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Executive Secretary
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IOWA UTILITIES BOARD

STATE OF IOWA
DEPARTMENT OF COMMERCE
BEFORE THE IOWA UTILITIES BOARD

IN RE: COMPLAINT OF UNITYPOINT CLINIC FAMILY MEDICINE AT HUXLEY f/k/a HUXLEY FAMILY PHYSICIANS	DOCKET NO. FCU-2013-0004
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OCA REPORT

Pursuant to the orders dated October 28 and December 16, 2014, the Office of Consumer Advocate (OCA), Iowa Department of Justice, submits the following report:

1. This formal complaint docket is one of six such dockets commenced at about the same time addressing intrastate rural call completion failures in Iowa. OCA has previously filed extensive reports in two of the other dockets. See *In re Complaint of Frahm*, No. FCU-2013-0007, report filed November 14, 2014; *In re Complaint of Rehabilitation Center of Allison*, No. FCU-2012-0019, report filed December 19, 2014.

2. This report concentrates on the information specific to this docket. It should be read in conjunction with the earlier reports referenced above. It does not repeat the general information provided in the earlier reports. It does repeat, largely without change, the steps that OCA has suggested originating and intermediate long distance carriers should take as a means of restoring the reliability of the network and hence of achieving a long-term solution to the problem.

NOTE: Confidential material has been identified by placing it between curly brackets {}.

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UnityPoint Complaint

3. In its complaint filed November 28, 2012, UnityPoint Clinic Family Medicine at Huxley (UnityPoint), formerly Huxley Family Physicians, alleged “static and lines cutting off” for four years “about this time of year when it gets cold and wet.” According to the complaint, hospitals, other clinics and patients were complaining daily about the phone lines. On the previous weekend, the clinic was unable to receive urgent test results from Mary Greeley Medical Center in Ames. The complaint alleged fax issues and calls not getting through to the answering service after hours. The complaint stated: “If we fail to provide care for a patient and something awful happens because we were unable to make or receive a phone call, there are terrible consequences.”¹

4. As detailed in the periodic reports submitted by OCA and in the presiding officer’s orders on prehearing conferences, the clinic has not experienced significant call completion problems subsequent to the docketing order in these proceedings on May 23, 2013.² On January 2, 2015, clinic administrator Kelly Brozek advised: “I was just told today that ‘for a long time’ we have had an issue where line 2 rings, but then no one is there. I have not yet had any time to investigate” The fact that the current problem is confined to a single line suggests it may be related to the clinic’s equipment.

Huxley Communications Cooperative Responses

5. In letters to Board staff dated December 18 and 19, 2012, local exchange carrier Huxley Communications Cooperative (Huxley Communications) addressed both

¹Huxley (population 3,317) is ten miles south of Ames (population 58,965). Population figures are from the 2010 census.

²Minor difficulties were noted in the report filed January 3, 2014, and in the order on prehearing conference filed January 28, 2014. They were quickly resolved.

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(i) a series of earlier difficulties (static, echoing, cutting in and out), some involving line 2, that were corrected with adjustments to the clinic's equipment, and (ii) more recent reports of difficulties, including instances in which calls were received by the clinic but no one was there when the calls were answered. Observing that these more recent difficulties were always on incoming calls, Huxley Communications concluded they were probably not equipment-related and instead were probably related to call completion.

6. Huxley Communications indicated that its own fiber-to-the-home facilities were functioning properly.

7. Huxley Communications indicated it had no record of calls that did not complete to the clinic (such as the failed fax attempts from Mary Greeley Medical Center), because such calls do not reach its switch.³

CenturyLink Responses

8. In a letter to Board staff dated January 9, 2013, Qwest Corporation d/b/a CenturyLink QC (CenturyLink) advised that Mary Greeley Medical Center is a local and long distance customer of CenturyLink. According to the letter, a CenturyLink technician had tested and determined the problem to be related to the call routing. CenturyLink therefore removed the intermediate carrier, Bluetone Communications, LLC, formerly Blue Mile, from the routing on calls to the NPA-NXX of the Huxley

³In a letter to Board staff dated January 24, 2013, Huxley Communications advised that new testing for the period January 10-15, 2013, showed nine incoming calls with static, echoing and drops. These calls were traced to five different carriers: Verizon, US Cellular, CenturyLink, AT&T and Cingular Wireless. The letter again noted that outgoing calls were never an issue. The January 10-15 testing results are included in OCA Exhibit HCC-1. In OCA's view, they lead to no obvious conclusion.

