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Abridged

August 22, 2022

Mr. Claude Doucet
Secretary General
Canadian Radio-television and
Telecommunications Commission
1 Promenade du Portage
Ottawa, ON K1A 0N2

Filed via GCKey
Ref Number: 8000-C12-202203868

Dear Mr. Doucet:

RE: Rogers Canada-wide service outage of July 2022 – Responses to Further Requests for Information

Rogers Communications Canada Inc. (“Rogers”) is in receipt of a confidential Letter from the Canadian Radio-television and Telecommunications Commission (“CRTC” or the “Commission”), dated August 5, 2022, containing further Requests for Information (“RFIs”) concerning the above-mentioned subject. We note that this Letter contains sensitive information, such as the names of our network equipment vendors.

On August 5th, the Commission asked 18 detailed questions with sub-questions, totalling 44 additional requests for information, to Rogers. Rogers had until August 15th to respond. On August 8th, Rogers asked a one-week extension to answer these new RFIs. In a second Letter dated August 11th, the Commission approved our extension request and also provided an abridged version of their August 5th Letter. Therefore, as per the procedure set out in that second Letter, please find below our Responses to these new RFIs.

Further, Rogers is in receipt of a letter from the Deaf Wireless Canada Consultative Committee (“DWCC”), dated August 12, 2022. We note that the DWCC seeks new information that is specific to the Deaf, Deaf-Blind, and Hard of Hearing (“DHHDB”) community and that is not covered by our July 22nd & August 22nd RFI Responses. Rogers takes accessibility issues very seriously. While the information contained in our July 22nd & August 22nd RFI Responses does not distinguish between DHHDB and other customers, Rogers believes that the steps Rogers is taking, including the separation of our wireless and wireline networks, will ensure that the DHHDB customers will continue to have access to 9-1-1 and data services during an outage, either through our wireless network or through WiFi. During the July 8th outage, our first priority was to get our wireless network back up because of the importance of wireless 9-1-1 access (including Text-with-911) to all Rogers’ customers. Rogers’ second priority was to restore landline service, as it is also an important method to access emergency care. Going forward, our key priorities are to prevent future outages and to ensure that our 9-1-1 and other critical services remain operational at all times.

Rogers requests that the Commission treat certain information contained in these Responses as

confidential, pursuant to subsection 20(1)(b) of the *Access to Information Act*, and sections 38 and 39 of the *Telecommunications Act*. For competitive reasons, and also to protect our customers as well as our networks and vendors, Rogers would never publicly disclose some of the information contained in these Responses other than to the Commission. Some of the information submitted contains highly sensitive information about Rogers' networks and operations. Rogers submits that any possible public interest in disclosure of the information in these Responses is greatly outweighed by the specific direct harm that would flow to Rogers and to its customers. Rogers is also filing an abridged version of its Responses.

Sincerely,



Ted Woodhead
Chief Regulatory Officer & Government Affairs

cc: Fiona Gilfillan, CRTC, fiona.gilfillan@crtc.gc.ca
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Q1.

As requested by Mr. Han Dong during the Commission's appearance before the Standing Committee on Industry and Technology on 25 July 2022, please quantify the direct economic losses of the outage. Further, please provide the methodology to calculate the impact as well as any assumptions.

A.

Unfortunately, Rogers is unable to answer this question. This is a tremendously complex question and Rogers simply does not possess the economic data necessary to properly model the impact of the outage. Furthermore, each customer, from the individual consumer to the largest enterprise customer, is unique and, realistically, each experienced very different impacts: from no impact to potentially very important ones. As a result, Rogers is simply not in a position to quantify the direct economic losses.

That said, as publicly announced, Rogers very carefully assessed the situation and decided to credit all our customers (residential, business and wholesale) the equivalent of five (5) days of service fees. The estimated value of this credit is around \$150 million.

Q2.

