

BEFORE THE WASHINGTON STATE  
UTILITIES & TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

QWEST CORPORATION d/b/a CENTURYLINK QC,

Respondent.

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DOCKET UT-140597

DIRECT TESTIMONY OF THOMAS R. ORR (EXHIBIT NO. TRO-1T)

ON BEHALF OF

PUBLIC COUNSEL

October 27, 2015

DIRECT TESTIMONY OF THOMAS R. ORR (EXHIBIT NO. TRO-1T)  
DOCKET UT-140597

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**EXHIBIT LIST**

Exhibit No. TRO-2	Resume of Thomas R. Orr
Exhibit No. TRO-3	Power Point on King County 911 and NORCOM
Exhibit No. TRO-4	April 14, 2014, Email from Marlys Davis to King County PSAPs
Exhibit No. TRO-5C	Confidential Email from Marlys Davis to NORCOM Regarding Failed Calls
Exhibit No. TRO-6	Emails with Status Updates Received by NORCOM During the Outage
Exhibit No. TRO-7	April 11, 2014, Email from Marlys Davis to PSAPs
Exhibit No. TRO-8	April 16, 2014, Email from Marlys Davis to PSAPs
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Exhibit No. TRO-10	April 10, 2014, Email from Marlys Davis to King County PSAPs
Exhibit No. TRO-11	April 18, 2014, Emails regarding Condition 4 routing

1       **Q:    Please state your name and business address.**

2       A:    My name is Thomas R. Orr, and my business address is 450 110<sup>th</sup> Ave N.E.,  
3       Bellevue, WA 98015.

4       **Q:    By whom are you employed and in what capacity?**

5       A:    I am employed by the North East King County Regional Public Safety  
6       Communications Agency (“NORCOM”). I have been employed as the Executive  
7       Director for NORCOM since December 15, 2012.

8       **Q:    On whose behalf are you testifying?**

9       A:    I am testifying on behalf of the Public Counsel Unit of the Washington Attorney  
10      General’s Office (Public Counsel).

11      **Q:    Please describe your professional qualifications.**

12      A:    I served eight years as a Seattle Police officer ultimately attending law school and  
13      graduating. After 14 years of private law practice for two large firm (Gibson Dunn  
14      & Crutcher; Holland & Hart), I returned to government service as an Assistant  
15      County Attorney, Assistant City Attorney, and Police Legal Advisor for two  
16      different agencies. My last Legal Advisor jobs for the City of Tacoma led to my  
17      selection as Executive Director for Pierce County’s largest 911 center where I  
18      served for seven years. For the last three years, I have served as Executive Director  
19      for NORCOM. I also have a great deal of cyber threat, technology, and intelligence  
20      training as an Intelligence Officer in the U.S. Naval Reserve. I retired in February  
21      2015 at the rank of Captain (same rank as a Colonel). My resume is attached as  
22      Exhibit No. TRO-2 to my testimony.

23      **Q:    What exhibits are you sponsoring in this proceeding?**

- 1       A:     I sponsor the following exhibits:
- 2               Exhibit No. TRO-2       Resume of Thomas R. Orr
- 3               Exhibit No. TRO-3       Power Point on King County 911 and NORCOM
- 4               Exhibit No. TRO-4       April 14, 2014, Email from Marlys Davis to King
- 5                                       County PSAPs
- 6               Exhibit No. TRO-5C      Confidential Email from Marlys Davis to NORCOM
- 7                                       Regarding Failed Calls
- 8               Exhibit No. TRO-6       Emails with Status Updates Received by NORCOM
- 9                                       During the Outage
- 10              Exhibit No. TRO-7       April 11, 2014, Email from Marlys Davis to PSAPs
- 11              Exhibit No. TRO-8       April 16, 2014, Email from Marlys Davis to PSAPs
- 12              Exhibit No. TRO-9       April 16, 2014, Email from Kathleen Miller to
- 13                                       county PSAPs
- 14              Exhibit No. TRO-10      April 10, 2014, Email from Marlys Davis to King
- 15                                       County PSAPs
- 16              Exhibit No. TRO-11      April 18, 2014, Emails regarding Condition 4
- 17                                       routing

18       **Q:     Please describe how 911 is structured in King County, Washington.**

19       A:     King County has 12 Public Safety Answering Points (PSAPs), as shown in Exhibit

20             No. TRO-3, slide 1. The King County E-911 office is responsible for routing 911

21             calls from the 911 demarcation point (where the telecommunications carrier,

22             CenturyLink, delivers the call) to the PSAP demarcation point (where the call enters

23             the PSAPs own equipment). In King County, the King County E-911 office serves

1 as the contact point with CenturyLink to provide routing of 911 calls to correct  
2 PSAP and also communicates information between CenturyLink and the PSAPs.  
3 PSAPs answer, locate, triage, and dispatch calls to the agencies they serve.<sup>1</sup>