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clinic (515-597). CenturyLink had notified Bluetone of this action and was working with Bluetone to address the issue. This change solved the problem.

9. In discovery, CenturyLink advised that its repair technician found no records of calls from the Mary Greeley Medical Center to the clinic's fax number on the dates referenced in the clinic's complaint (Nov. 24 and 25, 2012). The technician did, however, find calls from other callers to the clinic's fax number on other dates (Dec. 17 and 19, 2012) that showed "attempt" status. CenturyLink interpreted "attempt" status as a potentially failed call because the call was not marked completed and other errors were not noted in the call detail records. OCA Exhibit CL-1.⁴ OCA appreciates the candor of this assessment.

10. The correspondence between CenturyLink and Bluetone noted { [REDACTED] [REDACTED] }. OCA Exhibit CL-3. CenturyLink had previously removed { [REDACTED] } from routing on calls to the 515-597 NPA-NXX after duplicating the intermittent dead air reported by another customer. The trouble ticket on this earlier complaint { [REDACTED] [REDACTED] [REDACTED] [REDACTED] }. OCA Exhibits, CL 14, CL-15.⁵

11. More generally, the more extensive discovery responses from CenturyLink in No. FCU-2012-0019, *In re Rehabilitation Center of Allison*, see OCA report filed December 19, 2014, ¶¶ 45-46 and 48, showed { [REDACTED] }

⁴The relevant CenturyLink trouble ticket and the call details records for the Dec. 17 and 19 calls are included in OCA Exhibit CL-2.

⁵A second trouble ticket referenced in OCA Exhibit CL-14 did not appear to be relevant and is omitted from OCA Exhibit CL-15.

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[REDACTED]
[REDACTED]
[REDACTED].

12. The repair technician who evaluated the Huxley clinic's complaint determined it was necessary to "permanently move { [REDACTED] } down the routing list for this NPA-NXX 515-597, to ensure that calls could process appropriately to all customers in that area." The traffic to that destination was moved to { [REDACTED] } [REDACTED]. OCA Exhibits CL-1, CL-4, CL-7, CL-9, CL-10, CL-11, CL-12, CL-14.

13. The change was implemented by the repair technician on a temporary basis on December 21, 2012, and was made permanent by a senior engineer within the next ten days. { [REDACTED] } [REDACTED] [REDACTED]. OCA Exhibits CL-1, CL-4, CL-7, CL-9, CL-11, CL-12. As noted at paragraph 4 above, like problems have not since recurred.

14. Prior to the change, CenturyLink was paying { [REDACTED] } per minute charges of { [REDACTED] } intrastate and { [REDACTED] } interstate. After the change, CenturyLink paid a tariffed terminating charge to Huxley Communications and a tariffed tandem charge to Iowa Network Services. These tariffed charges totaled \$.09773 per minute intrastate and \$.06003 per minute interstate. The resulting cost impact of the change to CenturyLink, for both intrastate and interstate calls, was { [REDACTED] } monthly. OCA Exhibit CL-13.

15. CenturyLink does not know why { [REDACTED] } was unable to complete the calls. OCA Exhibit CL-1.

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Bluetone Responses

18. In a letter to Board staff dated February 15, 2013, Bluetone advised that it had received no trouble ticket from CenturyLink regarding the November 2012 call failures alleged in the Huxley clinic's complaint. Bluetone therefore took no action regarding the matter in November 2012.

19. According to the letter, Bluetone did receive a trouble report from CenturyLink on January 3, 2013, regarding calls placed to the Huxley clinic's fax number on December 17 and 19, 2012. Bluetone had been "unable to determine a definitive cause for the fax failure" but had re-routed the Huxley clinic's number to another vendor in order to provide an alternative route for call completion.

