Telecommunications Response to Questions

Rogers Proposed Telecommunications Tower Site: C9793 – Beaver Valley

Proposed:	90m Guyed Telecommunications Tower
Coordinates:	44.463581°, -80.418040°
Part of PIN:	37154-0117 (LT)
Municipal Address:	495928 Grey Road 2, Ravenna ON N0H 2E0

Can you please advise on the co-location potential of the proposed facility and the extent of equipment that might be housed on this structure?

The proposed telecommunications tower is designed to accommodate the co-location of multiple carriers. There is no obligation for other carriers to co-locate their antennas on, and at this time Rogers has no information on what, if any, other carriers will indeed co-locate their antennas on this tower, however the option will remain open. Rogers, being a tier 1 carrier, will likely have larger and more robust antennas compared to smaller tier 2 carriers.

The only other tier 1 carrier in the network is Bell. If Bell chooses to co-locate, their equipment will likely be similar in size to Rogers', and their equipment would be positioned just below Rogers' on the tower. Additionally, tier 2 carriers, such as Wind or Xplore Inc., may also co-locate. These carriers typically use smaller equipment, so their antennas and/or dishes would be less substantial in size and number compared to those of tier 1 carriers.

There is also a potential for the municipality to mount their own antenna, which would likely be smaller and positioned at a height of around 30 meters on the tower. This antenna would be significantly smaller compared to the tier 1 carrier antennas.

While the exact number, type, and height of the antennas are not yet confirmed, the attached photo rendering provides a conceptual visualization of how the tower might look if it were to be utilized by multiple possible carriers.

Can you please provide confirmation that the imagery you have provided depicts the most extensive use of the proposed tower and, if it currently does not depict this, can you please provide a visual depiction at maximum capacity?

The current imagery provided depicts only Rogers' equipment, as Rogers is the only carrier with confirmed plans for this proposed tower at this time. There is no certainty regarding the co-location of other carriers on the tower, and we cannot predict whether or when additional carriers might choose to utilize it.

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Should other carriers decide to co-locate, as contractors for Rogers, we are unable to specify the exact equipment they would use or how it would be configured, as these aspects are subject to federal regulations and standards.

The attached photo rendering offers a speculative visualization of what the tower might look like if it were to accommodate equipment from additional carriers. This rendering is based on typical configurations but remains a conceptual depiction and not a definitive layout.

On the coverage map, there are numerous Bell Towers shown. Can you please confirm if there is potential to co-locate on these towers to achieve service delivery objectives? Also, can you please advise whether the service delivery assessment is based on Rogers current available coverage or could coverage improvements be gained through co-location with Bell owned towers – most notably the Bell Tower to the north west?

As part of the site selection process for the proposed telecommunications tower, a thorough review of all existing antenna systems was conducted to evaluate potential co-location opportunities. This review included examining existing Bell towers and other infrastructure in the area. Despite these evaluations, the existing towers, including Bell towers, were disqualified due to their distance and coverage limitations.

Key Points:

1. **Distance and Coverage Limitations**: The nearest Bell tower is approximately 6 kilometers away from the proposed site. This distance is too far to effectively extend 5G coverage to the targeted area. Even significant modifications to these existing towers would not sufficiently bridge the coverage gap or meet the rigorous standards required for 5G service.
2. **Existing Co-Location and Coverage Gaps**: Rogers is already co-locating its equipment on two towers to the east of the proposed site. However, the coverage from these towers does not extend to the area in question due to the distance from the site. Additionally, Rogers is utilizing Bell's antennas on an existing Bell tower to the west through extended coverage roaming agreements. Despite this collaboration, the coverage still falls short of meeting the requirements for comprehensive service in the targeted area.
3. **Coverage Void**: The current coverage assessment indicates a significant service gap in the area. Existing infrastructure, including both Rogers' and Bell's equipment, cannot address this gap due to the distance and limitations in coverage extension. The high-speed 5G service typically covers only about 1 kilometer before transitioning to older technologies such as 4G and 3G/LTE, making it insufficient for the area's needs.
4. **Network Reliability and Demand**: Ensuring reliable and seamless coverage is essential to avoid dropped calls and service disruptions. The demand for robust connectivity continues to rise, particularly as remote work and digital reliance have increased. The new tower is critical for improving network reliability and meeting the growing connectivity needs of the region, especially in light of the COVID-19 pandemic's impact on communication and remote services.

