



Measuring Broadband New Zealand



Report 29, October 2026

The Measuring Broadband New Zealand programme measures the quality of New Zealand's fixed line, fixed wireless, and satellite internet. The aim of the programme is to independently measure and report on the actual in-home broadband performance so consumers can assess different providers, plans, and technologies to help them choose the best broadband for their homes. It will also encourage providers to improve and compete on their performance.

Please refer to [page 11](#) for speed test results. The report also includes summary tables at the back that show the results for easy reference.

This report provides an overview of the findings from data collected between 1st July and 31st July 2026.

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Overview

This report presents the key indicators of consumer internet performance in New Zealand from testing during July 2026.

Highlights include:

1. Continued monitoring of Starlink's newly introduced speed-tiered plans, Residential 100 Mbps and Residential Max.
2. Results for quality of service and quality of experience metrics across a variety of fixed line, fixed wireless and satellite plans, including download, upload and latency results from a Wireless Internet Service Provider (WISP).

This report draws on testing from a wide range of providers, and a full list of RSPs included in this MBNZ report can be found in Table 2. There are a range of other RSPs to choose from who are not currently included in the testing, and we encourage Kiwis to shop around. Previous reports released by the MBNZ programme can be found [here](#)¹.

As part of our ongoing work to ensure accurate reporting, we have improved how we validate Starlink service plans. We use the plan information reported by volunteers and confirmed by retail service providers to assign each Whitebox to a service plan. This process can be more challenging for Starlink packages because satellite performance may vary, and plan speed limits are not always clear from test results alone.

Report 28 provided an initial baseline for understanding the expected performance of Starlink's newer tiered plans. During this reporting period, we have identified a small number of Starlink Whiteboxes where the validated plan did not appear to align with the performance patterns observed in the majority of the sample. In an effort to ensure the results are as representative as possible, we have excluded these Whitebox units from the national plan-level results.

The speeds reported in this report reflect an improved validation of the sample, rather than a direct change in Starlink network performance since Report 28.

Results for HFC plans are not included due to low Whitebox numbers. We understand One NZ has written to HFC customers in some areas indicating that they are planning to close the HFC service in their area and letting them know alternative options.

¹ <https://comcom.govt.nz/regulated-industries/telecommunications/monitoring-the-telecommunications-market/monitoring-new-zealands-broadband/Reports-from-Measuring-Broadband-New-Zealand>

Results for ADSL plans are also not included due to low Whitebox numbers. This can be attributed to volunteer numbers falling as consumers move away from copper services as they are withdrawn in Fibre areas.

The MBNZ programme has a code of conduct to ensure that the parties involved act in good faith and in accordance with principles relating to data validation, ‘gaming’ of results, and appropriate public usage of the MBNZ results. A list of the signatories is included in the code, including the Commission and SamKnows. All tested RSPs complied with the current code of conduct, including validation of the data used in this report. You can see the code of conduct on our website [here](#).¹

¹ https://comcom.govt.nz/_data/assets/pdf_file/0026/334871/Measuring-Broadband-NZ-Code-of-Conduct-October-2023.pdf

Benchmarking

1. Changes in results for Starlink's new Residential 100 and Residential Max plans reflect an improved validation of the sample, rather than a direct change in Starlink's network performance since the previous report.
2. All other plans saw stable download, upload and latency results compared to the previous reporting month.
3. Due to technical issues with our testing during the measurement month, bufferbloat results are not included in this report. We hope to have this resolved and included in the next MBNZ report.

Application Performance

1. Online game store results infer the time taken to download Hogwarts Legacy from three popular online game stores across plans. For Fibre 500 and Fibre Max plans, the average time taken to download Hogwarts Legacy was under 25 minutes, and for Starlink's Residential Max plan this was under 50 minutes. Starlink's Residential 100 Mbps plan and Fibre 100 plans both averaged under 2 hours, and 4G Fixed Wireless plans averaged around 5 hours.
2. 100% of Fibre 100, 500 and Fibre Max households were able to support at least 4 simultaneous UHD Netflix Streams during peak hours. 95% of LEO Satellite households were able to support 2 simultaneous streams on Starlink's Residential Max plan, and 87% on their Residential 100 Mbps plan.
3. Latency to video conferencing services remained consistent for all technologies compared to the previous report.

Broadband Plan Comparison

This report includes broadband plans across a range of technologies and areas. The report shows performance comparison split across areas where Fibre broadband is available, and where Fibre is not an option. This comparison refines and expands our previous urban and rural view to better allow consumers to see how different technologies such as 4G Fixed Wireless perform in different areas. Areas with access to Fibre plans (Specified Fibre Areas) are the locations where Chorus can stop providing copper-based internet services (ADSL & VDSL plans) and are withdrawing these services because Fibre is available. These are typically in more urban areas of New Zealand. More information on the withdrawal of copper-based internet services is available on the Commerce Commission website [here](https://comcom.govt.nz/regulated-industries/telecommunications/regulated-services/consumer-protections-for-copper-withdrawal)¹.

ADSL - Remains suitable for traditional services like web browsing, email, and basic video streaming, particularly when there is only one person using the connection. Due to physical limitations, the highest-performing ADSL lines will never achieve download speeds higher than ~25 Mbps. The distance from house to exchange has a big effect on attainable speeds, with many ADSL lines averaging under 8 Mbps download. The higher latency, more frequent dropouts, and lower upload speeds make ADSL less suitable for video calls and multi-user households.

VDSL - There is a range in performance, some lines will achieve similar download/upload speeds to ADSL, whereas a small proportion of lines will achieve speeds comparable with Fibre 100, and certainly with lower speed Fibre plans. Lower speed lines will be less suitable for applications that use a lot of data, such as video conferencing and Ultra High Definition (UHD) streaming, whereas higher speed lines will generally support more data-heavy applications.

Fibre 100 - Supports latency-sensitive applications such as online gaming. Fibre 100 will also support applications such as UHD streaming and video conferencing. Fibre 100 may be unsuitable for data-heavy households with multiple simultaneous users.

Fibre 500 - Supports latency-sensitive applications such as online gaming. Fibre 500 will also support data-heavy applications such as UHD streaming with multiple simultaneous users or video conferences with a large number of participants. Fibre 500 will cover most users' requirements.

Fibre Max - Higher download and upload speeds than Fibre 500. The idle latency to internet applications, such as online games, through a Fibre Max line is the same as through any other Fibre

¹ <https://comcom.govt.nz/regulated-industries/telecommunications/regulated-services/consumer-protections-for-copper-withdrawal>

plan. Latency under load is lower for Fibre Max plans than for Fibre 500. Performance can vary depending on RSP, and Fibre 500 will support most modern internet applications and multi-user households. Fibre Max might be needed in cases where there is a genuine need for more bandwidth (e.g. frequently uploading or downloading large files) or when using extremely latency sensitive applications on a busy connection.

4G Fixed Wireless - Can offer higher download speeds than ADSL, and on average similar speeds to VDSL. Users will experience higher latencies due to the cellular technology underlying these plans. 4G Fixed Wireless has the highest latency of all technologies, and also delivers lower download/upload speeds and more frequent dropouts than Fibre. Speeds also can be more variable depending on the time of day, and other environmental factors. This range of performance factors means 4G Fixed Wireless should not necessarily be preferred to Fibre on performance grounds, however in some areas 4G Fixed Wireless is the only option for consumers, and even in areas where Fibre is available there are other reasons consumers might choose this option (ease of installation for example).

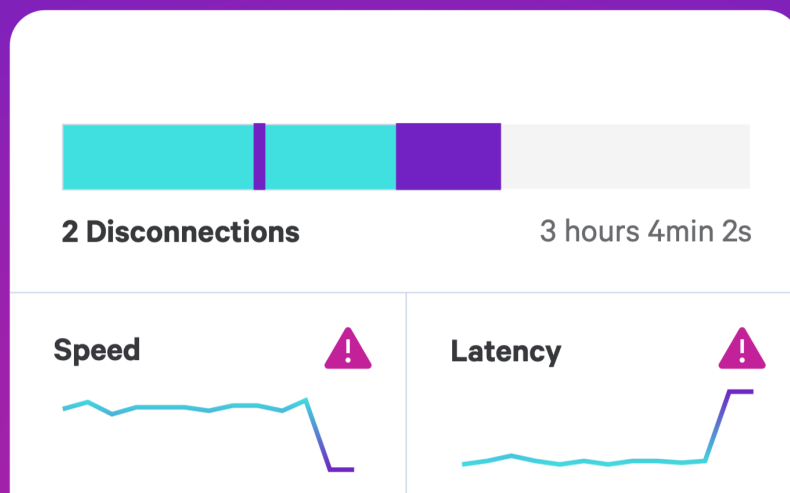
5G Fixed Wireless - Supports data-heavy applications, such as UHD streaming with multiple simultaneous users. Being a fixed wireless technology, users will likely experience higher latencies due to the nature of cellular technology. Speeds also can be more variable depending on the time of day, and other environmental factors. The 5G Fixed Wireless results presented in this report are specific to Spark. As each RSP has different fixed wireless infrastructure, these results should not be directly compared between RSPs.

WISP Fixed Wireless - WISP broadband delivers internet wirelessly from local towers to a receiver at a user's home, making it an option in areas where fixed-line services like Fibre are not available. Typical speeds and latency for WISP are similar to 4G Fixed Wireless, making it suitable for everyday online activities such as streaming, web browsing, video calls, and online gaming. As with other wireless technologies, performance can vary depending on distance from the tower, local terrain, and environmental conditions. The WISP results presented in this report are specific to Lightwire. As each WISP has different infrastructure, these results should not be directly compared with other WISPs.

LEO Satellite - Available in both rural and urban areas and is transmitted wirelessly using a satellite and ground-based satellite dish. Starlink is currently the only LEO Satellite provider included in the MBNZ report. In early 2026, Starlink updated its New Zealand residential plans to a tiered structure, replacing the Residential and Residential Lite plans with Residential 100 Mbps (LEO

Satellite (100 Mbps)), Residential 200 Mbps and Residential Max (LEO Satellite (Max)) plans. While speeds can be expected to handle most applications, including video conferencing and streaming, it is not as consistent as fixed line broadband due to factors such as congestion and bad weather. There is not enough sample to report on the Residential 200 Mbps plan currently.

Other Broadband Plans - There are other plans available that are not currently reported on by MBNZ. Fibre 30 and 200 plans should be broadly consistent with results measured for Fibre 100, 500 and Fibre Max for latency and reliability metrics. The main differences for these lower speed Fibre plans would be lower download and upload speeds, meaning it would take longer to download and upload larger files, and they would be able to support fewer users at the same time when using video streaming services.



Quality of Service & Reliability

In this section we report on the performance of a number of popular plans across New Zealand for quality of service metrics.

Some results in this section are shown with error bars representing the 95% confidence interval for each plan. This means that if we had repeated our measurements 100 times, we would expect the true result to fall within the black bands in at least 95 of the 100 cases. We have continued to include weighted results for Fibre 500 and Fibre Max plans.

The transparent bars show plans with a sample size lower than we would typically include within reporting. These plans have larger error bars due to the smaller sample size and care should be taken when comparing these plans against others. We recommend consumers factor in the error bars when comparing plan averages, especially those with smaller sample sizes.

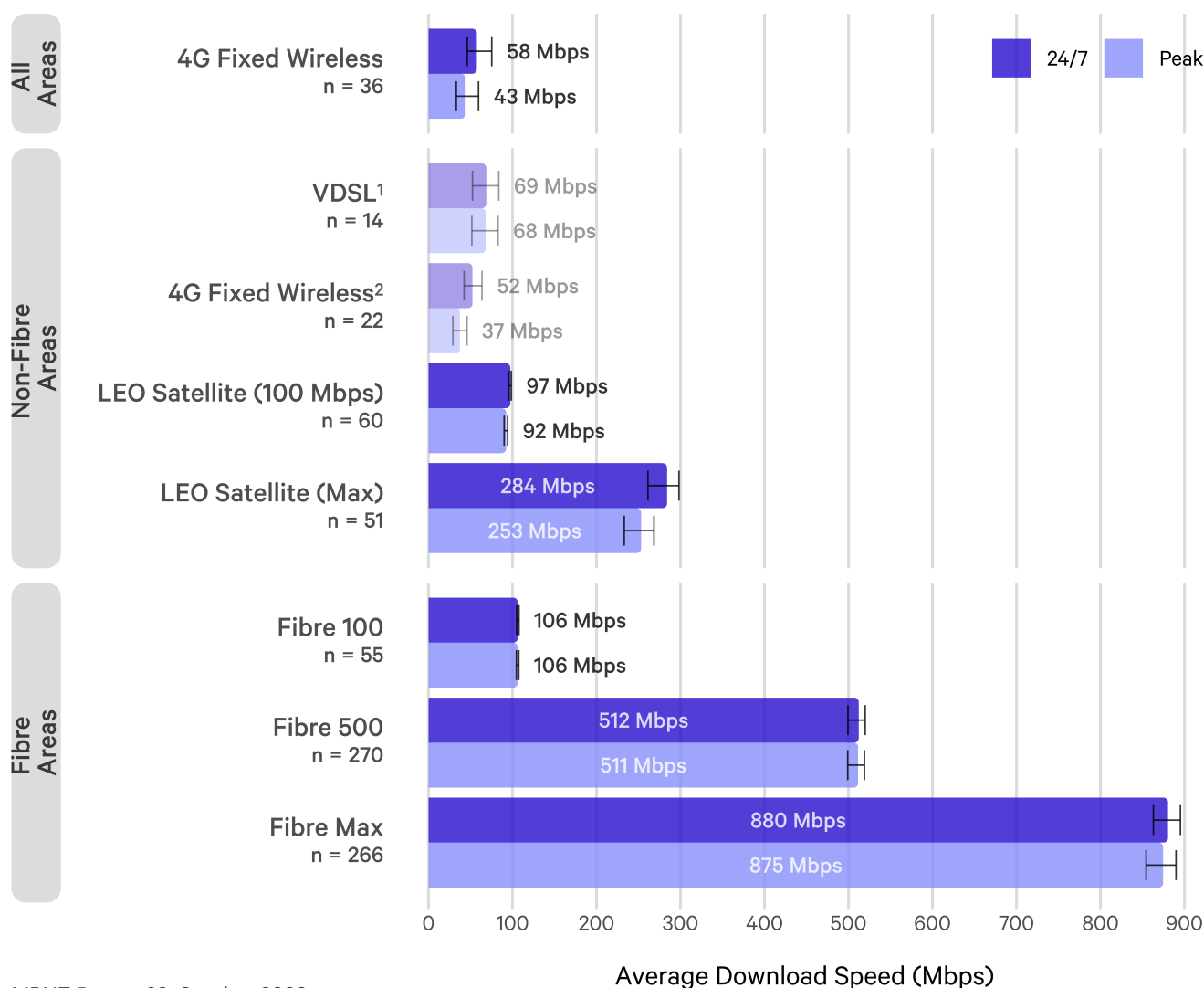
Speed Tests - Download

Figures 1 and 13 give an overview of download and upload speed across the country. These are included in every report to provide a benchmark that can be tracked over time. These results are split across Fibre areas, where Fibre is available to consumers and non-Fibre areas where Fibre is not available. There were not enough Whiteboxes to report ADSL results, or VDSL and 4G Fixed Wireless results in Fibre areas.

