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

In the Matter of
Applications of
Charter Communications, Inc.,
Time Warner Cable, Inc., and
Advance/Newhouse Partnership

For Consent To Assign or Transfer Control of
Licenses and Authorizations

MB Docket No. 15-149

Petition for Reconsideration

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ACA Report: Examination of “New Charter” Residential Buildout Condition ............... 1a
PETITION FOR RECONSIDERATION OF THE
AMERICAN CABLE ASSOCIATION

The American Cable Association ("ACA") seeks reconsideration—limited to one issue—
of the Commission’s order conditionally approving the transfer of licenses and authorizations in
the above-captioned matter. 1 The Order conditions approval on New Charter’s agreement to
deploy broadband Internet access service ("BIAS") of 60 Mbps or more to at least one million
locations in areas already served by BIAS providers offering speeds of at least 25 Mbps. That
overbuild condition is unlawful. It is not tailored to mitigate a merger-specific harm or confirm a
merger-specific benefit. It will exacerbate the merger harms the Order identifies, damage eco-
nomic efficiency, injure small providers, and harm consumers. The condition should be stricken.

INTRODUCTION AND SUMMARY

The Commission approved the transfer of various licenses and authorizations necessary
for Charter Communications, Inc., Time Warner Cable, Inc., and Advance/Newhouse
Partnership to merge. Order ¶ 1. The Commission concluded that the merged company ("New
Charter") would, because of its “increased broadband footprint and desire to protect its video

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1 In re Applications of Charter Commc’ns, Inc., Time Warner Cable, Inc., and
Advance/Newhouse P’ship for Consent To Assign or Transfer Control of Licenses and
profits,” have an increased incentive and ability to: (1) damage online video distributors (“OVDs”) by controlling data usage and interconnection arrangements; and (2) leverage unfair terms from programmers designed to prevent online distribution of video programming. *Id.* ¶¶ 2, 7. Time-limited conditions were imposed to prevent that conduct. *Id.* ¶¶ 8-12.

The Commission also included a condition unrelated to any identified merger-specific harm or benefit. Long after the pleading cycle closed, and shortly before the applications were approved, it became known that the Commission was considering a “buildout requirement” that mandated overbuilding.\(^2\) As adopted, that condition requires New Charter to deploy BIAS, at speeds of 60 Mbps or higher, to at least two million new locations. *Order* ¶¶ 12, 388. Of those, no fewer than one million must be outside New Charter’s footprint in areas where an existing BIAS provider offers 25 Mbps or faster service (the “overbuild condition”). *Id.* ¶ 388.

The overbuild condition is unlawful. Commission precedent precludes it from imposing conditions—“voluntary” or otherwise—except to address merger-related harms or confirm merger-related benefits. The Order nowhere finds that the overbuild condition would remedy harms created by the merger, or confirm merger benefits that might otherwise fail to materialize. Worse, the Order wholly ignores the harms the condition imposes. Far from mitigating any problems of market-power or leverage identified as consequences of the merger, the overbuild condition exacerbates them by increasing New Charter’s footprint and market concentration. It imposes an inefficient, government-mandated reallocation of resources, to the detriment of consumers. And the competitively unjustified entry it requires harms the small and medium cable operators and local telcos—including ACA members—that are likely targets of the overbuild.

REASONS FOR RECONSIDERATION

Reconsideration of the Order’s overbuild condition is warranted. The condition is unlawful, unreasoned, contrary to the Commission’s stated goals, and will result in government-mandated inefficient investment that will harm consumers. Because the overbuild condition was not broached until after the pleading cycle closed, the Commission did not have full benefit of public and industry comment.3 Those are precisely the circumstances in which reconsideration is warranted.4 Moreover, ACA’s members—especially smaller cable-operator and telco members—will be uniquely harmed by the condition. New Charter will have strong incentives to satisfy the condition by overbuilding those smaller providers. They will be forced to curtail services or be forced out of business entirely—not because of ordinary competition, but because of government-mandated uneconomic entry. Such mandated entry exacerbates rather than remedies merger harms. And it damages efficiency. Because ACA participated below, its members’ “interests are adversely affected by” the Order, and there was no adequate opportunity for ACA to address the condition previously, ACA may properly seek reconsideration.5

I. THE OVERBUILD CONDITION IS UNLAWFUL

The Commission has repeatedly reaffirmed it will impose only conditions that are tailored to remedy merger-specific harms or confirm merger-related benefits. The Order dis-

3 Parties had virtually no opportunity to present these facts and arguments earlier as there was no notice of the overbuild condition until the 11th hour. See Letter from Thomas Cohen, Counsel to ACA, to Marlene H. Dortch, Secretary, MB Docket No. 15-149 (filed May 5, 2016).

4 47 C.F.R. § 1.106(b)(2)(i)-(ii) (petition for reconsideration appropriate if it “relies on facts or arguments which relate to . . . circumstances which . . . changed” after, or were “unknown to petitioner until after,” the “last opportunity to present them to the Commission”).

5 47 C.F.R. § 1.106(b)(1) (permitting reconsideration by a “party” or a non-party “whose interests are adversely affected by” the Commission action and who shows “good reason” why he could not “participate in the earlier stages”); see 47 C.F.R. § 1.1202(d)(1) (“parties” includes any “person . . . filing a written submission . . . which is served on the filer”). ACA was an active participant in the proceedings here. Comments of the American Cable Association (filed Oct. 13, 2015); Reply Comments of the American Cable Association (filed Nov. 12, 2015).
regards that limit. The overbuild condition does not target a merger-specific harm. Nor does it confirm some merger-related benefit that might otherwise be lost. Instead, the condition exacerbates the merger harms the Order identifies—and imposes others that the Order ignores.

**A. Precedent Requires a Tight Fit Between Merger Effects and Conditions**

Time and time again, the Commission has declared “that it will impose conditions only to remedy harms that arise from the transaction . . . related to the Commission’s responsibilities.”

The merger approval process “is not an opportunity to correct any and all perceived imbalances in the industry,” “pre-existing harms,” or harms “unrelated to the transaction.” Conditions instead must be “narrowly-tailored” to “effectively remedy the potential for [the] particular harms” created by the transaction. The Commission’s “public interest authority” thus extends only to “transaction-related conditions” that “confirm specific benefits or remedy harms likely to arise from the transaction[ ]”—not power to regulate generally. Order ¶ 30; see id. ¶ 2.

Agencies have only those powers Congress grants, and they must regulate through required mechanisms. Imposing conditions unrelated to a merger-specific harm or benefit evades those limits. It threatens to convert merger-related licensing decisions into vehicles for reform of pre-existing market conditions without regard to specific limits on regulatory authority or the protections of notice-and-comment rulemaking. That is especially problematic where, as here, the conditions harm innocent third-parties (like ACA members). No judge engaging in

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9 *Cellco Order*, 23 F.C.C. Rcd. at 17447.

adjudication would announce he will rule for one litigant if that litigant performs some action the judge deems to be in "the public interest," especially if the action harms innocent third-parties. Nor should the Commission. That is not in the "public interest, convenience and necessity." 47 U.S.C. §§ 214(a), 310(d).