5. **Importance of Coverage in Transportation Corridors:** Reliable coverage is crucial not only for residential and business areas but also for transportation corridors, such as the one where the proposed tower is located. Adequate coverage in these areas is essential for safe and efficient travel, supporting navigation, emergency communications, and connectivity for vehicles and travelers. Ensuring robust network coverage along transportation routes enhances overall safety and service quality.
6. **Regulatory and Engineering Considerations**: Site location decisions and infrastructure proposals are based on rigorous engineering principles and regulatory requirements. The new facility is designed to adhere to both the Town's siting protocols, and the best practices established by regulatory bodies to ensure high-quality service and compliance with licensing agreements.

In conclusion, while Rogers is currently co-locating on existing towers and leveraging Bell's infrastructure, these measures alone are insufficient to address the coverage void in the proposed area. Therefore, the new tower is necessary to bridge this gap and enhance network coverage and reliability.

Can you please advise if you have contacted Bell to confirm their service delivery requirements relative to potential co-location on the proposed facility in order to reduce the number of required towers and also to avoid future applications for separate towers by Bell in this area?

As part of the federal government's telecommunications protocol, before the installation of any new telecommunications tower, service providers are required to submit an information package to other providers. This package details the specifics of the proposed tower and is provided after the tower's municipal approval and before construction begins. This process ensures that other providers are aware of potential co-location opportunities and can evaluate the feasibility of sharing the infrastructure.

The proposed antenna system by Rogers is designed with future co-location in mind. The tower will be constructed to accommodate additional carriers, such as Bell, alongside Rogers' own equipment. The design includes provisions for other carriers to install their antennas below Rogers' antennas, allowing for the shared use of the structure. This setup enables other providers, like Bell, to leverage the tower for their services if they choose to do so.

Alternatively, other carriers may choose to use Rogers' existing antennas for extended coverage roaming. They may negotiate an agreement with Rogers to utilize this service, which would allow them to offer coverage in the area without deploying their own antennas. This arrangement can reduce the need for additional towers and streamline infrastructure development.

The decision to pursue either option rests with the other carriers. They must determine whether to mount their antennas on the Rogers tower or utilize Rogers' existing infrastructure for extended coverage. Rogers is committed to making the tower available to other carriers, and any new tower proposals by these carriers would need to demonstrate that co-locating on the Rogers tower is not feasible for their coverage requirements.

In summary, while the proposed tower will primarily host Rogers' antennas, it is designed to support the inclusion of other providers' equipment should they express interest in utilizing this shared infrastructure.

Are you able to depict through service delivery "heat maps" which show available signal strength – the before and after coverage in the service delivery area?

The attached coverage maps illustrate the before-and-after scenarios for both 700 MHz and 2100 MHz frequencies, highlighting the coverage improvements achieved by the new proposed tower in comparison mounting antennas on the existing Bell tower. To note, 700 MHz is lower frequency, which travels further and penetrates buildings better. While this provides a greater coverage area, speeds for this coverage are slower, allowing for voice calling in the area. In contracts, 2100 MHz displays a higher density of signal strength in localized areas, allowing for faster speeds and data intensive connections including voice and data video calling and streaming.

While mounting antennas on the existing Bell tower does enhance overall coverage, it fails to address critical areas, particularly in Ravenna and south. Much of the coverage provided by the Bell tower primarily amplifies existing coverage rather than extending it into new areas. Consequently, areas with existing in-car coverage receive only marginal improvements, while significant coverage gaps remain, particularly south of Ravenna.

In contrast, the proposed new tower not only amplifies some of the existing coverage but also extends it significantly further, reaching Ravenna and much larger sections of Grey Rd 2. This extension is crucial for providing adequate service to these areas. The new tower addresses coverage needs between Victoria Corners and Ravenna, adds necessary coverage to Ravenna—where there is currently none—even with the Bell tower—and effectively closes coverage gaps between existing towers.

To further illustrate the impact of these two options, we can analyze the coverage areas provided by each tower:

- Proposed Rogers Tower: The new tower expands signal coverage to approximately **98 sq. km**. The majority of this area is underserved or lacks any coverage.
- **Existing Bell Tower:** In contrast, utilizing the Bell tower only increases signal coverage to about **67 sq. km**, much of which already has adequate signal strength.
- **Overlap:** There is an overlap of approximately **40 sq. km** between the signals from the Bell and Rogers towers.