Peak hours are the times when people typically use the internet; in New Zealand this is 7pm to 11pm on Monday-Friday.

Figure 1: Average Download Speeds by Plan

Average of monthly household weighted averages. Peak hours are Monday - Friday, 7pm - 11pm. The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 36). Error bars show 95% confidence intervals of the mean.



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Average Download Speed (Mbps)

¹ Results for VDSL are based on a sample size of 14 Whiteboxes. The low sample size can be attributed to volunteer numbers falling as consumers move away from copper services.

² Results for 4G Fixed Wireless in non-Fibre areas are based on a sample size of 22 Whiteboxes.

Key Observations

- VDSL results are consistent with those seen in the previous report, showing similar results during peak hours. ADSL results are not included in this report due to a low sample size. This can be attributed to volunteer numbers falling as consumers move away from copper services.
- Results for Starlink's Residential 100 Mbps plan¹ shows a large decrease in performance compared to the Residential Lite plan. Download speeds for the Residential 100 Mbps plan are more than 150 Mbps slower than results for the Residential Max plan across all hours and peak hours.
- Download speeds for Starlink's Residential Max plan have increased compared to Report 28, while speeds measured for their Residential 100 Mbps plan have decreased. The speeds reported in this report reflect an improved validation of the sample, rather than a direct change in Starlink network performance since the previous report.
- Results for 4G Fixed Wireless across all areas and Fibre areas show no noticeable difference in average download speeds compared to the previous MBNZ report.
- LEO Satellite and 4G Fixed Wireless show a larger variation between peak hour download speeds and all hour download speeds compared to fixed line plans. This could be due to these technologies being more sensitive to congestion during peak hours. There was not enough sample in fibre areas for 4G Fixed Wireless to compare results between fibre areas and non-fibre areas.
- Fibre 100, Fibre 500, and Fibre Max average download speeds are consistent with previous results. RSP specific results for Fibre Max and Fibre 500 can be found in Figures 2 and 3.

¹ Starlink offer three Residential plans in New Zealand based on speed tiers (Residential 100 Mbps, Residential 200 Mbps and Residential Max). Results for the Residential 100 Mbps and Residential Max plans are included in MBNZ. There is not enough sample to report on the Residential 200 Mbps plan currently.

Fibre 500 Breakdown by RSP

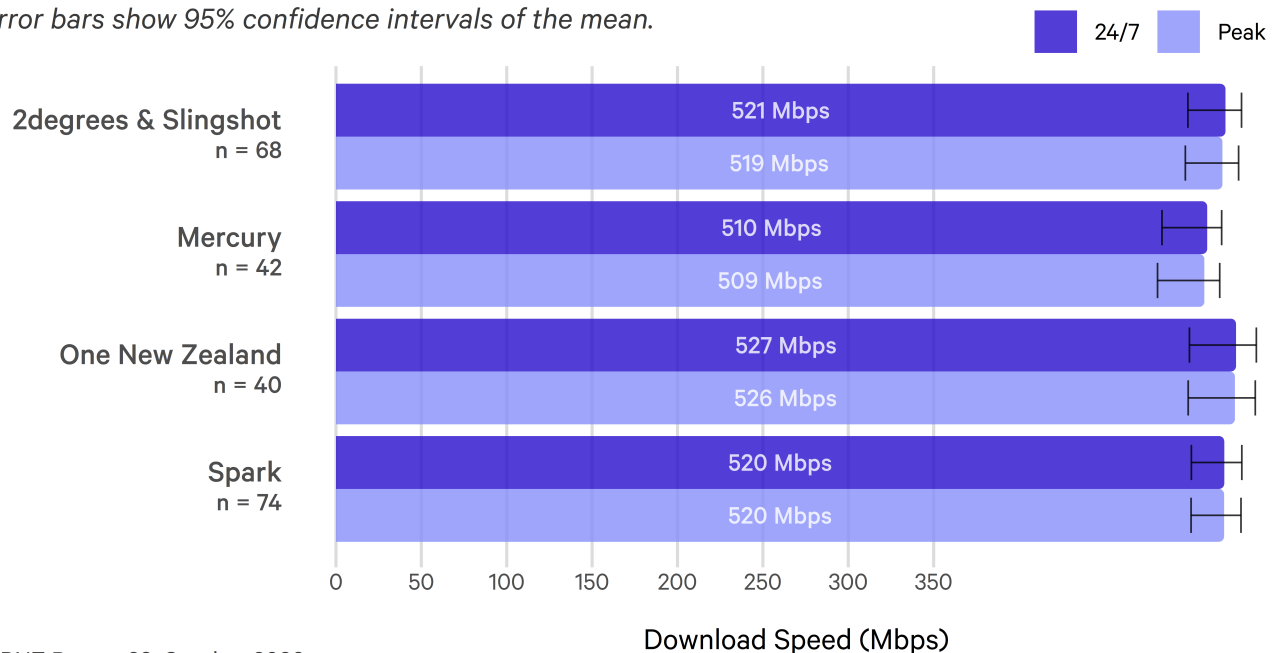
The speeds at which Fibre 500 is typically advertised to consumers are 500 Mbps download and 100 Mbps upload. In practice, since the provisioned speed is set slightly higher to allow for extra bandwidth used up by the network protocol overhead, it is quite common to see measured download speeds close to or slightly above 500 Mbps.

Figure 3: Comparison of Average Fibre 500 Download Speeds across RSPs

Average of monthly household averages. Peak hours are Monday - Friday, 7pm - 11pm.

The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 68)

Error bars show 95% confidence intervals of the mean.



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Key Observations

- All RSPs saw comparable results to the previous report, achieving average speeds above 500 Mbps including during peak hours.
- There were not enough volunteers on Contact Energy, Electric Kiwi, Inspire Net, Sky New Zealand or Voyager to report results. All tested RSPs are included in the overall Fibre 500 results shown in Figure 1.

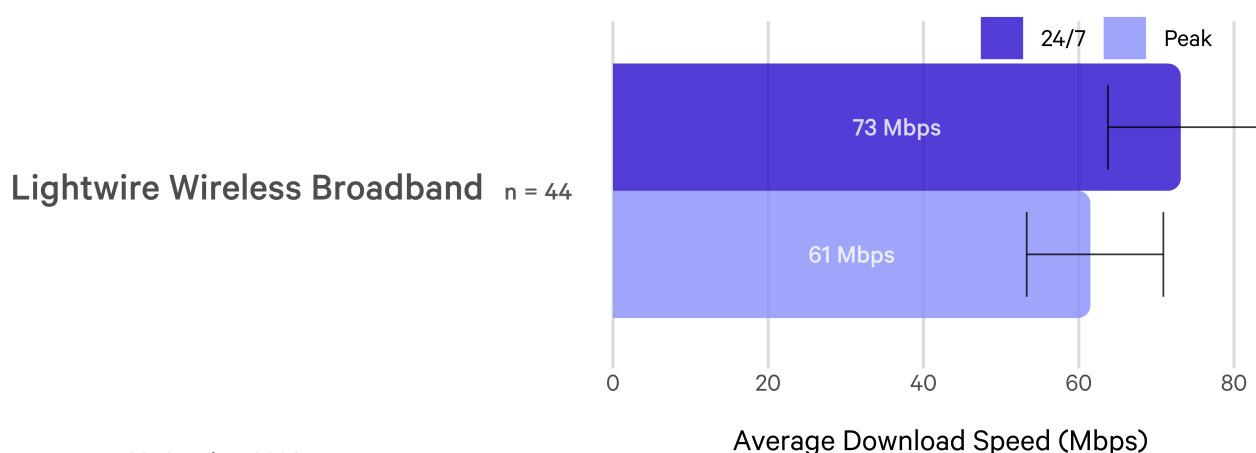
WISP Fixed Wireless Download Speeds

This report includes speed results from a Wireless Internet Service Provider (WISP). Overall performance results for WISP plans are not available due to a small sample size.

This report only includes results from Lightwire's Wireless Broadband plan. Lightwire uses a fixed wireless model to provide internet to rural New Zealand homes, where a signal is beamed from a high-site tower to a receiver usually installed on a user's roof.

Figure 4: Average Download Speeds for WISP Fixed Wireless Plans

Average of monthly household weighted averages. Peak hours are Monday - Friday, 7pm - 11pm. The number of whiteboxes contributing to each result is shown under each plan name (eg n = 44). Error bars show 95% confidence intervals of the mean.



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Key Observations

- The average download speed for Lightwire's Wireless Broadband plan was 73 Mbps, with a small decrease of 12 Mbps during peak hours.
- These results are slightly higher than the average download speeds across all 4G Fixed Wireless plans and RSPs in New Zealand, which is 58 Mbps during all hours, and 43 Mbps during peak hours.

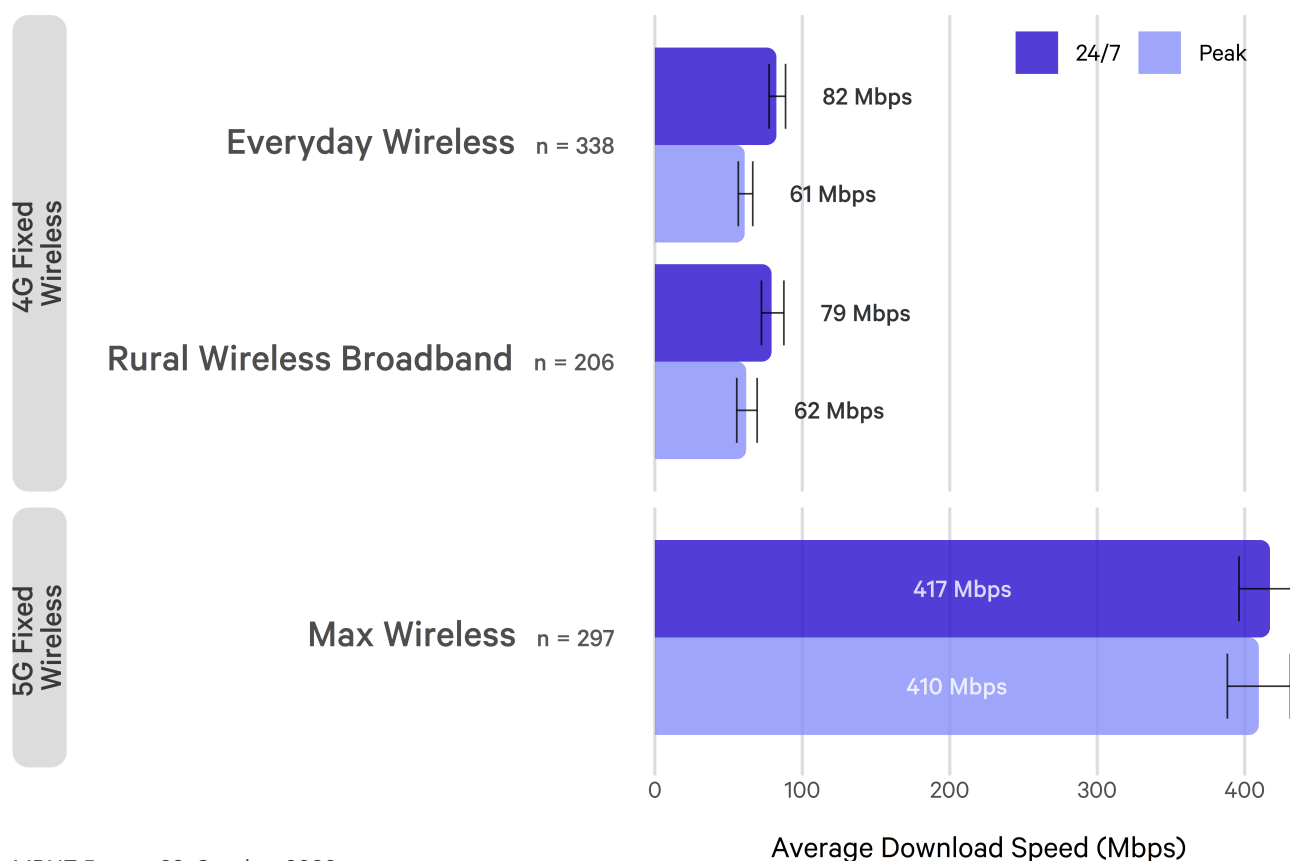
Spark Fixed Wireless Embedded Download Speeds

This report includes results from embedded agent testing, with SamKnows (part of Cisco) embedding its software directly into the modems of customers of an RSP. The embedded agent uses the same methodology as the Whitebox. Any customer with a modem that has the embedded software can become part of an RSP's test population. More details on this testing can be found in the technical FAQs on the Commerce Commission's website [here](#).

Spark is the first RSP to submit results of embedded agent testing for inclusion in the MBNZ report. To do so, Spark randomly selected around 1000 customers across their Everyday Wireless, Max Wireless, and Rural Wireless Broadband plans with Spark's Wireless Broadband modems (Spark Smart Modem 2 or a 5G Smart Modem), to be part of the sample group. We have ensured that this has resulted in a geographically representative sample of the plans being tested. The Spark modems with the embedded agent ran a comparable test schedule to the Whitebox agents used in the MBNZ project using the same off-net test servers, located in Auckland, Wellington, and Christchurch.

Figure 5: Average Download Speeds for Spark Fixed Wireless Plans

Average of monthly household weighted averages. Peak hours are Monday - Friday, 7pm - 11pm. The number of embedded agents contributing to each result is shown under each plan name (eg n = 338). Error bars show 95% confidence intervals of the mean.



