to 10 circuits. This is consistent with the pricing efficiencies of aggregating traffic. While a DS3 circuit is capable of carrying 28 uncompressed DS1 channels, the record reveals that it is efficient for a carrier to aggregate traffic at approximately 10

[354] *Triennial Review Order*, 18 FCC Rcd at 17222, para. 391.

[355] *Id.* at 17222-23, para. 392.

[356] *Id.*

[357] QSI Study at 15-21. *But see* BellSouth Reply at 30-31; Verizon Reply at 61-63; Verizon Reply, Reply Declaration of Lynn W. Walker (Verizon Walker Reply Decl.) at paras. 3-27; Declaration of Scott J. Alexander and Rebecca L. Sparks, *in* Letter from Christopher M. Heimann, General Attorney, SBC, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338 (Nov. 16, 2004).

DS1s.[358] When a carrier aggregates sufficient traffic on DS1 facilities such that it effectively could use a DS3 facility, we find that our DS3 impairment conclusions should apply.

b. DS3 Transport

129. We conclude that requesting carriers are not impaired without access to unbundled DS3 transport on routes connecting wire centers where both of the wire centers are either Tier 1 or Tier 2 wire centers. Thus, incumbent LECs are obligated to provide unbundled DS3 transport that originates or terminates in any Tier 3 wire center, but are not obligated to provide unbundled DS1 transport on routes connecting any combination of Tier 1 and Tier 2 wire centers. Just as the Commission determined in the *Triennial Review Order*, competing carriers continue to face high fixed and sunk costs in deploying transport facilities.[359] The initial cost of deploying a transmission facility does not vary significantly with capacity because much of the cost of the facility is related to the deployment itself, such as the costs associated with pulling fiber through conduit, trenching, or attaching fiber to poles.[360] Thus, carriers must have existing and expected scale economies sufficient to justify the costs of deployment. However, the need for DS3 capacity transport indicates that a carrier is aggregating a substantial amount of traffic from end users, and based on existing and predicted capacity requirements, such traffic sometimes is sufficient to justify transport facilities deployment.[361] Therefore, due to the potential revenues available at the DS3 level, we find that scale economies sometimes are sufficient to recover the fixed and sunk costs of deploying transport facilities. Just as the Commission did in the *Triennial Review Order*, we make this determination based on the high fixed and sunk costs associated with self-providing transport and evidence that competing carriers can begin to overcome these obstacles at this transmission level when transporting traffic between certain offices. Thus, we do not impose on incumbent LECs an unbundling obligation for DS3 transport where competitive LECs have deployed, or likely are able to deploy alternative transport facilities.

130. We conclude that requesting carriers are not impaired without access to unbundled DS3 transport on routes connecting wire centers where one or both of the wire centers classifies as either a Tier 1 or Tier 2 wire center because we find that competitive transport facilities have been or can be deployed between such wire centers. Tier 2 wire centers are characterized by the significant revenue opportunities they offer, as evidenced either by fiber-based collocation or by business line density. The significant revenue opportunities at both ends of such routes make it highly likely that competing carriers have deployed or can deploy in an economic manner transport to link such wire centers. Conversely, where one end of a route is a Tier 3 wire center, we cannot infer that carriers are not impaired in serving

[358] *See, e.g.*, Mountain Telecommunications Comments at 5-6 (explaining that in Arizona, an average 13 mile DS1 transport link costs $48.21 per month while an average 13 mile DS3 transport link costs $425.70, creating a cut over point at 8.83 DS1 channels); Integra Comments at 36 & Table 9 (based on average DS1 and DS3 UNE transport pricing in Qwest territory in Oregon, "it makes economic sense for Integra to purchase a DS-3" . . . "where 8 DS-1s are needed"); Lightship Gawlick Decl. at paras. 2, 13 & Attach. 1 (claiming that a 10.37 cut over point results from the average DS1 and DS3 UNE transport prices provided by Lightship which characterizes the data set as "a representative set of interoffice transport lines in our states," which include Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont).

[359] *Triennial Review Order*, 18 FCC Rcd at 17217-19, paras. 386-87.

[360] *See supra* paras. 69-77.

[361] A DS3 circuit has the equivalent capacity to 672 voice-grade loops or 28 DS1 loops.

the route between these wire centers – a link that necessarily requires sufficient opportunities to originate and terminate traffic at both ends of the route. Thus, for all routes with at least one end point classified as a Tier 3 wire center, we find that competing carriers are impaired without access to DS3 transport.

131. *Limitation on DS3 Transport.* On those routes for which we find impairment for DS3s, we limit the availability of DS3 transport. Although we find that sufficient revenue opportunities generally are not available to justify the deployment of competitive transport facilities on these routes, we nevertheless establish a safeguard to limit access to a carrier that has attained a significant scale on such a route indicating that more than sufficient potential revenues exist to justify deployment, we find no impairment. We give effect to this distinction, as we did in the *Triennial Review Order*, by establishing a limitation of 12 DS3s per carrier for any route on which carriers are not impaired.[362]

132. Although we find that this capacity limitation is useful as a safeguard, we reject AT&T's proposal to use this as the only limit on DS3 availability. AT&T proposes that a cap of 12 DS3s serve as the only limitation on DS3 transport access on a nationwide basis.[363] AT&T's proposal would miss identifying many locations where competing carriers have successfully duplicated the incumbent LEC's network.

c. Dark Fiber Transport

133. We find that competing carriers are not impaired without access to unbundled dark fiber transport on routes connecting wire centers where both of the wire centers are classified as either a Tier 1 or Tier 2 wire center because we recognize that competitive transport facilities have been or can be deployed between such wire centers. As the Commission has described in previous orders, dark fiber is fiber optic cable that has been deployed by a carrier but has not yet been activated through connections to optronics that "light" it, and thereby render it capable of carrying communications.364 Once activated, dark fiber transport is used by carriers for the same purposes as lit dedicated transport. Just as we did in the *Triennial Review Order*, we make our determination of impairment based on the high sunk costs associated with deploying fiber facilities, including dark fiber.[365] We find that, aside from those routes for which we make non-impairment determinations, carriers are impaired in their ability to self-provision the transmission facility itself, but are not impaired by the costs of collocation and electronics necessary to activate dark fiber. We also reaffirm the Commission's previous conclusions in the *Triennial Review Order* that pertain to state efforts to clarify processes and limitations on access to dark fiber.[366]

134. We must weigh the benefits of unbundling dark fiber, as described above, against the costs of unbundling. All parties apparently agree that dark fiber UNEs can be and are activated at very high

[362] *Triennial Review Order*, 18 FCC Rcd at 17219-20, para. 388.

[363] AT&T Comments at 42-50.

[364] *Triennial Review Order*, 18 FCC Rcd at 17213-14, para. 381.

[365] As we found in the *Triennial Review Order*, a substantial part of the costs of deploying transport facilities is in the sunk cost of burying, or otherwise deploying the fiber, such as obtaining rights-of-way, digging up streets or attaching cabling to poles. *Id.* at 17214, para. 382.

[366] *Id.* at 17216-17, para. 385 (describing state "flexibility to establish reasonable limitations and technical parameters for dark fiber unbundling" as well as processes for obtaining access to dark fiber) (internal quotations omitted).

capacity levels, including capacity levels for which we find no impairment for typical "lit" transport. Incumbent LECs claim that unbundling dark fiber facilities that enable such high bandwidth communications defeats any incentives that competing carriers have to deploy their own transmission fiber.[367] The record indicates, however, that dark fiber transport (like all fiber transport) can, in some circumstances, be self-provisioned or obtained on a wholesale basis from carriers other than the incumbent LEC. Therefore, the test we adopt in this Order results in no unbundling where the record reveals that a reasonably efficient competitor has, or could, duplicate the facilities of the incumbent LEC. The record indicates that competing carriers that use UNE dark fiber transport actively seek out wholesale alternatives to the incumbent LEC's fiber facilities.[368] Moreover, the test we adopt forces competing carriers to find alternative facilities in the areas where competitors have deployed or could deploy such facilities. Furthermore, carriers are capable of activating dark fiber when they have aggregated sufficient revenues from traffic to justify the deployment of extensive optronics, but even at such revenue levels, sometimes carriers have not achieved sufficient revenues to justify the high expense of fiber deployment.

135. We find that dark fiber allows for very efficient use of facilities that incumbent LECs have already deployed but that would otherwise lay fallow.[369] The record indicates that most incumbent LEC interoffice facilities had been replaced with fiber prior to the 1996 Act.[370] The record also indicates that competing carriers using unbundled dark fiber transport can operate more efficiently than when using lit transport, because the competing carrier itself engineers and controls the network capabilities of transmission and can maximize the use of previously dormant fiber.[371] We agree that dark fiber allows competing carriers to provide service without incurring the high sunk costs of self-deployment, especially when the fiber is not being used by the incumbent LEC. Competing carriers assert that use of dark fiber also prevents the unnecessary excavation of the streets that would be necessary if competitors were required to lay their own alternative fiber.372 Commenters also argue that unbundled dark fiber users must still deploy significant facilities, including optronic equipment and collocation arrangements in

[367] *See* SBC Comments at 73-76; Letter from Thomas F. Hughes, Vice President – Federal Regulatory, SBC, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338 (filed Dec. 7, 2004); Letter from Edwin J. Shimizu, Director – Federal Regulatory Affairs, Verizon, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338 (filed Dec. 3, 2004) (Verizon Dec. 3, 2004 Shimizu Dark Fiber *Ex Parte* Letter).

[368] *See, e.g.*, Alpheus Galvan/Maella Decl. at paras. 21-25.

[369] *See Triennial Review Order*, 18 FCC Rcd at 17215, para. 383; *see also* Alpheus Comments at 11, 15-16. *But see* Verizon Dec. 3, 2004 Shimizu Dark Fiber *Ex Parte* Letter at 3.

