

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Inquiry into Circumstances of Major 911 Outage) PS Docket No. 14-72
Centered in Washington State on April 9-10, 2014)
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)

To: Chief, Public Safety and Homeland Security Bureau

**COMMENTS OF THE
WASHINGTON STATE E9-1-1 COORDINATION OFFICE**

The Washington State E9-1-1 Coordinator's Office submits this reply to comments to the Commissioners in response to the Inquiry into Circumstances of Major 911 Outage Centered in Washington State on April 9-10, 2014, PS Docket No. 14-72. The Washington State E9-1-1 Coordinator's Office respectfully requests the Commission consider the information provided in this reply as the inquiry is conducted.

The Washington State E9-1-1 Coordinator's Office endorses the comments filed in this matter by Marlys Davis from the King County E9-1-1 Program Office, Stephanie Fritts from the Pacific County Sheriff's Office and Lorlee Mizell from the Spokane County E9-1-1 Office. Amplifying their comments, the Washington State E9-1-1 Coordinator's Office believes the following information to be germane to the inquiry.

The state of Washington is the 18th largest and 13th most populous state in the nation, covering an area of 71,362 sq mi, with a population of 6,971,406 (2013), in 39 counties. Nine-one-one service was implemented in 1985, and an Emergency Services IP Network (ESInet) was established statewide between 2009 and 2012. E9-1-1 service is provided to the public through

57 primary Public Safety Answering Points (PSAPs), including two federal military installation PSAPs, one Native American Tribal PSAP and four State Patrol PSAPs. In addition, the Washington State ESInet provides E911 service to 12 Secondary and/or back-up PSAPs.

On April 10, 2014, between approximately midnight and 8:00 AM, the Washington State ESInet suffered a large scale outage that was determined to have been caused by a technical error in an Emergency Call Management Center (ECMC) which prevented the system from properly processing and delivering 9-1-1 calls. During the outage, approximately 770 9-1-1 calls were successfully delivered to the PSAPs, while approximately 4,500 9-1-1 calls failed. CenturyLink is under contract by the state of Washington as the network provider for the ESInet. In the contract with the state, CenturyLink identifies Intrado as their Sub-Contractor for many of the network services required including the ECMC. On April 24, 2014, executives from CenturyLink and Intrado provided an in-depth technical and executive briefing of the causes of the outage and the actions taken during the outage.

Note: the US Navy provides ESInet services to 9-1-1 callers on Naval installations within Washington State, but is not connected to the Washington State ESInet.

There were issues associated with this ESInet outage that should be considered by the Commission:

1. At no time during the outage were any of the PSAPs, or any other officials in Washington State notified, by either CenturyLink or Intrado, that there was a problem impacting the delivery of 9-1-1 calls. Individual PSAPs were informed by individual citizens reporting that their 9-1-1 calls did not go through, or they were notified by Emergency Services providers, or they simply noticed an unusual reduction/flow in normal 9-1-1 call volumes. The State E9-1-1 Coordinator's Office and the County

E9-1-1 Coordinators became engaged as soon as citizen notifications began. Using a conference call line, the State E911 Coordinator's Office, the County E9-1-1 Coordinators, the PSAPs, conferenced with the CenturyLink 9-1-1 Service Manager, and maintained communication regarding the outage and service restoral.

2. Due to the sudden increase in the volume of trouble calls, the nation-wide CenturyLink 9-1-1 Repair Center quickly became overloaded. Consequently, most of the calls to the Repair Center went unanswered, or were put on hold for extended periods - some of those hold-times measured in hours. In addition, there was no screening of calls by the Call Center prior to putting PSAPs on hold, so this delayed the recognition by the Repair Center that a near statewide outage was occurring.
3. Neither CenturyLink nor Intrado provided any instructions to PSAPs on what they could do to mitigate the outage. The PSAPs were left on their own to try to figure out how to provide some level of service to the public. Because of the confusion and lack of instruction, as to the nature of this outage, a work-around that worked successfully for one PSAP, such as going to their back-up, did not work for other PSAPs. In addition, many of the contingency processes that had been put in place with CenturyLink and Intrado prior to the outage (such as "Condition 4 Routing") for the purpose of continuing to provide service to the public during an outage were not available to the PSAPs, due to the nature/cause of the outage.
4. The majority of 9-1-1 trunks (or ES Trunks) from call origination service providers are connected to one of the four Legacy Network Gateways (LNGs) in the system but the load of trunks per LNG are not balanced between the LNGs. In addition, the LNGs utilize a "primary/alternate" connectivity methodology for redundancy, so