The Commission’s control of licenses—and concomitant ability to block mergers dependent on the licenses’ transfer or assignment—gives it coercive power. Applicants may feel they can curry favor through unrelated undertakings. The merger-specific requirement prevents regulated entities from attempting to do so; it avoids the impression that they are being “held up” by regulators for such concessions; and it forestalls efforts to extract such concessions.

The required link between license conditions and transaction-specific harms has constitutional dimensions. The Supreme Court has expressed grave concern about approval conditions unconstrained by transaction-specific limits, equating them to legalized “extortion.”¹¹ In the land-use context, courts require agencies (and other state actors) to identify both a “nexus” between a condition and a public harm created by the transaction, as well as a “rough proportionality” between them.¹² The Commission’s merger-specific limitation provides comparable protections.

**B. The Overbuild Condition Fails the Test**

The Order nowhere identifies a merger-specific “harm” the overbuild condition will remedy. Order ¶¶ 382, 386-389. It does not suggest the merger might limit New Charter’s willingness to overbuild competitors;¹³ there is no decrease in overbuilding for the Order to remedy.

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¹³ To the contrary, the Order finds “the transaction is unlikely to result in a loss of competition or potential competition in the distribution of MVPD services” and that it “would [not] make overbuilding” by New Charter “into another MVPD’s territories less likely.” Order ¶¶ 154, 155.
Nor does it identify a *merger-related* “benefit” the overbuild condition “confirms.” The Order nowhere suggests that overbuilding was an expected upshot of the proposed merger that might be threatened or remain unrealized absent the requirement.

The condition appears to rest solely on the unsupported assumption that overbuilding, if extracted from New Charter, would benefit the public in a general way. New Charter’s “build out program,” the Order states, will ensure the “transaction’s public interest benefits will outweigh any harms.” Order ¶ 12; *see id.* ¶¶ 71, 92 (potential harm to OVDs from the merger will be “outweighed” by the “benefits secured by the conditions,” including the overbuild condition). That assertion confirms the condition’s fatal defect: The Commission cannot impose conditions to achieve *any* “public interest” benefit it wants. Mandatory donations to charity, to the Universal Service Fund, or to promote broadband in underserved areas, might all serve “the public interest” writ large. Statement of Commissioner O’Rielly, p. 347. But the Commission cannot require any of that, because none of it redresses a merger-specific harm or confirms a merger-specific benefit. The same is true of the gratuitous overbuild condition imposed here.

The overbuild condition, in any event, is a government mandate for inefficient investment that harms the public interest—which the Commission wholly fails to explore. As explained below, it exacerbates the very merger-related harms the Commission’s Order identified. The Order expresses concern about the new combination’s national broadband footprint and market concentration, asserting potential impacts on OVDs, programmers, and consumers. *See Order ¶¶ 39, 125, 155, 160.* But the overbuild condition expands that footprint and increases the concentration the Commission found troubling. If New Charter is too big and controls access to too many BIAS customers, requiring it to get bigger and control more customers—especially at the expense of smaller competitors—is counterproductive.
There is a reason the Order does not attempt to reconcile the overbuild condition with Commission precedent—they are simply irreconcilable. Commission precedent is clear: It will impose only conditions that (1) “remedy harms likely to arise from the transaction” or (2) “confirm specific benefits” from it. Order ¶ 30. The overbuild condition does neither. An agency cannot say one thing in its precedents while doing another in its decisions.14 And such overreaching here has consequences well beyond the communications or domestic context: Indeed, it adversely affects U.S. interests globally.15 The overbuild condition should be stricken.

II. **THE OVERBUILD CONDITION IS UNSUPPORTED AND DAMAGES THE PUBLIC INTEREST**

Far from mitigating putative merger harms, the overbuild condition exacerbates them. And it imposes inefficiencies and harms the public in myriad ways the Order does not even attempt to consider.

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15 U.S. companies operating abroad regularly confront extortionate demands when seeking regulatory approvals. Developing nations tell applicants they must further the nation’s “public interest” by turning over their intellectual property to local companies. U.S. Dep’t of State, 2014 Investment Climate Statement 7-8 (June 2014), http://www.state.gov/documents/organization/228504.pdf. Foreign governments pay attention to U.S. agency orders setting merger conditions, using them to justify their own actions. William E. Kovacic, *The United States and Its Future Influence on Global Competition Policy*, 22 Geo. Mason L. Rev. 1157, 1197 (2015). This Commission’s imposition of conditions unrelated to the merger’s effects, putatively to serve the “public interest” broadly defined, encourages the imposition of such extortionate conditions on U.S. companies abroad. That is contrary to U.S. interests.
A. The Overbuild Condition Exacerbates Merger Harms the Order Identifies

The Commission must examine “all ‘relevant data’” and “‘articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.’”\(^{16}\) A satisfactory explanation is, by necessity, a consistent one.\(^{17}\) Here, the Order is “internally inconsistent.”\(^{18}\) The Order purports to find harm from New Charter’s larger national footprint and greater market dominance. But it then imposes an overbuild condition that increases the footprint and the dominance the Order identifies as problematic.

Concentration and OVDs. The Order finds that New Charter’s incentive to harm video competitors grows with its size: New Charter’s size, the Order states, will make it “more profitable and therefore more likely” that New Charter will “inhibit OVD competition.” Order ¶ 83. The Order also asserts that New Charter “could use its increased size” to “discriminat[e] against potential video competitors (such as OVDs).” Id. ¶ 48. But the overbuild condition requires New Charter to increase in size, and increase its distribution territory by hundreds of thousands of new customers (at normal take-rates). Indeed, the buildout and overbuild conditions together increase market concentration about 2%. ACA Report 2a-3a. Thus, the Commission’s answer to the increased market concentration and larger footprint the Order identified as troubling is to require New Charter to expand its footprint and increase concentration further still. Statement of Commissioner Pai, p. 342; Statement of Commissioner O’Rielly, p. 348. The Order never reconciles that conflict; no reconciliation is possible.

Consistent with history and economics, moreover, New Charter is likely to overbuild and take customers from smaller providers such as ACA members, not Tier 1 providers. ACA

\(^{16}\) Nat’l Black Media Coal. v. FCC, 775 F.2d 342, 356 (D.C. Cir. 1985).


Report 6a-9a. Shifting subscribers from smaller providers to dominant ones (as opposed to adding new subscribers) exacerbates market concentration. *Id.* at 3a n.8. Market concentration will increase further still if New Charter’s entry into a low-margin market has the predictable effect of driving small providers out of business. *Id.* at 11a-12a. And the overbuild condition will tend to cement that concentration in place by foreclosing potential entry down the road.19

**Interconnection.** The Order expresses concern that BIAS providers with large “numbers of subscribers (or ‘eyeballs’)” and “strong control” over their networks have the market power to charge for “paid peering.” Order ¶ 100. Although old Charter did not charge for peering (only Time Warner and four other providers did), *id.*, the Order found that New Charter may do so given its larger subscriber base and greater control over its interconnection network, *id.* ¶ 103. New Charter, the Order states, will have “market and bargaining power” to charge for peering and “raise prices for edge providers.” *Id.* ¶ 93. The overbuild condition simply heightens that concern: Overbuilding “inevitabl[y]” increases the number of eyeballs under New Charter’s control. Statement of Commissioner Pai, p. 342. The Order offers no answer.