[370] AT&T asserts that "[b]y 1996, [the Bells] had transitioned almost 94% of [working interoffice] facilities to fiber." AT&T Reply, Attach. B, Reply Declaration of Anthony Fea (AT&T Fea Reply Decl.) at para. 4.

[371] *Triennial Review Order*, 18 FCC Rcd at 17216-17, para. 385; Alpheus Comments at 11-12; Alpheus Galvan/Maella Decl. at paras. 9-12.

[372] *Cf.* Alpheus Galvan/Maella Decl. at paras. 104-23 (describing some of the restrictions various municipalities have imposed to reduce the impact of fiber conduit trenching). However, we note that the Act does not allow us to assess the most efficient use of the incumbent LEC network; rather, our inquiry starts and stops with section 251 and its focus on impairment.

incumbent LEC offices, in order to light the dark fiber and connect it to their own networks.373 We find that this investment advances the facilities deployment goals of the Act.374

D. Entrance Facilities

136. In the *Local Competition Order*, the Commission defined dedicated transport as:

> incumbent LEC transmission facilities dedicated to a particular customer or carrier that provide telecommunications between wire centers owned by incumbent LECs or requesting telecommunications carriers, or between switches owned by incumbent LECs or requesting telecommunications carriers.[375]

The Commission reaffirmed this definition, which encompassed entrance facilities (the transmission facilities that connect competitive LEC networks with incumbent LEC networks), in the *UNE Remand Order*.[376] In the *Triennial Review Order*, we revised the definition of dedicated transport to exclude entrance facilities.[377] We determined that entrance facilities "exist *outside* the incumbent LEC's local network" and should therefore – given section 251's focus on competition within the local network – be excluded from the definition of dedicated transport.[378] We also limited the definition of dedicated transport to "those transmission facilities connecting incumbent LEC switches and wire centers within a LATA."[379] Reviewing the *Triennial Review Order*, the *USTA II* court indicated that our exclusion of entrance facilities from the definition of dedicated transport was at odds with the definition of "network element" found in section 153(29) of the Act.[380] Specifically, the court found that we erred in excluding these facilities from the definition of dedicated transport for purposes of implementing the section 251

---

[373] *See, e.g.*, Alpheus Comments at 14-15; *see also Triennial Review Order*, 18 FCC Rcd at 17213-16, paras. 381-84.

[374] While it could be argued that permitting use of unbundled dark fiber acts as a disincentive to alternative transport deployment by allowing competing carriers to obtain the fiber transport without incurring sunk costs that a self-deploying carrier would incur, we find that, through the application of our triggers, any disincentive effect is minimized.

[375] *Local Competition Order*, 11 FCC Rcd at 15718, para. 440.

[376] *UNE Remand Order*, 15 FCC Rcd at 3842, paras. 322-23.

[377] *Triennial Review Order*, 18 FCC Rcd at 17203-04, para. 366. We also determined in the *Triennial Review Order* that our decision with respect to entrance facilities applied to transmission facilities connecting mobile wireless carriers' networks with incumbent LECs' networks, and that wireless carriers were therefore not entitled to unbundled access to these facilities. *Id.* at 17206, para. 368. Because we now conclude that wireless carriers may not obtain UNEs solely to provide mobile wireless service, we find it unnecessary to reconsider whether facilities linking wireless and incumbent LEC networks are properly considered entrance facilities. *See supra* para. 36.

[378] *Triennial Review Order*, 18 FCC Rcd at 17203-04, para. 366 (emphasis in original).

[379] *Id.* at 17202, para. 365.

[380] *USTA II*, 359 F.3d at 585-86; *see also* 47 U.S.C. § 153(29) (defining "network element" as "a facility or equipment used in the provision of a telecommunications service").

unbundling obligation.[381] The court noted, moreover, that "[i]f entrance facilities are correctly classified as 'network elements,' an analysis of impairment would presumably follow."[382]

137. The *USTA II* court did not reject our conclusion that incumbent LECs need not unbundle entrance facilities, only the analysis through which we reached that conclusion.[383] In response to the court's remand, we reinstate the *Local Competition Order* definition of dedicated transport to the extent that it included entrance facilities, but we find that requesting carriers are not impaired without unbundled access to entrance facilities.[384]

138. As the court suggested, we now conduct an impairment analysis with respect to entrance facilities and find that the economic characteristics of entrance facilities that we discussed in the *Triennial Review Order* support a national finding of non-impairment.[385] Specifically, entrance facilities are less costly to build, are more widely available from alternative providers, and have greater revenue potential than dedicated transport between incumbent LEC central offices. As we noted in the *Triennial Review Order*, entrance facilities are used to transport traffic to a switch and often represent the point of greatest aggregation of traffic in a competitive LEC's network.[386] Because of this aggregation potential, entrance facilities are more likely than dedicated transport between incumbent LEC offices to carry

[381] *USTA II*, 359 F.3d at 585-86. We do not interpret the court's decision to mean that we have no discretion to refine the statutory definition of "network element" for purposes of unbundling under section 251(c)(3). As we noted in the *Triennial Review Order*, the Act "does not provide guidance on which transmission facilities should be included in the definition of the transport network element." *Triennial Review Order*, 18 FCC Rcd at 17203, para. 366.

[382] *USTA II*, 359 F.3d at 585-86.

[383] In fact, the court expressed skepticism that incumbent LECs should be required to build entrance facilities under any circumstances. *Id.* at 586.

[384] We reject suggestions that we define entrance facilities as a new UNE, Alpheus Comments at 68-69, or as a member of the "loop" family, *id.* at 71; ATX, Bayring, *et al.* Reply at 48. Because the traffic aggregation potential inherent in entrance facilities more closely resembles that associated with dedicated transport, we reject these arguments and consider these facilities to be a type of transport. In any event, the distinction has no practical significance, because our analysis here does not rely in any way on our treatment of other loop or transport elements. Several commenters have argued that we should revise the definition of dedicated transport to replace the references to a requesting carrier's "wire center" and "switch" with the term "location," to ensure that the definition does not exclude non-switched services, particularly data services. Alpheus Comments at 72-73; ATX, Blackfoot, *et al.* Comments at 48-49. Because these commenters have supplied no evidence that otherwise-qualified data service providers have been unable to obtain unbundled transport under the definition we re-adopt today, and because in any case we make a national finding of non-impairment with respect to entrance facilities, we reject this proposal.

[385] When the Commission last conducted an impairment analysis for entrance facilities, in the *UNE Remand Order*, the Commission concluded that competitive LECs were impaired without unbundled access to entrance facilities. *UNE Remand Order*, 15 FCC Rcd at 3851-52, paras. 347-48. The Commission found the record lacking in evidence that "the competitive entrance facility market is providing requesting carriers with effective alternatives to unbundled transport for all, or substantially all of the routes requesting carriers would need in order to provide the services they seek to offer." *Id.* at 3852, para. 348. At the same time, however, the Commission noted that "the entrance facility market appears to be the most mature segment of the interoffice transport market, and thus may, in some situations, provide requesting carriers with effective alternatives to unbundled transport for certain point-to-point routes." *Id.*

[386] *See Triennial Review Order*, 18 FCC Rcd at 17204-05, para. 367.

enough traffic to justify self-deployment by a competitive LEC.[387] Moreover, competitive LECs have a unique degree of control over the cost of entrance facilities, in contrast to other types of dedicated transport, because they can choose the location of their own switches.[388] For example, they can choose to locate their switches close to other competitors' switches, maximizing the ability to share costs and aggregate traffic, or close to transmission facilities deployed by other competitors, increasing the possibility of finding an alternative wholesale supply.[389] In addition, they often can locate their switches close to the incumbent LEC's central office, minimizing the length and cost of entrance facilities.[390]

139. The record in this proceeding also demonstrates that competitive LECs are increasingly relying on competitively provided entrance facilities. BellSouth notes, for example, that between October 2003 and September 2004, 10 percent to 20 percent of the entrance facilities it had provided to competitive LECs were replaced by facilities obtained from other sources.[391] Verizon states that between early 2003 and mid-2004, it migrated more than 32,000 entrance facility circuits to non-Verizon facilities.[392] No commenters in this proceeding have disputed this evidence, which indicates that wholesale alternatives to entrance facilities provided by incumbent LECs are widely available. And it appears that incumbent LECs and competitors alike continue to agree that entrance facilities are more competitively available than other types of dedicated transport.[393]

140. We note in addition that our finding of non-impairment with respect to entrance facilities does not alter the right of competitive LECs to obtain interconnection facilities pursuant to section 251(c)(2) for the transmission and routing of telephone exchange service and exchange access service.[394] Thus, competitive LECs will have access to these facilities at cost-based rates to the extent that they require them to interconnect with the incumbent LEC's network.

---

[387] *Id.* As described more fully below, the record contains evidence that competitive LECs are steadily deploying their own entrance facilities, or obtaining them from third-party providers, to replace entrance facilities formerly obtained from incumbent LECs. *See* Verizon Comments at 80-81; Verizon Comments, Attach. F, Declaration of Mohit Patel (Verizon Patel Decl.) at para. 15; BellSouth Comments at 54.

[388] *Triennial Review Order*, 18 FCC Rcd at 17204-05, para. 367.

[389] *Id.* at 17204-05, para. 367. The record contains evidence that competitive LECs are able to obtain entrance facilities from third-party providers. *See* NuVox Comments, Exh. A, Declaration of Keith Coker (NuVox Coker Decl.) at para. 3 ("[W]here available, NuVox utilizes third-party providers for backhaul from NuVox collocation arrangements to NuVox switches.")

[390] *Triennial Review Order*, 18 FCC Rcd at 17204-05, para. 367. The record indicates that entrance facilities tend to be much shorter in length than transport facilities between two incumbent LEC offices. AT&T Comments at 47-48, 52.

[391] BellSouth Comments at 54 & BellSouth Padgett Aff. at para. 39.