During Rogers' appearance before the Standing Committee on Industry and Technology on 25 July 2022, Mr. Tony Staffieri stated that Rogers was spending at least \$250M to physically separate its Internet and wireless networks as well as investing \$10B over the next three years to build out and strengthen its network:

- a. Provide a detailed cost breakdown of the \$250M for physically separating the network;**
- b. Provide a detailed description of implementation timelines;**
- c. Provide a detailed explanation of how the physical separation of the networks would improve resiliency;**
- d. Provide a technical description, associated cost breakdown and timelines related to the network upgrades/changes to be undertaken as part of the \$10B investment;**
- e. Provide a detailed explanation as to how the upgrades and changes described in response to question 2(d) will improve resiliency of Rogers' network.**

A.

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(a) The following table contains a cost breakdown of the \$250M (now estimated at \$261M) for the physical separation our wireless and wireline networks:

#

#

#

Our wireline and wireless "separation plan" is estimated at \$261M in capital expenditures (this excludes all OPEX).

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In the coming months, we will deploy new facilities/equipment and will migrate impacted services afterward. For example:

#

#

#

(b) The following tables provide a detailed description of our implementation timelines. In total, the full separation will take # # years. We are currently evaluating possible technology firms with specific IP core network designing expertise for telecommunications. The desired partner will have extensive telco background and proven success in design, engineering, and/or validation of large-scale IP core network for global carriers like Rogers.

Table 1: #

#

#

Table 2: #

#

#

Table 3: #

#

#

Table 4: #

#

#

#

(c) Rogers will follow strict wireless IP core “Infrastructure Design Principles” in order to separate its wireless IP core infrastructure, which will carry and support wireless data & voice services (i.e. 2G,3G, LTE, 5G, Fixed Wireless, etc.). Ultimately, there will be no fate-sharing between wireless and wireline networks for IP routing domain, IP access networks, data centers and security infrastructure.

The following items provide a detailed explanation of how the physical separation of our wireline and wireless networks will improve resiliency:

Resiliency: #

#

#

#

#

#

#

#

New Design Principles:#

#

#

(d) The following table provides a technical description, associated cost breakdown and timelines related to the network upgrades/changes to be undertaken as part of the \$10B investment:

#

#

#

#

#

#

(e) The \$10B investment will increase resiliency and redundancy of Rogers' networks through several network initiatives. These includes:

#

#

As we noted in our Response to question 2(c), our "Network Separation Program" (\$261M) will greatly improve resiliency of Rogers' networks since we would not ever again lose both our wireless and wireline networks due to an outage. On top of that very important project, the other network initiatives that are listed above will further improve the reliability and redundancy of our networks. For example, new tools to monitor our networks (e.g. OSS), service improvement programs, expansion of our cloud infrastructure and better internal network

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deployment processes will greatly strengthen our operations. Also, the transport fiber builds will provide us with more diversity between our various sites and network equipment. Finally, the replacement of end-of-life equipment will ensure that we are utilizing state-of-the-art technologies. In sum, our \$10B investment will deliver direct improvement to our network resilience and reliability to the benefit of our customers and Canadians generally.

Q3.

In response Rogers (CRTC) 11 July 2022 – 4(iii), Rogers stated “All customers will be getting 5 days of compensation. There is no distinction between residential and small business customers.” Confirm that all residential and small business customers received the credit.

A.

Yes, all residential and small business customers have received or will shortly receive the credit (based on their respective billing cycle). We started to credit customers on August 1st.

Q4.

After the outage, there were media reports indicating that certain customers were observing issues with Rogers' services in the weeks prior to the outage2:

- a. Was Rogers aware of these issues?**
- b. Were any problems identified in the weeks leading up to the outage?**
- c. What mechanisms did Rogers have in place to monitor recurrent issues in its network?**

A.

(a) Contrary to the media reports, there were no unusual or large-scale issues in the two weeks leading up to July 8th. The outage was not related to any past event but was solely due to an update being made in the early morning of July 8th.

(b) No specific problems were identified beyond normal localized events.

(c) Rogers has many mechanisms to monitor for recurrent issues across its networks and services. These vary by network level and technology. Realtime alerts upon repeat incidents, near real time service dashboards and longer-term trending are among tactics used to identify repeat incidents, so root causes can be found and resolved promptly.

Q5.

In the response to Rogers (CRTC)11July 2022 - 1(i), Rogers noted that # # change that deleted a routing filter which led to the outage. What was the actual network policy change?