**Leverage over Programmers.** In periodic negotiations with programmers over video distribution contracts, size provides leverage. Larger MVPDs “generally are able to obtain more favorable rates, terms, and conditions than smaller MVPDs.” Order ¶ 215. The Order states that New Charter’s increased size “increase[d] [its] incentive” and “ability to exercise its enhanced buying power in the upstream programming market.” *Id.* ¶ 206. The Order thus expresses concern that New Charter will “use that leverage in ways that harm online rivals,” such as by negotiating “terms that . . . restrict” programmers’ ability “to license content to OVDs.” *Id.*

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19 Concentration sometimes declines in the long term as market disruptors and innovators with new technologies enter. *See* Order ¶ 63. But, as others have observed, those providers are unlikely to enter areas where Charter has already overbuilt. *Id.* ¶ 70 n.211. The overbuild condition thus both increases concentration and forecloses potential competition that might reduce it.
¶ 206, 215, 217.

The overbuild condition once again inexplicably answers concerns about New Charter’s size by requiring that New Charter get bigger. Worse still, the overbuild condition ensures that expansion will come at the expense of smaller providers that, under the Commission’s own view of the markets, have neither the incentive nor ability to engage in the anticompetitive conduct the Order identifies.20 The overbuild condition thus amounts to enforced displacement of those providers the Order deems less likely to engage in anticompetitive conduct in favor of one the Order deems more likely to do so. The Order simply ignores these issues.

B. The Order Harms the Public Interest by Requiring Inefficient Entry and Redirecting Resources to the Detriment of Consumers

The Order fails to address any of the overbuild requirement’s public interest harms and proceeds without adequate data or analysis.

Ordinarily, “well-functioning market[s] . . . efficiently allocate[] resources.”21 The Cable Act encourages cable operators to expand their systems “where economically justified,” “rely[ing] on the marketplace . . . to the maximum extent feasible.”22 The Commission purports to mimic competitive markets,23 observing that they “allocate resources to those uses most valued by consumers.”24 Yet the overbuild condition reverses that course, setting investment

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20 For example, the Order states that smaller BIAS providers have less incentive to discriminate against OVDs, Order ¶83; that they have neither the subscribers nor “the infrastructure necessary” to demand payment for interconnection, id. ¶99; see also id. ¶¶127-128; and that they have no leverage with programmers, id. ¶215.
24 In re Reevaluation of the Depreciated-Original-Cost Standard in Setting Prices for
priorities by government mandate rather than through market forces that serve consumer interests. If it were efficient for New Charter to devote its resources to entering markets already served by a provider offering 25 Mbps or more, it would do so without the condition. Statement of Commissioner O’Rielly, p. 348. That New Charter has not done so hardly evidences market failure (and the Order identifies no such failure). It shows that New Charter has found other investments—such as network upgrades—to be most efficient and “most valued by consumers.”

By requiring New Charter to redirect its resources, the Order imposes significant harm on efficiency and New Charter subscribers. As explained in the ACA Report, overbuilding one million locations will cost New Charter between $560 million and $740 million over five years. ACA Report 3a. To finance that expansion, New Charter will need to raise prices or “divert capital” from more-efficient uses, such as enhancing the speed of existing broadband networks or converting video customers from analog to digital. Statement of Commissioner O’Rielly, p. 348. In fact, New Charter might “reduce capital” spending on “upgrade and network-enhancement for existing subscribers by up to 8%.” ACA Report 4a. The overbuild condition thus would result in many existing New Charter customers waiting longer for upgrades—from analog to digital video or from slower to faster broadband service—because the Order directs Charter to divert resources to otherwise economically unjustified expansion that reaches fewer customers. Id. at 3a-6a. The Order nowhere addresses that. Moreover, it makes no sense to require New Charter to expend enormous amounts of capital to offer 60 Mbps service to consumers that already have a 25 Mbps option from others, where New Charter could (for example) more efficiently spend those funds upgrading service for the 15% of Time Warner legacy customers and 3% of Bright House customers—more than a million New Charter subscribers in total—that do not even have

25 Mbps service themselves. *Id.* at 5a.

The overbuild condition also damages the smaller providers that are overbuilt, their long-term incentives, and their customers. ACA estimates overbuilding could decrease the lifetime value of an ACA member’s triple-play customer by as much as 85%. ACA Report 10a. Lacking access to other sources of capital, many smaller providers rely on current cash flows to finance network improvements. *Id.* at 12a. Overbuilding will cut returns and force many operators to forgo investments that otherwise would have improved consumers’ experiences—or it may force them out of business altogether. *Id.* at 11a-12a.25 Those harms are not the result of market-based competitive pressures. They are the consequence of a government mandate to overbuild, regardless of economic merits. An agency must consider “all relevant” factors and “‘str[ike] a reasonable accommodation among them.’”26 The Order fails to do that with respect to the unsupported overbuild condition.

C. The Commission’s Other Conditions Do Not Excuse These Failures

It is no answer to suggest that other conditions imposed on New Charter will address some of these harms. To address alleged merger-related impacts on OVDs, interconnection, and programmers discussed above, the Order did impose time-limited prohibitions (on data caps or usage-based pricing, settlement-based interconnection, or identified provisions in agreements with programmers). *See* Order ¶¶ 8-11. But none of those address the effect of forcing New Charter to invest in inefficient new entry—building out new network sections—over efficient upgrades for existing customers.

More fundamentally, none of those date-limited prohibitions can justify conditions that

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25 And once New Charter fulfills the overbuild condition, it will have little incentive to upgrade those areas later on given the smaller margins.
are directly contrary to the Order’s stated goals. Those conditions will expire. The Order cannot permanently distort the market, exacerbate the market concentration that (in the Commission’s view) create risks of anticompetitive conduct, and place smaller providers in regulator-imposed peril, simply because there is mitigation for some harms in the short term. Unless the long-term answer to the Order’s concerns is more market concentration rather than less, the overbuild condition cannot be sustained.

**CONCLUSION**

The Commission should grant ACA’s petition for reconsideration and strike the overbuild condition.

Respectfully submitted,

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I.  **Introduction and Summary of Findings**

As a condition of approving Charter’s merger, the Commission required Charter to build out to at least 2 million additional housing units, including at least 1 million homes served by Internet Service Providers (ISPs) providing download speeds of 25 Mbps or more (hereinafter, overbuild areas or overbuild locations).\(^2\) Our review shows that the condition will lessen competition and harm broadband deployment as follows:

First, Charter’s entry into markets where ISPs are providing high-speed data services will increase national market concentration. The condition thus exacerbates the Commission’s stated concern that Charter could wield power over online video distributors (OVDs) and programmers.\(^3\)

Second, the condition will require Charter to undertake inefficient investment in overbuild areas. By definition, Charter’s overbuild deployment is driven by a government mandate and not by market dynamics, making it an inherently inefficient investment. That mandate will likely reduce the capital available for reinvestment in existing plant, a particular concern given the need for digital-video and broadband-speed upgrades in certain Charter areas.

