



**UTC**

Washington Utilities  
and Transportation  
Commission

**UT-190209**  
**INVESTIGATIVE**  
**REPORT**  
**CENTURYLINK**

**ABSTRACT**

Staff investigation to determine if CenturyLink committed violations of RCW 80.36.080, Rates, services, and facilities, and WAC 480-120-450(1), Enhanced 911 obligations of local exchange companies

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## **PURPOSE, SCOPE, AND AUTHORITY**

### **Purpose**

The purpose of this staff investigation was to determine whether CenturyLink Communications LLC (CenturyLink or company) complied with Washington state law and the Washington Utilities and Transportation Commission's (commission) public safety rules during a July 2017 outage of portions of the state's emergency 911 system. This outage lasted nearly three hours and affected a large area of western Washington.

### **Scope**

This investigation focused on CenturyLink's business practices related to failed calls to 911 in the state of Washington and CenturyLink's communication of the outage to the public-safety answering points (PSAPs) and media.

### **Authority**

Staff undertook this investigation pursuant to Revised Code of Washington (RCW) 80.01.040 (General power and duties of commission), which grants the commission authority to regulate in the public interest and regulate the rates, services, facilities, and practices of all entities operating under public service laws, and 80.04.070 (Inspection of books, papers, and documents), which grants the commission authority to investigate public service companies. Staff also conducted this investigation pursuant to RCW 80.04.380 (Penalties – Violations by public service companies), which authorizes the commission to penalize public service companies for violations of state law, commission rules, and other requirements.

### **Staff**

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## EXECUTIVE SUMMARY

On July 12, 2017, Washington residents experienced a widespread, partial outage of the state's 911 system, which severely disrupted emergency and public safety communications. The 911 system partially failed at 5:52 a.m. on July 12, 2017, and was restored nearly three hours later, at 8:39 a.m. The outage resulted in the failure of 222 calls to 911.

Staff undertook this investigation to determine whether CenturyLink complied with the requirement to provide 911 service.

Staff also considered:

- Whether CenturyLink complied with the requirement to promptly and effectively notify affected customers and stakeholders during the outage; and
- Whether CenturyLink complied with the requirements of the San Juan County Outage Communications Plan and the Washington State Outage Communications Plan.

The root cause of the outage is known, but this investigation did not otherwise address the specific system and technical aspects that led to the 911 service failure.

### Staff Findings

CenturyLink's 911 vendor, West (formerly Intrado), operates two Emergency Communications Management Centers (ECMCs), located in Englewood, Colorado, and Miami, Florida. A failed software update in the Englewood ECMC during the early morning hours of July 12, 2017, disrupted delivery of automatic number identification (ANI), automatic location identification (ALI), and voice carrier traffic. This caused the ECMC to reject 222 911 calls from eight unique wireline numbers and 140 unique mobile numbers

CenturyLink first notified 28 of the 29 PSAPs that were potentially affected by the outage by email on July 12, 2017, at 3:50 p.m., more than five hours after the outage was restored.<sup>1</sup> CenturyLink first notified the 29th PSAP (Washington State Patrol – King County), also by email, on Aug. 4, 2017, 25 days after the outage.<sup>2</sup>

Staff found that Washington residents were denied access to vital emergency services during the nearly three-hour outage. Staff will never know exactly how many Washington residents lost access to 911. Staff found, however, that out of 1,405 emergency calls placed to 911 in Washington during the outage, 222 did not go through. In addition, staff found that CenturyLink failed to provide timely notification to the commission, PSAPs, and county and state emergency management officials.

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<sup>1</sup> Twenty-nine PSAPs were potentially affected by the outage. Nineteen PSAPs actually experienced failed 911 calls.

<sup>2</sup> See Appendix A for a copy of CenturyLink's log of PSAP notifications.

As a result of this investigation, staff finds that CenturyLink committed 222 violations of Revised Code of Washington (RCW) RCW 80.36.080, requiring provision of modern, adequate, sufficient, and efficient service and facilities, and of Washington Administrative Code (WAC) 480-120-450(1), requiring the provision of enhanced 911 (E911) service.

