

DEPARTMENT OF PUBLIC SERVICE REGULATION
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MONTANA

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IN THE MATTER OF CenturyLink QC's) REGULATORY DIVISION
Service Quality and Its Response to Notice)
of Commission Action in Docket) DOCKET NO. D2014.11.91
N2014.3.38, Including Petition for Waiver of)
Admin. R. Mont. 38.5.337197)(b))

IN THE MATTER OF the Request of Staff) REGULATORY DIVISION
of the Montana Public Service Commission)
for CenturyLink Service Quality Information) DOCKET NO. N2014.4.38

**DATA RESPONSES OF THE MONTANA CONSUMER COUNSEL
TO CENTURYLINK**

CTL-001

At page 7, beginning at line 3, Dr. Loube's pre-filed direct testimony states:

It is possible to compare the OOS clearance rate by type of infrastructure. I was able to compare the clearance by whether **the customer** is served by analog carrier systems, fiber to the node (FTTN) design, fiber to the home (FTTH) design, bonded copper pair and all other network designs.
(emphasis in bold added)

However, at page 7, beginning at line 16, Dr. Loube's pre-filed direct testimony states:

The metric I use to compare service by infrastructure type is the number of OOS greater than 24 hours per 1000 **living units passed**. (emphasis in bold added)

- a. Please provide Dr. Loube's definition of "customer" and "living unit passed."
- b. Is its Dr. Loube's contention that all living units passed are also customers? Are there some living units that are not customers? Please explain. Are there some customers that are not living units? Please explain.

CTL-001 continued

- c. Consider the following hypothetical scenario for the purpose of answering the question below:

Example	A	B
Customers	100	500
% Customers OOS>24	10%	10%
# of Customers OOS>24	10	50
Living Units Passed	1000	1000
%LU Passed OOS>24	1%	5%

The %Customers OOS>24 in examples A and B is the same. However, in example A, 100 (10%) of the 1000 living units are customers while in Example B, 500 (50%) of the 1000 living units are customers.

Does Dr. Loubé agree that if the percentage of OOS>24 remains constant (as in the example above), the greater the percentage of living units passed that are customers, the greater the percentage of OOS>24 will be? If not, why not.

RESPONSE:

- a. A customer is an entity that purchases services from CenturyLink QC. Dr. Loubé used the term living unit to mean the same as the Bureau of Census housing unit. The Bureau's definition of a housing unit is: a house, an apartment, a mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters, or if vacant, intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building and which have direct access from outside the building or through a common hall. For vacant units, the criteria of separateness and direct access are applied to the intended occupants whenever possible.
- b. Dr. Loubé does not contend that all living units are customers of CenturyLink QC. Persons in living units can also be customers of other providers of telecommunications services. There are customers that would not be part of the count of living units. These are business customers. Dr. Loubé used the living units number in

CTL-001 continued

the denominator of the metric because it is a basic fact associated with census blocks.

- c. Dr. Loube agrees with the logic of the hypothetical. However, the value of the hypothetical depends on whether there is a direct relationship between the ratio of living units to customers with any important variable in the analysis such as whether this ratio is higher for fiber to the node areas than it is for other types of infrastructures. At this time Dr. Loube has not determined if there are any relationships such as described above. If such relationships do not exist, then the use of the metric as a description measure of the relationship between OOS>24 and the infrastructure type would not be affected by the hypothetical.

CTL-002

Please provide all of the calculations used to produce each of the numbers in Table 1 on page 9 of 11, line 11 of Dr. Loubé's testimony. Please provide all calculations, workpapers, assumptions, excel spreadsheets, source data and any other materials used in the development of these numbers.

- a. Regarding Dr. Loubé's testimony, page 8, lines 1-5, please provide a list of the census blocks that "were assigned to CenturyLink QC" and the wire center each census block was assigned to.
- b. Regarding Dr. Loubé's testimony, page 8, lines 5-6, please provide the number of living units in each census block.
- c. Regarding Dr. Loubé's testimony, page 8, lines 6-12, please provide the census blocks to which each of the addresses associated with FTTN, FTTH, bonded pairs and analog circuit locations were assigned.
- d. Regarding Dr. Loubé's testimony, page 8, lines 12-14, please provide the census blocks that each of the addresses with OOS greater than 24 -hours for the months of August 2014 to February 2015 were assigned.
- e. Regarding Dr. Loubé's testimony, page 8, lines 14-17 and page 9, lines 1-2, please provide the calculations described in the following sentence:

The numerator of the metric was determined by summing the number of OOS greater than 24 hours across all census blocks where the particular infrastructure was available, and the denominator was determined by summing the number of living units across all census blocks where the particular infrastructure was available and dividing that sum by 1,000.
- f. Consider the following single census block hypothetical scenario for the purpose of answering the question below:

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Type of Infrastructure	Analog Circuit	FTTN	FTTH	Bonded Pair	Total
Customers served	10	30	0	10	50
% Customers OOS>24	10%	10%		10%	10%
# of Customers OOS>24	1	3		1	5
Living Units Passed in CB					1000
OOS>24/1000 Living Units Passed					5%

In this hypothetical, 5% of the 1,000 living units passed in the census block experienced OOS>24 but only 20% (1) of those OOS>24 is attributable to analog circuit.