Third, the overbuild condition will adversely affect the subscribers of overbuilt ISPs, including many Tier 2 cable and telephone companies.\(^4\) Smaller ISPs offering triple-play

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1 This report has been compiled through a combination of industry research using both public and paid data sources, discussions with ACA member operators, internal research, and consultation with industry experts.

2 See FCC Merger Order 16-59, Appendix B, Section V.2.b.i (May 10, 2016).

3 See FCC Merger Order 16-59, ¶¶ 206, 213, 219.

4 We define Tier 1 as operators with 1 million or more broadband and video subscribers as of Q1
services (video, broadband and phone) cannot match Charter’s subscriber economics. They will be forced to reduce consumer-facing investments, cut video services, or even go out of business, harming subscribers and further increasing market concentration. Those harms, it should be emphasized, are not the result of ordinary competitive pressures but a consequence of Charter’s *uneconomic* entry into new markets in response to a regulatory mandate.

II. **The Effect of the Buildout Condition on Market Power over OVDs and Programmers**

The Charter merger increased national market concentration significantly. The buildout condition will increase national market concentration further. We calculated the increase in the Herfindahl-Hirschman Index (HHI) on a national scale under various implementations of the buildout requirement. Current national broadband market concentration, post-merger, is approximately 1,537. The required buildout of 2 million additional housing units, including at

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5 National broadband market concentration—defined based on operators’ reported total broadband subscriber numbers—increased by as much as 12% with the merger, crossing the Department of Justice’s threshold for moderate market concentration. The HHI increased from approximately 1,381 to 1,537 after the merger. See fns. 6-8, infra, for methodology.

6 The Department of Justice defines HHI as: “A commonly accepted measure of market concentration . . . calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers . . . The agencies generally consider markets in which the HHI is between 1,500 and 2,500 points to be moderately concentrated, and consider markets in which the HHI is in excess of 2,500 points to be highly concentrated.” DOJ, Herfindahl-Hirschman Index, https://www.justice.gov/atr/herfindahl-hirschman-index. Calculations are based on 1Q 2016 high speed data subscriber numbers from SNL Kagan for the top 69 broadband providers nationally. See SNL Kagan U.S. MVPD Analysis, https://www.snl.com/Interactivex/templatebrowser.aspx?V=V&Doc=12150456&File=10547874&Format=XLS&SaveFileAs=U.S.%20Cable%20Industry:%20Multichannel%20Peer%20Analysis.

7 Charter subscribers were calculated as the sum of Time Warner Cable, Charter, and Bright
least 1 million through overbuilding, increases market concentration 20 to 30 points, or 2%.  

III. THE EFFECT OF THE BUILDOUT CONDITION ON EFFICIENCY AND CHARTER’S CURRENT SUBSCRIBERS

To meet the buildout condition, Charter will have to allocate capital inefficiently—from projects with higher potential returns to overbuilds with worse economics. Charter’s spending on new construction will increase above historical levels, likely at the expense of network upgrades. Conservatively, Charter will need to spend $560-$740 million over five years to overbuild 1 million homes, and another $2.8 billion to pass the additional 1 million homes outlined in the order, for up to $3.5 billion in total. Charter has stated it intends to reduce overall

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8 The buildout condition does not specify where the additional 1 million homes beyond the overbuild requirement must be built. We have analyzed two scenarios: (A) 2 million homes overbuilt and (B) 1 million homes overbuilt / 1 million unserved homes built out. For each scenario, we have further modeled variations of Charter purchasing a number of passed housing units (250,000). See FCC Merger Order 16-59, Appendix B, Section V.2.g. These variations are: (a) Charter acquires one medium-sized operator, (b) four small operators, or (c) does not acquire any operators, building out the full 1 million overbuilt homes itself. Both scenarios (A) and (B) net out new subscribers acquired by Charter in overbuilt areas from all Tier 2 ISPs, proportionally based on how much of the Tier 2 market they currently control. Those two scenarios use a service take rate of 26.6% in overbuilt regions, based on the average take rate of WOW and RCN, two representative overbuilders. Scenario B (1 million overbuilt / 1 million unserved) uses a take rate of 60% in unserved regions, conservatively calculated using a total broadband penetration of 70% (the 2016 National Broadband Report estimates national fixed broadband penetration with 50+ Mbps speeds at 86%, see Broadband Progress Report, FCC 16-6, fn. 240), and a market share after 5 years of 85% (assuming no competitors in the region, and wireless taking a 15% market share). The maximum HHI increase is Scenario A, with Charter acquiring four small ISPs: 1,566 – 1,537 = 29 point increase.

9 To calculate capital spending, we used the same two base scenarios—A and B—from the HHI analysis. See fn. 8, supra. Together, these represent the range of possible overbuild capital investments. To address the possibility of Charter acquiring 250,000 passings without adding unneeded complexity, we have modeled only the lowest-cost version of A and the highest cost version of Scenario B. See Appendix B, infra. The lowest-cost version of Scenario A assumes Charter is able to acquire the full 250,000 passings it is allowed. The highest-cost version of Scenario B assumes Charter is unable to acquire any passings to meet its obligations. We assume a service take rate of 26.6% for overbuilt homes. See fn. 8, supra. We use the
capital spending to 12% of revenue, which indicates it will not significantly increase capital spending to meet the buildout condition.\(^\text{10}\) Given the limited capital that can be shifted from areas like customer-premise equipment (CPE) and commercial spending, consumer-facing capital-spending categories will experience the largest cuts as Charter reallocates capital to meet buildout requirements.\(^\text{11}\) That could reduce capital historically available for upgrade and network-enhancement\(^\text{12}\) for existing subscribers by up to 8%.\(^\text{13}\) The alternative of increased

following cost benchmarks from ACA Reply Comments, FCC 14-126 (April 6, 2015)—(a) Overbuild Cost to Pass of $650 per home, an Overbuild Cost to Drop of $350 per home that subscribes to service. For the currently unserved housing units in Scenario B, we assume a service take rate of 60%, and the following cost benchmarks from ACA Reply Comments, FCC 14-126 (April 6, 2015)—(a) Unserved Cost to Pass of $2,500 per home, Unserved Cost to Drop of $500 per home that subscribes to service. Charter has already committed to invest $2.5 billion towards the buildout. See Commission Accepts for Filing Applications, FCC 15-856 ¶ 14 (July 27, 2015).

\(^\text{10}\) See Charter Communications Form DEFM14A (August 20, 2015); see also MoffettNathanson Research, Charter Q1 ’16 Earnings: Let’s Talk Conditions, Shall We? (April 28, 2016).

\(^\text{11}\) To allow for comparisons, the U.S. cable industry uses five categories to define non-commercial capital spending: CPE, Scalable Infrastructure, Line Extensions, Upgrade/Rebuild, and Support. We have identified Line Extensions, generally a high-growth, high-return category, as the primary capital category for buildout-related expenses. Conservatively, even if Charter were to reduce line extension spending by 50%—unlikely because most line extensions are typically within an operator’s current footprint, where the buildout costs are lowest and returns the highest—it would still not be able to fully fund the FCC’s buildout obligation with current levels of line extension capital. Charter will not be able to reduce the amount of capital spent on CPE or Support, as they are directly tied to the installation of new customer assets or replacement of obsolete equipment. That leaves only Scalable Infrastructure and Upgrade/Rebuild as discretionary capital categories that could be reduced to fund buildout. Scalable Infrastructure and Upgrade/Rebuild are also the two categories most directly responsible for customer experience, service quality, and product improvement.