- a. What lines were removed and/or added that triggered the outage?
- b. Why were those configuration items removed and/or added?
- c. More specifically, what filter was removed, and why?
- d. What was the expected behavior of the routing filter removal on the # # routers?
- e. Was this removal part of the approved Method of Procedure?
- f. What is the default behavior of the # # routers?

A.

Rogers requests that the CRTC treat certain information contained in this Response as **confidential**, pursuant to subsection 20(1)(b) of the *Access to Information Act*, and sections 38 and 39 of the *Telecommunications Act*. For competitive reasons, and also to protect our customers as well as our networks and vendors, Rogers would never publicly disclose some of the information contained in this Response other than to the Commission. Some of the information submitted contains highly sensitive information about Rogers' networks and operations. Rogers submits that any possible public interest in disclosure of the information in this Response is greatly outweighed by the specific direct harm that would flow to Rogers and to its customers.

(a) The following line configuration was removed from our Distributed Gateways in #

#

#

(b) #

#

#

(c) See our Response to question 5(a) above. This was performed to prevent service degradation issue as #

#

#

#

(d) #

#

(e) Yes.

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(f) #

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Q6.

Explain in more detail how the # change led to the # issue. #

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#

A.

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(a) By default, each #

#

#

#

(b) As explained in our Responses to questions 5(f) and 6(a) above #

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(c)

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Q7.

The timeline of events in Rogers (CRTC)11July 2022-1_i_Appendix refers to two changes:

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A.

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a) First, we can confirm that change # [REDACTED] # was not relevant to the July 8th outage. It is # [REDACTED] # that caused the outage. It started at 2:27AM EDT and the closure code of # [REDACTED] # was assigned by the system as per our network design. In this case, the terms [REDACTED] #. That was the only "issue" identified at that time. As this was the change that caused the outage on July 8th, connectivity for the implementer was lost at 4:43AM EDT, which meant they were unable to complete, update and close the ticket in the system.

(b) As per our Response to question 7(a) above, there were no specific problems to be addressed prior to the change at 4:43AM EDT. All had been going as planned until that point.

(c) #

(i) No, this was not the change at 04:43AM. The change underway at 04:43 was # [REDACTED] # which started at 02:27AM.

(ii) As we explained above, this change was not relevant to the July 8th outage. It was a change involving preparation work to support # [REDACTED] #.

Q8.

In the response Rogers (CRTC)11July2022 - 1(iii), Rogers noted that some wireless customers "had intermittent service(s) throughout the day on our GSM and 3G networks".

- a. Why and how did GSM and 3G voice calls fail if the impact was to the Rogers core IP network?
- b. Which GSM and 3G wireless services were impacted and why?
- c. Is it typical for 3G and mobile services such as voice, text, 9-1-1 to be impacted by an IP core failure?

A.

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(a) Our GSM network requires IPCORE connectivity # [REDACTED] #. Our 3G (UMTS) network requires IPCORE for # [REDACTED] #.

#

#

(b) All GSM and UMTS services were impacted. We only saw SMS traffic for UMTS, which could be due to re-attempts/delivery of text messages.

(c) Yes, it is typical for 3G mobile services to be impacted by an IP core failure. In our situation,

#

#

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Q9.

With respect to the process improvements implemented following the April 2021 outage and noted in Rogers (CRTC)11July 2022 - 1(ix),

#

#

#

#

A.

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For years, Rogers has been having a very robust lab environment. Testing network changes and updates is part of our best practices. After the April 2021 outage, other improvements were made to our testing processes. For example:

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#

All specific improvements relevant to # were applied across the board to other Roger’s vendors. The # products are not tested as a “closed network”. The end-to-end call flows require connectivity between the individual nodes, which is facilitated by switching and transport functionality provided by different vendors. Hence, by association with the testing of the # core, the following products (i.e. vendors) are also being tested within our lab.