By analyzing these figures, we find that opting for the Bell tower means missing out on approximately **57.8 sq. km** of area that currently has little to no coverage. Meanwhile, it only adds about **27 sq. km** of service to regions that are already adequately covered.

This translates to significant coverage inefficiencies: using the Bell tower rather than constructing a new Rogers tower results in a failure to address **59%** of the area that lacks good coverage while only adding 28% to areas that are already served. This stark imbalance demonstrates that relying on the Bell tower does not satisfactorily resolve the coverage deficiency, as much of the coverage provided is redundant.

Additionally, adding antennas to the existing Bell tower involves substantial costs without the promise of substantial benefits. Sacrificing nearly 60% of the needed coverage for the sake of enhancing areas that are already sufficiently covered makes it clear that utilizing the Bell tower is not the optimal solution. It fails to satisfy the coverage radius required for this project and does not extend signal strength into new areas that currently lack coverage.

In conclusion, the proposed new Rogers tower is the best option for improving overall service delivery and addressing the current coverage deficiencies in the area. It offers a strategic approach to enhance connectivity where it is most needed and effectively meets the demands of the community.

Can you please identify any opportunities to reduce the proposed tower height to mitigate visual impacts? Most visual analysis outside of view locations to the north which show full exposure of the tower appear to show roughly a third of the proposed height carrying a view impact.

The proposed tower is designed to stand at a height of 90 meters, which is crucial for addressing significant coverage gaps and capacity limitations in the network within this area. This height is essential for providing optimal coverage, ensuring seamless service delivery, and filling existing coverage voids.

A guyed tower is the only type that can support the required height of 90 meters, and this height allows for the accommodation of multiple carriers or broadcasters. This practice is encouraged by the federal ISED CPC protocol and helps reduce the need for additional towers in the future. For telecommunications towers to achieve the necessary signal propagation, they must be tall enough to connect with other towers in the network, transmit signals above the surrounding trees, and meet coverage requirements for the area.

Radio Frequency and Transmission Qualifications have confirmed that a 90-meter tower is needed to achieve the greatest possible signal propagation and avoid the proliferation of additional towers. The first set of antennas will be mounted at 88.65 meters, utilizing the full height of the tower to achieve the required signal. The minimum antenna height required is 85 meters above ground level to connect with the existing 120-meter Berkley C0145 tower, which has its connecting antennas at 87 meters above ground level. This is detailed in the Microwave Height Qualification report provided by Rogers' Microwave Engineering Department, which is attached for confirmation.

Reducing the tower height below 90 meters would prevent it from connecting effectively to existing towers in the network, rendering it inadequate for its intended purpose. At three times the

tower height, or approximately 300 meters, the visual size of the structure diminishes to less than that of a local 20-meter hydro pole when viewed from a residence. Additionally, ISED regulations imply that beyond this distance, the visual impact is minimal. Evidence of this can be inferred from ISED's default public consultation protocol, which waives public consultation when there are no properties within this radius, indicating that the visual impact is considered negligible.

While we understand concerns about visibility, the primary focus must be on ensuring the tower's functionality in connecting to the network and fulfilling its purpose. A shorter tower would not meet these critical requirements and would be unable to serve the network effectively.

Has there been consideration given to the use of multiple smaller towers that would have less impact?

In response to the consideration of using multiple smaller towers, several important factors have been evaluated. The proposed tower's height of 90 meters is essential to address significant coverage gaps and capacity limitations in the area. This height ensures optimal coverage, seamless service delivery, and effective network integration.

The primary goal is to minimize the number of towers installed to avoid proliferation and reduce visual and environmental impacts. In accordance with federal protocol, we are required to confirm that no existing towers can meet the coverage needs before proceeding with the installation of a new tower. This process involves a thorough evaluation of existing infrastructure to ensure that a new tower is necessary and that no alternative solutions are viable.

While the use of multiple smaller towers might seem like a potential solution to reduce visual impact, it is important to note that the funding available through Rogers does not support the deployment of multiple towers, as this approach would be significantly more costly. The proposed solution aims to address both budgetary constraints and critical network requirements efficiently. Deploying multiple smaller towers would not only be more expensive but would also result in further environmental negatives, such as increased land use, additional access roads, and the need for more compounds.