\(^\text{12}\) Charter’s historical level of capital spending is based on combined Charter, Time Warner Cable, and Bright House capital spending from 2015. See Charter & Time Warner Cable Form 10-K, FY 2015; see also Charter, Charter to Acquire Bright House Networks (March 31, 2015).

\(^\text{13}\) To calculate the reduction in Scalable Infrastructure and Upgrade/Rebuild, we distributed the annual capital required for the buildout (less 50% of current Line Extensions capital) proportionally between those categories, based on their relative share of annual capital spending, drawn from Charter and Time Warner Cable annual 10-K reports. The largest
prices is also undesirable.\textsuperscript{14}

Decreased spending on existing subscribers will have significant ramifications for the 12\% of legacy Time Warner Cable and 5\% of legacy Bright House video subscribers who remain to be converted from analog to digital.\textsuperscript{15} Charter will also be hindered in its ability to upgrade broadband speeds in former Time Warner Cable and Bright House territories.\textsuperscript{16} All 2 million new additions to Charter’s network must have access to download speeds of at least 60 Mbps.\textsuperscript{17} But according to the latest National Broadband Map, approximately 15\% of housing units in Time Warner Cable’s former footprint and 3\% of units in both Bright House and Charter’s footprints do not even have access to speeds greater than 25 Mbps.\textsuperscript{18}

\textsuperscript{14} MoffettNathanson predicts that former Time Warner Cable and Bright House customers will be transitioned to Charter pricing over the next four years, increasing the ARPUs of these customers. They assign a 5.0\% CAGR for increasing ARPU between the closing data and Q4 2020. \textit{See} MoffettNathanson, Charter (CHTR): Two in the Bush . . . Our New Post-Merger Model, p. 8 (June 1, 2016). Mr. Rutledge has said of future ARPU: “It’s not lower . . . [We] ultimately get a higher ARPU in the out-years without necessarily taking ARPU backwards while we make the transition.” \textit{See} Charter Communications Inc. at MoffettNathanson Media & Communications Summit (May 19, 2016).

\textsuperscript{15} SNL Kagan Multichannel Operators Data, \url{https://www.snl.com/interactivex/TopCableMSOs.aspx}.

\textsuperscript{16} California and New York State have imposed conditions on the merger which require Charter to upgrade all homes within its footprint in those states to higher speeds, and New York has imposed an additional buildup condition within Charter’s New York footprint. This will further restrict capital for upgrades in other regions of the country. \textit{See} Proposed Decision, CPUC #14811, pp. 68-69 (April 12, 2016); \textit{see also} Order Granting Joint Petition Subject to Conditions, NYPSC 15-M-0388, Appendix A (January 8, 2016).

\textsuperscript{17} \textit{See} FCC Merger Order 15-69, ¶ 388 (May 10, 2016).

\textsuperscript{18} \textit{See} National Broadband Map Provider Data, Max Advertised Wireline Download Speeds (June 30, 2014).
Absent the buildout condition, Charter would likely prioritize completing its all-digital upgrade and improving the speeds of its existing customers. Those upgrades would bring the largest number of subscribers the best possible service. In contrast, the Commission’s condition will bring a more limited number of customers the possibility of improved service.

IV. THE EFFECT OF THE OVERBUILD CONDITION ON AREAS SERVED BY TIER 2 OPERATORS AS WELL AS THEIR FUTURE INVESTMENT IN PLANT AND NEW INITIATIVES

The overbuild condition is a government-mandated overbuild not merited by market conditions. It will disproportionately affect Tier 2 ISPs in two ways: (1) Charter will likely target smaller ISPs, including many of ACA’s cable and telephone company members; and (2) overbuilt ISPs’ higher video programming costs will make it hard for them to offer a competitive video product. As a result, subscribers to small ISPs are likely to be harmed as operators are forced to reduce capital available for investment, and potentially go out of business. Those are consequences not of ordinary competition, but of uneconomic entry mandated by a regulator.

A. While Charter in theory can overbuild anywhere, Charter will most likely pursue markets with the lowest cost, highest return on investment, and greatest likelihood of providing new subscribers. Charter is therefore likely to follow three guiding principles for identifying potential areas to overbuild.

One, it is unlikely to enter completely new markets. Consistent with historical practice, Charter has strong incentives to pursue edge-out expansion in markets where it has an established presence, where it can exploit existing advantages like operational teams, brand

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19 Charter’s 2014 and 2015 Form 477 submissions indicate that its interim expansion occurred within 274 counties in which it had an existing presence, compared to only 3 new counties. See FCC Form 477 Broadband Deployment Data (June 30, 2015, & December 31, 2014).
recognition, network infrastructure, and retransmission consent licenses.\textsuperscript{20}

Two, Charter will likely avoid areas served by other Tier 1 cable operators. Historically, the cable industry has seen little competition between Tier 1 cable operators.\textsuperscript{21} By contrast, Tier 1 cable companies have not hesitated to overbuild smaller Tier 2 ISPs.\textsuperscript{22}

Three, when assessing potential competitors, Charter will likely avoid areas served by ISPs offering fiber-to-the-home, as fiber-based operators offer a more competitive broadband and video product than DSL, and one which is equally competitive to the hybrid-fiber-coax technology used by cable ISPs.\textsuperscript{23} Further, areas served by fiber within Charter markets (which do not overlap with Tier 1 cable) have a lower housing density than equivalent areas served by DSL or cable,\textsuperscript{24} making the business case for overbuilding fiber even less attractive.\textsuperscript{25}

\textsuperscript{20} Existing markets have been defined as DMAs in which Charter has 50,000+ video subscribers. That is enough for Charter to have a significant operational team in the DMA, as well as other existing-market advantages outlined above. 92\% of current Charter subscribers are in DMAs with 50,000+ video subscribers. \textit{See} SNL Kagan Operator Comparison by Market.

\textsuperscript{21} Nationwide, 100 million households are in regions served by a single Tier 1 cable company, while only 1.6 million are served by two or more. \textit{See id.; see also fn. 26, infra.}

\textsuperscript{22} ACA’s internal analysis of 2014 National Broadband Map data found that Tier 1 cable operators overlap 50\% or more of the footprint of 140 of its members, cable and telephone companies alike.

\textsuperscript{23} Charter is most likely to target ISPs offering DSL, which cannot compete effectively with cable. \textit{See} FCC Merger Order 15-69, ¶¶ 53-54. Fiber, however, is viewed by consumers and Charter as competitive with cable. \textit{See id.} ¶¶ 58, 62.

\textsuperscript{24} This is likely due to fiber networks built by rate-of-return carriers, which mostly serve small towns and areas, and receive subsidies because those services would otherwise be uneconomic.