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Average Download Speed (Mbps)

Key Observations

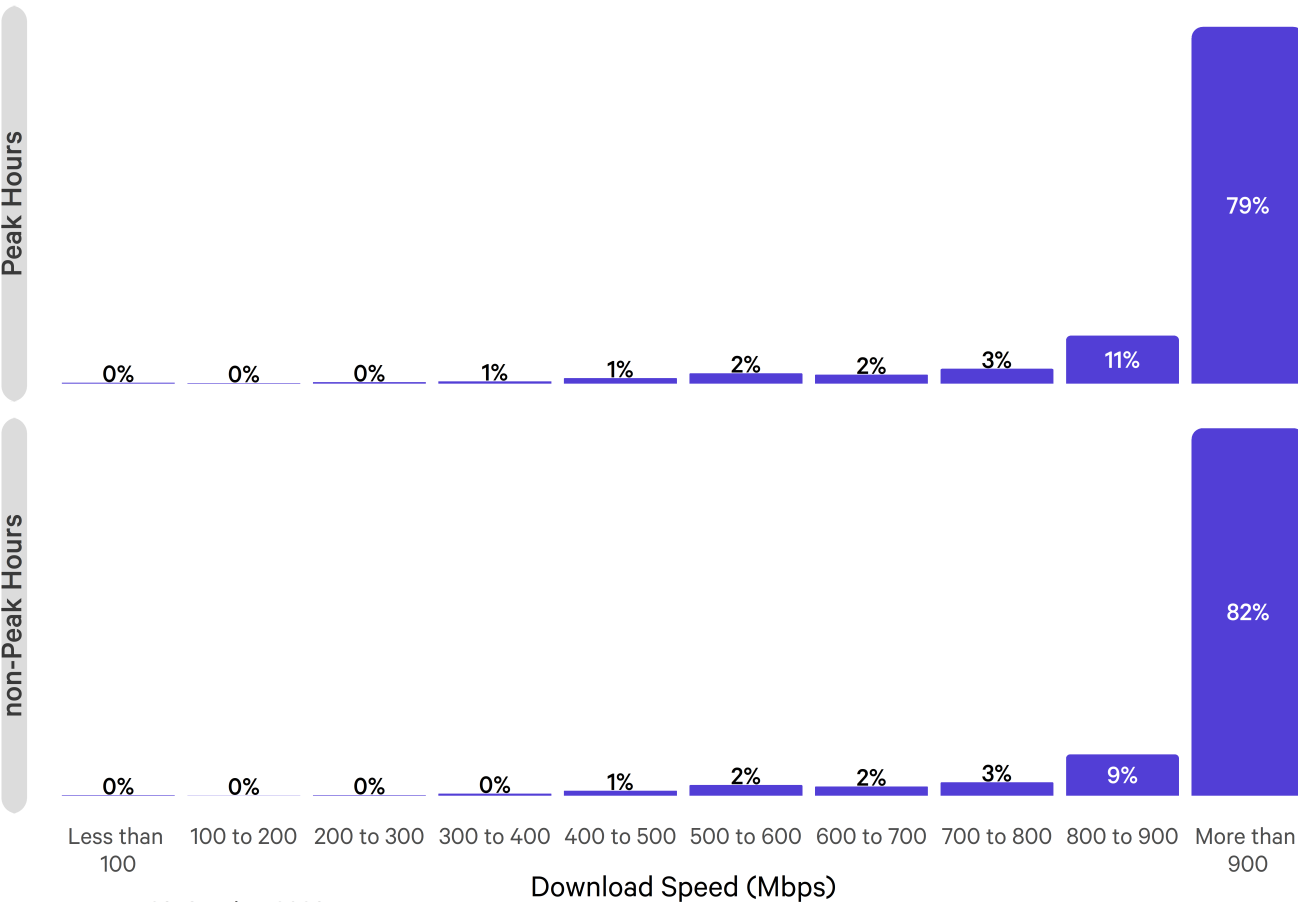
- There is minimal difference in average download speeds between Spark 4G Everyday Wireless and Rural Wireless Broadband, with both plans seeing a small decrease in download speeds during peak hours.
- The average download speeds across all 4G Fixed Wireless plans and RSPs in NZ is 58 Mbps during all hours, and 43 Mbps during peak hours. All average results for the Spark 4G plans measured are higher than the average download speed of all 4G Fixed Wireless results.
- There are a number of factors that influence fixed wireless broadband performance including distance, and number of customers connected to the nearest cell tower. During peak hours, the number of customers connected to a cell tower in an urban area can be much higher than in a rural area, which could be one explanation for a larger decrease in average peak hour speeds in urban areas.
- The average download speed measured for Spark's Max Wireless 5G Plan was 417 Mbps during all hours, and 410 Mbps during peak hours.

Distribution of Fibre Max Results

Figure 6: Download Speeds on Fibre Max Plans

Distribution of test results across 266 Fibre Max households

Average (24/7) download speeds for Fibre Max plans is 880 Mbps; this varies by RSP and over time.



Key Observations

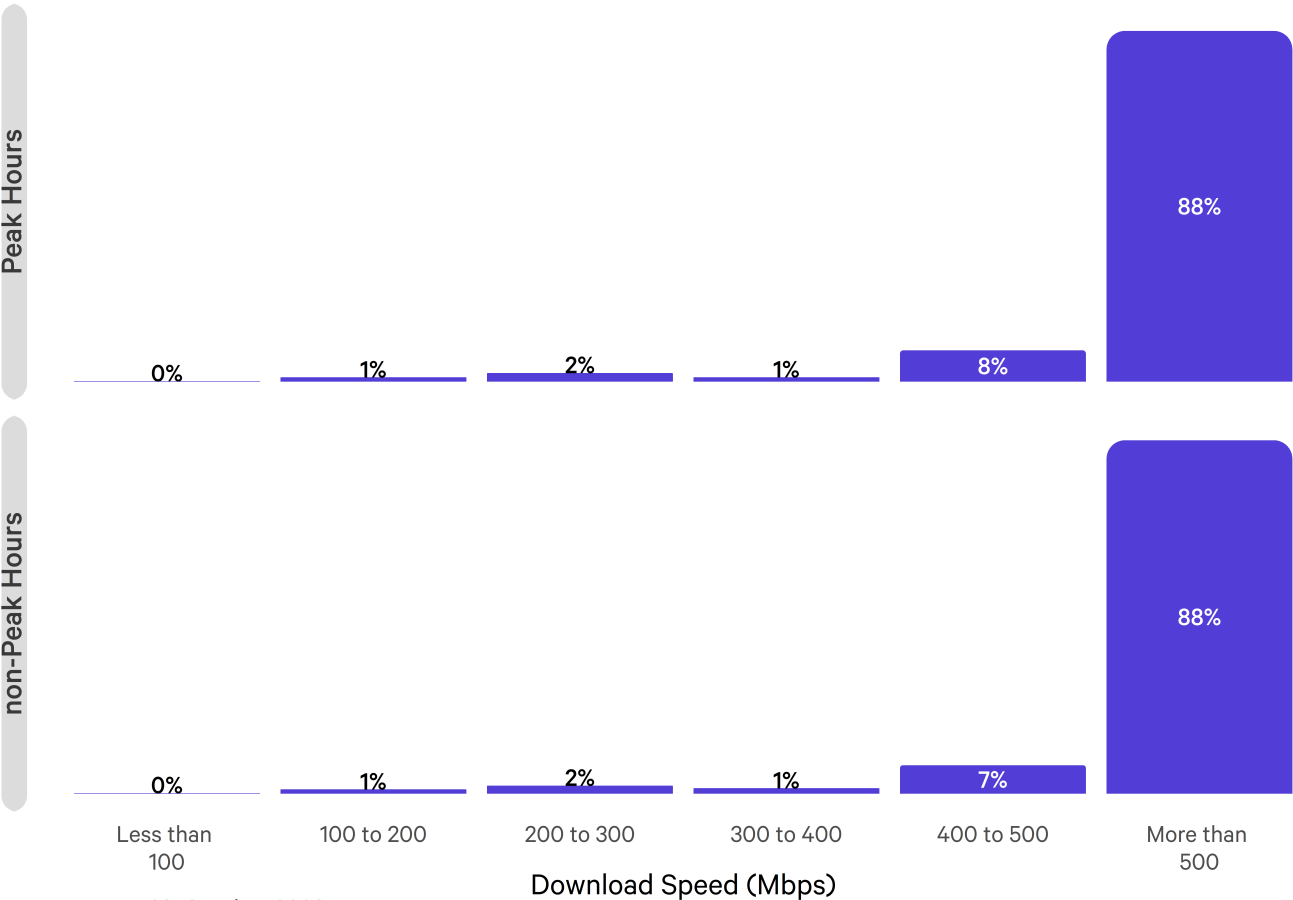
- 82% of speed tests run over Fibre Max lines achieved download speeds above 900 Mbps during non-peak hours, compared to 79% during peak hours.

Distribution of Fibre 500 Results

Figure 7: Download Speeds on Fibre 500 Plans

Distribution of test results across 270 Fibre 500 households

Average (24/7) download speeds for Fibre 500 plans is 512 Mbps; this varies by RSP and over time.



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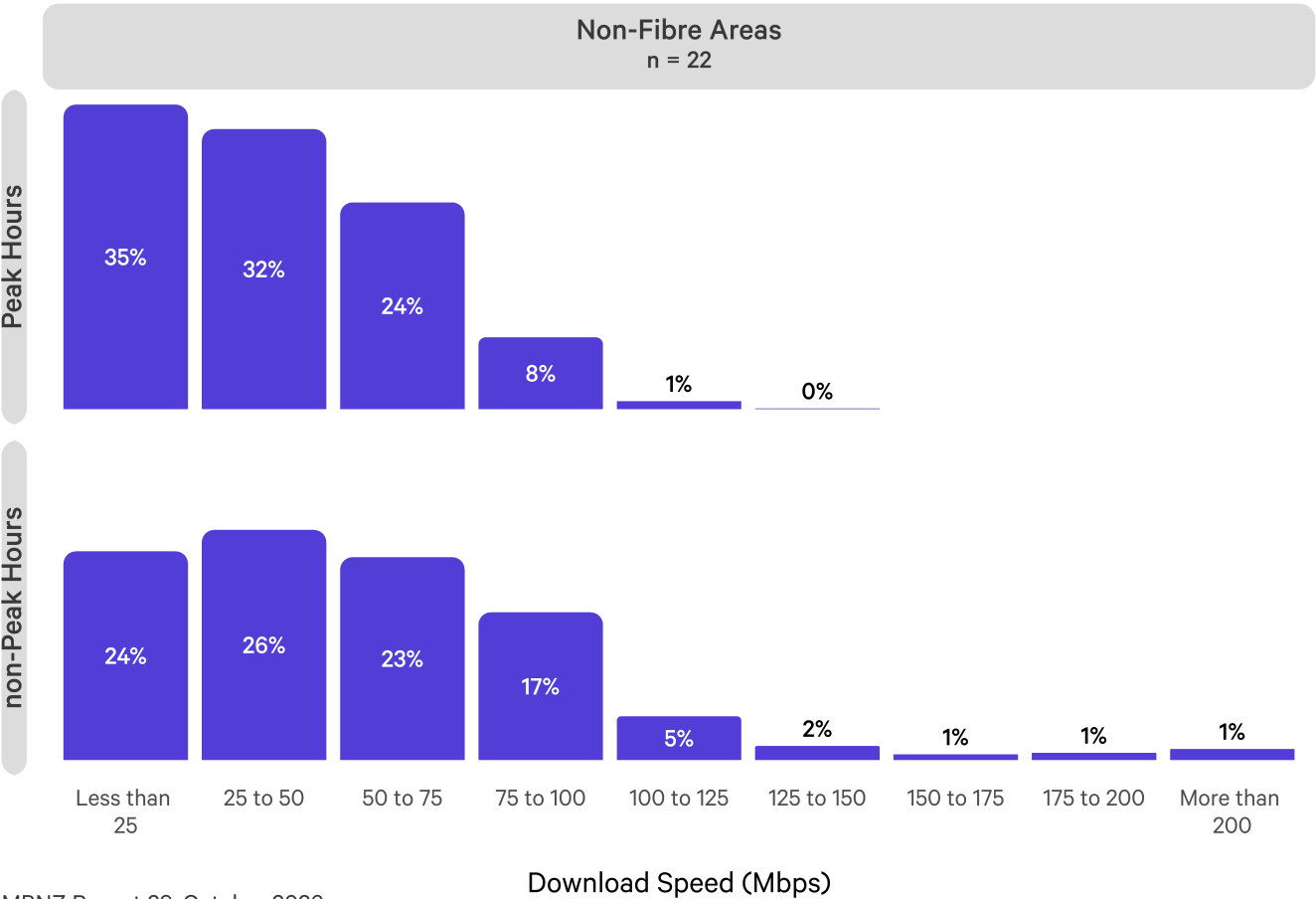
Key Observations

- 88% of speed tests run over Fibre 500 lines achieved download speeds above 500 Mbps during both non-peak hours and peak hours.

Distribution of 4G Fixed Wireless Results

Figure 8: Download Speeds on 4G Fixed Wireless Plans

Distribution of test results. Average (24/7) download speeds for 4G Fixed Wireless plans is 52 Mbps in non-Fibre areas and 58 Mbps across all areas; this varies by RSP and over time.



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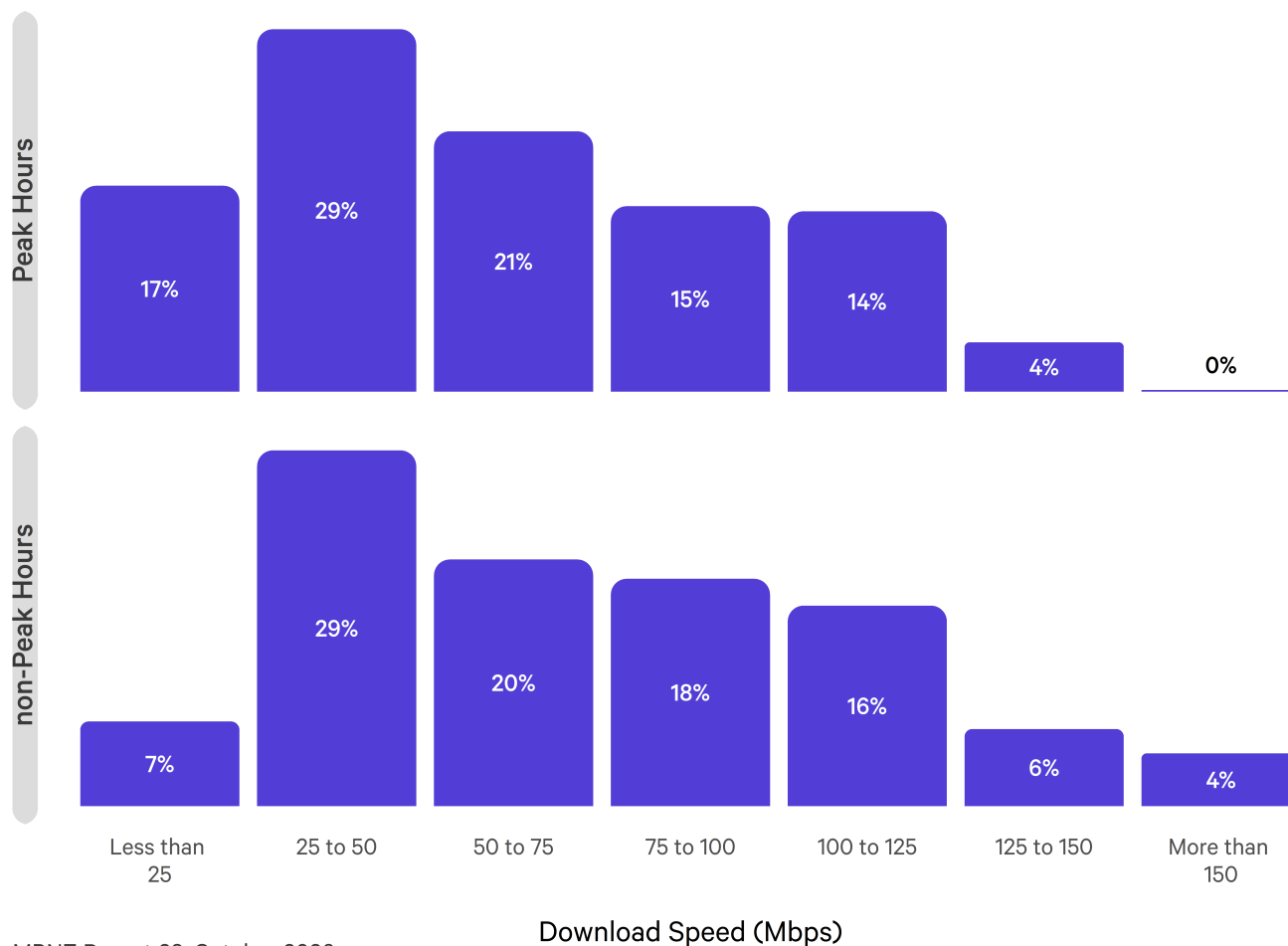
Key Observations

- 24% of speed tests run over Fixed Wireless lines achieve download speeds of less than 25 Mbps in non-Fibre areas during non-peak hours, compared to 35% during peak hours.