Staff's investigation found that no single PSAP suffered a total loss of service, and there was no disruption of local exchange or toll services to more than one thousand customers. Accordingly, this incident does not rise to the level of a "major outage" as defined in WAC 480-120-021.<sup>3</sup> Therefore, the notification requirements of WAC 480-120-412(2) and (3), and the Washington State and San Juan County Outage Communication Plans adopted by Order 05 in Docket UT-132234, did not apply. Nevertheless, staff is concerned about the company's continued pattern of lack of timely notification related to this and similar incidents, which occurred in 2013, 2014 and 2016.<sup>4</sup>

### **Penalty Recommendation**

Staff recommends the commission issue a formal complaint against CenturyLink and, because of the company's continuing pattern of system failures, assess a penalty of up to the statutory maximum of \$1,000 for each of the 222 violations (222 failed 911 calls) of RCW 80.36.080, Rates services, and facilities, and WAC 480-120-450(1), Enhanced 911 obligations of local exchange companies.

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<sup>3</sup> WAC 480-120-021 defines a major outage as "a service failure lasting for thirty or more minutes that causes the disruption of local exchange or toll services to more than one thousand customers; total loss of service to a public safety answering point or emergency response agency; intercompany trunks or toll trunks not meeting service requirements for four hours or more and affecting service; or an intermodal link blockage (no dial tone) in excess of five percent for more than one hour in any switch or remote switch."

<sup>4</sup> Staff is currently investigating a major 911 outage involving CenturyLink which occurred in December, 2018.

## BACKGROUND

### **Company Information**

CenturyLink is the major Incumbent Local Exchange Carrier (ILEC) offering telephony, data, and other services in the state of Washington, with gross intra-state combined annual revenue of \$399,409,239 in 2017. Additionally, at the time of the outage, CenturyLink had statewide responsibility for the underlying elements of the state's 911 system, including 911 call processing.

### **Compliance History and Communications Plans**

#### *San Juan Island County – Docket UT-132234*

On Nov. 5, 2013, a telephone cable was severed between Lopez and San Juan Islands in San Juan County, Washington, resulting in a 10-day interruption of all long distance and 911 services. The commission penalized CenturyLink \$173,210, with all but \$50,000 suspended, for violations of WAC 480-120-412, related to notification requirements of a major outage.

As part of a settlement agreement, CenturyLink agreed to collaborate on and produce emergency communications plans for San Juan County and for the state of Washington. The purpose of the plans is to ensure CenturyLink complies with the commission's notification requirements for major outages as found in WAC 480-120-412. The commission approved both plans in Order 05, entered May 2, 2016.

#### *Englewood, Colorado, Switch Failure – Docket UT-140597*

On April 9 and 10, 2014, a switch failure in Englewood, Colorado, caused a statewide outage of Washington's 911 system. The 911 system failed at 11:54 p.m. on April 9, 2014, and was restored just over six hours later, at 6:06 a.m., on April 10, 2014. This outage affected all 39 Washington counties, 56 primary PSAPs, and 12 secondary PSAPs.

On Feb. 22, 2016, in Order 03, the commission approved a settlement agreement in which CenturyLink admitted to violations of RCW 80.36.080, Rates, services, and facilities; WAC 480-120-450, Enhanced 911 (E911) obligations of local exchange companies; and WAC 480-120-412, Major outages; and agreed to pay penalties in the amount of \$2,854,750.

#### *The Dalles, Oregon Switch Failure*

On Nov. 6, 2016, CenturyLink experienced a switch failure in The Dalles, Oregon, which resulted in an outage of 911 services over a two day period, affecting 100,000 customers in Klickitat and Skamania counties. CenturyLink failed to notify the commission or the State E911 Coordinator's Office within the Emergency Management Division of the Washington Military Department until 28 hours after the outage occurred. This violated WAC 480-120-412 and the Washington State Outage Communications Plan. As a result, on June 1, 2017, the commission entered Order 06 in Docket UT-132234, which imposed suspended penalties from the San Juan outage proceeding in the amount of \$123,210.