20. In discovery responses, Bluetone opined that the Huxley clinic's problems were related to the local equipment and not attributable to the intermediate long distance carriers or the routing. OCA Exhibit BT-19. Bluetone's position in this respect is less discriminating and less persuasive than that of Huxley Communications, which distinguished the clinic's earlier reported difficulties, which did appear to be equipment-related, from its later reported difficulties, which did not. Bluetone's argument is further undercut by the history of call completion difficulties to the 515-597 NPA-NXX, as reported by CenturyLink and detailed above, which was not limited to calls destined for the Huxley clinic and hence could not generally be attributed to its equipment.

21. Bluetone has a standing policy that provides for the "force-routing" of calls "anytime a fax issue is reported on an IP-enabled path to a TDM path instead." OCA Exhibit BT-5. "Force-routing" means "rout[ing] a call directly to a specific vendor" and thus "by-pass[ing] the vendor selection in the standard routing tables." OCA

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Exhibit BT-5P.⁹ When asked whether it has an understanding of the extent to which the movement of calls from an IP-enabled path to a TDM path or vice versa is contributing to alleged call completion problems, Bluetone responded “No.” OCA Exhibit BT-2P.

22. According to Bluetone, the practice of automatically changing the routing upon receipt of a call completion or quality complaint is common in the industry and often resolves the problem. OCA Exhibit BT-5. This practice is reactive rather than proactive in nature. It is part of the problem. It reflects the fact that calls are transmitted over routes that have not been tested. See paragraph 30 below.

23. The routing change made by Bluetone, as referenced in its letter to Board staff, was made on January 3, 2013. OCA Exhibit BT-1. Bluetone { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] }. This change was the only change made by Bluetone in connection with the facts of this docket. OCA Exhibits BT-2, BT-3, BT-4, BT-6.

24. According to an e-mail from Bluetone to CenturyLink, the re-routing to a “Tier 1 TDM vendor” was intended “to provide the best opportunity for call completion.” OCA Exhibit BL-8; see OCA Exhibit CL-3. When asked whether it has an understanding of the extent to which the use of a tier 1 carrier improves the ability of calls to complete and to be of good quality, Bluetone responded “No.” OCA Exhibit BT-3P.¹⁰

⁹Exhibit numbers ending with “P” are discovery responses in No. FCU-2013-0009, *In re Complaint of Pals*.

¹⁰In April 2010, the FCC regarded the following “IXCs/ISPs,” evidently among others, as tier 1 carriers: ATT, Sprint, GX, Verizon Business, Level 3, XO, TWTC. *In the Matter of Connect America Fund*, 25 F.C.C.R. 6657 (Apr. 21, 2010), p. 128.

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25. When asked to explain the financial consequences to Bluetone of the Bluetone re-routing done in this case, Bluetone responded: “Bluetone terminates a small volume of traffic to this destination. There was negligible to no financial impact to Bluetone.” OCA Exhibit BT-10. When asked to explain the financial consequences if Bluetone were to use only tier 1 carriers on all calls completed to a particular NPA-NXX in Iowa, Bluetone responded: “As pricing changes frequently in the wholesale space, Bluetone cannot answer this question with any level of certainty.” OCA Exhibit BT-10P. When asked to explain the financial consequences if Bluetone were to use only tier 1 carriers on all calls completing to Iowa, Bluetone responded: “Bluetone completes few calls to Iowa. Therefore, any financial consequences would be negligible.” OCA Exhibit BT-11P.

26. The Bluetone re-routing had no actual effect on call completion to the Huxley clinic, since CenturyLink had previously removed Bluetone from the routing. See OCA Exhibit BT-6P.