Distribution of WISP Fixed Wireless Results (Lightwire Only)

Figure 9: Download Speeds on WISP Fixed Wireless Plans (Lightwire Only)

Distribution of test results.



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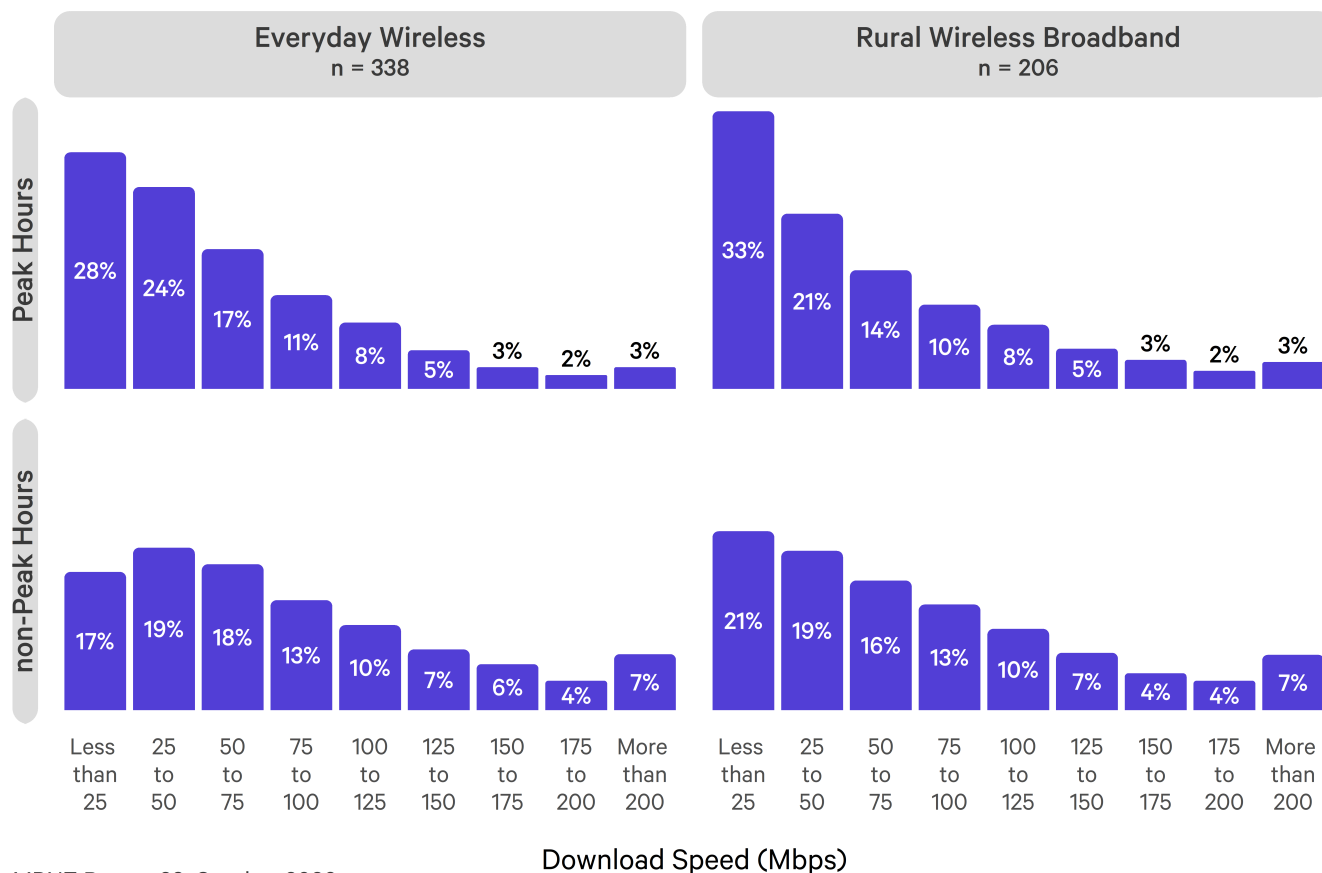
Key Observations

- 7% of speed tests run over Fixed Wireless lines achieve download speeds of less than 25 Mbps during non-peak hours, compared to 17% during peak hours.

Distribution of Spark Embedded Fixed Wireless Results

Figure 10: Download Speeds on Spark Embedded 4G Fixed Wireless Plans

Distribution of test results.



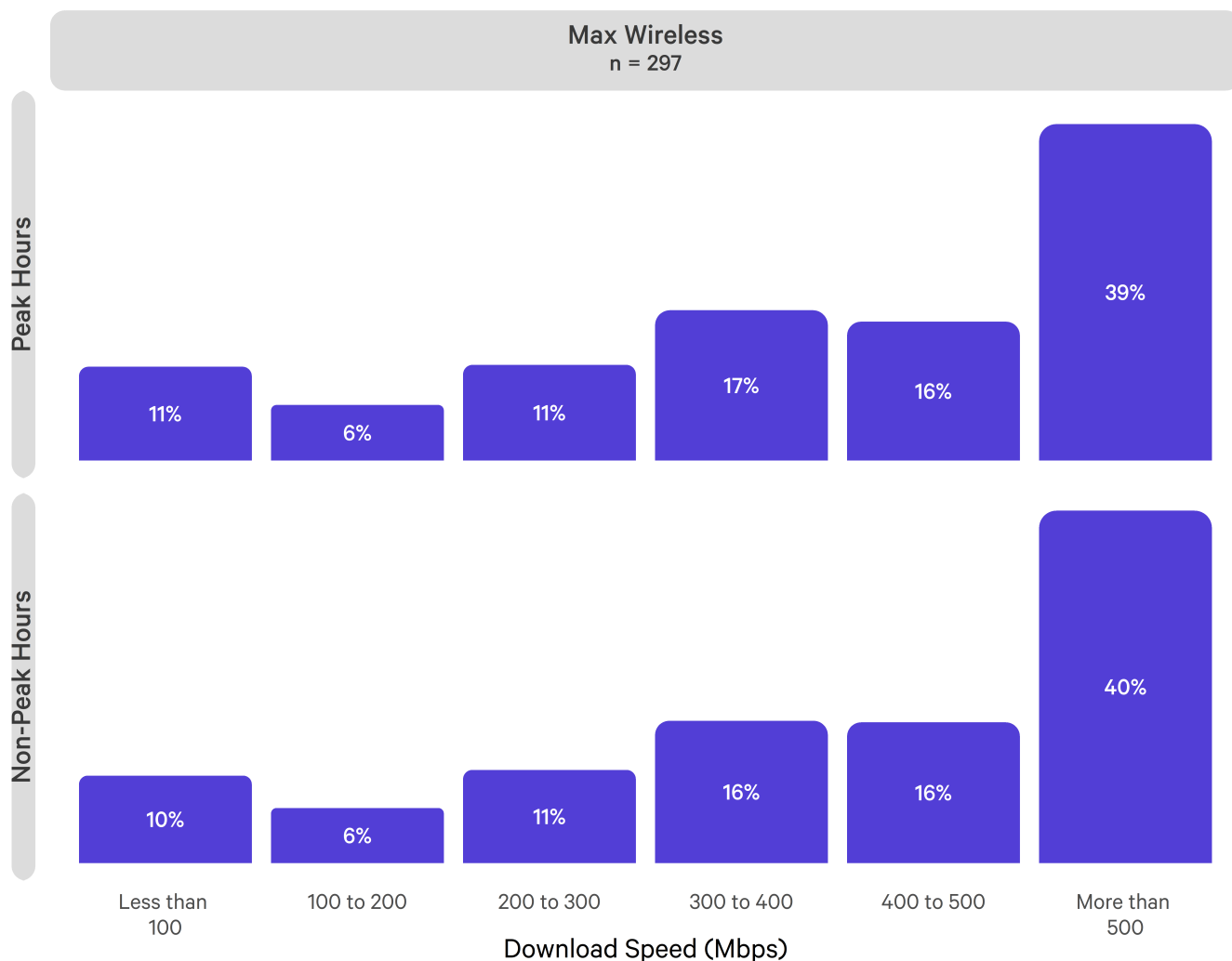
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Key Observations

- During non-peak hours, 34% of download tests for Everyday Wireless and 32% for Rural Wireless Broadband achieved speeds above 100 Mbps. During peak hours, the percentage of tests over 100 Mbps for Everyday Wireless fell to 21%, and Rural Wireless Broadband also saw the percentage fall to 21%.
- For both plans, the percentage of tests below 25 Mbps increased during peak hours compared to non-peak hours. For Everyday Wireless plans, the percentage rose from 17% to 28%, and for Rural Wireless plans, it also increased from 21% to 33%.
- During non-peak hours, both plans had 7% of tests achieve speeds over 200 Mbps. However, during peak hours, the percentage of tests fell to just 3% for Everyday Wireless, and 3% for Rural Wireless.

Figure 11: Download Speeds on Spark Embedded 5G Fixed Wireless Plan

Distribution of download test results.



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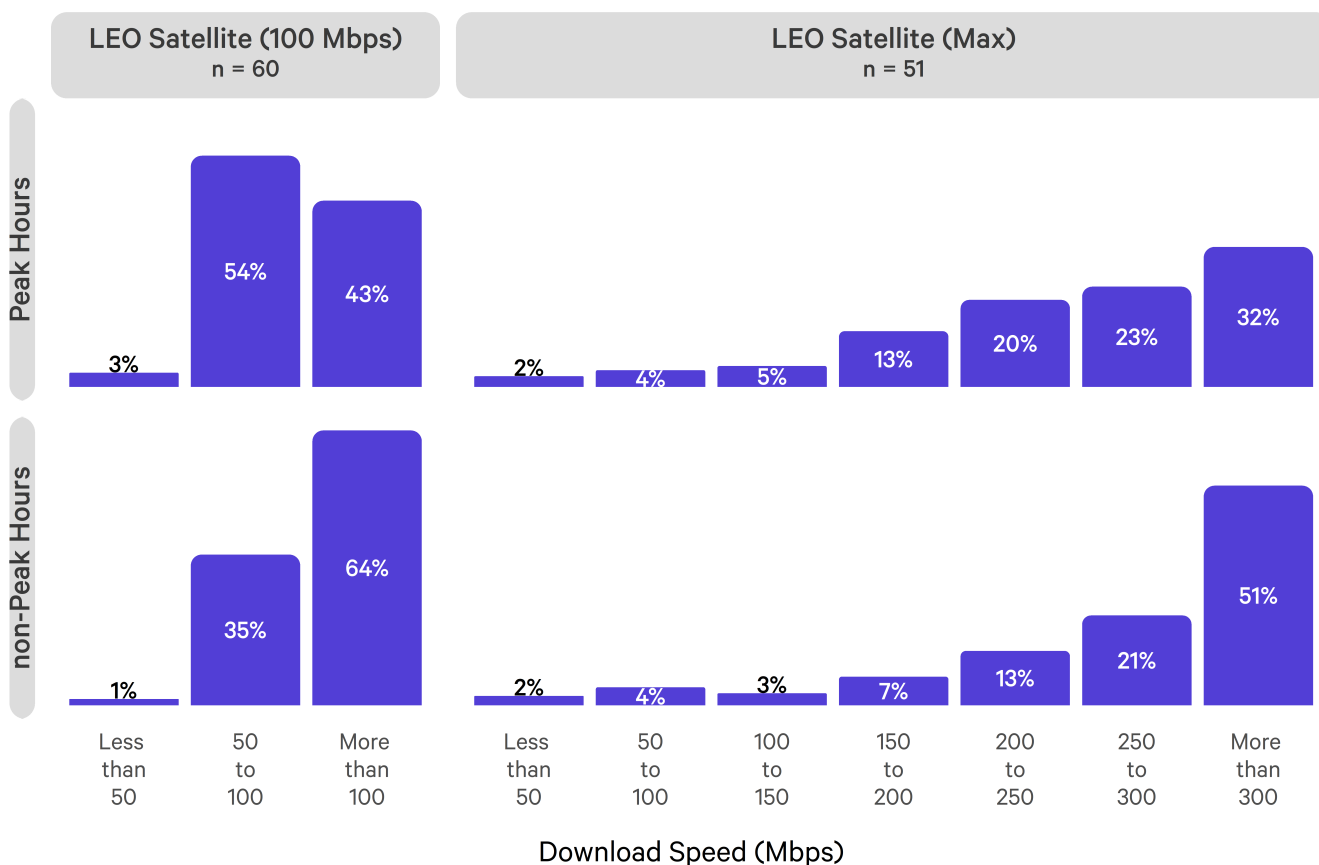
Key Observations

- The distribution of download tests for Spark 5G Max Wireless was broadly similar during peak hours compared to non-peak hours.
- During non-peak hours, 10% of tests resulted in download speeds below 100 Mbps, while during peak hours this figure rose to 11%.
- 72% of tests achieved download speeds above 300 Mbps during both peak and non-peak hours.
- During non-peak hours, 40% of all embedded download speed tests run on Max Wireless plans achieved speeds greater than 500 Mbps.

Distribution of LEO Satellite Results

Figure 12: Download Speeds on LEO Satellite Plans

Distribution of test results across LEO Satellite households. Average (24/7) download speeds for LEO Satellite plans average 284 Mbps in non-Fibre areas on Starlink's Residential Max plan and 97 Mbps on their LEO Satellite (100 Mbps) plan; this varies over time.