#

#

#

- (a) All vendors “in production” have a derivative within the lab space to facilitate upgrades, correction package testing and to enable investigation of live issues within the lab space in a “no harm to network” model.
- (b) All vendors managed by test projects follow our vendors product roadmaps and/or new vendor product testing.
- (c) All vendors. Our support contracts are based on maintaining the HW of the vendor equipment within the network and lab infrastructure, as well as the operating systems running on that HW.
- (d) The Rogers “Network Resilience Program” is an initiative to ensure all HW and SW is tested in an “as live” mode where as much functional and disruptive testing as possible is carried out

within the lab to reduce the risk of major impacts to the production environment when these products “go live”. This program also allows the testing of procedure methodology for upgrades and configuration changes resulting in process improvement across the network.

(d)(i) The lab processes ensure all vendors are participants in the program. The testing of each vendor is dependent on the affected area within the network, its associated processes, as well as its interworking with other vendor products.

(e) Any access to lab environment is strictly controlled #

#

#

(f) This is not applicable. Our lab improvements is applied all vendors, including #
#.

Q10.

With respect to the immediate actions Rogers is taking in examining its "change, planning and implementation" in response to the 8 July 2022 outage as detailed in the response to Rogers (CRTC)11July 2022 - 1(x); #

How was this change classified? Was it high-risk?

A.

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In the question from the Commission, it is assumed "*this change*" is referring to # which was found to be the cause of the July 8th outage. This change was listed as "Low" risk.

The initial change in this series was "High", but subsequent changes in the series were "Medium", and this one was "Low" based on #. Since prior changes in this series had been successful, the risk value was reduced for #.

It is important to note that the level of testing, review, and governance for this change remained at the highest level. This means the network design was tested, the Method of Procedure ("MOP") was reviewed by peers and the process went through full Technical and Business review before being approved.

Q11.

In the response to Rogers (CRTC)11July 2022 -1(xviii), Rogers stated that its Network Operations Center (“NOC”) notified the ILECs (i.e. 9-1-1 Network Providers) at 8:39am EDT and that the ILECs then notified the Public Safety Answering Points (“PSAPs”). Given that the outage began at 4:45am, explain why it took nearly 4 hours to initiate the notification process to PSAPs.

A.

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As described in Q1(i) of our July 22nd RFI Responses, the Rogers NOC

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and to identify the specific impacts, including the size of the outage, the industry notification process to the ILECs and PSAPs was triggered. This communications protocol is in line with the best practices listed in Appendix 1 of Telecom Decision 2017-389, which is to notify all 9-1-1 Network Providers in case of an outage. More specifically, section 2.5 of CISC ESWG Report ESRE0076 stipulates that, once a significant partial or fully 9-1-1 service impacting Originating Network call processing issue is identified, the “Originating Network provider(s) must notify the 9-1-1 SP as soon as possible” [emphasis added]. This is what Rogers NOC did on July 8th.

Q12.

In the response to Rogers (CRTC)11July2022 - 2(xi), Rogers explained that Bell and TELUS confirmed that some of Rogers' customers were able to connect to Bell and TELUS' respective wireless networks in order to place 9-1-1 calls. Explain why some calls were able to connect to other wireless networks to make 9-1-1 calls while others were not?

A.

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In our July 22nd RFI Responses, Rogers confirmed that approximately # [REDACTED] # 9-1-1 calls made by our wireless customers were successfully completed on July 8th. This represents roughly 60% of our average daily volume of 9-1-1 completed calls. We also confirmed that, normally, if a customer's device cannot connect to their own carrier's RAN, they will automatically connect to the strongest signal available, even from another carrier, for the purpose of making a 9-1-1 call. However, since Rogers' RAN remained in service on July 8th, we assume that many Rogers customers' phones did not attempt to connect to another network.

The connection state of the User Equipment ("UE") to Rogers wireless networks (i.e. GSM-2G, UMTS-3G, LTE-4G and 5G), and the stability of those networks during the outage, determined the ability of UE to have the 9-1-1 calls processed by other wireless networks within the same coverage area. In cases where customers were not able to successfully complete their 9-1-1 calls through the Rogers wireless networks, their devices should have attempted, as per standard industry specifications, to scan for alternative available networks. This usually results in a longer time to establish 9-1-1 calls. It is expected that some customers would have aborted their 9-1-1 calls before the calls were being fully connected to the PSAPs. As part of our plan to improve customer notifications, we will provide more details on our revised 9-1-1 webpage on how to connect to alternate wireless networks during an outage and what to expect when dialing 9-1-1. In some cases, the call set-up could take up to one minute.