## INVESTIGATION

On Wednesday, July 12, 2017, at 4:31 p.m., the Washington Military Department notified commission staff by email of a failure of the 911 system involving 222 failed 911 calls in the state of Washington that had occurred earlier that day. The email was sent to a large distribution group and stated that a service disruption in the West ECMC in Englewood, CO, resulted in as many as 222 failed 911 calls.<sup>5</sup>

Two days later, on Friday, July 14, 2017, CenturyLink sent an email notification to commission staff as a “courtesy notification of non-major outage,” stating “West (formerly Intrado) did a system upgrade / reboot on Wednesday morning that caused potential issues with more than 200 911 calls in the state of Washington.”<sup>6</sup>

### Data Request

On Aug. 25, 2017, staff sent a data request to CenturyLink requesting the following information:<sup>7</sup>

- CP1: The number of affected customers, identified by customer type (commercial or residential), and CenturyLink services affected.
- CP2: A list of every failed 911 call, including the full telephone number.
- CP3: All communication with Washington’s Primary Public Safety Answering Points (PSAPs) who were impacted by this outage.
- CP4: Documentation of all call backs related to the failed calls.
- CP5: A chronology of all internal communications related to the outages, including summaries of phone calls, and copies of any emails or other written correspondence.
- CP6: A chronology of all communications with stakeholders related to the outages, such as commission staff, other government agencies, the media, and the public. Summaries of phone calls and copies of any emails or other written correspondence.
- CP7: A chronology of service restoral by location, number of customers, and service type.
- CP8: A summary of any credits for the outages.

CenturyLink responded to staff’s data request on Sept.13, 2017. The company requested, and was granted, an extension to respond to CP5 until Sept. 25, 2017. The company submitted an amended response to CP1 on Oct.9, 2017. CenturyLink’s responses are summarized below:

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<sup>5</sup> See Appendix B for a copy of Washington Military Department’s email, dated July 12, 2017.

<sup>6</sup> See Appendix C for a copy of CenturyLink’s email, dated July 14, 2017.

<sup>7</sup> See Appendix D for a copy of data request to CenturyLink, dated Aug. 25, 2017.

**CP1: The number and type of affected customers, and service affected.**

In its response, CenturyLink reported that the outage affected 911 service to 29 PSAPs. During the affected period, 222 (16%) of the 1,405 calls attempted to 911 failed. Eight of the failed calls were from unique wireline telephone numbers, and 140 were from unique wireless numbers.

In its response to CP1, the company included a letter it had submitted to the commission on Aug. 11, 2017, in response to data requests received from UTC Regulatory Services staff on July 17 and 24, 2017. In the letter, identified by CenturyLink as Exhibit CP1-1, the company explained that the outage began on July 12, 2017, at 5:52 a.m. and ended at 8:39 a.m., for a duration of two hours and 47 minutes.<sup>8</sup>

The letter contained a list of 29 potentially affected PSAPs, with 19 of them marked with an asterisk indicating the PSAP had experienced missed 911 calls. The outage caused failed 911 calls to the following 19 PSAPs:

- |                                      |   |
|--------------------------------------|---|
| 1. Clallam County (Pencomm)          | 11. Skagit County                         |
| 2. Clark Regional Emergency Services | 12. Skamania County Sheriff's Office      |
| 3. Cowlitz County 9-1-1              | 13. SNOCOM – Snohomish County             |
| 4. Jeffcom 9-1-1 Communications      | 14. South Sound 911                       |
| 5. King County Sheriff               | 15. Thurston County – CAPCOM              |
| 6. Kitsap County                     | 16. Valley Communications Center          |
| 7. Klickitat County Sheriff's Office | 17. Washington State Patrol – King County |
| 8. Lewis County 9-1-1                | 18. Washington State Patrol – Tacoma      |
| 9. NORCOM – King County              | 19. What-Comm Communications Center       |
| 10. Seattle Police Department        |   |

The outage also potentially affected the following 10 PSAPs; however, no failed 911 calls were documented:

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| 1. Bothell Police Department        | 6. Puyallup Communications            |
| 2. Grays Harbor Communications      | 7. Redmond Police Department          |
| 3. Island County Emergency Services | 8. San Juan County Sheriff's Office   |
| 4. Mason County                     | 9. SNOBAC – Snohomish County          |
| 5. Pacific County Communications    | 10. Wahkiakum County Sheriff's Office |

**CP2: A list of every failed 911 call, including the full telephone number.**

CenturyLink provided lists of the failed wireline and wireless calls. According to CenturyLink, 148 unique callers attempted to make 222 calls to 911. This means that some callers attempted to call 911 more than once.

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<sup>8</sup> See Appendix E for a copy of CenturyLink's original and revised summaries of the outage.



**CP3: All communication with Washington’s Primary Public Safety Answering Points (PSAPs) who were impacted by this outage.**

CenturyLink provided copies of its initial and final notifications to the 29 affected PSAPs. CenturyLink did not notify the PSAPs until after restoral of service, and a single email notification from CenturyLink served as both the initial and final notification. Twenty-eight PSAPs were notified at approximately 3:50 p.m., on July 12, 2017, more than seven hours after the outage was restored. The 29<sup>th</sup> PSAP, Washington State Patrol – King County, was notified on August 4, 2017, 23 days after the outage was restored.

**CP4: Documentation of all call backs related to the failed calls.**

CenturyLink stated in its response that it does not perform callbacks on failed 911 calls. The company does provide a log of failed to calls to PSAPs to make call backs at their discretion. CenturyLink stated that it provided the call log to the PSAPs on July 13, 2017, at approximately 10:00 a.m., more than 24 hours after the outage was restored.

**CP5: A chronology of all internal communications related to the outages, including summaries of phone calls, and copies of any emails or other written correspondence.**

CenturyLink provided a log of internal correspondence as requested. The first internal communication listed occurred on July 12, 2017, at 1:21 p.m., Mountain Time (12:21 p.m., Pacific Time) and was an email from CenturyLink staff notifying the “internal team” of the outage.

**CP6: A chronology of all communications with stakeholders related to the outages, such as commission staff, other government agencies, the media, and the public. Summaries of phone calls and copies of any emails or other written correspondence.**

CenturyLink provided copies of communication with UTC staff and the FCC. CenturyLink did not provide documentation of any communications with the media or the public regarding this outage. Because this incident was not a major outage as defined in WAC 480-120-021, the notification requirements found in WAC 480-120-412 and the company’s communications plans do not apply.

**CP7: A chronology of service restoral by location, number of customers, and service type.**

CenturyLink reported that the partial outage began July 12, 2017, at 5:52 a.m., and impacted 911 service. The issue that impacted the trunks was resolved on July 12, 2017 at 8:39 a.m., at which time access to 911 was no longer impaired. This was the case for all locations, all customers, and all end-user services.

**CP8: A summary of any credits for the outages.**

According to CenturyLink, the issues with accessing 911 on July 12, 2017, do not meet their criteria for end-user credits. Therefore, no record of end-user, or consumer, credits exists.

**Findings**

The 911 system is a vital part of Washington's emergency and public safety services to the people of Washington. CenturyLink's failure deprived Washingtonians of the most basic telecommunications service, which is the ability to dial 911 and reach emergency services. The company is required by Washington statute to provide service and facilities that are safe, modern, sufficient, and efficient. RCW 80.36.080. As a result of this investigation, staff concludes that CenturyLink and its 911 vendor did not meet the standards required for providing safe and efficient 911 service and deprived Washington callers of the ability to place a 911 call. Staff finds 222 violations of RCW 80.36.080, Rates services, and facilities, and of WAC 480-120-450, Enhanced 911 (E911) obligations of local exchange companies, for 222 failed 911 calls.

## RECOMMENDATIONS

Staff's investigation finds that CenturyLink's 911 system failed due to a foreseeable and preventable technical error and related deficiencies. As a result, the residents of Washington state lost access to 911 services for almost three hours. Staff believes that the severity of the outage and the risk it posed to the public warrants a substantial penalty.