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Key Observations

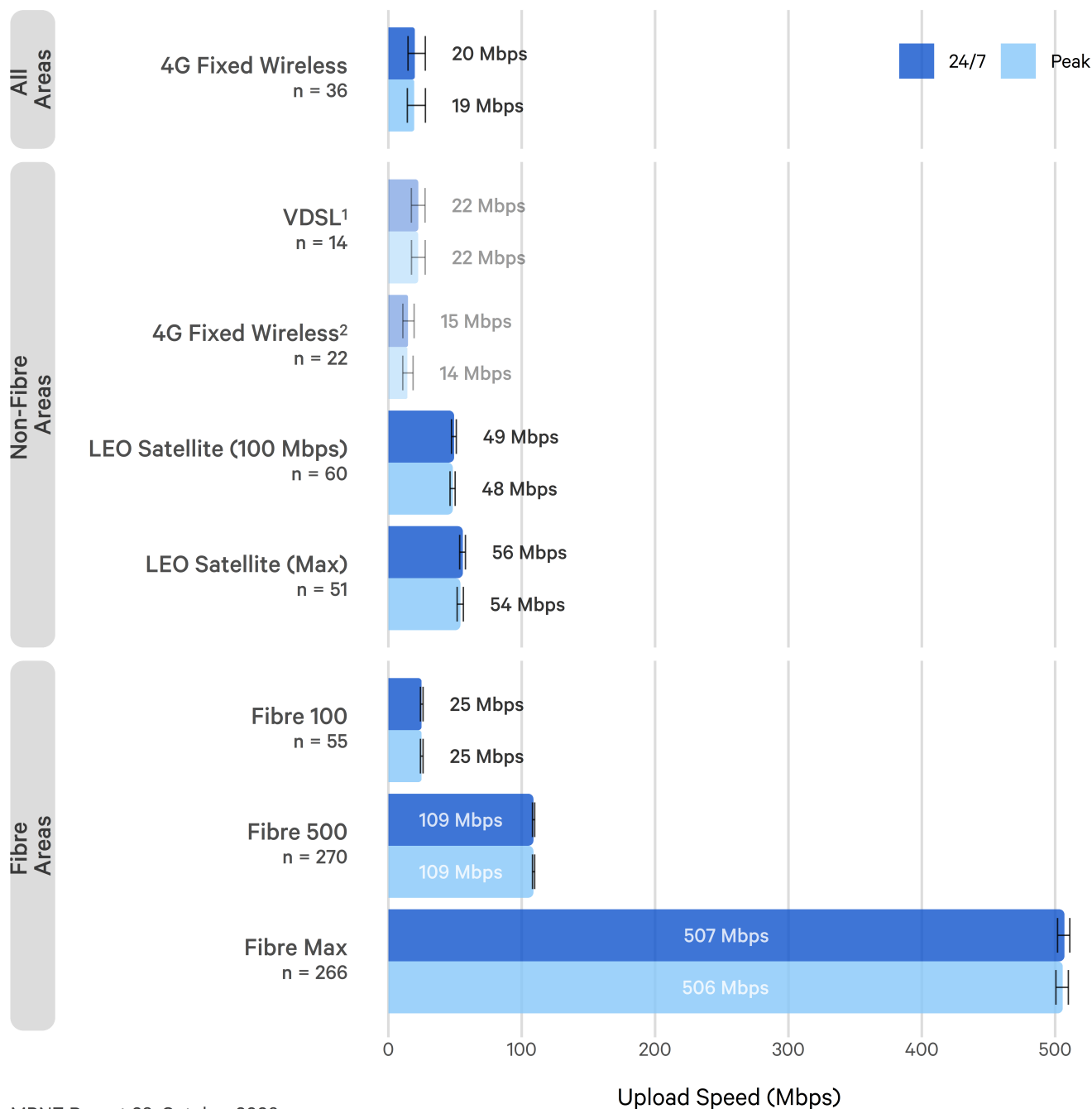
- 3% of all tests run during peak hours and 1% of tests run during non-peak hours across Starlink's Residential 100 Mbps plan achieved speeds below 50 Mbps.
- On Starlink's Residential Max plan, only 2% of tests achieved speeds below 100 Mbps during both peak and non-peak hours.
- During non-peak hours, 64% of download speed tests for the Residential 100 Mbps plan reached speeds of 100 Mbps or higher, compared to 43% during peak hours.
- For the Residential Max plan, 51% of download speed tests during non-peak hours reached speeds of 300 Mbps or higher, compared to 32% during peak hours.

Speed Tests - Upload

Upload speeds should be considered alongside download speeds. The main applications where the impact of upload speed is apparent are file transfers and video conferencing. For example, a lower upload speed will mean that it takes longer for files to sync or email attachments to be added.

Figure 13: Average Upload Speeds by Plan

Average (24/7) of monthly household weighted averages. Peak hours are Monday - Friday, 7pm - 11pm. The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 36). Error bars show 95% confidence intervals of the mean.



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Upload Speed (Mbps)

¹ Results for VDSL are based on a sample size of 14 Whiteboxes. The low sample size can be attributed to volunteer numbers falling as consumers move away from copper services.

² Results for 4G Fixed Wireless in non-Fibre areas are based on a sample size of 22 Whiteboxes.

Key Observations

- The average upload speeds are broadly consistent for all technologies with those seen in the previous report, including LEO Satellite plans. ADSL results are not included in this report due to a low sample size. This can be attributed to volunteer numbers falling as consumers move away from copper services.

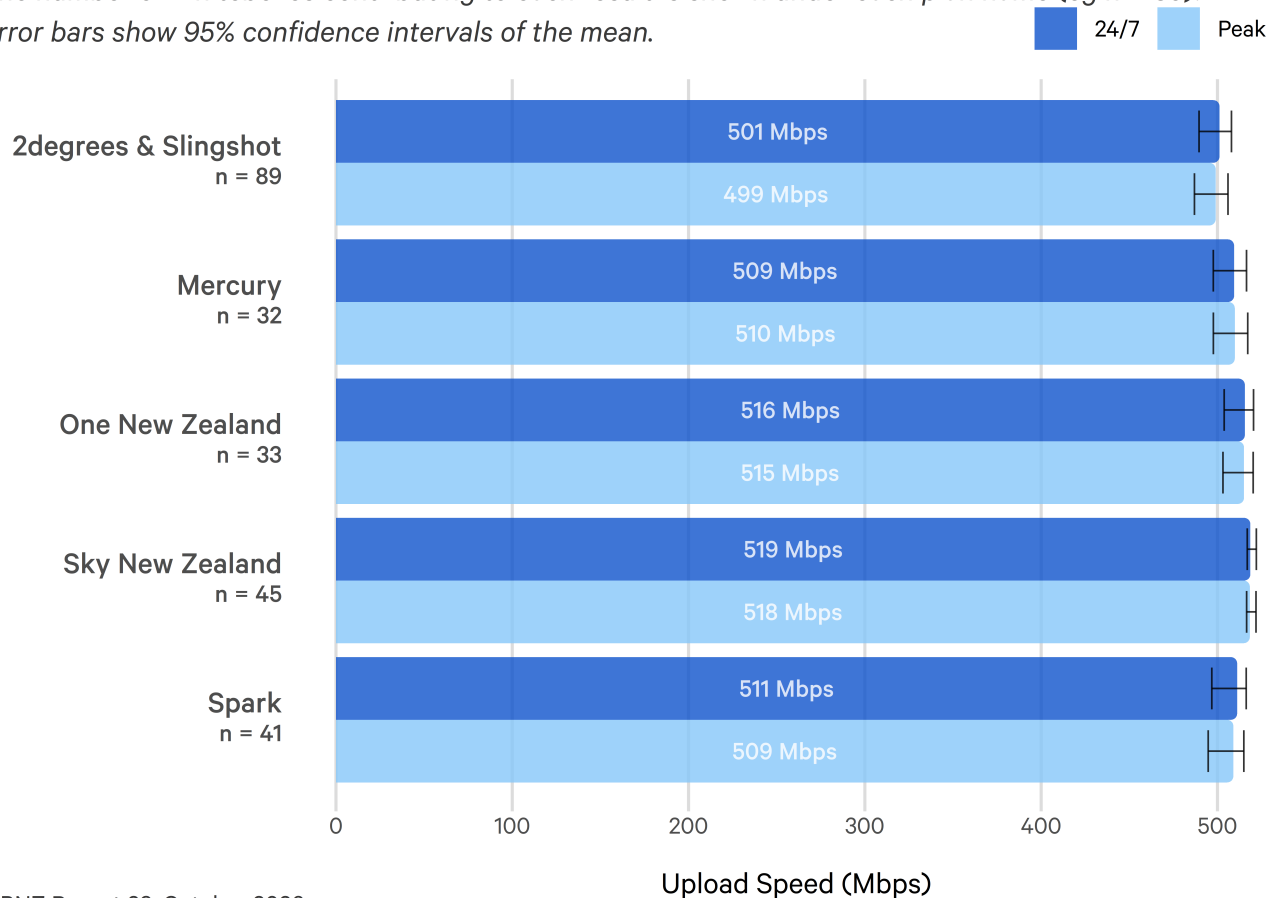
Fibre Max Breakdown by RSP

Figure 14: Average Fibre Max Upload Speed by RSP

Average of monthly household averages. Peak hours are Monday - Friday, 7pm - 11pm.

The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 89).

Error bars show 95% confidence intervals of the mean.



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Key Observations

- All RSPs achieved average upload results around 500 Mbps or above during all hours.
- Upload speeds were consistent during peak hours, with all RSPs only showing the same or a very small decrease in speed compared to their all hours result.
- There were not enough Fibre Max volunteers on Contact Energy, Electric Kiwi, PureLink, Voyager or WorldNet during the measurement period to report results for these RSPs. All tested RSPs are included in the overall Fibre Max results shown in Figure 13.

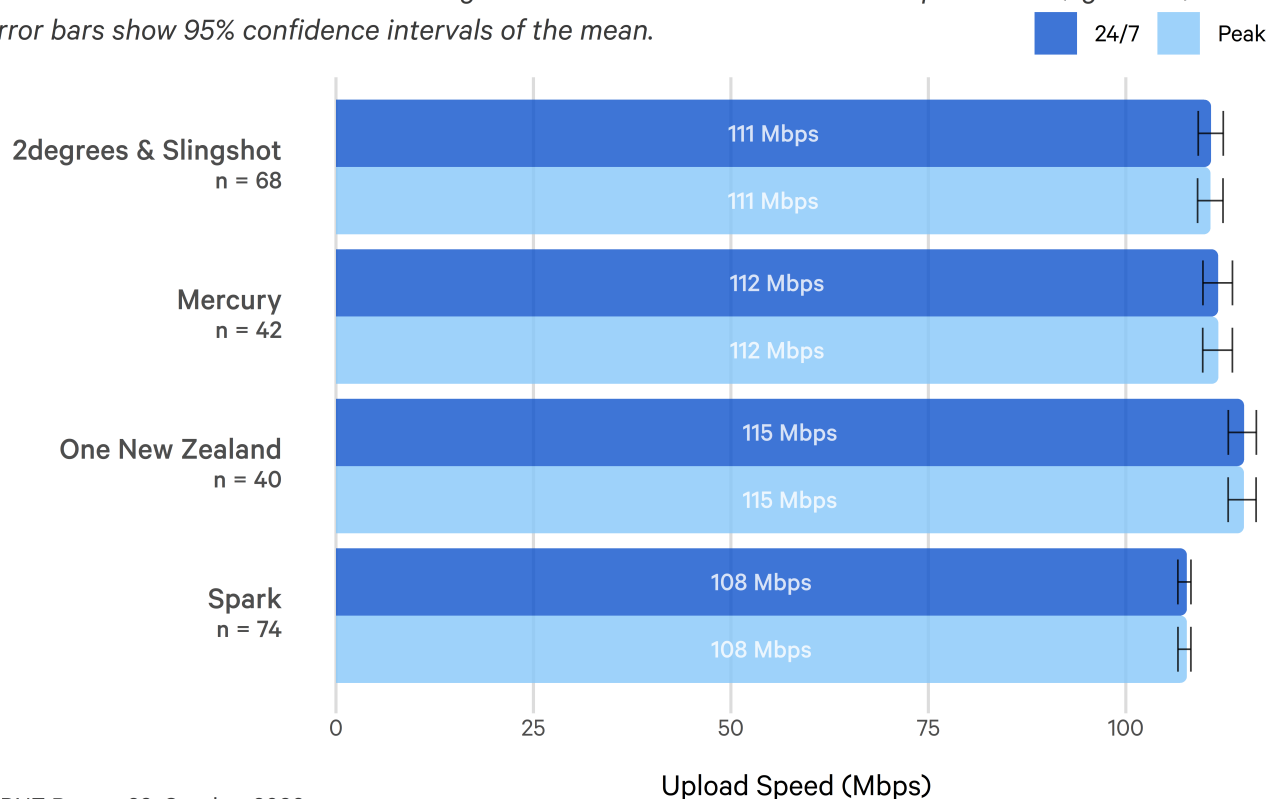
Fibre 500 Breakdown by RSP

Figure 15: Comparison of Average Fibre 500 Upload Speeds across RSPs

Average of monthly household averages. Peak hours are Monday - Friday, 7pm - 11pm.

The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 68)

Error bars show 95% confidence intervals of the mean.



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Key Observations

- All RSPs achieved average upload results above 100 Mbps.
- Upload speeds were consistent during peak hours, with no noticeable drop compared to average upload speeds across all hours.
- There were not enough volunteers on Contact Energy, Electric Kiwi, Inspire Net, Sky New Zealand or Voyager to report results. All tested RSPs are included in the overall Fibre 500 results shown in Figure 13.

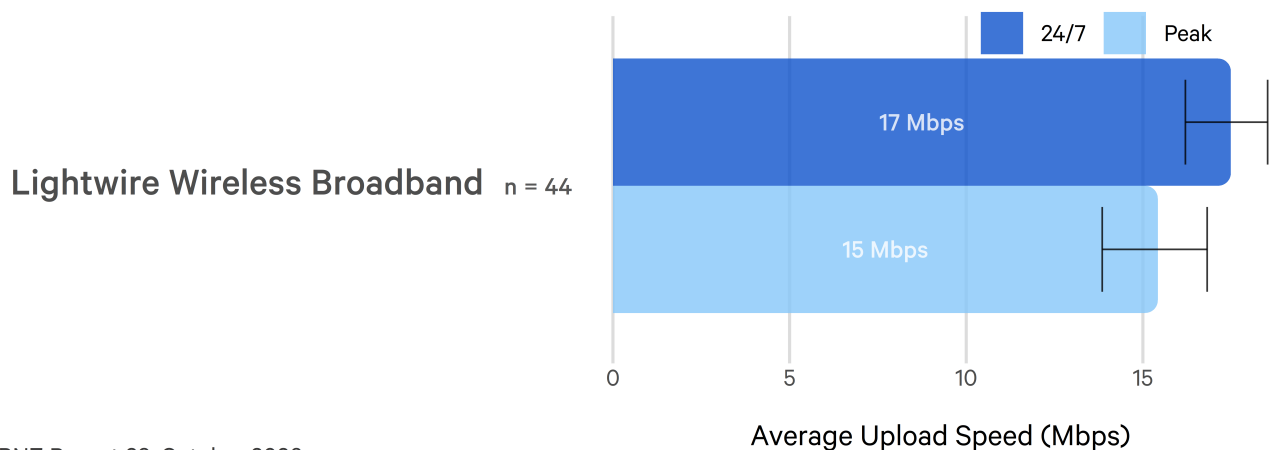
available due to a small sample size. More information on WISP results can be found on [page 15](#).