consequentially most traffic effectively only goes to its primary LNG. In addition, each LNG sends calls to a “preferred” Call Router, and doesn’t send calls to a Secondary Router unless the “preferred” router is unavailable. Again, there is no balancing of load to the Routers and in reality, for the Washington State ESInet, the majority of traffic is sent to the Intrado ECMC in Englewood, CO.

5. While the ECMC that was no longer able to process 9-1-1 calls identified a problem and informed the Network Operations Center (NOC), the alarm generated was of such a low level that no automated corrective action to reroute to the remaining functional ECMC occurred.
6. The failure did generate an alarm, but the alarm was not distinguishable as a failure to process calls. Because of this, the Network Operations Center (NOC), did not recognize the significance of the problem. In addition, even though the device that failed sent 4,500 alarms to the NOC, they were grouped together into a summary, so again, the significance of the problem was not recognized by the NOC.
7. Once Intrado recognized there was an issue, it required bringing in additional technicians and engineers before the cause and scope of the problem could be identified. This caused a delay of several hours in the rerouting of 9-1-1 calls.
8. Washington State is concerned that CenturyLink’s 9-1-1 service utilizes one ESInet, provided by Intrado, which includes only two call routing locations to serve all customers nationwide. At a minimum, a statewide ESInet such as the Washington State ESInet should be served by a pair of Call Routers dedicated to this purpose so the nationwide Next Generation 9-1-1 network has some redundancy.

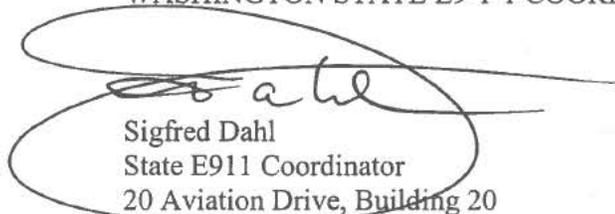
Following the resolution of the immediate problem, the Washington State E911 Coordinator's Office requested, on behalf of the counties, that CenturyLink generate and send a list of callers who attempted to dial 9-1-1 during the time of the outage but failed to connect, so the counties could follow-up with the caller to ensure their issue had been resolved. The requested information was delivered over several days and was formatted in an unusable manner. This required contacting all the service providers (both wireline and wireless) in order to get usable data. This step took as much as two weeks in some cases (and in one case a wireless provider refused to provide the requested data absent a court order) and by the time received so much time had elapsed that it became a moot effort. This level of service is unacceptable and applies to all providers of E9-1-1 telecommunications service.

Once the problem that created the outage was identified; rerouting the calls to the other selective router resolved the immediate problem and restored service; and Intrado has taken steps to mitigate a recurrence of the problem. However, this event clearly demonstrated that active redundancy does not exist in the network. In addition, this outage pointed out that the generation of critical alarms in response to failures along the call processing path is incomplete. The example in this failure was that a critical sub-system routine failed to allow call processing to continue beyond this sub-system. Because the process performed by this sub-system failed, the call ceased to be processed but no critical alarm or notification was generated to alert the NOC that a call that had entered the ECMC never completed processing through the ECMC. Subsequently the call timed out and a failure or busy notification was returned to the caller. Had the LNG been "notified" of the failure, it could have attempted to send the call to the other router.

Since the outage, E911 Directors and Coordinators from all Washington State counties (including those not impacted) have been working in concert with CenturyLink and Intrado to resolve issues/failures and refine procedural protocols. CenturyLink and Intrado have determined the cause of the outage and explained the issue in detail. The cause of the outage is important, and a short-term fix has been implemented with long term changes being planned. In retrospect however, the cause of the outage is no longer the primary concern, but the issues of awareness, notification, and follow-up continue.

Respectfully submitted,

WASHINGTON STATE E9-1-1 COORDINATION OFFICE

A handwritten signature in black ink, appearing to read "S. Dahl", is written over a circular stamp or seal. The signature is fluid and cursive.

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