Q13.

In the response to Rogers (CRTC)11July 2022 - 2(xi), Rogers stated that it was able to route thousands of 9-1-1 calls on 8 July 2022 and that its wireless network worked intermittently during that day as it was trying to restore the IP core network, varying region by region. Further, in the response to Rogers (CRTC)11July 2022 - 2(xii), Rogers' noted that its RAN remained in service on 8 July 2022 and that many Rogers customers phones did not attempt to connect to another network.

- a. As 'the RAN remained in service', explain in what circumstances 'the wireless network worked intermittently'? Was this in areas where the IP core network had been restored or where the IP core network worked intermittently?
- b. Describe why some wireless 9-1-1 calls were successful despite the catastrophic failure of the IP core?

A.

(a) The Rogers wireless networks successfully carried 9-1-1 calls in areas where either the IP core network worked intermittently, or the IP core network had been restored. As a matter of fact, we know that the 9-1-1 call volume over our LTE network dropped on July 8th. However, the 9-1-1 call volume increased over our 2G and 3G network during that same period. Given that the 2G/3G networks worked intermittently too on July 8th and that we have been decreasing the voice capacity on these legacy networks, we can confirm that we were able to complete 9-1-1 calls during the outage, but not all 9-1-1 calls that were placed. As the Rogers IP core network was progressively restored across the country, customers had their service restored at different times throughout the outage period. Hence, all of this explains why thousands of 9-1-1 calls were carried by Rogers on July 8th.

(b) Calls to 9-1-1 were successful when the Rogers RAN, IP core, and/or 2G-3G-4G networks were functioning as expected.

Q14.

In the response to Rogers (CRTC)11July 2022 - 2(xii), Rogers explained that generally, if a customer's device cannot connect to their own carrier's RAN, the device will automatically connect to the strongest signal available, even from another carrier, for the purpose of making a 9-1-1 call. However, since Rogers' RAN remained in service on 8 July 2022, many Rogers customers phones did not attempt to connect to another network. In hindsight, and given the significant number of unsuccessful wireless 9-1-1 calls on 8-9 July 2022, what advice should Rogers have given their subscribers, including registered Text with 9-1-1 users, and PSAPs, about how to access 9-1-1 during the outage?

A.

The following advice would have assisted our customers during the network outage. As part of our plan to improve customer notifications, we will provide these details on our revised 9-1-1 webpage:

- A wireless device will connect to other wireless networks within the same coverage area, if available, as long as sufficient time is given for the device to scan and search for an available network, and for the device to make the call connection.
- Customers should stay "on the line" for a few seconds, and up to one minute, at the beginning of the 9-1-1 call, as the call can take time to establish a full connection.
- Customers should not hang up. They should wait for the call to be connected to 9-1-1 operators.
- Customers should keep monitoring the cell phone display to ensure that the call is connected or still try to connect.
- If the device is not able to detect another network in the coverage area, Rogers customers could physically move to another area, if possible (assuming that the outage is not national in scope).
- Customers may use alternative technologies, such as Wi-Fi calling (if available).
- Customers may seek alternate communication methods, such as residential phones, neighbors, or public phones.
- Removal of the SIM card can be done to disconnect from Rogers' radio access network and then to place an unregistered 9-1-1 call. However, removal of the SIM card will impact 9-1-1 PSAP ability to call back the customers. This is not a recommended option.
- For registered Text-with-911 ("T9-1-1") customers, removal of the SIM card will not provide callers with T9-1-1 service. For registered T9-1-1 customers, emergency text communications with PSAPs also takes longer to initiate.

Advice for PSAPs in the event of a network outage is as follows:

- Monitor emails for updates regarding the status of the ongoing outage.
- They may see an increase in Rogers' customers calls from other networks.
- During a network outage, PSAPs may see some customers reaching 9-1-1 with unsubscribed handsets. If PSAPs need to call back a disconnected user, the Rogers 24x7 9-1-1 Assist Line will provide customer contact information.