Figure 16: Average Upload Speeds for WISP Fixed Wireless Plans

Average of monthly household weighted averages. Peak hours are Monday - Friday, 7pm - 11pm.

The number of embedded agents contributing to each result is shown under each plan name (eg n = 44).

Error bars show 95% confidence intervals of the mean.



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Key Observations

- The average upload speed for Lightwire's Wireless Broadband plan was 17 Mbps, with a minimal decrease during peak hours.
- These results are similar to the average upload speed across all 4G Fixed Wireless plans and RSPs in NZ, which is 20 Mbps during all hours.

Spark Fixed Wireless Embedded Upload Speeds

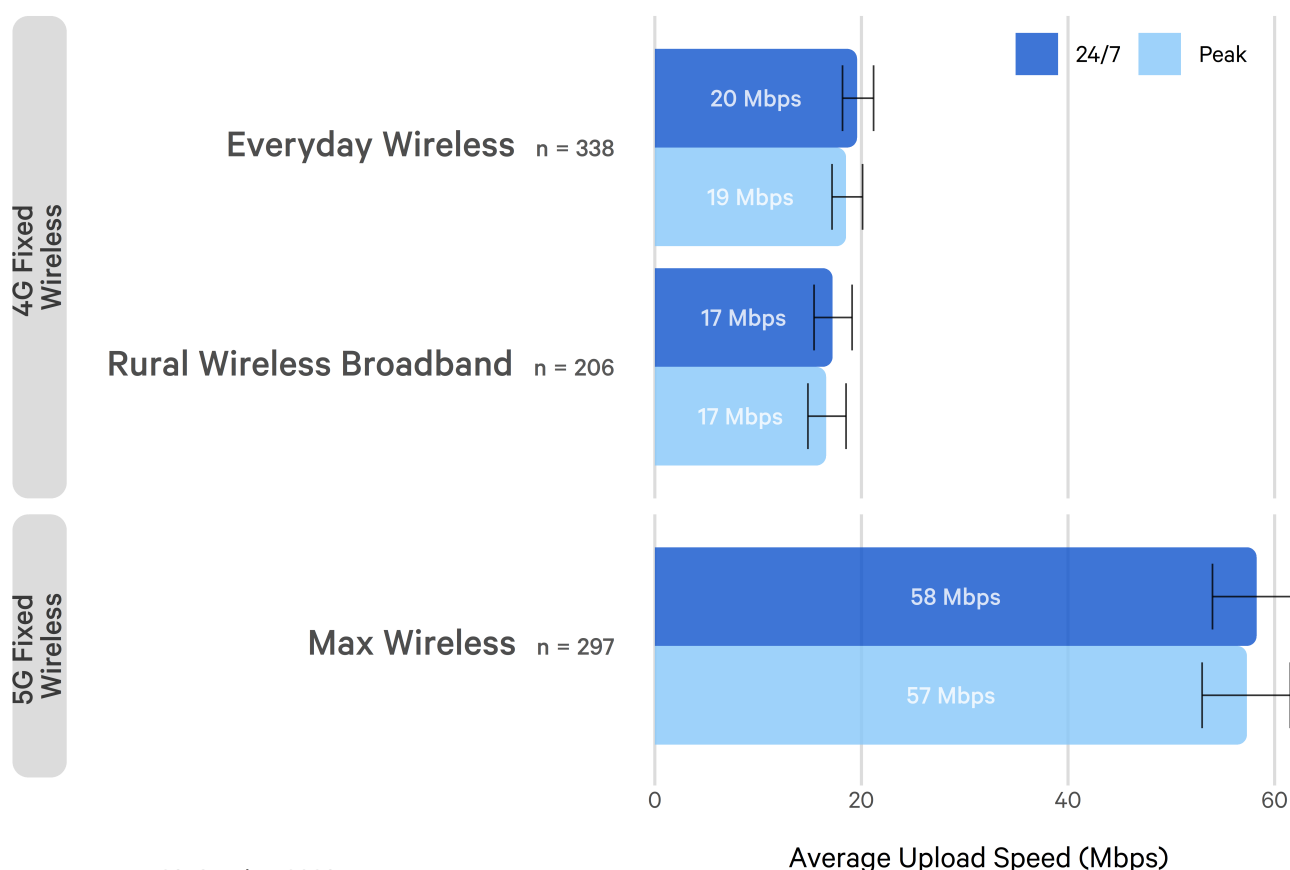
The results below are for some of Spark's 4G Fixed Wireless and 5G Fixed Wireless plans. More information on Spark's embedded testing can be found on [page 16](#).

Figure 17: Average Upload Speeds for Spark Fixed Wireless Plans

Average of monthly household weighted averages. Peak hours are Monday - Friday, 7pm - 11pm.

The number of embedded agents contributing to each result is shown under each plan name (eg n = 338).

Error bars show 95% confidence intervals of the mean.



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Key Observations

- There is minimal difference in average upload speeds between Spark 4G Everyday Wireless and Rural Wireless Broadband, with both plans seeing no noticeable decrease in upload speeds during peak hours.
- The average upload speed measured for Spark's Max Wireless 5G Plan was 58 Mbps during all hours, showing no noticeable decrease during peak hours.

Latency

Latency is another key factor that should be considered when assessing broadband performance.

The time it takes to transmit and receive messages between households and servers limits the responsiveness of realtime applications such as interactive webpages or video calls. Higher baseline latency makes realtime applications more vulnerable to jitter (also known as packet delay variation) and dropouts. Figure 18 only includes results relating to servers hosted in New Zealand.

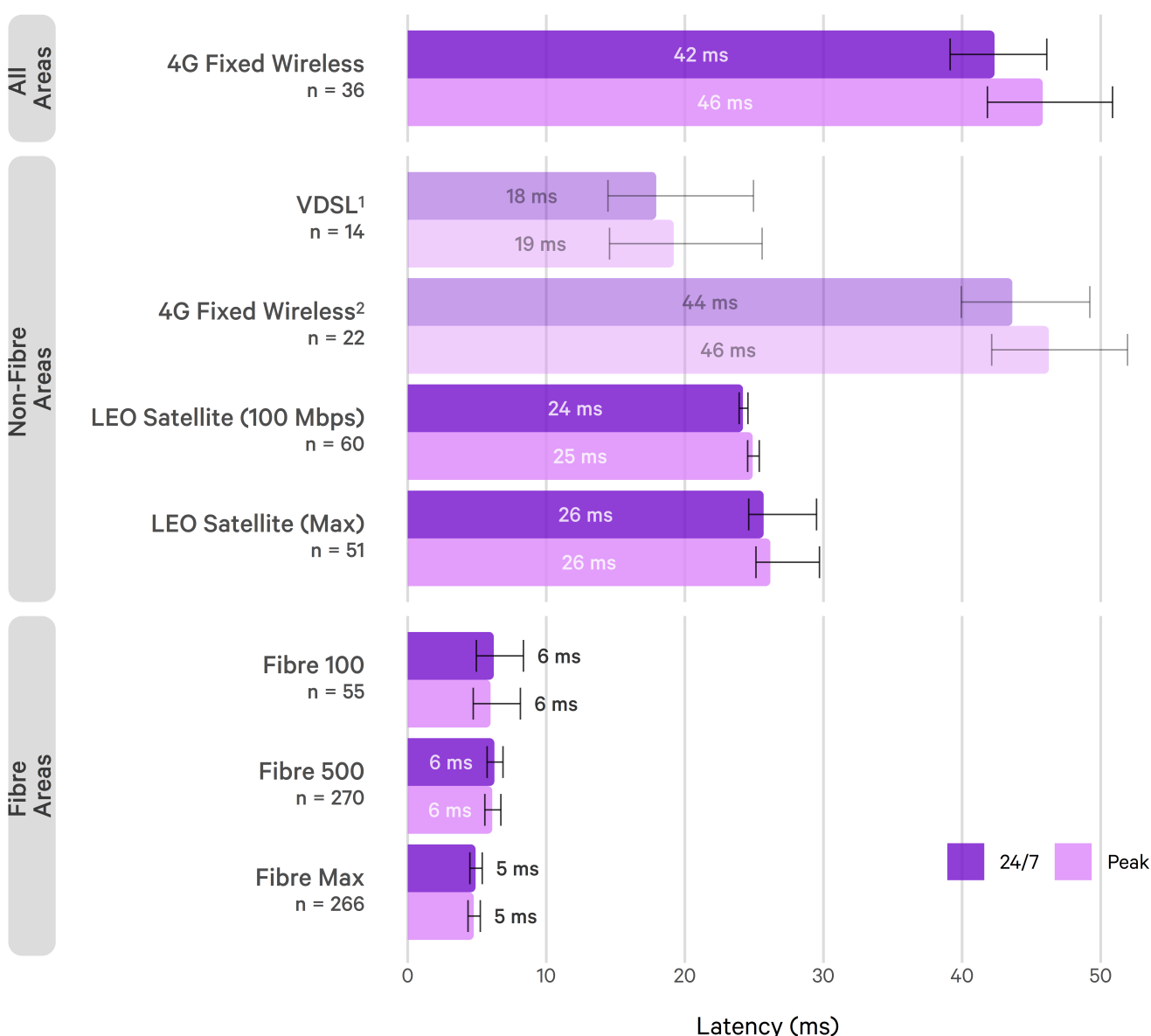
Figure 18: Average Latency to Test Servers by Plan

Lower is better. Average of monthly household weighted averages.

Peak hours are Monday - Friday, 7pm - 11pm.

The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 36).

Error bars show 95% confidence intervals of the mean.



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¹ Results for VDSL are based on a sample size of 14 Whiteboxes. The low sample size can be attributed to volunteer numbers falling as consumers move away from copper services.

² Results for 4G Fixed Wireless in non-Fibre areas are based on a sample size of 22 Whiteboxes.

Key Observations

- Idle latency over Fixed Wireless is higher than over Copper (VDSL) or Fibre (Fibre 100, Fibre 500, Fibre Max). Fibre is faster due to both the lower latency over Fibre optics and the more modern infrastructure that underpins the Fibre network.
- Some plans show a wider variation of latency than others: latency across a Fixed Wireless connection will generally be more variable than over a Fibre line.
- ADSL results are not included in this report due to a low sample size. This can be attributed to volunteer numbers falling as consumers move away from copper services.

WISP Fixed Wireless Latency

The results below are for Lightwire's WISP plan. Overall performance results for WISP plans are not available due to a small sample size. More information on WISP results can be found on [page 15](#).

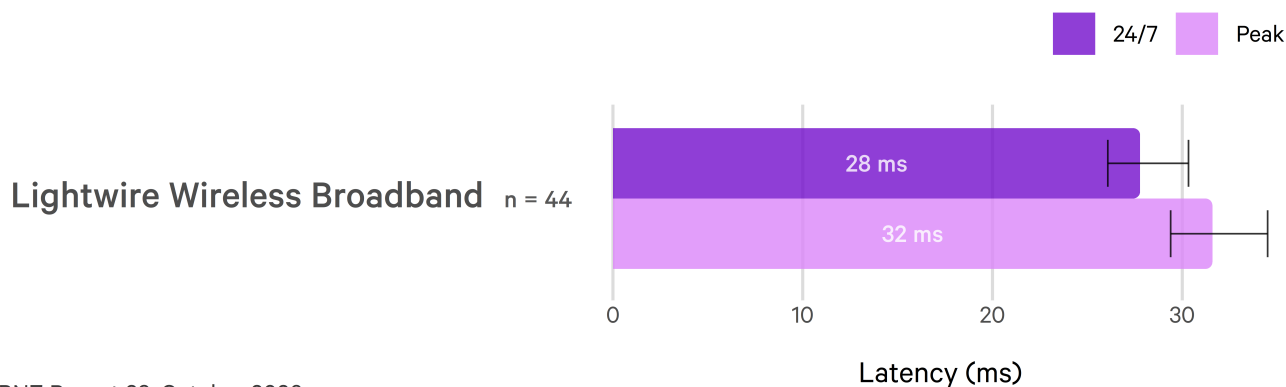
Figure 19: Average Latency to Test Servers for WISP Fixed Wireless Plans

Lower is better. Average of monthly household weighted averages.

Peak hours are Monday - Friday, 7pm - 11pm.

The number of embedded agents contributing to each result is shown under each plan name (eg n = 44).

Error bars show 95% confidence intervals of the mean.



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Key Observations

- Average latency across all 4G Fixed Wireless plans and RSPs in NZ is 42 ms during all hours. Average results for Lightwire's Wireless Broadband plan measured slightly below the average latency we see for 4G Fixed Wireless across all RSPs.

Spark Fixed Wireless Embedded Latency

The results below are for some of Spark's 4G Fixed Wireless and 5G Fixed Wireless plans. More information on Spark's embedded testing can be found on [page 16](#).

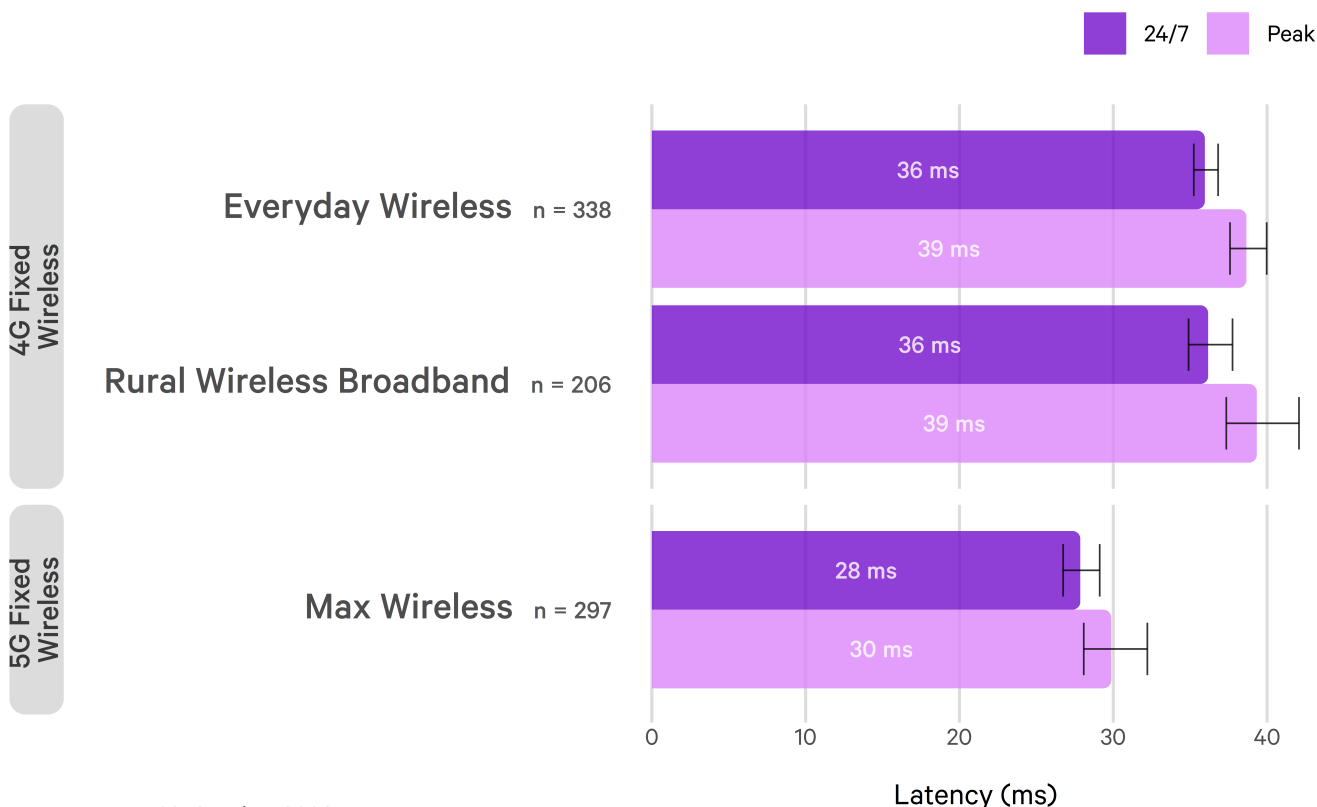
Figure 20: Average Latency to Test Servers for Spark Fixed Wireless Plans

Lower is better. Average of monthly household weighted averages.