Is it true that Dr. Loube’s formula for calculation of the OOS greater than 24 hours per 1,000 living units passed sums the number of OOS greater than 24 hours across **all** census blocks where analog circuit was **available**? If yes, does the formula exclude OOS>24 not attributable to analog circuit in the census block? If so, how?

RESPONSE:

- a. See Dr. Loube’s work papers, Montana_CensusBlocks_06032015_revised,
- b. See Dr. Loube’s work papers, Montana_CensusBlocks_06032015_revised.
- c. See Dr. Loube’s work papers, Montana_CensusBlocks_06032015_revised.
- d. See Dr. Loube’s work papers, Montana_CensusBlocks_06032015_revised.
- e. See Dr. Loube’s work papers, Montana_CensusBlocks_06032015_revised.

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- f. Dr. Loube's calculation is based on the census blocks where analog circuit locations were successfully geo-coded. As he noted there were some analog circuit locations that he could not geo-code. Therefore, there are some census blocks with analog circuit equipment that are not included in the calculation.

CTL-003

- a. Regarding page 13, line 11 through page 14, line 2, please provide any evidence or data upon which Dr. Loube relies to support a conclusion that CenturyLink QC's out of service restoral times would be improved by "a more reliable network across the entire state of Montana."
- b. Consider that the Montana Public Service Commission's standard for network trouble reports is set forth in Admin. R. 38.5.3371(7)(a) and states that:

Service shall be maintained by the carrier in such a manner that the monthly rate of all customer trouble reports, excluding reports concerning interexchange calls or nonregulated customer premises equipment, does not exceed six per 100 local access lines per month per exchange.

Is it Dr. Loube's contention that CenturyLink QC's network across the state fails to meet this PSC reliability standard? If so, please explain how.

Please identify any network reliability standard that Dr. Loube contends CenturyLink QC's network fails to meet and the data upon which he relies to reach such conclusion.

RESPONSE:

- a. In its October 17, 2014 presentation materials, CenturyLink QC asserts that its "investment in modern technology ... has positively impacted service. Fewer customers are experiencing troubles and out of service conditions." Page 15 of the materials. If investment in modern technology leads to fewer customers experiencing out of service conditions, then investment in such technology would lead to improvements in restoral times unless CenturyLink QC reduces the number of technicians it employs or directs those technicians to perform other work activities.
- b. Dr. Loube is not contending that CenturyLink has failed to meet Montana Public Service Commission's network trouble report

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standard. CenturyLink is not meeting the network reliability standard associated with the provision of broadband service at 10Mbps to 22,799 locations that the FCC has offered to support as part of its CAF II program. The FCC staff provided this information on the FCC web page:

https://www.fcc.gov/wcb/CAM43_Supported_Locations.zip. It is possible that CenturyLink QC is not meeting this standard at low cost locations or at extremely high-cost locations also. However, at this time, Dr. Loubé has not performed a study that would determine the number of additional locations for which the standard is not being met.

CTL-004

At page 14, beginning at line 9, Dr. Loube's pre-filed direct testimony states:

Therefore, CenturyLink QC is not addressing the Commission's observation that chronic rural service quality problems are due to the poor condition of the CenturyLink QC network.

- a. Other than the Commission's observation, does Dr. Loube have an independent factual basis for concluding:
 1. CenturyLink QC has chronic rural service quality problems and
 2. Such problems are due to the poor condition of the CenturyLink QC network?
- b. If so, please identify the data upon which Dr. Loube relies for that factual basis and provide any analysis of the condition of CenturyLink QC's rural network that Dr. Loube performed.

RESPONSE:

- a. Dr. Loube relies on the statement made by CenturyLink that "approximately one percent of its lines, which serve predominately remote rural customers, account for a disproportionately large 15 percent of the out of service restorals that are not completed in 24 hours." This observation is linked to the fact that those areas have tendency to be served by analog circuit equipment for which there is a limited availability of repair parts. CenturyLink Response to Notice of Commission Action, Request for Continuance and Petition for Waiver, Docket No. N2014.4.38, October 24, 2014, paragraph 3.
- b. See response "a" above.

CTL-005

Regarding MCC Confidential Exhibit 5, please provide a reference for the specific source for each of the numbers in the “material,” “non-material,” and “number of units” columns. If the data is from the FCC’s CAM, please provide a specific reference to where the data resides in the FCC’s CAM model.