Per the Enforcement Policy of the Washington Utilities and Transportation Commission, (Docket A-120061), commission staff considered the following factors in determining the appropriate recommended penalty amount for these violations:

1. **How serious or harmful the violations are to the public.**

This partial outage lasted nearly three hours and impacted the most populous counties in the Puget Sound region. In this case, the potential impact was mitigated only by the fact that no major natural or human-caused disasters or incidents occurred during the timeframe of the outage.

Not being able to reach 911 is a serious and potentially life-threatening event. It is impossible to know the true extent of harm to the public; however, we know that 148 individual customers attempted 222 calls to 911 and were unsuccessful. The fact that 74 of the calls were repeat calls suggests the urgent need for those customers to get through to emergency services.

The duration or extent of a 911 outage is of no interest to the individual caller who needs help in an emergency. Each call must go through. The failure of even a single call is potentially very harmful and is of great concern.

2. **Whether the violations were intentional.**

Considerations include:

- Whether the company ignored commission staff's previous technical assistance; and
- Whether there is clear evidence through documentation or other means that shows the company knew of, and failed to correct the violations.

Although the outage itself was unintentional, evidence suggests that it was preventable. CenturyLink's vendor, West, attempted a software configuration change at the Englewood ECMC that failed and caused this partial 911 outage. The commission issued significant penalties against CenturyLink in Docket UT-140597 after a software failure at Englewood caused a massive 911 outage in April 2014. By failing to ensure that its vendors properly test software configuration changes before implementation and have redundancy in place to prevent future failures, CenturyLink allowed this outage to occur.

3. **Whether the Company self-reported the violations.** The company did not self-report these violations. Staff learned of the 222 failed 911 calls in an email received at 4:31 p.m., on Aug. 12, 2017, from the Washington Military Department.<sup>9</sup>
4. **Whether the Company was cooperative and responsive.**  
The company was cooperative and responsive throughout the investigation.
5. **Whether the Company promptly corrected the violations and remedied the impacts.**  
The company, through its vendor, corrected the circumstances which caused this particular outage in less than three hours. However, staff is not aware of any permanent infrastructure or process improvements by CenturyLink or its vendor to prevent future system failures and outages.
6. **The number of violations and number of customers affected.**  
Every Washington resident west of the Cascade Range needing emergency services was potentially affected by this outage. One hundred forty-eight individual customers did need emergency services and made 222 attempts to reach 911. Each and every call was critical, whether the customer made one or multiple attempts to get assistance through a call to 911.
7. **The likelihood of recurrence.**  
Unfortunately, this incident was just the latest in a pattern of CenturyLink system failures. Like the 2014 and 2016 incidents, this outage involved a failure at a central switch, with no redundant system in place to prevent an interruption of service. Staff believes that unless CenturyLink makes significant changes, such as better quality control and system redundancy at central switches, another failure is likely.
8. **The Company's past performance regarding compliance, violations, and penalties.**  
The commission assessed significant penalties against CenturyLink for violations related to 911 outages that occurred in 2013, 2014, and 2016. An outage from December 2018 is currently under investigation. Staff finds this ongoing pattern of outages to be unacceptable.
9. **The Company's existing compliance program.**  
Other than the Washington State and San Juan County Communications Plans, which address notification, staff is not aware of any other compliance program.
10. **The size of the Company.**  
CenturyLink is the major ILEC offering telephony, data, and other telecommunications services in the state of Washington, with gross intra-state combined annual revenue of \$399,409,239 in 2017.

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<sup>9</sup> See Appendix B for a copy of Washington Military Department's email, dated July 12, 2017.

**Penalty Recommendation**

Staff recommends the commission issue a formal complaint against CenturyLink and assess a penalty of up to \$222,000 for 222 violations of RCW 80.36.080, Rates services, and facilities, and of WAC 480-120-450(1) Enhanced 911 obligations of local exchange companies, based on 222 failed calls to 911.