Peak hours are Monday - Friday, 7pm - 11pm.

The number of embedded agents contributing to each result is shown under each plan name (eg n = 338).

Error bars show 95% confidence intervals of the mean.



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Key Observations

- Average latency across all 4G Fixed Wireless plans and RSPs in NZ is 42 ms during all hours. Average results for the Spark 4G plans measured are in line with the average latency we see for all RSPs.
- Spark's Max Wireless 5G plan shows lower latency than their 4G Fixed Wireless plans.

Disconnections

Realtime applications like video calls rely on a consistent connection between the home router and the target server. If the connection drops, even for a few seconds, the application will exhibit some form of stuttering. In the worst instance, a user might be disconnected and have to reconnect or wait for their broadband connection to come back online.

A brief disconnection very rarely means that, for example, a physical cable has been cut. Instead, the main reasons for network dropouts relate to congestion and the configuration of network equipment. The following chart compares daily disconnection rates across plans.

This chart shows medians across households which obscures the extremes of performance for each plan. Disconnection results for Fixed Wireless plans are not included in this report as they are no longer running the continuous latency measurement.

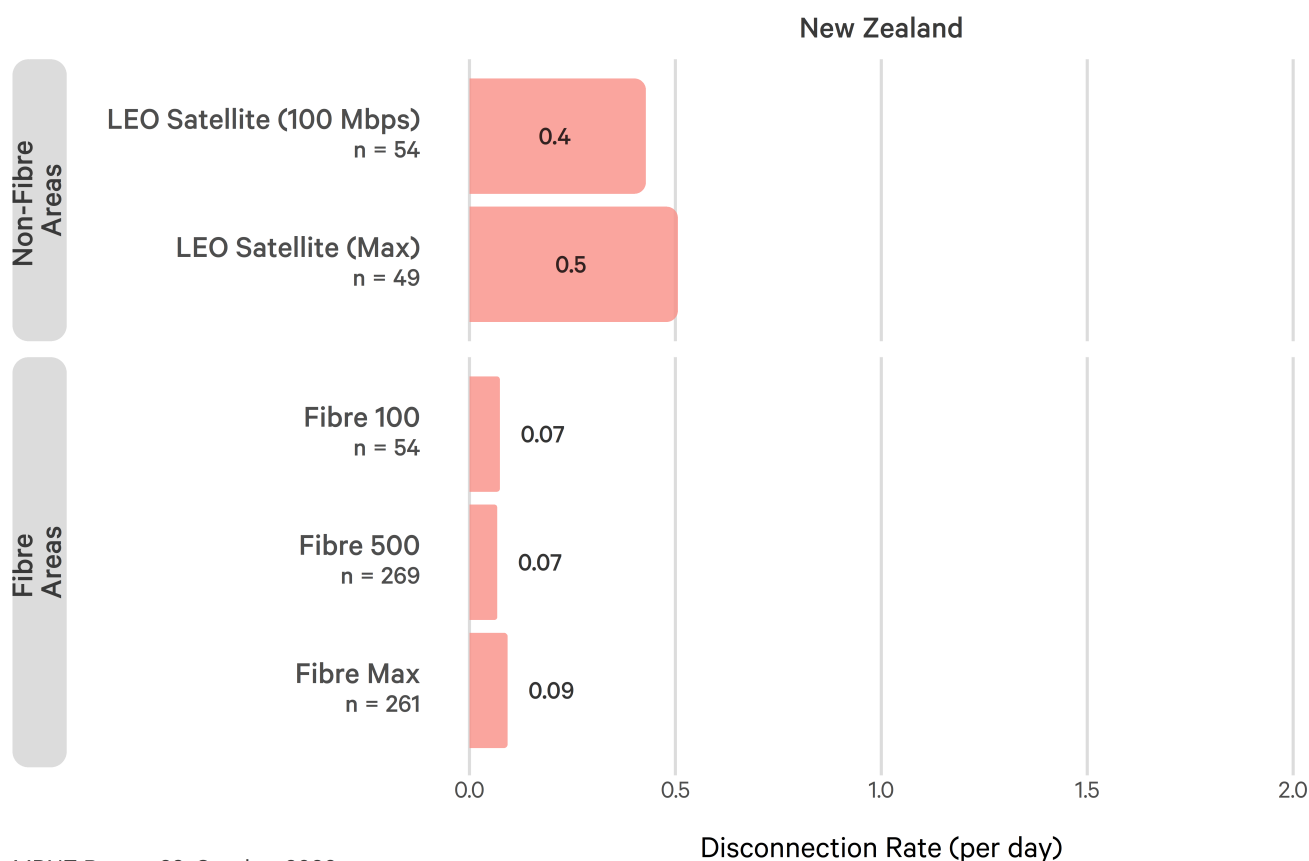
Many common applications, such as video conferencing applications or online gaming used by New Zealanders are served from overseas, mainly Australia, East Asia, and the USA. All New Zealand RSPs share capacity through four undersea cable networks which carry traffic to and from New Zealand across the Tasman Sea and the Pacific.

The second chart shows disconnections for all Fibre plans across RSPs. Overseas traffic can take different routes depending on the RSPs' relationship with different peering providers. This can result in a difference between overseas disconnections across RSPs.

Figure 21: Median Daily Disconnection Rates to New Zealand Servers

Lower is better. Medians of household daily rates. Disconnections greater than 30 seconds.

Testing only covers periods where the line is idle.



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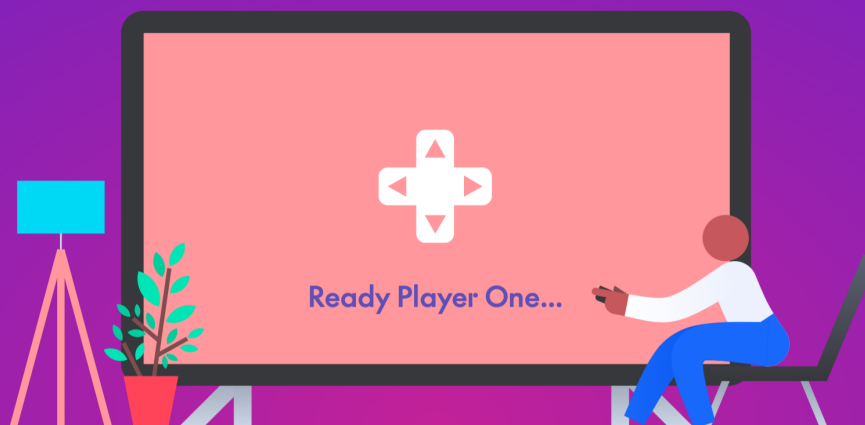
Key Observations

- This chart categorises a disconnection as lasting longer than 30 seconds, as these are likely to be more noticeable to consumers. Most households see a very low rate of noticeable disconnections, at least while the line is idle.
- There is a very low median rate of disconnection across Fibre plans.
- Median disconnections for LEO Satellite plans are no more than 0.5 to servers across New Zealand. This means that 50% of households will experience no more than 0.5 disconnections per day lasting over 30 seconds.

Lower is better. Fibre plans only. Medians of household daily rates. Disconnections greater than 30 seconds. Testing only covers periods where the line is idle.



- All RSPs have low levels of disconnections to servers in New Zealand across their Fibre plans.
- Traffic going overseas is more likely to be lost than traffic remaining within New Zealand. Some RSPs see a small increase in disconnections to Australia and to the United States compared to New Zealand.



Application Performance

In this section we report on the performance of a number of common applications that consumers in New Zealand use on a regular basis.

Some results in this section are shown with error bars representing the 95% confidence interval for each plan. The transparent bars show plans with a sample size lower than we would typically include within reporting. These plans have larger error bars due to the smaller sample size and care should be taken when comparing these plans against others. We recommend consumers factor in the error bars when comparing plan averages, especially those with smaller sample sizes.

Netflix

Video streaming is a good example of an application where the quality of a user's experience is more affected by bandwidth (capacity) than by latency (lag). The Netflix measurement streams real video from the live Netflix service¹. Traffic for this service is often delivered from within a broadband provider's network to improve performance. The transparent screens show plans with a sample size lower than we would typically include within reporting.

¹ This test runs on an idle connection, results may be affected with simultaneous usage. HD is measured at 3 Mbps, and UHD at 15 Mbps in accordance with Netflix guidelines.

Figure 23:

% that can Reliably Stream HD & UHD Videos from Netflix during Peak Hours.

Plan

4G Fixed Wireless

All Areas, n = 37



59%



32%



19%



8%

0-1 simultaneous UHD video streams



97%



81%



73%



65%

4+ simultaneous HD video streams

4G Fixed Wireless¹

Non-Fibre Areas, n = 23



61%



26%



13%



0%

0-1 simultaneous UHD video streams



96%



83%



74%



61%

4+ simultaneous HD video streams

LEO Satellite (100 Mbps)

Non-Fibre Areas, n = 54



100%



87%



35%



4%

1-2 simultaneous UHD video streams

LEO Satellite (Max)

Non-Fibre Areas, n = 44



100%



95%



75%



16%

2-3 simultaneous UHD video streams

Fibre 100

Fibre Areas, n = 51



100%



100%



100%



100%

4+ simultaneous UHD video streams

Fibre 500

Fibre Areas, n = 255



100%



100%



100%



100%

4+ simultaneous UHD video streams

Fibre Max

Fibre Areas, n = 231



100%



100%



100%



100%

4+ simultaneous UHD video streams

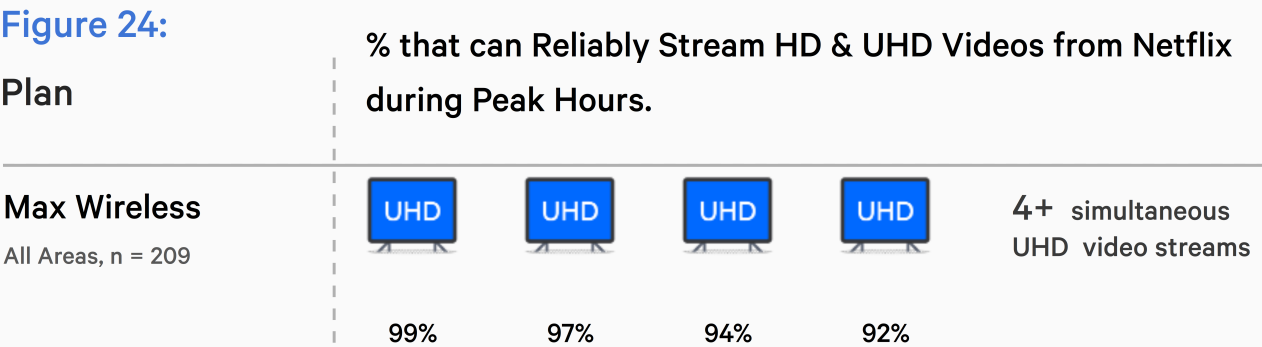
MBNZ Report 29, October 2026

¹ Results for 4G Fixed Wireless in non-Fibre areas are based on a sample size of 23 Whiteboxes.

Key Observations

- During peak hours, 95% of LEO Satellite households on Starlink's Residential Max plan were able to stream 2 simultaneous UHD Netflix streams, compared to 87% on the Residential 100 Mbps plan.
- 59% of households on Fixed Wireless across all areas of New Zealand were able to support a single UHD stream, and 65% of households could support at least 4 simultaneous HD streams.
- In non-Fibre areas, 61% of 4G Fixed Wireless households were able to support a single UHD stream, and 61% of households could support at least 4 simultaneous HD streams.
- 100% of households on Fibre 100 were able to stream 4 simultaneous UHD Netflix streams.
- 100% of households on Fibre 500 and Fibre Max plans achieved average download speeds able to support 4 simultaneous UHD Netflix streams.

Spark embedded results continue to mark the first insight into application performance for 5G Fixed Wireless technology within the MBNZ programme. Given that each RSP has different fixed wireless infrastructure, these results should not be directly compared across RSPs.



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Key Observations

- During peak hours, 92% of Spark units were able to support 4 simultaneous UHD Netflix streams.

Game Stores

Modern console games are delivered from online stores such as Steam, Xbox Live and PlayStation Network. These games can be tens or even hundreds of gigabytes so achieving high throughput from these stores is important to gamers. The game store measurement downloads a portion of a real game from three different game stores¹. Results will depend on the content distribution networks (CDNs) that host the games, and can vary depending on your RSP and where the CDNs are located.