[392] Verizon Comments at 81 & Verizon Patel Decl. at para. 15.

[393] *See, e.g.*, AT&T Comments at 52 (indicating that "almost all competitively deployed transport links are entrance facilities") (emphasis removed); Verizon Comments at 40-41; Verizon Comments, Attach. E, Declaration of Claudia P. Cuddy (Verizon Cuddy Decl.) at paras. 4-16 (describing Verizon's success in finding non-incumbent LEC providers of entrance facilities outside its region); *see also Triennial Review Order*, 18 FCC Rcd at 17205, para. 367 & n.1122.

[394] *Triennial Review Order*, 18 FCC Rcd at 17204, para. 366.

141. The evidence described above convinces us that competitive LECs are not impaired without access to entrance facilities.[395] We also conclude that it would be inappropriate to apply the same impairment test to entrance facilities that we have adopted for other types of dedicated transport.[396] As we have explained, entrance facilities are characterized by unique operational and economic characteristics that justify separate treatment: they are less costly to build, are more widely available from alternative providers, and have greater revenue potential than dedicated transport between incumbent LEC central offices.[397] For these reasons, we do not apply our test for other types of dedicated transport to entrance facilities.

E. Transition Plan

142. Because we remove significant dedicated transport unbundling obligations, as described above, we find it prudent to establish a plan to facilitate the transition from UNEs to alternative transport options, including special access services offered by the incumbent LECs.[398] Specifically, for DS1 and DS3 dedicated transport we adopt a twelve-month plan for competing carriers to transition to alternative facilities or arrangements, including self-provided facilities, alternative facilities offered by other carriers, or special access services offered by the incumbent LEC. As discussed below, we find it is appropriate to adopt a longer, eighteen-month transition plan for dark fiber transport. These transition plans shall apply only to the embedded customer base, and do not permit competitive LECs to add new dedicated transport UNEs pursuant to section 251(c)(3) where the Commission determines that no section 251(c) unbundling requirement exists.[399]

---

[395] We find no justification in the record for making entrance facilities available on a transitional basis, as ALTS suggests, until carriers have achieved sufficient volumes to make self-deployment efficient. ALTS *et al.* Comments at 90. As we explained above, the record shows that self-deployment or alternative wholesale provisioning of entrance facilities are viable alternatives given the possibilities for traffic aggregation and efficient location of competitive LEC switches. These factors demonstrate that requesting carriers are able to enter the market on an economic basis without unbundled access to entrance facilities, and we therefore decline to require such unbundling.

[396] *See Triennial Review Order*, 18 FCC Rcd at 17204, para. 367 ("[T]he economics of dedicated facilities used for backhaul between networks are sufficiently different from transport within an incumbent LEC's network that our analysis must adequately reflect this distinction.") We thus reject commenters' suggestions that entrance facilities should be subject to the same test that applies to dedicated transport between incumbent LEC facilities. *See* AT&T Comments at 50-52; Loop-Transport Coalition Comments at 87; ATX, Bayring, *et al.* Reply at 48; McLeod Reply at 37.

[397] *See* AT&T Comments at 32 (noting that entrance facilities, compared to other transmission facilities, are better suited to self-deployment because they involve "enormous traffic" and "very short distances").

[398] To the extent that a particular dedicated transport facility no longer subject to unbundling pursuant to section 251(c)(3) has been used as part of an EEL, our existing rules governing conversions and commingling apply. *See Triennial Review Order*, 18 FCC Rcd at 17348-50, paras. 585-89 (conversions); *id.* at 17342-48, paras. 579-84 (commingling).

[399] We recognize that some dedicated transport facilities not currently subject to the nonimpairment thresholds established in this Order may meet those thresholds in the future. We expect incumbent LECs and requesting carriers to negotiate appropriate transition mechanisms for such facilities through the section 252 process.

143. We believe it is appropriate to adopt a longer transition period for DS1 and DS3 dedicated transport than was proposed in the *Interim Order and NPRM*,[400] because we find that the twelve-month period provides adequate time for both competitive LECs and incumbent LECs to perform the tasks necessary to an orderly transition, including decisions concerning where to deploy, purchase, or lease facilities.[401] Consequently, carriers have twelve months from the effective date of this Order to modify their interconnection agreements, including completing any change of law processes. At the end of the twelve-month period, requesting carriers must transition the affected DS1 or DS3 dedicated transport UNEs to alternative facilities or arrangements.

144. Because incumbent LECs generally do not offer dark fiber as a tariffed service regulated under sections 201 and 202 of the Act,[402] and because it may take time for competitive LECs to negotiate IRUs or other arrangements with incumbent or competitive carriers, we find that a more lengthy transition plan is warranted for transitioning carriers from the use of UNE dark fiber to alternative facilities.[403] Moreover, we find that "lit" DS3 or OCn services are sufficiently different from dark fiber not to qualify as a ready substitute.[404] Because incumbent LECs offer no tariffed service comparable to dark fiber, we find that, if no impairment is found for a particular route on which a competitive LEC utilizes unbundled dark fiber, the risk of service disruption is significantly higher than for DS3 and DS1 unbundled transport, for which comparable service offerings are available under tariff. The record reveals that, even under ideal situations, deploying fiber transport facilities can take up to several years.[405] For these reasons, we adopt an eighteen-month transition period for dark fiber transport facilities similar to the twelve-month transition period that we adopt for DS1 and DS3 transport.[406] We expect that the extra time will be sufficient to allow carriers the time necessary to migrate to alternative fiber arrangements, including self-deployed fiber.

145. We do, however, adopt the *Interim Order and NPRM*'s proposal regarding transition pricing of unbundled dedicated transport facilities for which the Commission determines that no section 251(c) unbundling requirement exists.[407] Thus, during the relevant transition period, any dedicated transport UNEs that a competitive LEC leases as of the effective date of this Order, but for which the Commission determines that no section 251(c) unbundling requirement exists, shall be available for lease from the incumbent LEC at a rate equal to the higher of (1) 115 percent of the rate the requesting carrier paid for

---

[400] *See Interim Order and NPRM*, 19 FCC Rcd at 16799, para. 29 (proposing a six-month period).

[401] *See, e.g.*, ALTS *et al.* Comments at 70-72 & n.113 (discussing the steps carriers must take to transition away from unbundled incumbent LEC transmission facilities).

[402] *See* 47 U.S.C. §§ 201, 202.

[403] Alpheus Comments at 57, 66; Alpheus Reply at 29.

[404] *See, e.g.*, Alpheus Comments at 66.

[405] *Id.* at 61.

[406] Thus, for dark fiber transport, carriers have eighteen months from the effective date of this Order to modify their interconnection agreements, including completing any change of law processes. At the end of the 18-month period, requesting carriers must transition the affected dark fiber dedicated transport UNEs to alternative facilities or arrangements.

[407] These transitional pricing requirements apply to DS1, DS3, and dark fiber dedicated transport links alike.

the transport element on June 15, 2004, or (2) 115 percent of the rate the state commission has established or establishes, if any, between June 16, 2004 and the effective date of this Order, for that transport element.[408] We believe that the moderate price increases help ensure an orderly transition by mitigating the rate shock that could be suffered by competitive LECs if TELRIC pricing were immediately eliminated for these network elements, while at the same time, these price increases, and the limited duration of the transition, provide some protection of the interests of incumbent LECs in those situations where unbundling is not required.[409] Of course, the transition mechanism adopted here is simply a default process, and pursuant to section 252(a)(1), carriers remain free to negotiate alternative arrangements superseding this transition period. The transition mechanism also does not replace or supersede any commercial arrangements carriers have reached for the continued provision of transport facilities or services.

VI. HIGH-CAPACITY LOOPS

A. Summary

146. In this section, we apply section 251(d)(2)(B) to incumbent LECs' DS1, DS3, and dark fiber loops, consistent with the requirements of *USTA II*. Specifically, we evaluate a requesting carrier's ability to utilize third-party alternatives to high-capacity loops, or to self-deploy such loops, to serve particular locations in an economic manner. Based on the evidence in the record, we make the following determinations:

- *DS3 Loops.* We find that requesting carriers are impaired without access to DS3-capacity loops at any location within the service area of an incumbent LEC wire center containing fewer than 38,000 business lines or fewer than four fiber-based collocators. Thus, requesting carriers are not impaired without access to DS3-capacity loops at any location within the service area of a wire center containing 38,000 or more business lines and four or more fiber-based collocators.

- *DS1 Loops.* We find that requesting carriers are impaired without access to DS1-capacity loops at any location within the service area of an incumbent LEC wire center containing fewer than 60,000 business lines or fewer than four fiber-based collocators. Thus, requesting carriers are not impaired without access to DS1-capacity loops at any location within the service area of a wire center containing 60,000 or more business lines and four or more fiber-based collocators.

- *Dark Fiber Loops.* We find that requesting carriers are not impaired without access to unbundled dark fiber loops in any instance.

B. Background

147. As the Commission explained in the *Triennial Review Order*, loops are the transmission facilities between a central office and the customer's premises, *i.e.*, "the last mile" of a carrier's network

[408] *Interim Order and NPRM*, 19 FCC Rcd at 16797-99, para. 29. These prices apply to both lit and dark fiber transport. To the extent that a state public utility commission order raises some rates and lowers others for dedicated transport, the incumbent LEC may adopt either all or none of these dedicated transport rate changes. Dedicated transport facilities no longer subject to unbundling shall be subject to true-up to the applicable transition rate upon the amendment of the relevant interconnection agreements, including any applicable change of law processes.