Q15.

In the response to Rogers(CRTC)11July2022 -2(xvi), Rogers outlined its plan to enhance communications to its customers, 9-1-1 network providers, emergency management officials, PSAPs, 9-1-1 governing authorities and first responders in relation to access to 9-1-1 during a network outage, many of which include updated information on webpages, e.g. how to remove a SIM card and Wi-Fi calling. Given that Rogers' subscribers were not able to access the Internet and therefore those webpages during the outage, explain whether other mediums should be considered, such as a paper insert/Tips card and/or instructions available directly on the wireless device.

A.

As answered in Rogers(CRTC)11July2022-2(xvi), Rogers will work to improve our communications with customers to provide more clarity in relation to accessing 9-1-1 during a network outage. Various mediums of communication are to be considered as there are challenges in communicating during a network outage when the primary tool for delivering information is impacted. Rogers already outlined it will work to provide customers with more resources "across various channels and in-store" to inform them of potential actions they may take if they are unable to reach 9-1-1. This includes timely information stipulating 9-1-1 may not be operating properly.

While the "Rogers 9-1-1 Emergency Service" webpage on rogers.com will serve as a central hub for detailing 9-1-1 service characteristics, critical information from this resource will also be provided to customers in order to raise awareness. There are a number of ways under consideration on how to ensure customers can obtain more relevant information, including deploying a SMS to customers on an annual basis, updating the relevant checklist used by frontline agents to inform customers at point of sale, and adding an excerpt to customers' welcome email or updating the Terms of Service booklet and prompting subscribers to retain a copy for their records.

Additionally, in the event of network outage, and as referenced in our July 22nd Responses, enhanced communication on 9-1-1 will also be cascaded via media outlets, and public service announcements, including on radio and social media, giving customers another alternative medium for receiving such important information.

Q16.

In the response to Rogers (CRTC)11July 2022 - 1A(iii), Rogers stated that a number of Rogers Media broadcasting services were unable to deliver emergency alerts during the outage. Are you aware of other broadcasting clients of Rogers who rely on Rogers' services to establish a connection to the National Alert Aggregation and Dissemination (NAAD) System that were therefore unable to deliver emergency alerts during the outage?

A.

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over-the-air broadcast signal originates from the Rogers Media broadcast facility located at # and consequently was not able to deliver emergency alerts during the outage due to the impact on Rogers' broadcast facilities outlined in our July 22nd Response.

We are not aware of any other broadcasting clients of Rogers who rely solely on Rogers' services to establish connection to the NAAD system and therefore were unable to deliver emergency alerts on July 8th.

Q17.

In the response to Rogers (CRTC)11July 2022 - 2(iii) it is indicated that Rogers will be implementing a solution to maintain alerting capabilities on its radio and television stations. Will this solution be applicable to broadcasters that rely on Rogers' services for internet to establish a connection to the NAAD to deliver emergency alerts to their audience? Further, are there any potential solutions available to broadcasters that rely on Rogers' services for internet to establish a connection to the NAAD?

A.

Rogers requests that the CRTC treat certain information contained in this Response as **confidential**, pursuant to subsection 20(1)(b) of the *Access to Information Act*, and sections 38 and 39 of the *Telecommunications Act*. For competitive reasons, and also to protect our customers as well as our networks and vendors, Rogers would never publicly disclose some of the information contained in this Response other than to the Commission. Some of the information submitted contains highly sensitive information about Rogers' networks and operations. Rogers submits that any possible public interest in disclosure of the information in this Response is greatly outweighed by the specific direct harm that would flow to Rogers and to its customers.

Rogers Media is deploying a carrier diversity solution which will involve the implementation of redundant Internet and wireless connections (where applicable) that will ensure our broadcast operations and emergency alerting responsibilities are not impacted in the event of a future network outage. This solution will apply to all broadcast signals originating from our broadcasting facilities including that of # [REDACTED] #.

However, this specific solution will not apply to third party broadcast clients of Rogers' Internet, cable and wireless services as each broadcaster is responsible for implementing its own disaster recovery solution. As required, broadcasters are responsible to implement a carrier diversity solution that best suits their specific technical and infrastructure needs in their applicable market(s). Rogers Media would be pleased to share our best practices and learnings from this event with other broadcasters where requested.