In conclusion, the proposed 90-meter tower is designed to meet both coverage and capacity needs while minimizing the overall number of towers required, thereby reducing the potential environmental impact.

Can you please provide additional information on further expansion of Rogers coverage in the area?

As site acquisition specialists, we are not privy to information on all projects within the area, and in accordance with the federal CPC protocol, each tower consultation must stand on its own merits. The consultation process underway is currently only for the 1 proposed tower, C9793, and does not pertain to any other towers within the network. We can confirm that prior to any Rogers project, engineers

must first disqualify any existing or future planner Rogers towers for co-location prior to planning a new telecom tower in the area.

Locations north of the proposed tower site appear to have the greatest visual exposure. Has sufficient analysis of view impacts in the areas north of the site been completed to assess potential impact?

As outlined in the protocol, comprehensive viewscape renderings have been conducted from both high and low elevation points, including areas to the north and south of the proposed site. The height of the proposed tower, which is 90 meters, is essential to achieve the necessary coverage and network connection. This height ensures that the tower can effectively serve its intended purpose by providing optimal signal propagation and connectivity.

Although federal undertakings are exempt from the application of zoning bylaws, we have adhered to the principles of good siting design. This involves locating the tower on non-residential properties with significant setbacks from residential areas. The proposed site is situated on Agricultural (A) zoned land, surrounded by similarly zoned properties, and is set back from adjacent Hazard (H) lands. The tower is positioned more than three times its height from tower base to the nearest residential properties, which helps to mitigate its visual impact.

The proposed location fully complies with the good siting design tenets and guidelines, including all optimum design criteria of the CPC. Within the three times tower height radius (the federal CPC notification radius), there are only 10 properties, of which only 3 are zoned residential. This demonstrates a greater-than-average ability to minimize impacts on residential uses.

It is important to note that towers need to be situated where people are to provide effective service. If towers are placed too far from residents, they will not deliver the necessary signal, rendering them ineffective. In densely populated areas such as Toronto, residents are often within meters of antennas. Our goal is to provide coverage where it is needed most.

We have made every effort to position the tower as far from residential areas as possible while still meeting the coverage and connectivity requirements. Placing the tower at a lower elevation would necessitate a taller structure, and locating it further away from people would require a larger tower to ensure adequate coverage, particularly in important transportation corridors. This approach would ultimately fail to provide the necessary service to customers within the network.

In summary, the height and placement of the proposed tower have been carefully considered to balance the need for effective coverage and minimal visual impact, ensuring it meets both technical requirements and community concerns.

Can you advise on stealth options for this tower?

The proposed tower is designed to be a guyed tower. Given the required height of 90 meters, stealth options such as monopine or flagpole towers, which are typically suitable for heights of 30 meters or less, are not feasible. These stealth designs also limit co-location opportunities for other carriers, as they do not support the installation of additional equipment and are typically less effective in transmitting signals over long distances. Moreover, these stealth options require heavier structures for mounting and are not suitable for the required height and functionality of this tower.

The choice of a guyed tower over a self-supporting tower was made to optimize visual impact. Self-supporting towers, while offering more rigid structures, have larger visual footprints due to their increased support structures and larger compound sizes. They are also more visible from a greater distance compared to guyed towers. In contrast, guyed towers, which use guy wires for support, have a narrower visual profile and become less noticeable from a distance. At approximately one times the tower height away, the guy wires of a guyed tower become virtually invisible, and the overall structure appears less prominent compared to a self-supporting tower. For comparison, self-supporting towers are more than three times as visible due to their extensive support structures. The guyed tower design provides a more visually mitigated solution, akin to the visibility of a typical hydro pole, such as those on Grey County Road 2 directly in front of the property.

In summary, while stealth options are limited by the height and functional requirements of the tower, the guyed tower design was chosen to minimize visual impact as effectively as possible.

Can you confirm if Rogers has completed any outreach to the public to date?

As of now, Rogers has not completed any public outreach for this proposed site. In accordance with The Town of Blue Mountains' protocol, we are required to complete pre-consultation before initiating public consultation. We have fulfilled the pre-consultation requirements and submitted our application with Carter prior to his departure from the Town. During this process, we were informed that as part of the consultation, we would need to present information at the upcoming Town Hall meeting scheduled for September 10, 2024.

We have requested mailing labels for the public consultation process and are currently awaiting their receipt. Once we have the mailing labels, we will proceed with the outlined public consultation for this site.