[409] *See Interim Order and NPRM*, 19 FCC Rcd at 16799, para. 30.

that enables the end-user to originate and receive communications.[410] In distinguishing among the various types of loop facilities – voice grade (DS0/analog POTS), DS1, DS3, OCn and dark fiber[411] – the Commission has defined "high-capacity loops" as those of DS1 or higher capacity.[412]

148. In the *Triennial Review Order*, the Commission determined that competitive LECs were impaired without access to DS1, DS3, and dark fiber loops, subject to state commission implementation of "triggers" principally measuring the availability of actual alternatives or the feasibility of constructing such alternatives to a particular customer location, which could show that a competitor was not impaired without unbundled access to incumbent LEC facilities.[413] As we explained in the *Interim Order and NPRM*, the D.C. Circuit did not make a formal pronouncement regarding the status of the Commission's findings with respect to high-capacity loops, and although some carriers have argued that those rules have been vacated,[414] we have not taken a position on that question.[415] Nevertheless, the Commission sought comment on how best to respond to the D.C. Circuit's *USTA II* decision concerning application of the impairment standard to high-capacity loops. In recognition of the fact that continued disputes over *USTA II*'s implications for our high-capacity loop unbundling rules would give rise to uncertainty and thus instability in the market, we take this opportunity to revisit those rules here.

C. Impairment Analysis – High-Capacity Loops

1. General Operational and Economic Characteristics of High-Capacity Loops

149. At the outset, we note that the *USTA II* court did not disturb our conclusions regarding either DS0 or OCn loops.[416] Indeed, the D.C. Circuit has recognized that the lowest capacity level – a DS0 copper loop to the customer premises – is the most obvious candidate for an unbundling obligation, and our finding regarding the lack of impairment for the highest capacity loops in the *Triennial Review Order*

---

[410] *Triennial Review Order*, 18 FCC Rcd at 17105, para. 203.

[411] *Id.* at 17012, para. 45.

[412] *Id.* at 17012, 17106, paras. 45, 204.

[413] *Id.* at 17164-84, paras. 311-42. The *Triennial Review Order* established two types of triggers to evaluate impairment of high-capacity loops: (1) a two wholesaler trigger (for DS1 and DS3 loops); and (2) a two self-provisioner trigger (for DS3 and dark fiber loops).

[414] *See, e.g.*, Letter from Jerry Hendrix, Assistant Vice President Interconnection Services, BellSouth, to Stephen G. Huels, Regional Vice President, AT&T (Apr. 30, 2004), *in* Letter from David Lawson, Counsel for AT&T, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 01-338 at attach. 7 (filed May 7, 2004) ("The D.C. Circuit Order explicitly vacated the Federal Communications Commission's (FCC) national impairment finding for DS1, DS3 and dark fiber elements. As a result, once vacatur becomes effective, ILECs will no longer have an obligation under Section 251 of the Act to offer these elements and, at that time, BellSouth will pursue the legal and regulatory options available to it."); Verizon Reply, CC Docket Nos. 01-338, 96-98, 98-147 at 5 (filed Apr. 5, 2004) ("Once the mandate in *USTA II* issues, ILECs will have no obligation to make high-capacity facilities available on an unbundled basis at all.").

[415] *USTA II*, 359 F.3d at 571-73; *Interim Order and NPRM*, 19 FCC Rcd at 16788, para. 9 (assuming *arguendo* that the D.C. Circuit vacated the Commission's enterprise market loop unbundling rules).

[416] Thus, this Order does not address loops of either of those capacity levels.

was never challenged.[417] With this in mind, we limit our analysis to DS1, DS3, and dark fiber loops, and begin by examining the economics of deploying such loops. We find that although the costs of deploying high-capacity loops vary little among the different capacity levels, the revenue opportunities increase with the capacity level. Thus, our findings regarding impairment among different capacity levels differ somewhat, and we are more likely to find that competitive LECs are impaired without access to unbundled loops of the lowest capacity levels, for which revenue opportunities are the smallest, if no alternatives outside the incumbent's network are available.

150. The economics of deploying loops are determined by the costs associated with such deployment and the potential revenues that can be recouped from a particular customer location. Competitive LECs face large fixed and sunk costs in deploying competitive fiber, as well as substantial operational barriers in constructing their own facilities.[418] The costs of loop construction are fixed, meaning that they are largely independent of the particular capacity of service that a customer obtains at a particular location. 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 fiber loop does not differ significantly from the cost to construct a DS3 or higher-capacity fiber loop), but such costs do vary based on the length of the loop. The most significant portion of the costs incurred in building a fiber loop results from deploying the physical fiber infrastructure into underground conduit to a particular location, rather than from lighting the fiber-optic cable.[419] The record reflects that for these reasons, LECs do not typically construct fiber loop facilities at lower capacity levels, such as DS1 or DS3, but rather install high-capacity fiber-optic cables and then use electronics to light the fiber at specific capacity levels, often "channelizing" these higher-capacity offerings into multiple lower-capacity streams.[420]

151. In addition to the substantial fixed and sunk costs involved in deploying competitive fiber, competitive LECs also face substantial operational barriers to constructing their own facilities. As we found in the *Triennial Review Order*, the construction of local loops generally takes between six to nine months absent unforeseen delay.[421] Competitive LECs describe on our record the possible delays

[417] *USTA II*, 359 F.3d at 561.

[418] *See* XO Tirado Decl. at para. 17 (stating that costs of deploying loops average $200,000 per building).

[419] These costs include the costs of obtaining rights-of-way and other necessary legal permissions, the costs of the actual fiber-optic facilities, and the costs of physical deployment itself. Alpheus Comments at 34-35; AT&T Comments at 57-60; ALTS *et al.* Comments at 63; Sprint Comments at 43-46. The availability of conduit substantially reduces the revenues a carrier must earn to justify the deployment of a lateral. *See* Letter from Thomas Jones, Counsel for Time Warner Telecom, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338, Exh. B, CSMG CLEC Network Extension Cost Model at 33 (filed Dec. 1, 2004) (Time Warner Telecom Dec. 1, 2004 *Ex Parte* Letter) (summarizing the projected revenues required to justify the deployment of a lateral to a location between 500 feet and 4,500 feet from an existing fiber network in selected markets where conduit is leased, rather than constructed). All LECs are obligated under section 224 of the Act to provide access to poles, ducts, and conduit. 47 U.S.C. § 224. We therefore assume for purposes of this discussion that existing conduit is available to competitive carriers that seek to deploy their own loop facilities. Indeed, the record contains evidence that existing conduit is frequently available for use by competitive LECs that wish to deploy their own fiber. SBC Reply at 37-38; Qwest Reply at 36-37; Verizon Pilgrim Reply Decl. at paras. 12-15. To the extent that any party may believe that section 224 of the Act requires some different interpretation or implementation, such concerns are outside the scope of this proceeding. *See supra* para. 23.

[420] *See, e.g.*, Qwest Comments at 76-77; SBC Reply at 29; Verizon Reply at 47-48.

[421] *Triennial Review Order*, 18 FCC Rcd at 17161, para. 304.

affecting construction decisions and the time it takes to deploy fiber. Often these delays are attributable to problems in securing rights-of-ways from local authorities in order to dig up streets prior to laying fiber, including lengthy negotiations with local authorities over the ability to use the public rights-of-way and obtaining building and zoning permits.[422] Moreover, commenters note that many local jurisdictions impose construction moratoriums which prevent the grant of a franchise agreement to construct new facilities in the public rights-of-way.[423]

152. Loop impairment is more closely related to the demand of the individual customer served by such a loop than is impairment with regard to dedicated transport. Unlike transport facilities, loops generally are not used to aggregate multiple customers' traffic.[424] Because a loop serves a specific location and cannot economically be transferred to serve another customer location, most of the costs of constructing loops are sunk costs. Unless the loop is subsequently purchased or leased by another provider wishing to serve that same location, a carrier's ability to recover the cost of that loop is generally wholly tied to the carrier's ability to maintain service to a specific customer and, thus, most of the costs associated with constructing loops are sunk costs.

153. As such, the barriers to entry impeding competitive deployment of loops are substantial: The costs of the loops themselves, as well as costs associated with accessing right-of-ways and obtaining building access do not generally vary with demand. As we found in the *Triennial Review Order*, the costs of loop deployment vary due to factors such as regional differences in costs of construction; the length of the fiber lateral[425] that competitor must construct from the splice point on the relevant ring[426] to the customer location; and the availability of reasonable access to rights-of-way.[427]

154. While the fixed and sunk costs for constructing loops are quite high, economies of scale in deployment can accrue when carriers construct loops to locations that are geographically close to the transport network, assuming other barriers do not preclude construction.[428] This is especially true in

---

[422] *Id.*

[423] *See, e.g.*, Alpheus Galvan/Maella Decl. at para. 56; XO Tirado Decl. at para. 17.

[424] The feeder portion of a loop that serves a multiunit premises typically is used to aggregate the traffic of multiple customers, but only those customers located in the same building. *See* XO Tirado Decl. at para. 13 (noting that only in "limited instances" is there an opportunity to aggregate traffic on a loop).

[425] Throughout this Order, we use the term "lateral" to describe a fiber-optic facility used to connect a fiber-optic ring to a particular customer location.

[426] Even if a fiber-optic facility passes directly next to a building, a competitor cannot attach a lateral wherever the ring passes a building but rather must attach its lateral at a splice point along the ring. The record indicates that splice points on competitive networks are typically placed about 2,000 feet apart. *See* AT&T Comments at 37; AT&T Comments, Attach. D, Declaration of Anthony Fea and Anthony Giovannucci (AT&T Fea/Giovannucci Decl.) at para. 23; *see also* Alpheus Comments at 61 (noting that the Commission "cannot simply assume a short lateral, as sometime CLECs must extend lateral a significant distance to even get to the closest splice point").

[427] *Triennial Review Order*, 18 FCC Rcd at 17161, para. 304.