4 **Q: Please describe NORCOM.**

5 A: NORCOM is a multi-discipline, multi-jurisdiction 911 PSAP and Emergency  
6 Communications Center that serves 14 fire agencies and five law enforcement  
7 agencies. With an annual budget of \$11 million, NORCOM is responsible for  
8 emergency communications for an area that covers 1,400 square miles and an  
9 estimated population of 620,000 people. In FY2014, NORCOM received and  
10 dispatched over 200,000 Police, Fire, and EMS incidents.<sup>2</sup>

11 **Q: Please compare the normal call volumes for 911 that NORCOM typically**  
12 **experiences during a 24 hour period with the call volume experienced on April**  
13 **10, 2014.**

14 A: On average, NORCOM receives 445 911 calls per day and 249 non-911 emergency  
15 calls per day. Table 1 below shows our average call volume by hour in 2014, with  
16 the period of the April 2014 911 outage, as reported by CenturyLink, highlighted.

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<sup>1</sup> See Exhibit No. TRO-3.

<sup>2</sup> *Id.*

1

**Table 1: Average 911 Calls Volume by Hour in 2014**

<b>Hour</b>	<b>911 Calls</b>
0000-0100	12
0100-0200	9
0200-0300	8
0300-0400	6
0400-0500	5
0500-0600	6
0600-0700	9
0700-0800	12
0800-0900	17
0900-1000	21
1000-1100	23
1100-1200	26
1200-1300	26
1300-1400	27
1400-1500	27
1500-1600	29
1600-1700	29
1700-1800	28
1800-1900	27
1900-2000	24
2000-2100	22
2100-2200	20
2200-2300	17
2300-0000	14

2

Table 2 below shows the volume of 911 calls NORCOM experienced on April 10,

3

2014, with the period of the outage, as reported by CenturyLink, highlighted.

4

1

**Table 2: Number of 911 Calls Experienced on April 10, 2014**

<b>Hour</b>	<b>No. of 911 Calls / Hour</b>
0000-0100	11
0100-0200	5
0200-0300	3
0300-0400	2
0400-0500	0
0500-0600	1
0600-0700	27
0700-0800	13
0800-0900	15
0900-1000	24
1000-1100	21
1100-1200	24
1200-1300	21
1300-1400	15
1400-1500	21
1500-1600	26
1600-1700	25
1700-1800	22
1800-1900	31
1900-2000	22
2000-2100	23
2100-2200	21
2200-2300	16
2300-0000	9

2

3

**Q: What did NORCOM observe with respect to call volumes during the statewide 911 outage that occurred on April 9-10, 2014?**

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5

**A:** We do not have a complete list of all calls that were lost, but CenturyLink provided the King County E-911 Office with a list of 29 911 calls to NORCOM that failed.

6

7

The King County E-911 Office forwarded the list to NORCOM. NORCOM

8

attempted to contact all callers to determine the nature of their emergency and

9

whether they still needed assistance. In many cases, particularly with wireless



1 callers, NORCOM was unable to contact the caller because the failed call list did  
2 not include the actual number from which the call originated.<sup>3</sup> Exhibit No. TRO-5C  
3 contains the list of failed calls NORCOM received from the King County E-911  
4 Office.

5 **Q: Was NORCOM able to receive 911 calls during the outage?**

6 A: No. NORCOM experienced a significant drop in calls to our 911 call center during  
7 the outage, and CenturyLink later provided a list of failed calls. Before  
8 CenturyLink was even aware of the outage, we noticed the drop in volume and, as  
9 reflected in Table 2 above, also started receiving calls on our business lines from  
10 residents and the agencies we serve informing us that they were unable to reach us  
11 by dialing 911. Our telecommunications staff actively began troubleshooting.  
12 They called in our telecommunications subject matter expert and contacted other  
13 PSAPs.

14 **Q: How did NORCOM become aware that there was a 911 outage on April 9-10,**  
15 **2014?**

16 A: As mentioned above, NORCOM telecommunicators noticed a sudden drop in call  
17 volume beginning approximately 0030 hours (12:30 a.m.). They began  
18 troubleshooting and contacted other PSAPs, to determine if they were reporting  
19 similar problems. Other PSAPs confirmed that they were experiencing problems.  
20 NORCOM began receiving calls on its business lines from residents and members  
21 of NORCOM's agencies advising they could not reach NORCOM by dialing 911.  
22 NORCOM has a full-time Information Technology Systems Engineer, Zeb

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<sup>3</sup> See Exhibit No. TRO-4.

1 Middleton, who specializes in telecommunications. NORCOM Operations  
2 contacted Mr. Middleton who responded to NORCOM from home and began  
3 assisting with troubleshooting. As per standard procedure, NORCOM and other  
4 PSAPs reported the outage to the King County E-911 office, which in turn  
5 contacted CenturyLink. Initially, CenturyLink was unaware of the outage. Exhibit  
6 No. TRO-6 is an email string containing status updates that NORCOM received  
7 from the King County E-911 Program Office throughout the outage.