27. Bluetone advises it has no documents that shed any light on what caused the difficulties. OCA Exhibit BT-9.

28. Bluetone declined to produce the contract between itself and its second-tier downstream intermediate carrier. OCA Exhibit BT-17.¹¹ Bluetone had no written contract with the carrier it removed from the routing due to alleged call completion problems in No. FCU-2013-0009, *In re Complaint of Pals*. OCA Exhibits BT-4P, BT-

¹¹A motion to compel may have succeeded in obtaining the document. See *Harris v. Board of Governors of Federal Reserve System*, 938 F.2d 720, 723 (7th Cir. 1991) (“The rights of a party to obtain documents under judicial process are not enjoyed at the sufferance of third parties who have agreed between themselves to keep documents secret”). Constraints of time and resources, however, prevent OCA from pursuing every hindrance to exhaustion.

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13P. Compare American Telecommunications Industry Solutions, “Intercarrier Call Completion/Call Termination Handbook” (March 2013), Introduction, Part 5 (responsibilities of downstream intermediate carriers should be defined in an agreement).

29. Bluetone has no visibility into the operations of a downstream carrier after it hands a call off to such a carrier. OCA Exhibit BT-4P. The absence of such visibility inhibits Bluetone’s ability to monitor its own call completion performance and to manage its dealings with its downstream carriers. See *In the Matter of Rural Call Completion*, 28 F.C.C.R. 1569 (Feb. 7, 2013), App. B, ¶ 2. The absence of such visibility also heightens the need for adequate contracts with downstream carriers.

30. Bluetone asserts that it “routes calls to the highest quality suppliers available” and that it “works with reputable vendors, and works closely with them to ensure performance quality.” OCA Exhibit BT-19. However, when asked to provide a listing of the tests it conducted as a means of assuring the ability of a downstream carrier to complete calls properly, including the dates of the tests, a description of what the tests measured, and the results, Bluetone provided no such dates, descriptions or results. Bluetone stated instead “there [is] nothing to test” unless and until a problem occurs. OCA Exhibit BT-13. Again, this wholly reactive approach to network reliability is a part of the problem. Systems and carriers must be tested for reliability before they are used, not after they fail.

31. When asked to describe any performance requirements, metrics or standards that Bluetone imposes on underlying carriers, Bluetone provided the following:

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- Answer Seizure Ratio – 70%¹²
- Network Effectiveness Ratio – 90%¹³
- Trouble Tickets per Million Minutes – 1 maximum
- Post Dial Delay – < 2 seconds.

OCA Exhibit BT-14.

32. When asked whether it has at any time questioned whether a downstream intermediate carrier has met these metrics, Bluetone responded: “Bluetone addresses performance issues contemporaneously but does not have records that track vendors against the guidelines over time.” OCA Exhibit BT-15P.

33. It is not clear at this point why a 70 percent answer seizure ratio or a 90 percent network effectiveness ratio represents an acceptable level of performance on the part of a downstream carrier or even an appropriate trigger for investigation. Any information that Bluetone might be able to supply in this respect would be helpful.

34. The fact that Bluetone views two seconds or less as an appropriate metric for post-trial delay supports OCA’s previous observation that the FCC’s reliance on a metric of eight seconds or less is arguably too long. See *In re Complaint of Rehabilitation Center of Allison*, OCA report filed Dec. 19, 2014, ¶¶ 83-84.

35. When asked what sanctions Bluetone can impose on a downstream intermediate carrier for failure to meet performance requirements, metrics, or standards,

¹²Bluetone calculates answer seizure ratio “by taking the number of successfully answered calls and dividing by the total number of calls attempted.” OCA Exhibit BT-16P.

¹³Bluetone calculates network effectiveness ratio “by taking (Total Calls – 503/34 Rejects)/Total Calls.” “503/34 rejects” are calls that result in a release code for service availability: 34 is the code in an SS7 environment; 503 is the corresponding code in a SIP environment. OCA Exhibit BT-17P.

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Bluetone responded it “has the ability to send less traffic and remove vendors from routing.” OCA Exhibit BT-15.