Q18.

Beyond Rogers' own broadcasting services, is Rogers aware of the impact of the 8 July 2022 outage on other radio, television or broadcasting distribution services? If so, provide a complete and detailed report on the services impacted during the service outage that began on 8 July 2022, including but not limited to:

- a. which television, radio and broadcasting distribution services were impacted, how they were impacted and for how long?;**
- b. any communication that was sent to the impacted broadcasting services?;**
- c. the compensation that will be provided to the impacted broadcasting services, if any;**
- d. the measures or steps, if any, that Rogers has, or plans to put in place to prevent issues such as those that led to the outage, as well as the timelines to put in place any future remedial measures.**

A.

Rogers requests that the CRTC treat certain information contained in this Response as **confidential**, pursuant to subsection 20(1)(b) of the *Access to Information Act*, and sections 38 and 39 of the *Telecommunications Act*. For competitive reasons, and also to protect our customers as well as our networks and vendors, Rogers would never publicly disclose some of the information contained in this Response other than to the Commission. Some of the information submitted contains highly sensitive information about Rogers' networks and operations. Rogers submits that any possible public interest in disclosure of the information in this Response is greatly outweighed by the specific direct harm that would flow to Rogers and to its customers.

(a) Rogers has three classes of broadcasting clients:

- 1) Broadcasters who license or contract broadcast services from Rogers Media;
- 2) Broadcast distribution undertakings who are clients of Rogers Cable as a TRDU; and
- 3) Broadcasters who are Internet and/or wireless general business clients.

1) Rogers Media clients:

In addition to the above relationship with # [REDACTED] #, Rogers Media also has content agreements with # [REDACTED]

#.

#

We understand that these stations aired a back-up program for one hour (7:00am – 8:00am) until a back-up signal path was established.

We have been in discussions with our partners on how we intend to mitigate future technical interruptions (e.g. carrier diversity) going forward to ensure we uphold our regulatory requirements and other public expectations.

2) Rogers Terrestrial Relay Distribution Undertakings ("TRDUs") clients:

Rogers also operates as a TRDU, providing programming services to # [REDACTED] # unaffiliated broadcasting distribution undertakings ("BDUs") in # [REDACTED] #. Our TRDU service is delivered over our wireline

network, which was impacted by the July 8th outage. As a result, our TRDU clients lost access to the programming services for the duration of the outage. Rogers has the following TRDU clients:

#

#

3) Rogers Internet/Wireless Business clients:

Rogers for Business (“R4B”) has the following broadcast clients for whom it provides a range of services spanning wireless, Internet, and technical infrastructure services:

#

#

#

#

#

#

Rogers is not aware of any specific impact the outage had on our broadcast clients’ ability to operate their businesses. As noted above, our services range from wireless, Internet to terrestrial relay distribution all of which would have been impacted by the outage and

would therefore impact each client differently based on their service mix and the technical contingencies they had in place in the event of an outage.

(b) On the day of the outage, Rogers for Business (“R4B”) was unable to communicate with our clients directly due to various parties being affected by the outage. However, some employees with alternate telecommunications services at home were able to access the cloud-based Salesforce program (a customer relationship management software program) which is used by R4B clients. An automatic reply was set-up within Salesforce advising of the network outage so that any clients who were able to access the program would be notified.

On July 9th, Mr. Tony Staffieri (Rogers President and CEO) sent a message to our entire subscribers base, providing further details concerning the outage.

On July 12th, Mr. Ron McKenzie (President, R4B) sent a letter to all our business customers, apologizing for the outage and informing them of next steps.

(c) As Rogers stated publicly, we will automatically credit customers (including those listed above) the value of five days of service. The credits will be applied to the customer’s August invoice.

(d) See Rogers(CRTC)5Aug2022-2 for detailed timelines and more information concerning our “Network Separation Program”, as well as other network activities (which are part of our \$10B investment) that will greatly improve resiliency of Rogers’ networks. All these programs and activities will address the matters that are described by the Commission in question 18.

*** End of Document ***