RESPONSE:

The data are from the FCC’s CAM. The input table can be obtained at: <https://www.fcc.gov/encyclopedia/price-cap-resources>. The number of units are calculated based on (1) data provided in CenturyLink’s response to MCC-014 Confidential Attachment A and (2) engineering rules in CAM.

CTL-006

Beginning at page 16, line 6 through page 17, line 15, Dr. Loube proposes an alternative plan consisting of five numbered elements. Please provide Dr. Loube's estimate of how much it would cost to perform each of the tasks described in the numbered five elements. Please provide all data workpapers and used to estimate the cost.

RESPONSE:

The requested cost estimate would require Dr. Loube to perform a special study that he has not currently performed. It would also require CenturyLink to provide Dr. Loube substantially more information regarding its network. In addition, some of the information required to determine the cost estimate would not be known until the technicians have surveyed the network. Therefore, there is no cost estimate available to provide to CenturyLink QC and there are no work papers associated with the cost study. Dr. Loube, however, notes that a substantial part of the costs associated with the plan could be obtained from the FCC's CAF II program if CenturyLink decides to accept the FCC's offer.

CTL-007

Beginning at page 27 line 10 Dr. Loube's direct testimony reads:

I am concerned that CenturyLink QC estimates may be unreasonably high. I developed alternative estimates of the cost of upgrading the connections between the customers to the wire centers. My estimates range between \$34 million and \$54 million.

Please provide each of Dr. Loube's estimates broken down by wire center.

RESPONSE:

Due to a rounding convention, the estimated cost of splitters and cabinets are slightly higher in the attached wire center work book than those estimates were in MCC Confidential Exhibit 5.

The wire center estimates are provided as CTL-007 confidential attachment A.

CTL-008

Beginning at page 17 line 16 Dr. Loube's direct testimony reads:

In addition I highly recommend that CenturyLink QC accept the FCC's CAF II offer which will facilitate the above recommendations.

Beginning at page 29 line 2 Dr. Loube's direct testimony reads:

I recommend that CenturyLink QC should replace its analog carrier systems in census blocks where the FCC is offering CAF II.

Does Dr. Loube recommend that CenturyLink QC replace its analog carrier systems in census blocks where the FCC is offering CAF II if CenturyLink QC does not accept the model-based statewide CAF II offer in Montana?

RESPONSE:

Dr. Loube recommends that CenturyLink be required to replace its analog carrier systems because Montana Administrative Rule 38.5.3371 states that "the carrier shall be expected to meet generally accepted industry standards for quality for any service provided by the carrier that is not covered by these rules." The provision of digital data transmission service is a service provided by CenturyLink to many of its customers. The provision of such a service is a generally accepted industry standard practice in low cost areas and will become a generally accepted industry standard practice in areas where the FCC is offering CAF II support. However, that service cannot be provided where customers are served by analog carrier systems. Therefore, it is necessary to replace the analog carrier systems in areas that would receive CAF II support to be in compliance with Rule 38.5.3371.

CTL-009

At page 18, beginning on line 12, Dr. Loube's direct testimony reads:

The additional tasks included in the alternative plan are to focus on the underperforming wire centers over the six years of the CAF II program. For each selected wire center, the additional tasks would include....

- a. Please identify each and every "underperforming" wire center.
- b. Please describe the criteria Dr. Loube uses to identify "underperforming" wire centers.
- c. Please provide all data and analysis Dr. Loube used to identify the "underperforming" wire centers.
- d. Please identify the "selected" wire centers.
- e. Please describe the criteria Dr. Loube uses to select the wire centers identified in d.
- f. Please provide (1) all data Dr. Loube used to select the wire centers and (2) describe all analysis he used in the applying the data to reach his conclusions.

RESPONSE:

- a. For the period of time that Dr. Loube analyzed CenturyLink QC's out of service reports, with the exception of the below listed wire centers, all other wire centers were underperforming. The wire centers not underperforming in the first four months of 2015, were: Anaconda, Boulder, Butte-South, Gallatin, Clancy, Livingston, Pray, Manhattan, Amsterdam, Opportunity, Red Lodge, Roberts, Terry and W. Yellowstone
- b. An underperforming wire center is a wire center that contributes to CenturyLink's failure to meet Montana service quality standards.
- c. See Confidential Exhibit 3. Confidential Exhibit 2 provides a similar analysis for the year 2014.

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- d. Dr. Loube did not provide a priority list that would designate the order of wire centers that would be selected for immediate review from among the underperforming wire centers. The order of review could be established through negotiations among the Commission staff, the company and the MCC.
- e. See the response to “d”.
- f. See the response to “d”.