36. When asked whether Bluetone has imposed a sanction on a downstream carrier for failure to meet performance requirements, metrics or standards based on whole or part on calls or faxes to or from Iowa, Bluetone responded that it works with carriers when it has concerns, adding: “Bluetone has not had a vendor fail to meet the standards in Response 14, or fail to cure concerns brought to that vendor, based on routes in Iowa, so no sanction other than removal from individual call paths (as in this case) has been required in Iowa.” OCA Exhibit BT-16.

37. The Board has seen at least three additional complaints alleging call completion difficulties on routes carried by Bluetone. See file nos. C-2013-0026 (FCU-2013-0009), C-2013-0130, C-2014-0087.

38. According to data provided by CenturyLink in No. FCU-2012-0019, *In re Rehabilitation of Allison*, { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] }. See OCA report, filed Dec. 19, 2014, ¶ 47.

39. Bluetone advises it has received no inquiries from the FCC regarding call completion failures. OCA Exhibits BT-18, BT-19P.

40. In informal discussions prior to its engagement of counsel, Bluetone expressed the view that it may be wise to encourage consumers of telecommunications services, including health care facilities, to find means other than faxes for transmitting

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documents. If that is Bluetone's view today, it would be helpful if Bluetone provided a statement of record in support of its view, together with relevant supporting information.

41. When asked for its long-term solutions to the call completion problems, Bluetone responded in part:

Bluetone is committed to continued call routing process and product improvement to ensure successful call completion. Bluetone has been working with and will continue to work with other carriers, both upstream and downstream from Bluetone, to improve communication regarding service problems and troubleshooting, and we have been working with carriers in light of the FCC's orders to make product changes and network augmentations to ensure that our services and those of our carrier customers will comply with FCC safe harbor requirements.

OCA Exhibit BT-20P. Additional information regarding the referenced product changes and network augmentations would be helpful.¹⁴

Concrete Steps toward a Long-Term Solution

42. The following are concrete steps that CenturyLink and Bluetone should take as elements of a long-term solution to the problem. These suggested actions are intended to complement the work of the FCC, including the data collection and reporting to be implemented pursuant to the FCC rules. These suggested actions are also appropriate for consideration in a rule-making proceeding, which could afford long-term solutions industry-wide.

¹⁴The FCC rules do not apply to intermediate carriers. *In the Matter of Rural Call Completion*, 28 F.C.C.R. 16154 (Nov. 8, 2013) ¶ 19.

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Step 1

Acknowledge responsibility for the performance of downstream carriers.

43. The FCC has recently emphasized in a related context the need for “end-to-end” carrier responsibility and accountability from the time a call is placed to the time it is completed.¹⁵ Such end-to-end responsibility is a prerequisite to solving the rural call completion problem. The first step in a long-term solution to the problem is for originating and upstream intermediate carriers to acknowledge responsibility for the performance of the downstream intermediate carriers they engage to complete the calls.

Step 2

Maintain on file with the Board a list of downstream carriers currently being used to carry Iowa traffic.

44. A simple filing of this character, with contact information for the downstream carriers, updated as changes occur, will keep the Board apprised of the identity of the companies that are carrying the Iowa traffic.

Step 3

Reduce the number of intermediate providers in the call paths.

45. A key reason for the increased problems in rural areas is that a call is often handled by numerous different providers, the identities of which may not even be known to the originating provider, resulting in nearly untraceable call routes. *In the Matter of Rural Call Completion*, 28 F.C.C.R. 16154(Nov. 8, 2013) ¶¶ 17, 87, 88. A provider that

¹⁵“April 2014 Multistate 911 Outage: Cause and Impact, Report and Recommendations,” Public Safety Docket No. 14-72 (FCC Oct. 2014). Although the focus of the report was the vulnerability of the 911 system, the factors that account for this vulnerability, including the increasing reliance of IP-supported networks on geographically remote servers and on software-based components to support key functions, are equally applicable to the public telephone network as a whole.