[428] *See, e.g.*, Alpheus Comments at 39-40; KMC Duke Decl. at paras. 8-11; XO Tirado Decl. at paras. 14-20; Verizon Pilgrim Reply Decl. at paras. 10-15; Loop and Transport Coalition Reply at 38-39; Qwest Reply at 39 & n.101.

urban areas where the concentration of potential customer locations – and thus of revenue opportunities – is very dense.[429] Competitive carriers explain that when they build fiber rings in a metropolitan area, they do so in a manner that identifies geographically proximate commercial buildings that house as many potential customers as possible, and attempt to design and build the ring such that it directly passes and can be used to serve as many of those buildings as possible.[430] As such, the record shows that carriers are able to self-deploy or to use competitive DS3 loop facilities in large metropolitan areas where buildings are either directly connected to a competitive fiber ring, or likely would require the construction of only a short lateral from a nearby splice point where buildings are either directly connected to the fiber rings, or lie in narrow geographic corridors close to these rings.[431] Given the high cost of constructing the "lateral" fiber connecting a building to the fiber ring's splice point, carriers generally will construct these laterals only to buildings located in narrow geographic corridors close to their existing fiber rings. Moreover, the record indicates that carriers can sometimes economically serve lower-capacity customers (*e.g.*, customers at the DS1 capacity level) in multi-tenant buildings because the incremental costs of providing channelized capacity over a higher-capacity fiber loops are minimal when one or more other customers in a building are already served by competitive fiber of sufficient capacity, or the likelihood of capturing customers at higher capacity justifies deployment of facilities that can be channelized to the DS1 level.[432] Thus, the record indicates that when deciding whether and where to build their own

---

[429] *See, e.g.*, Alpheus Comments at 37; SBC Comments, Attach. A, Tab TX at 16; Verizon Reply at 110-12; BOC UNE Fact Report 2004 at III-7; Letter from Patrick J. Donovan, Counsel, TDS Metrocom, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338, Attach. at 1 (filed Oct. 18, 2004). *But see* Qwest Comments at 63 (stating that costs of deployment are lower in rural areas where wires do not need to be trenched).

[430] AT&T Comments at 33; XO Tirado Decl. at paras. 12-15; KMC Duke Decl. at para. 6; *see also* Letter from Jonathan Banks, Vice President-Executive and Federal Regulatory Affairs, BellSouth, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338 at 2-3 (filed Dec. 9, 2004). A local fiber network or fiber ring is an interconnected set of transmission facilities connecting critical hand-off points such as incumbent LEC tandem offices and interexchange POPs built by competitive LECs. Competitive LECs use these facilities to serve customers that are either directly connected to the fiber ring or connected by short laterals or spurs off the ring to the nearest splice point.

[431] *See id. See also, e.g.*, SBC Comments, Attach. A, Tab CA at 18, Tab IL at 16, Tab MI at 17, Tab MO at 10, Tab OH at 16, and Tab TX at 16 (citing evidence that competing carriers have placed fiber-optic facilities in dense urban and/or commercial areas, near other buildings to which a competitive carrier has already deployed a fiber loop); ATI Wigger Decl. at para. 23 (stating that ATI will only build a lateral of less than 500 feet for a customer with a minimum bandwidth requirement of one DS3); Loop and Transport Coalition Comments, Declaration of James C. Falvey (Xspedius Falvey Decl.) at para. 20 (showing that Xspedius has 600 lit buildings either directly on a fiber ring or connected to a competitive ring via a short lateral); ATX, BayRing, *et al.* Reply at 42 (stating that two DS3s' worth of traffic would justify deployment of competitive loops where the fiber ring is within 500-1000 feet of the building); AT&T Comments at 37 (stating that, under the most favorable case, two DS3s' worth of traffic would justify deployment of competitive loops where the fiber ring is within 350 feet of the building); XO Emergency Petition for Expedited Determination that Competitive Local Exchange Carriers Are Impaired Without DS1 UNE Loops, WC Docket No. 04-313, CC Docket No. 01-338 at 27 (filed Sept. 29, 2004) (stating that XO has built laterals to approximately 1% of the office buildings in cities where it has metro fiber networks, with an average distance from the fiber ring of 500 feet).

[432] *See, e.g.*, Loop and Transport Coalition Comments, Declaration of David A. Kunde (Eschelon Kunde Decl.) at para. 17; Letter from Bennett L. Ross, General Counsel, BellSouth, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338 at 1-2 (filed Dec. 8, 2004) (BellSouth Dec. 8, 2004 DS1 *Ex Parte* Letter) ("[T]he most significant costs of providing high-capacity services utilizing the CLEC's own network are (continued....)

facilities, competitive LECs target areas that offer the greatest demand for high-capacity offerings (*i.e.*, that maximize potential revenues) and that are close to their current fiber rings (*i.e.*, that minimize the costs of deployment).[433] The evidence in the record shows that the highest concentration of competitive LEC deployment of loops in the central business districts of large metropolitan areas are near where competitors have already deployed fiber rings.[434]

2. Appropriate Level of Granularity

a. Appropriate Geographic Market

155. Our first task in the impairment analysis is to define the appropriate level of geographic granularity at which to evaluate impairment. Consistent with the position of several incumbent LECs, including Verizon and SBC, we find that the area served by a wire center is the appropriate geographic market.[435] Parties have advocated a wide array of options, ranging from building-specific tests to MSA-wide determinations to national findings of impairment or lack thereof.[436] We recognize that some imperfections are inherent in any approach we might adopt, and conclude that the other proposed geographic tests have greater defects than the one we select. For example, a properly designed building-specific test could assess variations in impairment far more subtly than could a wire center or MSA-based approach, but would entail steep (and indeed, as we conclude below, insurmountable) hurdles with regard to administrability. In contrast, an MSA-wide approach relying on objective, readily available data would alleviate dramatically any concerns regarding administrability, but (as we also describe below) would require an inappropriate level of abstraction, lumping together areas in which the prospects for competitive entry are widely disparate. Thus, we are faced with the difficult task of adopting a test that balances these concerns, recognizing impairment where it exists but denying unbundling where competitive deployment is economic – and doing so in an administrable manner that is not excessively over- or under-inclusive.[437] As explained below, we adopt a wire center-based test, finding that requesting carriers are not impaired within the service areas of wire centers that contain significant competitive fiber deployment, as evidenced by collocation, and exhibit substantial revenue opportunities, as evidenced by the number of business lines served by the particular wire center. Although we recognize that such a test may in some cases be under-inclusive (denying unbundling in specific buildings where competitive entry is not in fact economic) or over-inclusive (requiring unbundling in

(Continued from previous page)
associated with collocation, construction of a fiber ring, and installation of the [laterals] to connect buildings to that fiber ring. However, once those costs have been incurred to offer service at a DS-3 or higher transmission level, the incremental expense of offering DS-1 service is minimal.").

[433] The differences in revenue opportunities of different capacity loops are discussed below.

[434] *See, e.g.*, Alpheus Comments at 37; SBC Comments, Attach. A, Tab TX at 16; Verizon Reply at 110-12; BOC UNE Fact Report 2004 at III-7; TDS Metrocom Jenn Decl. at para. 9.

[435] *See, e.g.*, Verizon Comments at 82; SBC Comments at 88; BellSouth Dec. 8, 2004 DS1 *Ex Parte* Letter at 1; ACS Dec. 8, 2004 *Ex Parte* Letter at 4; *see also supra* note 251 (defining "wire center").

[436] *See, e.g.*, ALTS *et al.* Comments at 66 (building-by-building test); AT&T Comments at 15-32 (same); MCI Comments at 139-40 (same); Verizon Comments at 83-85 (MSA test); SBC Comments at 87-89 (same).

[437] *See USTA II*, 359 F.3d at 570 (noting "the inevitability of *some* over- and under-inclusiveness in the Commission's unbundling rules").

specific buildings where competitive entry is in fact economic), we conclude that this approach strikes the appropriate balance and responds to the concerns expressed by the court in *USTA II*.[438]

156. Our choice of the wire center service area as the appropriate level of geographic granularity at which to assess requesting carriers' impairment without access to high-capacity loops is grounded on two specific directives set forth in the *USTA II* decision. As explained above, the D.C. Circuit (1) rejected the *Triennial Review Order*'s "subdelegation" to state commissions of authority to evaluate subjective criteria and, based on such evaluation, require unbundling under section 251,[439] and (2) directed the Commission to consider not only *actual* competition within a given market, but also *potential* competition within that market.[440] In concert, these two directives effectively preclude our reliance on a building-specific approach to high-capacity loop impairment, and counsel instead for a wire-center by wire-center approach.

157. *Administrability.* Given the court's prohibition on subdelegation to the states, a building-specific impairment analysis would be impracticable and unadministrable. As noted above, it would be exceedingly difficult for us to conduct the sort of nationwide, fact-intensive, building-specific inquiries that we delegated to the state commissions in the *Triennial Review Order*. The record suggests that there are at least 700,000 commercial buildings, and perhaps as many as 3 million buildings,[441] for which impairment would have to be evaluated. Such case-by-case evaluation would be impracticable even if the relevant evidence were entirely objective and readily forthcoming. Here, however, the difficulty would be magnified by carriers' disincentives to provide relevant data that is in their possession and by the subjectivity inherent in the interpretation of that data.

158. First, building-by-building evaluation of competitive deployment would require collection and analysis of information that is not easily verifiable, and is often exclusively within the possession of competitive LECs, many of which have little incentive to provide that information to regulators evaluating impairment.[442] Incumbent LECs assert that this problem manifested itself during the state proceedings conducted to implement the *Triennial Review Order*,[443] and recurred in the instant

[438] *See Pricing Flexibility Order*, 14 FCC Rcd at 14276, para. 96 (citing *United States v. FCC*, 707 F.2d, 610, 618 (D.C. Cir. 1983)); *see also Sinclair v. FCC*, 284 F.3d 148, 159 (D.C. Cir. 2002) ("Where issues involve 'elusive' and 'not easily defined' areas . . . our review is considerably more deferential, according broad leeway to the Commission's line-drawing determinations.") (citation omitted); *AT&T v. FCC*, 220 F.3d 607, 627 (D.C. Cir. 2000) (stating that "the Commission has wide discretion to determine where to draw administrative lines").