8 **Q: Please describe the availability of information during the outage regarding**  
9 **what was occurring and expectations of service restoration.**

10 A: Information was confusing and contradictory. Information as to scope and nature of  
11 the outage was spotty, at best. It took several hours for CenturyLink to confirm the  
12 outage. Initially, CenturyLink reported that the outage was due to a faulty network  
13 card in Sheridan, Oregon. A day or two later, CenturyLink reported that the  
14 Washington outage was not connected to the Oregon outage. CenturyLink also  
15 later reported that the cause of the Washington outage was due to a preventable  
16 software coding error in an Intrado router in Colorado.<sup>4</sup>

17 **Q: Was the information NORCOM received throughout the outage accurate?**

18 A: No. There was a great deal of confusion regarding the cause and the timetable.

19 **Q: Was the information NORCOM received throughout the outage timely?**

20 A: No. Additionally, CenturyLink's untimely communication continued even after the  
21 911 outage. For example, on April 17, 2014, CenturyLink forwarded to the county

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<sup>4</sup> See Exhibit Nos. TRO-7 and TRO-8.

1 911 offices an April 15, 2014, media release that had previously only been sent to  
2 the state 911 office.<sup>5</sup>

3 **Q: Please describe how NORCOM addressed the outage.**

4 A: In addition to the discussion above, NORCOM was actively communicating with  
5 the King County E-911 office and other PSAPs to determine the cause, nature,  
6 extent, and timetable related to the 911 outage. There were significant concerns and  
7 anxiety that key public safety emergencies were being missed, i.e., that NORCOM  
8 and its agencies might fail to respond, resulting in significant injury and death to  
9 those who were attempting to call 911.

10 Also, the event generated intense media interest resulting in three local  
11 television stations requesting access to our facility and pressing for details.<sup>6</sup>  
12 NORCOM staff was overtaxed in responding to these requests, attempting to  
13 diagnose the fix, returning or making calls as the information became available,  
14 issuing press releases, responding to agency queries about the status of the outage,  
15 and later attempting to call back 911 callers whose calls had failed.

16 **Q: When did 911 calls resume for NORCOM?**

17 A: The answer to this remains unclear. Volumes started to return at approximately  
18 0730 hours (7:30 a.m.), but reports of 911 calls failing continued through to at least  
19 1634 hours (4:34 p.m.).<sup>7</sup>

20 **Q: How long was it before call volumes returned to normal levels?**

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<sup>5</sup> See Exhibit No. TRO-9.

<sup>6</sup> See Exhibit No. TRO-6.

<sup>7</sup> See Exhibit No. TRO-10.

1 A: Because reports of missed or intermittent calls continued after 0630 hours (6:30  
2 a.m.) and extended to 1634 hours (4:34 p.m.), it is impossible to say precisely when  
3 volumes returned to complete normalcy. However, it appears most volumes were  
4 approaching normal at approximately 0730 hours (7:30 a.m.).

5 **Q: Did NORCOM have any control over whether it could receive 911 calls from**  
6 **the public?**

7 A: No. NORCOM had no control over whether it could receive 911 calls.<sup>8</sup> NORCOM  
8 was unable to speak to CenturyLink directly and could not provide the public or  
9 media with any definitive answers. A minority of PSAPs were requesting  
10 CenturyLink to provide Condition 4 routing, which could potentially bypass the  
11 cause of the outage. The Seattle Police PSAP reported that they were not  
12 experiencing an outage because they had Condition 4 routing in place.<sup>9</sup> NORCOM  
13 asked the King County E-911 office to have CenturyLink move NORCOM to  
14 Condition 4 routing. After several weeks, NORCOM was informed that this type of  
15 routing is not available to NORCOM from CenturyLink. For the most part,  
16 NORCOM was completely in the dark during the outage, and it was not until days  
17 or weeks later that NORCOM began to understand the cause of the outage.

18 **Q: What impact did the outage have on NORCOM's personnel?**

19 A: This was a very stressful time for personnel. Citizens were contacting NORCOM  
20 agencies and other officials to report that their calls to 911 were not going through.  
21 NORCOM's staff was on full emergency footing, bringing in on-call technical and

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<sup>8</sup> See Exhibit No. TRO-4.

<sup>9</sup> See Exhibit No. TRO-11.

1 telecommunicator personnel during the 911 outage. Seconds count in public safety.  
2 NORCOM's personnel are trained to provide the fastest possible answer and  
3 dispatch to every call to assure that no one is injured or killed. Throughout the  
4 outage, the overriding concern was the key calls such as cardiac arrests, injury  
5 motor vehicle accidents, and violent crimes were being missed. NORCOM believes  
6 that we were incredibly fortunate that no one was injured or killed as a result of the  
7 outage.

8 **Q: In your experience with emergency response, have you experienced an outage**  
9 **similar to the April 2014 outage?**

10 A: This was an unprecedented outage in my 10 years as Executive Director of a 911  
11 center, seven years as a police legal advisor, eight years as a law enforcement  
12 officer, and approximate 45 years as a citizen-user of 911. Since this outage, there  
13 has been at least one other Intrado-related outage, but not for the same length of  
14 period or as wide-spread.

15 **Q: Does this conclude your testimony?**

16 A: Yes.