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limits the number of intermediate providers in the call path is better able to manage performance to rural destinations than a provider that sends calls through numerous intermediate providers. Limiting the number of intermediate providers also limits the potential for lengthy setup delay and looping. *Id.* If a carrier can implement the “safe harbor” in the federal rules by limiting the number of intermediate providers on a call path to two or fewer, see 47 C.F.R. § 2107, as CenturyLink is proposing to do, that will help remediate the call failures. Even if a carrier cannot implement the safe harbor, or even if it is not subject to federal reporting requirements, it may be able to reduce the number of intermediate carriers in its call paths. The reductions can be accomplished either through new interconnection agreements or through new construction.

Step 4

Promote transparency in the use of downstream carriers.

46. Prior to the time that federal and state authorities began to investigate the rural call completion failures, many of the intermediate carriers were hidden from view. Some continue to resist relevant disclosures. The lack of transparency lessens accountability. It also hampers the Board’s ability to understand and address the difficulties. Under the FCC’s rules, as one of the conditions for the safe harbor, covered providers must certify that any nondisclosure agreements with intermediate providers permit disclosure of the identity of the intermediate provider and any additional intermediate providers to the Commission and the affected rural local exchange carrier. 47 C.F.R. § 64.2107. Regardless of whether a carrier takes advantage of the federal safe harbor, and regardless of whether a carrier is subject to federal reporting requirements, a commitment to certify that any nondisclosure agreement permits disclosure to the Board

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of both the identity of any intermediate providers and the relevant contract would increase transparency and therefore contribute to a long-term solution.

Step 5

Actively participate in the standard-setting work of the Alliance for Telecommunications Industry Solutions.

47. The FCC has applauded efforts by the Alliance for Telecommunications Industry Solutions (ATIS) to diagnose problems in call routing, cooperate on finding solutions and adopt best practices aimed at solving the problem. *In the Matter of Rural Call Completion*, 28 F.C.C.R. 16154 (FCC Nov. 8, 2013) ¶ 12. Such efforts must continue, because the development of industry standards for call completion has not been completed.¹⁶ Because all carriers must interconnect with the same public telephone network, and because interoperability and coordination are needed across all components of the network, wide industry participation in this work will help. The metrics must be specific to the particular technologies. When and as new standards are developed, companies should report them to the Board, so the Board can ensure they adequately protect consumers and are followed. In time, as the standards are more fully developed for all technologies, the Board, either on its own for intrastate calls or in partnership with

¹⁶Through its Next Generation Interconnection Interoperability Forum (NGIIF), ATIS has worked with carriers and utility commissions to generate an “Intercarrier Call Completion/Call Termination Handbook” (ATIS Handbook) that describes industry standards and best practices that carriers can follow to address call completion issues and manage intermediate carriers. See *In re Complaint of Frahm*, No. FCU-2013-0007, Verizon resistance to motion to compel, filed July 11, 2014, p. 5. The ATIS Handbook, approved August 2012 and updated March 2013, is an excellent start at addressing the technical challenges but is not a finished product. On its own terms, it is “a living document” describing “some” of the problems being encountered and discussing “some” of the industry standards and practices relevant to ensuring call completion, particularly signaling, routing and trouble handling. ATIS Handbook, § 1.1. According to the handbook, carriers need to establish “Direct Measures of Quality” (“DMoQs”), such as “Call Completion Rate” and “Post Dial Delay,” for their vendors to meet. The handbook does not, however, provide any standard or norm for what an acceptable metric value might be. See ATIS Handbook, § 5.6 and Table 2. Some of the SIP (Session Initiation Protocols) mechanisms are not yet standardized. ATIS Handbook, § 4.1.1.3.

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the FCC for all calls, should consider giving these standards, or some of them, with any modifications that public comment may require, the force and effect of law. See and compare 199 IAC 22.5(3).¹⁷

Step 6

Exercise responsibility over the use of downstream intermediate carriers.