[439] *USTA II*, 359 F.3d at 565-68, 573-74, 594.

[440] *See id.*; *infra* Part IV.C.

[441] *See* Loop and Transport Coalition Comments at 73 (citing "some 3 million commercial buildings in the United States"); Sprint Comments at 44 (stating that "[t]here are approximately 739,000 commercial buildings alone in the U.S.").

[442] We decline to impose the burdens of creating and updating a building-by-building facilities catalog on these third-party carriers. Moreover, we recognize that these third-party competitive LECs may (1) have no interest in the outcome of the analysis, and thus little incentive to provide the relevant information, or (2) desire to retain unbundling within the building (perhaps to serve customers on floors other than the floors currently served over their own facilities), and thus would have an explicit incentive to avoid cooperating.

[443] *See, e.g.*, Verizon Reply at 62-63; Verizon Dec. 8, 2004 Guyer/Glover *Ex Parte* Letter at 3; Letter from Glenn T. Reynolds, Vice President-Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 01-
(continued....)

proceeding, during which they suggest competitive LECs submitted only limited, anecdotal evidence of their own.[444] Competitive LECs, for their part, criticized incumbent LEC data regarding competitive deployment.[445]

159. Second, even if all parties cooperated in providing the relevant data, that data would require substantial analysis before it could be used to reach impairment determinations. For example, competitive LEC commenters have proposed extremely complex criteria to identify which observed competitive facilities should be included in any analysis of current competition in particular buildings – criteria which would require evaluation of which parts of a building were served by the competitive facility, where that facility interconnects with the incumbent LEC's network, and the systems used for ordering and provisioning the competitive service, among other things.[446] Even if these factors could be

(Continued from previous page)
338, Attach. at 2, 8 (filed Aug. 18, 2004). In contrast to the situation here, the building-by-building approach to unbundling used in the *MDU Reconsideration Order* relies upon information about the characteristics of the tenants in buildings that is readily ascertainable by both incumbent LECs and competitive LECs, and based upon an established regulatory framework. *MDU Reconsideration Order*, 19 FCC Rcd at 15856, 15858-59, para. 6.

[444] BellSouth Reply at 31-33 (observing that competitive LECs have unique access to data regarding competitive facilities deployment, yet chose not to submit that evidence in the record); Qwest Reply at 10-12 (observing that competitive LECs advocating for impairment determinations to be made on a route-by-route basis failed to provide data that would allow the Commission to make such evaluations); SBC Reply at 17-19 (asserting that the Commission should infer from the fact that competitive LECs chose not to submit evidence of competitive facilities deployment in the record that such evidence, if submitted, would have been detrimental to the competitive LECs' positions); Verizon Reply at 12-16 (stating that competitive LECs have refused to submit their data regarding competitive facilities deployment). A number of competitive LECs relied upon a study by QSI analyzing data submitted in 14 state commission proceedings regarding high-capacity loops and transport. *See* QSI Study. However, as incumbent LEC commenters note, the evidence submitted in the state proceedings may itself be incomplete; the evidence that was submitted focused on whether evidence of deployment met the *Triennial Review Order's* triggers; and the factors that QSI applied to exclude competitive facilities, including the exclusion of competitive facilities identified by incumbent LECs, are subject to dispute. *See* Verizon Walker Reply Decl. at paras. 21-27; SBC Reply at 28-30; BellSouth Reply at 29-30; *see also, e.g.*, BellSouth Reply at 31-32 (criticizing competitive LEC commenters for providing only general claims about their deployment of competitive transmission facilities, without providing details regarding that deployment).

[445] *See, e.g.*, ALTS *et al.* Reply at 23-24; Global Internetworking Reply at 2-4; Integra Reply at 9; MCI Reply at 90 n.269. Several incumbent LECs submitted maps depicting competitive fiber deployment in various metropolitan areas throughout the country. *See* Verizon June 24, 2004 *Ex Parte* Letter, Attach. at 4 and Exh. 5 (providing maps of competitive fiber deployment); SBC Aug. 18, 2004 *Ex Parte* Letter, Attach.; BellSouth Oct. 1, 2004 Reynolds *Ex Parte* Letter, Attach. (same). As described in more detail below, *see infra* paras. 187-89, the value of these maps to our analysis is undermined by several shortcomings. Among other things, they fail to indicate the capacity of service being provided over the facilities described, or whether those facilities are in fact being used to provide services for which competitive LECs may use UNEs Moreover, even if the maps indicated a competitive LEC's ability to compete in some areas within a given MSA without unbundled high-capacity loops, we reject an MSA-wide approach to loop unbundling, and the incumbent LECs have offered no administrable and accurate means by which we could use the maps to locate those specific areas within an MSA in which we should prohibit unbundling. *See id.* Given these critical problems, these maps are only minimally relevant to our inquiry here, which evaluates whether a particular facility can be duplicated by a competitive carrier for provision of a particular service.

[446] *See, e.g.*, Letter from Becky Sommi, Vice President, Operation Support, Broadview Networks, *et al.* to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338 at 2-5 (filed Dec. 8, 2004) (favoring a test based on the presence of competitive wholesalers and stating that the existence of wholesalers serving buildings using competitive DS1 loops should be evaluated by an independent third party, based on the following criteria: (1) (continued....)

reasonably enumerated, it is inevitable that incumbent LECs and competitive LECs would engage in disputes over many of them, building-by-building, raising the prospect of expensive, fact-intensive litigation for years to come. The expense of such litigation could not be justified by the revenue available from the majority of individual customers. We thus conclude that such detailed and potentially subjective building-by-building and loop-by-loop evaluations, conducted for between 700,000 and 3 million buildings, involving data parties will be reluctant to provide, are not practical. Indeed, various incumbent LECs have agreed, advocating a wire center-based approach to the high-capacity loop impairment inquiry.[447]

160. *Reasonable Inferences.* Even if we could surmount the administrability problems outlined above and adopt a building-specific approach that accounted for the presence of competitive alternatives within a building – which, as described, we could not – that approach would still be flawed by its failure to draw reasonable inferences from actual deployment regarding *potential* deployment. Any effort to account for such potential deployment would render the building-specific test even more fact-intensive, and far more difficult to administer.[448] Clearly, the Commission is not suited to conduct this kind of analysis for between 700,000 and 3 million buildings.

161. Given the guidance of *USTA II* and the concerns described above, we believe that the wire center service area is the appropriate geographic unit at which to evaluate requesting carriers' impairment without access to unbundled high-capacity loops. As an initial matter, there are far fewer wire center service areas than there are buildings.[449] Conversely, wire centers generally cover relatively small land

(Continued from previous page)
the wholesaler must be unaffiliated with the incumbent LEC; (2) the wholesaler must offer DS1 loops on a common carrier basis; (3) the wholesaler must be capable of delivering DS1 loops that connect to all customers in the building at the customer-specified point of demarcation; (4) the wholesaler must be offering service using its own loop facilities (not those of the incumbent LEC or another competitive LEC); (5) DS1 service must be delivered over an industry standard DS1 interface, including, but not limited to, meeting Telcordia Standard GR-499; (6) the wholesaler's loops must be terminated at competitive LECs' collocations; and (7) the wholesaler must have electronic ordering and provisioning systems).

[447] *See, e.g.*, Verizon Comments at 82; SBC Comments at 88; BellSouth Dec. 8, 2004 DS1 *Ex Parte* Letter at 1; ACS Dec. 8, 2004 *Ex Parte* Letter at 4.

[448] For example, the "potential deployment analysis" that we asked state commissions to conduct with regard to high-capacity loops in the *Triennial Review Order* required consideration of numerous factors in relation to each location, including:

> 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; and availability/feasibility of similar quality/reliability alternative transmission technologies at that particular location.

Triennial Review Order, 18 FCC Rcd at 17179, para. 335; *see also* BellSouth Reply at 40 (describing burden of conducting a potential deployment analysis on a building-by-building basis).

[449] Our record suggests that there are about 11,000 BOC wire centers. *See* Qwest Dec. 7, 2004 Wire Center Data *Ex Parte* Letter; Verizon Dec. 7, 2004 Wire Center Data *Ex Parte* Letter; SBC Dec. 7, 2004 Wire Center Data *Ex Parte* Letter; BellSouth Dec. 7, 2004 Wire Center Data *Ex Parte* Letter; BellSouth Dec. 10, 2004 Reynolds *Ex Parte* (continued....)

areas, such that characteristics found in one section of a wire center serving area are likely to be found in other sections of the wire center serving area as well. Moreover, as described above,[450] the tests we adopt rely on data regarding the number of business lines and fiber-based collocators in a wire center, which are objective and readily available. Thus, our wire center test avoids the administrability concerns that would afflict any building-by-building approach. Furthermore, our wire center-based approach yields reasonably precise results that link impairment to the factor that most prominently determines whether construction of a competitive facility is economic – namely, the presence of extensive competitive fiber rings within an area, as evidenced by competitive fiber-based collocations and high business line counts. The record supports inferences at the wire center service area level that requesting carriers are not impaired without unbundled DS1 or DS3 loops in wire center service areas with these features, due to their ability to deploy their own facilities or obtain access to other competitively deployed networks on a wholesale basis.[451] Thus, our choice of a wire center-based test permits an accurate, administrable, and appropriately nuanced evaluation of impairment.