\textsuperscript{25} Housing density is a key determinant of the cost of expansion: higher density areas have lower incremental costs to pass each household. \textit{See} fn. 26, \textit{infra.} Average density was calculated across all census blocks covered by a given category of ISP (i.e., Tier 2 cable, fiber). In Charter markets, regions served by Tier 2 cable with 25+ Mbps service average 501 housing units per square mile, versus 247 units per square mile for fiber-served regions. That yields a cost advantage of about $300 (or 35\%) per passing if Charter overbuilds Tier 2 cable companies instead of fiber. Similarly, DSL regions average 388 units per square mile, yielding a cost advantage of roughly $200 or 20\% over fiber. \textit{See} Wiley Rein LLP, \textit{Ex Parte} Presentation in the Matter of a National Broadband Plan for Our Future, FCC 09-51, p. 17
If we eliminate housing units in Charter markets served by ISPs offering fiber-to-the-home or served by Tier 1 cable companies, there are 2.6 million housing units available for Charter to overbuild. The great majority are served by Tier 2 cable and telephone companies.

<table>
<thead>
<tr>
<th></th>
<th>DMAs Where New Charter has &gt;50k Video Subscribers</th>
<th>All Other U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Housing Units Passed</td>
<td>69 Million</td>
<td>65 Million</td>
</tr>
<tr>
<td>New Charter Housing Units</td>
<td>40 Million</td>
<td>4 Million</td>
</tr>
<tr>
<td>Non-Overlapping Tier 1 Cable Housing Units</td>
<td>20 Million</td>
<td>42 Million</td>
</tr>
<tr>
<td>Non-Overlapping Fiber Housing Units</td>
<td>606,000</td>
<td>962,000</td>
</tr>
<tr>
<td>Total Remaining Housing Units</td>
<td>8.5 Million</td>
<td>18 Million</td>
</tr>
<tr>
<td>Total Served with 25 Mbps or Faster</td>
<td>2.6 Million</td>
<td>9 Million</td>
</tr>
<tr>
<td>Tier 2 Cable</td>
<td>2.1 Million</td>
<td>8 Million</td>
</tr>
<tr>
<td>Tier 1 and Tier 2 DSL</td>
<td>494,000</td>
<td>870,000</td>
</tr>
</tbody>
</table>

Table 1. Breakdown of Available Housing Units for Charter to Overbuild

In DMAs served by Charter, about 2.1 million housing units are served by Tier 2 cable operators providing speeds of 25 Mbps or faster that do not overlap with Charter or another Tier 1 or Tier 2 operator. The Commission stated that eligible buildout locations include “residences, home offices, and very small businesses (and [exclude] locations occupied by large enterprises and institutions other than schools and libraries).” See FCC Merger Order 16-59, Appendix B.V.2.a. In this analysis, we focus exclusively on housing units. Schools and libraries will constitute a very small portion of the 2 million buildout locations, and home offices are captured by an analysis of housing units. As the FCC determination of “very small businesses” is based on the past three years of revenue, there is no way for us (or Charter) to accurately capture the number of very small businesses within Charter’s location.

(October 15, 2009). Estimated cost of passing a housing unit, based on housing unit density, calculated with the following formula, derived from multiple public benchmark values: Cost per housing unit = -467.24Ln(Housing Units per Square Mile) + 3658.9.

26 See FCC Form 477 Broadband Deployment Data (June 30, 2015); see also fn. 20, supra. Within these markets, we calculated the number of housing units per census block, using 2010 census numbers and Experian housing unit growth estimates from 2010 to present. This information was combined with operator presence, technology deployed, and speeds available, also at the census block level, from Form 477. Charter’s current video subscriber presence was calculated based on SNL Kagan estimates of current subscribers per DMA. See SNL Kagan Operator Comparison by Market, 1Q 2016.

27 The Commission stated that eligible buildout locations include “residences, home offices, and very small businesses (and [exclude] locations occupied by large enterprises and institutions other than schools and libraries).” See FCC Merger Order 16-59, Appendix B.V.2.a. In this analysis, we focus exclusively on housing units. Schools and libraries will constitute a very small portion of the 2 million buildout locations, and home offices are captured by an analysis of housing units. As the FCC determination of “very small businesses” is based on the past three years of revenue, there is no way for us (or Charter) to accurately capture the number of very small businesses within Charter’s location.
An additional 494,000 housing units in Charter DMAs are served by ISPs offering DSL speeds of 25 Mbps or greater; more than 90% of those are served by Tier 2 ISPs (telcos) rather than Tier 1 ISPs. Assuming Charter targets the DSL households, that would fulfill less than half its 1-million-household overbuild obligation. Following an edge-out expansion strategy, Charter would then have to move into areas served by Tier 2 cable operators.

Tom Rutledge, CEO of Charter, has stated that Charter intends to meet part of its buildout obligation by acquiring smaller cable operators. However, there are few cable companies with a sufficient number of housing units to satisfy the Commission’s conditions for the overbuild. We have identified fewer than 70,000 housing units nationally that meet the Commission’s conditions and do not overlap with Tier 1 cable operators. However, acquiring even these would require Charter to purchase segments of systems from more than 40 companies, with an average of 1,500 passings from each—an unlikely scenario.

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28 See fn. 20, supra.
29 Id. 455,000 of 494,000 housing units with 25 Mbps or faster DSL are served by Tier 2 ISPs.
30 Tom Rutledge, CEO of Charter, has expressed his intention to at least initially target telephone companies for overbuild: “I can’t overbuild another cable company, because then I could never buy it . . . . So, it was really about overbuilding phone companies.” Charter Communications Inc. at MoffettNathanson Media & Communications Summit (May 19, 2016).
31 See Charter Communications Inc. at MoffettNathanson Media & Communications Summit, (May 19, 2016). Mr. Rutledge has specified that Charter would look to acquire small cable providers: “We can also buy 250,000 cable customers (sic) who are not interconnected, who are in competitive markets, and have those count.”
32 See FCC Merger Order 15-69, Appendix B.V.2.g (May 10, 2016).
33 See FCC Form 477 Broadband Deployment Data (June 30, 2015). Filtered housing units in areas not served by a Tier 1 cable company, where a cable provider offers only speeds slower than 25 Mbps, while another ISP is offering speeds of 25 Mbps or greater. Tier 1 cable regions have been removed for the reasons above.
34 SNL Kagan has recorded 40 cable system sales over the past 15 years. See SNL Kagan Cable Systems Sales Summary (April 2016). It is unlikely that Charter on its own will account for 40 such transactions (at an even smaller level) over the coming five years.
B. As a large provider, Charter will have substantial advantages over smaller operators. While the Commission finds it unlikely Charter will alter its current broadband pricing model, Charter’s current economics are unsustainable for smaller providers.