48. Each originating and intermediate carrier that makes use of downstream intermediate carriers should have sound policies in place addressing each of the following elements:

- Establish and conduct standardized testing routines;
- Investigate on an ongoing basis whether downstream carriers have properly designed and properly functioning equipment, including properly designed and properly functioning software;
- Investigate on an ongoing basis whether downstream carriers have sufficient capacity in their switches and call paths to carry the traffic to the intended destinations;
- Require each downstream carrier on an ongoing basis to provide specific information regarding its system and the limitations of its system, including information regarding any difficulties its system may have interoperating with other systems using a different technology;¹⁸
- Require each downstream carrier on an ongoing basis to provide specific information regarding any bandwidth or other capacity constraints that would prevent its system from completing calls to particular destinations at busy times;
- Require each downstream carrier to have properly designed and properly functioning alarms in its system so as to ensure immediate notice of any outages on its system;

¹⁷The cited subrule contains specific standards that local exchange carriers must meet, among them: (i) complete dialing of called numbers on at least 97 percent of calls without encountering an all-trunks-busy condition, during average busy-season busy-hour; and (ii) properly tested alarms on a 24-hour basis to indicate improper functioning of equipment.

¹⁸The need for such sharing of information will commonly override a carrier's desire to treat the information regarding its system as confidential.

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- Require each downstream carrier to have properly designed and properly functioning mechanisms in place to ensure that the downstream carrier, if unable to complete a call, timely releases the call back to the upstream carrier (ATIS Handbook § 5.3);
- Require each downstream carrier to have properly designed and properly functioning mechanisms in place to ensure that the downstream carrier, if making successive attempts to route the call through different lower-tiered downstream carriers, timely passes the call to a second (or third or fourth) lower-tiered downstream carrier if a first (or second or third) lower-tiered downstream carrier cannot complete it;
- Require each downstream carrier to have properly designed and properly functioning mechanisms in place to detect and control looping, including the use of hop counters or other equivalent mechanisms that alert a carrier to the presence of a loop (ATIS Handbook § 4.1.3);
- Establish direct measures of quality and require downstream carriers to meet them (ATIS Handbook, § 5.6 and Table 2);
- Establish and implement appropriate sanctions for intermediate carriers that fail to meet standards;
- Require downstream carriers to manage lower-tiered downstream carriers and to hold lower-tiered downstream carriers to the same standards to which they themselves are held (ATIS Handbook § 5.8);
- Define the responsibilities of downstream carriers in an agreement (ATIS Handbook § 5 introduction).

Step 7

Provide copies of the Iowa portion of the federal data and the FCC's analysis of the Iowa data to the Board and OCA.

49. The Board cannot effectively evaluate problems and ensure the implementation of successful solutions without ready access to relevant sources of information. Nor can OCA adequately discharge its responsibilities to Iowa consumers without such access. The FCC's data collection processes, including the generation of CAR and NER statistics for each rural OCN, including each rural OCN in Iowa, together

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with the FCC's analysis of these metrics, is specifically designed to provide relevant sources of information. For that reason, the Iowa data and the FCC's analysis of them would assist the Board in addressing the rural call completion problem in Iowa and assist OCA in representing the interests of Iowa consumers. On an ongoing basis, a company reporting to the FCC should therefore provide copies of its Iowa data and the FCC's analysis of the Iowa data to the Board and OCA.

Step 8

Keep routing tables up-to-date.

50. Accurate routing tables are essential to successful call completion. *In the Matter of Rural Call Completion*, 28 F.C.C.R. 15164 (Nov. 8, 2013) ¶ 42 & n. 49. If the tables are not properly updated, for example, some calls may fall into a loop and never be set up. In the *Matter of Rural Call Completion*, 28 F.C.C.R. 1569 (Feb. 7, 2013) (separate statement of Commissioner Ajit Pai). Due to consumer elections to switch carriers and to local number portability, among other factors, these tables are changing constantly. Routing tables must therefore be kept up-to-date. The updating should be done through the Local Exchange Routing Guide (LERG) of the Traffic Routing Administration.

Step 9

Provide periodic progress reports to the Board on implementation.

51. Each company should provide periodic reports to the Board regarding the progress it is making in fulfilling any commitments it makes.

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Conclusion

OCA submits this report, to be read in conjunction with the reports referenced in paragraph 1, setting forth the results of its investigation and its conclusions regarding concrete steps that the companies can take toward a long-term solution.

Respectfully submitted,

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