162. *Alternative Geographic Market Definitions.* Although commenters suggest geographic markets for high-capacity loops ranging from individual buildings to entire regions, these approaches are inferior to the wire center approach. First, as discussed at length above, we reject as unadministrable commenters' advocacy for a building-specific approach to loop impairment.[452]

163. Second, we specifically reject competitive LECs' assertions that building access constraints, such as denial of building access or an incumbent LEC's first-mover advantage with regard to building access, require us to adopt a geographic market definition specific to the customer's location within a building.[453] As noted above, we believe it would be inappropriate to distort our unbundling analysis in an effort to solve alleged deficiencies in other aspects of our regulatory regime. Thus, we examine impairment with regard to loops only at the wire center-specific level, and leave building-specific impediments to be addressed in other Commission proceedings, or in other fora, as appropriate. Furthermore, while we do not give weight to the availability or use of tariffed incumbent LEC offerings, standing alone, in evaluating impairment for high-capacity loops, we note that competitive LECs that are denied access to loops in a particular building where competitive deployment is not economic for building-specific reasons likely will still be able to access incumbent LEC facilities as services at tariffed rates. Thus, for example, in urban wire centers where high-capacity loop unbundling is not required, competing carriers will be able to use their own facilities, or facilities deployed by other competitors, potentially complemented, as a gap-filler, by services using an incumbent LEC's tariffed alternatives for

(Continued from previous page)
Letter; SBC Dec. 10, 2004 Benison *Ex Parte* Letter. These wire centers comprise the great majority of all wire centers operated by incumbent LECs that are subject to unbundling. *See generally* 47 U.S.C. § 251(f) (exempting certain incumbent LECs from the obligations set forth in section 251(c)).

[450] *See supra* paras. 100, 105.

[451] Specifically, as discussed below, we do not unbundle DS3 loops in wire center service areas with at least 38,000 business lines and at least four fiber-based collocators. We do not unbundle DS1 loops in wire center service areas with at least 60,000 business lines and at least four fiber-based collocators. *See infra* paras. 174, 178.

[452] *See supra* paras. 157-61; *see also, e.g.*, Verizon Dec. 8, 2004 Guyer/Glover *Ex Parte* Letter at 2.

[453] Time Warner Telecom Dec. 1, 2004 *Ex Parte* Letter at 3-4; *see also* Declaration of Graham Taylor and Charles M. Boto at 4-10, *in* Time Warner Telecom Dec. 1, 2004 *Ex Parte* Letter, Exh. A.

buildings where competitive facilities cannot economically be deployed.[454] The availability of such incumbent LEC offerings therefore mitigates concerns, expressed by some competitive LECs, that a wire center approach is impermissibly "under-inclusive" and overlooks the existence of end users in that wire center that cannot economically be served by competitive facilities.

164. Third, we also reject proposals that we evaluate impairment for high-capacity loops by broader geographic areas, such as MSAs.[455] As we have explained above,[456] a single MSA can encompass urban, suburban, and rural areas, each of which presents different challenges to competitive LECs seeking to self-deploy high-capacity loop facilities or to obtain such facilities from an alternative wholesale provider. An impairment determination that applies to a geographic zone of this size is therefore likely to either over-estimate or under-estimate impairment.[457]

165. Fourth, we reject proposals to reach national findings, of either impairment or non-impairment, with regard to high-capacity loops. On one hand, SBC, Qwest, and Verizon urge us to make a nationwide finding that competitive LECs are *not impaired* without access to DS3 loops,[458] and Qwest urges a nationwide finding of no impairment with respect to DS1 loops as well.[459] On the other hand, AT&T urges us to make a nationwide finding of *impairment* for all high-capacity loops, limited only by the *Triennial Review Order*'s capacity-based restrictions on DS3 loops,[460] while ALTS urges a nationwide impairment finding with regard to DS1 loops.[461] Whereas (as described below) we conclude that the revenue opportunities associated with fiber-optic cable are such that it will always be economic for carriers to deploy such facilities rather than lighting UNE dark fiber for use at very high capacities, the record indicates that the feasibility of constructing loops to serve customers at the DS1 and DS3 capacities is more case-specific, prohibiting a national finding. We thus find that the more nuanced wire center approach that we adopt today is a more faithful and workable implementation of the Act and *USTA II* than either of "nationwide" proposals set out in our record. Unlike commenters' proposals, our approach takes into account specific factors relevant to the prospects for competitive deployment in a

[454] The record also suggests that in some cases, competitive LECs might be able to serve customers' needs by combining other elements that remain available as UNEs. *See* BellSouth Dec. 8, 2004 DS1 *Ex Parte* Letter at 2 (stating that competitive LECs can use the following types of copper loops to provide DS1 service to customers: (1) 2-wire or 4-wire High Bit Rate Digital Subscriber Line (HDSL) Compatible Loops; (2) Asymmetrical Digital Subscriber Line Compatible Loops; (3) 2-wire Unbundled Copper Loops-Designed; or (4) Unbundled Copper Loop Non-Designed).

[455] *See* Verizon Comments at 83-85; BellSouth Comments at 44; SBC Comments at 87-89.

[456] *See supra* para. 82.

[457] *See id.* As noted above, we recognize that our wire center-based approach likely suffers from some of these flaws, and will doubtless give rise to some over- and under-inclusion. However, because wire center serving areas are generally far smaller than MSAs, we conclude that the wire center approach achieves far more granularity than an MSA-based approach, and produces reasonable, accurate results without sacrificing too great a degree of administrability.

[458] Qwest Comments at 81; SBC Comments at 87-89; Verizon Comments at 82-83.

[459] *See, e.g.*, Qwest Comments at 76-81.

[460] AT&T Comments at 26-27.

[461] ALTS *et al.* Comments at 52-60.

given area. In contrast, a nationwide finding with regard to high-capacity loops would be inappropriate, given that – as described below – the revenue opportunities associated with DS3 loops will, in some but not all areas, justify the attendant costs, and that competitors will, in some but not all areas, be able to provide service at the DS1 capacity using higher-capacity competitive facilities.

b. Capacity-Specific Analysis

166. As described below, we base our analysis of high-capacity loops on our findings that: (1) competitive deployment of DS3-capacity loops is in some cases economic; (2) competitive deployment of stand-alone DS1-capacity loops is rarely if ever economic, but competitors are nonetheless able to provide DS1-capacity service using a competitively deployed, higher-capacity facility; and (3) requesting carriers are not impaired with respect to dark fiber loops. Based on these determinations, and drawing inferences about requesting carriers' ability to deploy competitive facilities, we find it appropriate to adopt tests that preclude DS1 and DS3 loop unbundling throughout a wire center service area where that area's revenue opportunities and the presence of extensive competitive fiber deployment indicate the feasibility of competitive provision at the relevant capacity level.[462] With respect to dark fiber loops, we eliminate unbundling on a nationwide basis.

3. Wire Center-Based Impairment Analysis

167. As discussed above, competitive carriers have been able to overcome the barriers to self-deployment of DS3 loops in narrow geographic corridors where they have already deployed fiber-optic facilities. Where they have used competitive facilities to serve customers at the DS1 capacity, they generally have done so only over higher-capacity facilities already used to serve one or more other customers within the same building.[463] To identify which other markets likely are suitable for self-deployment of DS3- or higher-capacity loops (and those which are suitable for provision of channelized DS1-capacity service), we derive administrable proxies that correlate to the evidence of actual DS3 loop deployment in our record. These proxies indicate when a particular building is likely to fall within the central business district, and thus close to competitive fiber rings. In such cases, our record indicates that competitive carriers can deploy relatively short fiber laterals to connect buildings to nearby splice points on competitive fiber rings, and we may thus infer that DS3 or higher-capacity loops can be deployed in an economic manner. As described above, we find that the presence of fiber-based collocations in a wire center service area is a good indicator of the potential for competitive deployment of fiber rings.[464] We further find, consistent with parties' comments, that a wire center service area's business line count is indicative of its location in or near a large central business district, which is likely to house multiple competitive fiber rings (and thus numerous splice points) with laterals to multiple buildings.[465] A high

[462] For reasons similar to those described in the dedicated transport section, we do not undertake an "at a minimum" analysis of factors other than impairment with respect to high-capacity loops. *See supra* note 226.

[463] *See supra* para. 154.

[464] *See supra* paras. 96-105. We define "fiber-based collocator" here to have the same meaning we assign to it for purposes of our transport test above. *See supra* para. 102 (defining "fiber-based collocation").

[465] We recognize that our tests, which measure business line counts within wire centers but do not account for the size of the land areas served by those wire centers, do not explicitly rely on "density" of business lines per unit of geographic area. We note, however, that no party advocated an explicit density-based approach (as distinct from a line-count-based approach) to unbundling, and that no party placed into our record the evidence that would be necessary to derive the relevant density figures. Rather, the parties advocating a wire center approach generally (continued....)

concentration of business lines generally indicates a likely concentration of large, multi-story commercial buildings, which in turn may justify the construction of fiber networks. Thus, high business line counts and the presence of fiber-based collocators, when evaluated in conjunction with one another, are likely to correspond with actual self-deployment of competitive LEC loops or to indicate where deployment would be economic and potential deployment likely.[466]

168. In contrast to our test for dedicated transport, our test for high-capacity loops requires both a minimum number of business lines served by a wire center *and* the presence of a minimum number of fiber-based collocators to show that requesting carriers are not impaired. As described above, the costs of deploying loops can vary tremendously depending on the length of the lateral that a competitor must construct between the fiber ring's splice point and the building. Thus, our test captures areas characterized by high revenue opportunities and the likely presence of multiple competitive fiber rings. A test, like the one we adopt for dedicated transport, that was satisfied only by either a sufficient number of lines *or* a sufficient number of collocations would not account for both revenue opportunities and the scope of deployed fiber rings, and would therefore deny unbundling where carriers are impaired, for two reasons. First, the presence of fiber rings in the absence of a sufficiently high business line count might indicate a wire center service area that happens to fall along a ring that serves other busy, high-revenue areas but that does not itself offer revenues sufficient to justify competitive deployment of high-capacity loops. In such wire center service areas, competitive LECs might deploy fiber transport through the wire center service area but not bring fiber close enough to buildings to permit economic service to end-user customers over short laterals. Second, the presence of a high number of business lines in the absence of a correspondingly high number of fiber-based collocations might indicate a location that offers high revenue opportunities but that is not close to existing fiber facilities or not suitable for fiber ring deployment for other reasons – for example, an otherwise suburban area that houses a small commercial development, a factory in a rural area, or an urban area with high business line count but insufficient