ACA has modeled the financial impact of Charter’s market entrance on a Tier 2 ISP representative of its members. Through a combination of lower ARPU, higher promotional discounts, and overall greater churn, Charter’s entrance could reduce the customer lifetime value of a small ISP’s triple-play subscriber by 85%. Smaller ISPs trying to match Charter

35 See FCC Merger Order 16-59, ¶¶ 87, 90-92.
36 Average revenue per user (ARPU) for markets before Charter’s overbuild is calculated using the average non-promotional triple-play package pricing of two representative Tier 2 ISPs: Mediacom and Atlantic Broadband ($152 per month). ARPU for markets after Charter’s overbuild is based on Charter’s current non-promotional triple-play package pricing, which overbuild operators will likely have to match ($144 per month). Non-promotional triple-play pricing is used in lieu of actual ARPUs because actual ARPUs include the blended impact of promotional pricing, and our analysis seeks to isolate the impact of promotional pricing on the economics of Charter’s competitors via the Subscriber Acquisition Cost (SAC).
37 SAC for markets before Charter’s overbuild is calculated using the average reported SAC of DirecTV and DISH ($853 per subscriber). DirecTV SAC figures are from 2Q 2015, before their acquisition by AT&T. DISH SAC figures are taken from FY 2014, before the release of Sling TV, which DISH reports has lower subscriber acquisition costs than Pay-TV subscribers. A portion of the pre-Charter SAC is assigned to promotional discounts, calculated using Mediacom and Atlantic Broadband triple-play promotions (avg. $480 over the course of 12-24 months). This is counted as promotional subsidies, while the remaining $373 is attributed to baseline marketing and sales costs. After Charter overbuilds the market, existing operators are assumed to match Charter’s steeper promotional discounts ($867 per user, plus an additional $152 for one month’s contract buyout). These are added to baseline marketing and sales costs to arrive at an SAC value of $1,392 after overbuild.
38 Churn varies based on competition in the marketplace, with highly competitive markets spurring increased churn. Churn ranges from below 1% in some markets to as high as 3.0% in high-competition markets. See Frontier Residential customer monthly churn rates, and SNL Kagan Broadband Financial Databook, 2015. For our customer-lifetime-value model, we conservatively assign a low competition churn rate of 2.0% before overbuild. After overbuild, we conservatively assume a churn rate of 2.5%.
39 Customer lifetime value (CLV) is a standardized metric, using ARPU, SAC, churn, and monthly cost of customers. We have used CLV because it captures the long-term impact of the overbuild on cash flow at the subscriber level. CLV is calculated first by subtracting the
promotional pricing to retain certain customers would see the margins on these customers decline to -14%.\textsuperscript{40} It bears emphasis that those declines are not the product of competitive forces. They are the product of uneconomic entry compelled by regulatory mandate.

C. While Tier 1 ISPs have significant capital cushions and access to capital markets to withstand competition over a small portion of their footprint, local Tier 2 ISPs have fewer routes to capital, and will be competing over a large portion of their total footprint.

To compete with Charter, small operators will be forced to redirect money into promotional or marketing campaigns.\textsuperscript{41} That will detract from consumer-facing investments, like service improvements and network upgrades,\textsuperscript{42} which will adversely impact customers by slowing innovation and service improvement. The overbuild condition forces small operators into a financial battle which they have neither the resources to win nor the footprint to absorb, and which will ultimately harm the consumer. Attempting to match Charter’s model could drive average monthly costs of a user (described below) from the average monthly revenue produced by that user (fn. 36). This value is divided by the monthly churn rate of subscribers (fn. 38). The subscriber acquisition costs (fn. 37) are subtracted to produce overall customer lifetime value. For our model, in both conditions before and after the overbuild, we calculate the monthly cost of a triple-play subscriber as the sum of the marginal costs for video, broadband, and voice. Incremental margins for video (17%), broadband (59%), and voice (27%) were derived from SNL Kagan data. See SNL Kagan, Average Monthly Per Sub Revenue and Costs (May 5, 2016). The customer lifetime value of an average provider’s triple-play subscriber decreases from $1,624 to $251 after overbuild. See Appendix C, infra.

\textsuperscript{40} Current margins calculated using ARPU described in fn. 36 and monthly cost per user in fn. 39. Discounted margins during first year after Charter overbuild calculated using Charter triple-play bundle promotional pricing ($89.97 per month) and monthly cost per user in fn. 39.

\textsuperscript{41} To stay competitive in a market overbuilt by Charter, Tier 2 ISPs will have to spend more money to match Charter’s pricing, gain subscriber attention, and minimize churn. Churn is the single most important lever in the customer lifetime value calculation, and as such is likely to be prioritized over alternative strategies, like minimizing costs to subsidize promotional prices.

\textsuperscript{42} See fn. 13, supra. Flexible capital categories are Scalable Infrastructure and Upgrade/Rebuild.
small operators out of business. That increases concentration.\(^{43}\)

In the end, overbuilt providers will have four options: reduce capital spending, temporarily finance their operations through means other than cash flow, eliminate their low-margin video offerings, or go out of business. Small operators may lose money on many subscribers due to the fact that Charter’s first-year promotional pricing is below small operators’ cost per subscriber. One approach to return to black would be to reduce capital spending on non-essential categories, which (as described above) would harm consumer interests.\(^{44}\)

Tier 2 ISPs do not have the same access to capital markets as Tier 1 cable companies, nor can they borrow as cheaply. Few have access to public-equity markets,\(^ {45}\) and only larger Tier 2 ISPs have access to corporate-debt markets. Small Tier 2 ISPs rely much more heavily on current cashflows to fund their operations than Tier 1 ISPs.

As margins on many vulnerable subscribers become compressed or enter negative territory, these small ISPs may eliminate their lowest-margin offering: video.\(^ {46}\) Others might be forced out of business by the decline in cash flows. That would further exacerbate the market concentration that was the basis for most of the Commission’s concerns about the merger.\(^ {47}\)

\(^{43}\) Furthermore, once Charter overbuilds a market, it is unlikely that another (smaller) overbuilder will also enter these markets, even after Charter’s five year buildout timeline. Only 12% of U.S. households have access to more than two providers of 25+ Mbps. See 2015 Broadband Progress Report, FCC 15-10, ¶ 83 (January 29, 2015).

\(^{44}\) See fn. 41-42, supra.

\(^{45}\) Among Tier 2 cable companies, only Cable One, GCI, Shentel, and TDS are public companies. Among Tier 2 telephone companies, only CenturyLink, Fairpoint, Windstream, Cincinnati Bell, Hawaiian Telecom, and Alaskan Communications are public companies.

\(^{46}\) See fn. 39, supra.

\(^{47}\) For example, if two mid-sized Tier 2 ISPs like Shentel Cable Company (54,000 subscribers) and Vyve Broadband (51,000 subscribers) were to go out of business, the national broadband market HHI would increase an additional 5 points. See SNL Kagan, U.S. MVPD Analysis.
# APPENDIX A

*Operator Market Shares for HHI Calculation*

<table>
<thead>
<tr>
<th>Operator</th>
<th>Market Share Pre-Buildout</th>
<th>Market Share Post-Buildout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comcast Corporation</td>
<td>24.51%</td>
<td>24.51%</td>
</tr>
<tr>
<td><strong>New Charter</strong></td>
<td><strong>22.17%</strong></td>
<td><strong>22.83%</strong></td>
</tr>
<tr>
<td>AT&amp;T Inc.</td>
<td>16.26%</td>
<td>16.26%</td>
</tr>
<tr>
<td>Verizon Communications Inc.</td>
<td>9.51%</td>
<td>9.51%</td>
</tr>
<tr>
<td>CenturyLink, Inc.</td>
<td>6.25%</td>
<td>6.25%</td>
</tr>
<tr>
<td>Cox Communications, Inc.</td>
<td>5.37%</td>
<td>5.37%</td>
</tr>
<tr>
<td>Cablevision Systems Corporation</td>
<td>2.92%</td>
<td>2.92%</td>
</tr>
<tr>
<td>Frontier Communications</td>
<td>2.56%</td>
<td>2.56%</td>
</tr>
<tr>
<td>Cequel Communications Holdings</td>
<td>1.37%</td>
<td>1.37%</td>
</tr>
<tr>
<td>Mediacom Communications Corporation</td>
<td>1.15%</td>
<td>1.15%</td>
</tr>
<tr>
<td>Windstream</td>
<td>1.13%</td>
<td>1.13%</td>
</tr>
<tr>
<td>WideOpenWest Networks, LLC d/b/a WOW!</td>
<td>0.74%</td>
<td>0.69%</td>
</tr>
<tr>
<td>DISH Network Corporation</td>
<td>0.65%</td>
<td>0.60%</td>
</tr>
<tr>
<td>Cable One, Inc.</td>
<td>0.52%</td>
<td>0.49%</td>
</tr>
<tr>
<td>Consolidated Communications Holdings, Inc.</td>
<td>0.47%</td>
<td>0.44%</td>
</tr>
<tr>
<td><em>All other (50+) operators with &lt;0.5% market share can be found on SNL Kagan.</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SNL Kagan MVPD Analysis, 1Q 2016; Leichtman Research Group

Methodology: fns. 5-8
## APPENDIX B

### Capital Spending Categories Distribution

<table>
<thead>
<tr>
<th>Capital Category (Dollar values in $M)</th>
<th>Charter</th>
<th>Time Warner Cable</th>
<th>Bright House (*Private)</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE</td>
<td>$582</td>
<td>$1,810</td>
<td>N/A</td>
<td>$2,658</td>
</tr>
<tr>
<td>%</td>
<td>32%</td>
<td>41%</td>
<td></td>
<td>38%</td>
</tr>
<tr>
<td>Scalable Infrastructure</td>
<td>$523</td>
<td>$930</td>
<td>N/A</td>
<td>$1,615</td>
</tr>
<tr>
<td>%</td>
<td>28%</td>
<td>21%</td>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>Line Extensions</td>
<td>$194</td>
<td>$771</td>
<td>N/A</td>
<td>$1,072</td>
</tr>
<tr>
<td>%</td>
<td>11%</td>
<td>17%</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Upgrade/Rebuild</td>
<td>$128</td>
<td>$270</td>
<td>N/A</td>
<td>$442</td>
</tr>
<tr>
<td>%</td>
<td>7%</td>
<td>6%</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Support</td>
<td>$413</td>
<td>$665</td>
<td>N/A</td>
<td>$1,198</td>
</tr>
<tr>
<td>%</td>
<td>22%</td>
<td>15%</td>
<td></td>
<td>17%</td>
</tr>
<tr>
<td>Total</td>
<td>$1,840</td>
<td>$4,446</td>
<td>$700 (2014)</td>
<td>$6,986</td>
</tr>
</tbody>
</table>

### Scenario A: Overbuild 2 Million (With 250k Acquired)

<table>
<thead>
<tr>
<th>Passings</th>
<th>Pass Cost</th>
<th>Take Rate</th>
<th>Subs</th>
<th>Drop Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overbuild</td>
<td>$650.00</td>
<td>26.6%</td>
<td>465,500</td>
<td>$350.00</td>
</tr>
<tr>
<td>Cost to Pass</td>
<td>$1,137,500,000</td>
<td>$162,925,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$1,300,425,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Scenario B: Overbuild 1 Million, 1 Million Unserved (No Acquisition)

<table>
<thead>
<tr>
<th>Passings</th>
<th>Pass Cost</th>
<th>Take Rate</th>
<th>Subs</th>
<th>Drop Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overbuild</td>
<td>$650.00</td>
<td>26.6%</td>
<td>266,500</td>
<td>$350.00</td>
</tr>
<tr>
<td>Unserved</td>
<td>$2,500.00</td>
<td>60.0%</td>
<td>600,000</td>
<td>$500.00</td>
</tr>
<tr>
<td>Cost to Pass</td>
<td>$3,150,000,000</td>
<td>$393,100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$3,543,100,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Charter 2015 Form 10-K; Time Warner Cable 2015 Form 10-K; “Charter to Acquire Bright House Networks: Driving Scale and Strategic Flexibility” Charter (March 31, 2015)

Methodology: fns. 9-13
## APPENDIX C

*Customer Lifetime Value Calculation – Triple-Play Subscriber*

<table>
<thead>
<tr>
<th>Formula Input: Pre-Overbuild</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Revenue per User</td>
<td>$152</td>
<td>Average of Mediacom and Atlantic broadband, representative Tier 2 operators.</td>
</tr>
<tr>
<td>Monthly Costs</td>
<td>$103</td>
<td>Sum of marginal costs to provide service, margins based on SNL Kagan and ACA member data.</td>
</tr>
<tr>
<td>Churn</td>
<td>2.0%</td>
<td>Churn generally ranges from 1.7% - 3.0%. Low-competition churn estimated as 2.0%.</td>
</tr>
<tr>
<td>Subscriber Acquisition Costs</td>
<td>$853</td>
<td>Average subscriber acquisition costs of DirecTV and DISH, before AT&amp;T acquisition and SlingTV release, respectively.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Formula Input: Post-Overbuild</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Revenue per User</td>
<td>$144</td>
<td>Charter non-promotional triple-play pricing (used in lieu of reported ARPU, which blends promotional pricing with standard pricing).</td>
</tr>
<tr>
<td>Monthly Costs</td>
<td>$103</td>
<td>As above.</td>
</tr>
<tr>
<td>Churn</td>
<td>2.5%</td>
<td>Churn generally ranges from 1.7% - 3.0%. High-competition churn conservatively estimated as 2.5%.</td>
</tr>
<tr>
<td>Subscriber Acquisition Costs</td>
<td>$1,392</td>
<td>Charter promotional subsidies ($867 over 12 months, with an additional $152 one-month contract buyout), added to baseline marketing and sales cost derived from DirecTV/DISH average, above ($373).</td>
</tr>
</tbody>
</table>

Source: SNL Kagan; ACA Member Data; Financial releases from: Mediacom Communications Corp, Atlantic Broadband, DirecTV, DISH Network Corp, Frontier Communications Corp, and Charter Communications Inc.; Pricing information from: Mediacom Communications Corp, Atlantic Broadband, and Charter Communications Inc.

Methodology: fns. 36-39
**Customer Lifetime Value Formula**

\[
\text{ARPU} - \text{Mo. Cost} - \text{Churn} = \text{SAC} = \text{CLV}
\]

**Customer Lifetime Value Formula – Pre-Buildout**

\[
$152 - $103 = $853 = $1,624
\]

2.0%

**Customer Lifetime Value Formula – Post-Buildout**

\[
$144 - $103 = $1,392 = $251
\]

2.5%
CERTIFICATE OF SERVICE

Pursuant to 47 C.F.R. §1.47, I hereby certify that on June 9, 2016, the foregoing document was electronically filed and served on the following parties by both electronic mail and U.S. mail:

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