(Continued from previous page)
supported thresholds based on business line counts. *See, e.g.*, Verizon Comments at 82 (stating that "the Commission must eliminate unbundling of high-capacity UNEs in those wire centers that have concentrated demand for high-capacity services," and identifying such wire centers on the basis of business line counts); USTA Reply at 16 (same); Verizon Reply, Attach. F, Reply Declaration of Ronald H. Lataille, Marion C. Jordan, and Julie K. Slattery (Verizon Lataille/Jordan/Slattery Reply Decl.) at para. 7 (arguing that line counts effectively predict presence of competitively supplied high-capacity facilities); BellSouth Padgett Aff. at paras. 27-30 (same); Letter from Glenn T. Reynolds, Vice President – Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338, Attach. (filed Dec. 1, 2004) (linking business line counts and "business line density"); SBC Comments at 88-90 (arguing that high line counts correlate to a competitive carrier's ability to construct fiber-optic facilities within a wire center). Moreover, data submitted into our record by BellSouth, associating line count and fiber-based collocator figures with particular CLLI codes, confirm that the wire centers with the most business lines tend to fall within the centers of large urban areas. *See* BellSouth Padgett Aff., Ex. SWP-1; BellSouth Dec. 7, 2004 Wire Center Data *Ex Parte* Letter; BellSouth Dec. 10, 2004 Reynolds *Ex Parte* Letter. Furthermore, our line count test is used in conjunction with a collocation test, to maintain unbundled access within wire centers showing relatively high revenues but insufficiently extensive competitive fiber rings to enable the economic construction of short laterals. *See, e.g.*, *infra* para. 168.

[466] Our high-capacity loop rules thus rely on the same readily ascertainable data used for our dedicated transport analysis. *See supra* para. 161. To facilitate application of a federal standard, we rely on objective criteria that are administrable and verifiable, but could be disruptive as applied to a dynamic market if modest changes in competitive conditions resulted in the reimposition of unbundling obligations. Therefore, once a wire center satisfies the standard for no DS1 loop unbundling, the incumbent LEC shall not be required in the future to unbundle DS1 loops in that wire center. Likewise, once a wire center satisfies the standard for no DS3 loop unbundling, the incumbent LEC shall not be required in the future to unbundle DS3 loops in that wire center.

competitive fiber deployment to indicate that the construction of competitive laterals to actual buildings would be economic at any particular capacity. Competitive deployment of high-capacity loops to such areas would require the construction of long fiber laterals, and thus would entail extremely high costs that very likely would exceed the available revenues.

169. While the evidence does not (and could not) reveal a precise, immutable relationship between actual and potential deployment of high-capacity loops on the one hand, and the numbers of business lines and fiber-based collocators on the other hand, we adopt these proxies because they best minimize and balance any under-inclusiveness and over-inclusiveness. The proxies we have chosen appear from our record to be most likely to reveal, in an administrable manner, which areas are likely to offer concentrated revenue opportunities and support significant fiber deployment, and thus to permit the construction of competitive high-capacity loops. As the Commission has recognized in the past, and as courts have agreed, our selection of specific criteria is not an exact science, and the Commission may exercise line-drawing discretion when rendering determinations based on agency expertise, our reading of the record before us, and a desire to provide an easily implemented and reasonable bright-line rule to guide the industry.[467] We note too that the D.C. Circuit has in the past expressly upheld the Commission's reliance on fiber collocation as an indicator of the potential for facilities-based competition.[468]

170. We emphasize, however, that economic conditions surrounding competitive deployment of DS3-capacity loops permit inferences regarding potential deployment in the context of DS3 loops that would not be appropriate in the context of DS1 loops. A DS3 loop has 28 times the capacity of a DS1 loop, and thus offers a substantially greater revenue opportunity.[469] This critical difference forecloses an approach that would treat the different capacity facilities as though they were the same. The record before us indicates that competitive carriers typically do not provision stand-alone DS1 loops (*i.e.*, loops at the DS1 capacity provisioned either by the competitive LEC itself or a third-party provider unaffiliated[470] with the incumbent LEC) to serve customers at the DS1 capacity level.[471] Rather, the

---

[467] *See supra* note 438.

[468] *See WorldCom, Inc. v. FCC*, 238 F.3d 449, 458-59 (D.C. Cir. 2001).

[469] This is parallel to the fact that a DS1 has equivalent capacity to 24 DS0s. Small and medium enterprise customers served by DS1 loops provide much lower revenue opportunities than large enterprise market customers and, generally, resist multi-year contract obligations. *See, e.g., Triennial Review Order*, 18 FCC Rcd at 17174, para. 325; NuVox Comments at 11-12 (discussing revenue potential that can be generated from a DS1). Additionally, the record shows that the majority of small and medium-sized business customers occupy single tenant commercial buildings and that the building of laterals for DS1 services requires many customers at a single location to justify their costs. ATI Wigger Decl. at para. 21; *see also* Eschelon Kunde Decl. at para. 17 (stating that deploying a single DS3 to serve a customer within a building is not economic except where anchor tenants within the building are already served by competitive fiber-optic facilities).

[470] As in relation to our transport analysis, we use the terms "affiliate" and "affiliated" here consistent with the definition set forth in section 3(1) of the Act. *See* 47 U.S.C. § 153(1).

[471] *See* ALTS *et al.* Comments at 53-56; Loop and Transport Coalition Comments at 97-99, 105-112; NuVox Comments at 11-12. In addition, competitive carriers expressly state that a competitive LEC would not construct its own DS1 (or lower) capacity loops, and even incumbent LECs' assertions about competitive provision to DS1 customers are based on assumptions that competitors routinely deploy multiplexing equipment that can provide capacity down to lower levels. *See* NuVox Comments at 11-13; NuVox Coker Decl. at para. 2; NuVox Reply at 4-7; (continued....)

record indicates that competitive carriers can sometimes provide facilities-based service at the DS1 capacity where they, or another competitive carrier, have rationalized the costs of a DS3- or higher-capacity fiber loop by providing high-capacity services to one or more other customers within the same building (so-called "anchor" tenants).[472] Competitive LECs provide evidence that, in such cases, they sometimes find it economic to self-deploy higher-capacity facilities that may be used to serve a particular customer at the DS1 level.[473] Additionally, competitive LECs are sometimes able to purchase wholesale capacity to serve a DS1 customer from another competitive carrier that is serving a customer at the DS3-capacity level or higher level in the same building.

171. Thus, the test we adopt here with respect to DS1 loops denies unbundled access to DS1 loops only in the areas served by wire centers where we believe it likely that competitors actually have deployed, or will deploy, competitive facilities at the DS3 capacity level or higher, creating the potential for competitive LECs to channelize those facilities to offer service at the DS1 capacity level. As described above, our DS1 loop impairment analysis is grounded on our conclusion that competitive LECs can supply DS1-capacity service in buildings already served by a higher-capacity facility, but cannot deploy stand-alone DS1-capacity loops on an economic basis. Therefore, the analysis for DS1 loops necessarily differs from the analysis for DS3 loops. In the DS3 loop context, the question before us is whether a carrier *expecting revenues commensurate with a DS3-capacity service* could construct a DS3-capacity facility in an economic manner. In contrast, a competitive LEC seeking to provide a DS1-capacity service by definition cannot expect the magnitude of revenues associated with a DS3-capacity service, and our DS3 test – which assumes that the requesting carrier will reap revenues and thereby offset the costs of deployment – is inapposite. With regard to DS1 loop impairment, then, we do not assess whether the economic conditions in a wire center permit construction of a DS3 loop by a carrier expecting the high revenues associated with that loop, but rather whether it is likely that other competitive carriers have already deployed or will deploy such high-capacity facilities to buildings throughout the wire center serving area, thus making DS1-level use of those deployed facilities potentially viable.

172. For this reason, we require a higher business line count within a wire center service area before determining that requesting carriers are not impaired without unbundled access to DS1 loops than

(Continued from previous page)

Loop and Transport Coalition Comments at 105-112; Sprint Comments at 43; Time Warner Telecom Comments at 3; SBC Comments at 86; SBC Reply at 32. The evidence submitted in the record shows that there is *de minimis* deployment of DS1 loops by carriers for their own use, as well as extremely limited availability of wholesale DS1 loops. *See* NuVox Reply at 7 (citing declarations made by a number of competitive LECs about the availability of wholesale DS1 loops); Letter from Andrew D. Lipman *et al.*, Counsel for ATX *et al.*, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-313, CC Docket No. 01-338 at 4-5 (filed Dec. 8, 2004) ("CLECs have self-provisioned DS1 capacity loops in a certain geographic area or location *only* where the CLEC has already self-provisioned fiber loop facilities at higher capacity levels to serve clusters or tightly grouped customers."). Finally, as explained below, our record contains no probative evidence that cable companies are currently serving enterprise customers at the DS1 or higher capacity to any significant degree. *See infra* note 509.

[472] Multi-tenant buildings with customers at the DS3-capacity level or above provide a greater revenue potential than that offered by a single DS1 customer, and where customers seeking higher-capacity services justify a carrier's deployment of DS3- or higher-capacity facilities, those carriers can offer channelized DS1 service in the same building. *See, e.g.*, Eschelon Kunde Decl. at para. 17; AT&T Comments at 42.

[473] *See id.* Competitive LECs would not deploy a copper loop to serve a DS1 customer because the costs of deploying copper are similar to the costs of deploying fiber, whereas the revenue potential is much lower for a copper loop than for a fiber loop.