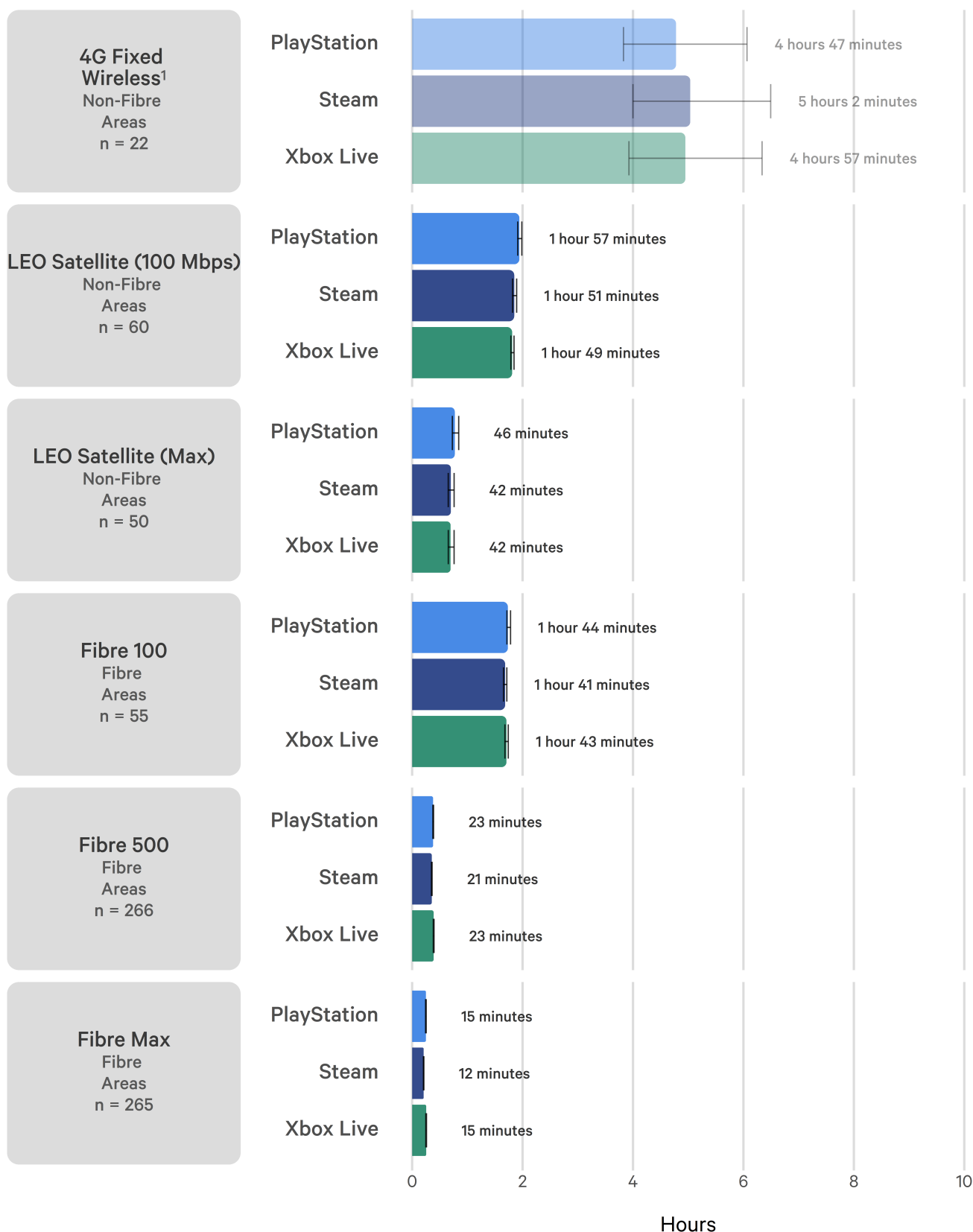
¹ This test runs on an idle connection, results may be affected with simultaneous usage.

Figure 25: Average Time Taken to Download Hogwarts Legacy by Plan during Peak Hours

Average time taken to download a file of 79.5 GB.

Average of household average download speed, lower is better.

The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 22).



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¹ Results for 4G Fixed Wireless in non-Fibre areas are based on a sample size of 22 Whiteboxes.

Key Observations

- Households on Fibre 100 were able to download Hogwarts Legacy on average in under 1 hour 45 minutes, while those on Fibre 500 plans averaged less than 25 minutes, and Fibre Max households averaged 15 minutes or less.
- The average time taken to download Hogwarts Legacy was around 5 hours across all game store providers for 4G Fixed Wireless plans in non-Fibre areas.
- LEO Satellite plans had average download speeds capable of downloading Hogwarts Legacy in around 45 minutes for Starlink's Residential Max plan, and under 2 hours for Starlink's Residential 100 Mbps plan.

Video Conferencing

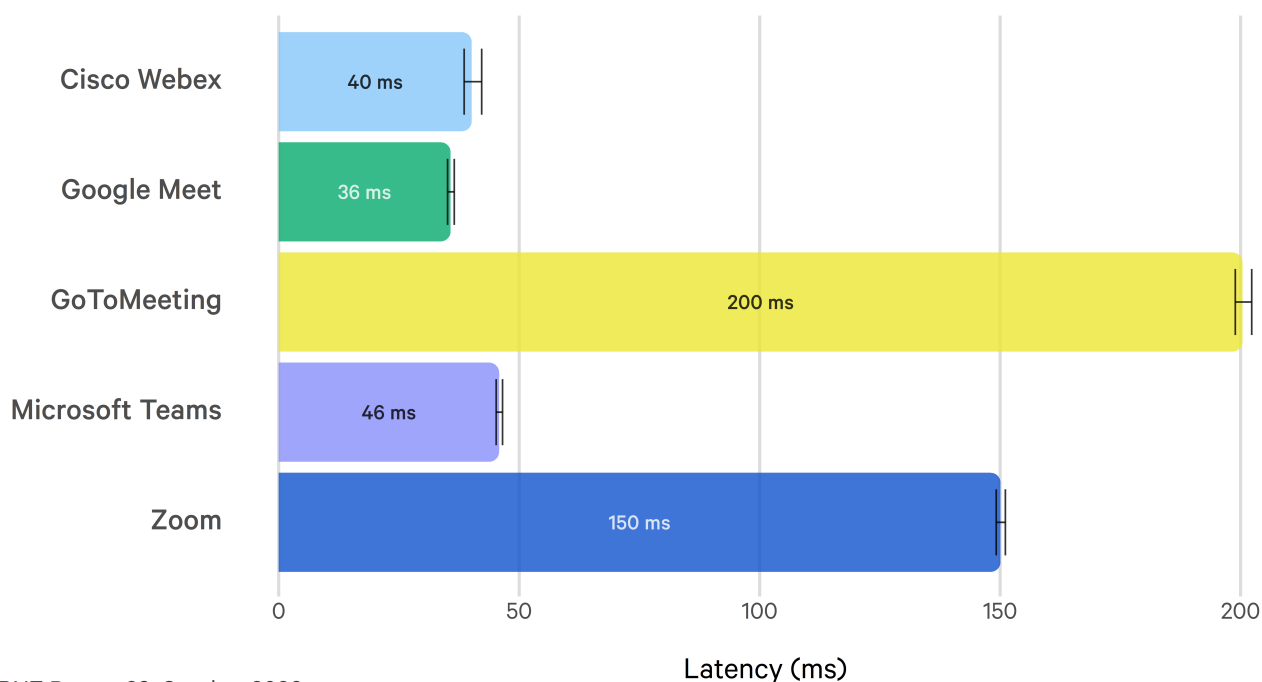
Latency is not the only factor impacting the quality of a video call. Packet loss and jitter can result in stuttering and dropouts, and these are not captured in the round-trip times measured here.

Application specific attributes such as audio/video encoding and proprietary communication protocols can lead to different performance characteristics for different services.

Figure 26: The Latency to Servers of Different Video Conferencing Services

Results are using free accounts only.

Average of household average latency, lower is better. Fibre plans only.



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Key Observations

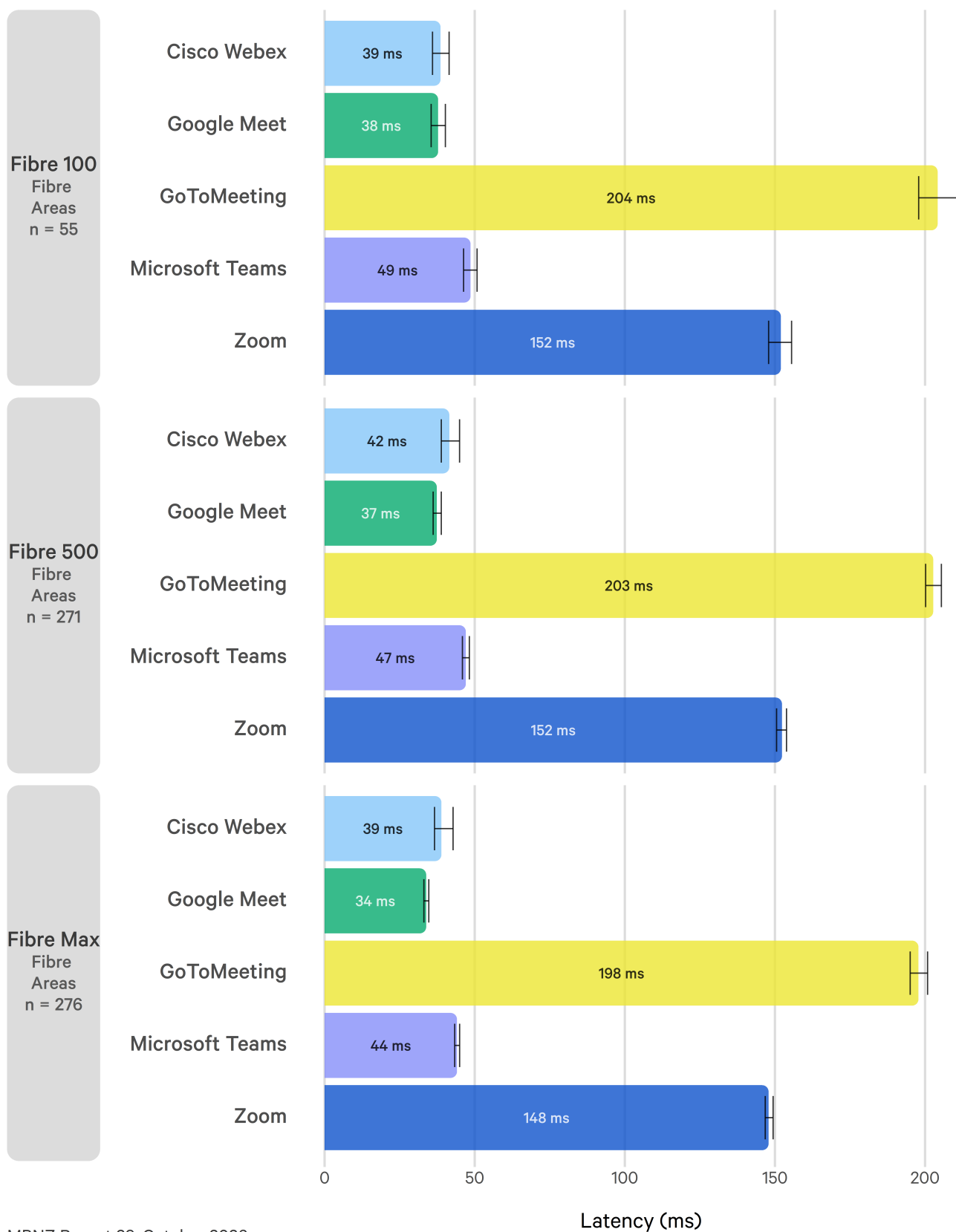
- Latency values for all video conferencing services remained consistent for Fibre plans compared to the previous report.
- Video conferencing services that use international servers usually see similar performance, however as the traffic is travelling further and subject to international routing, this could account for small differences in consumer experience like people talking over one another more frequently when using these unpaid services.
- The latency results above are shown for Fibre plans only. Results for video conferencing split by individual plans can be seen in the figure below, and results for all RSPs can be seen in Table 5.

Figure 27: The Latency to Servers of Different Video Conferencing Services by Plan

Fibre Areas only. Results are using free accounts only.

Average of household average latency, lower is better.

The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 55).



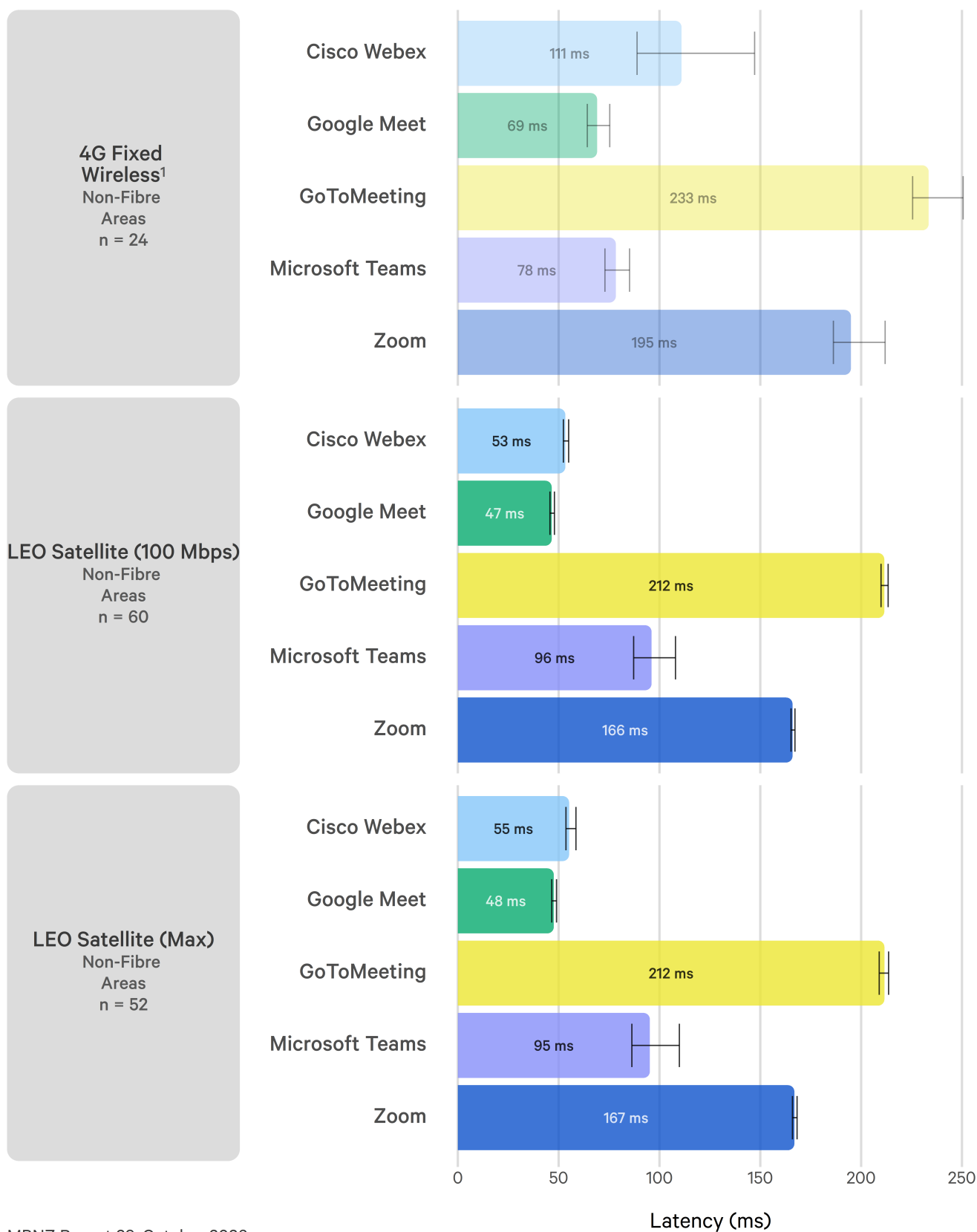
MBNZ Report 29, October 2026

Figure 28: The Latency to Servers of Different Video Conferencing Services by Plan

Non-Fibre Areas only. Results are using free accounts only.

Average of household average latency, lower is better.

The number of Whiteboxes contributing to each result is shown under each plan name (eg n = 24).



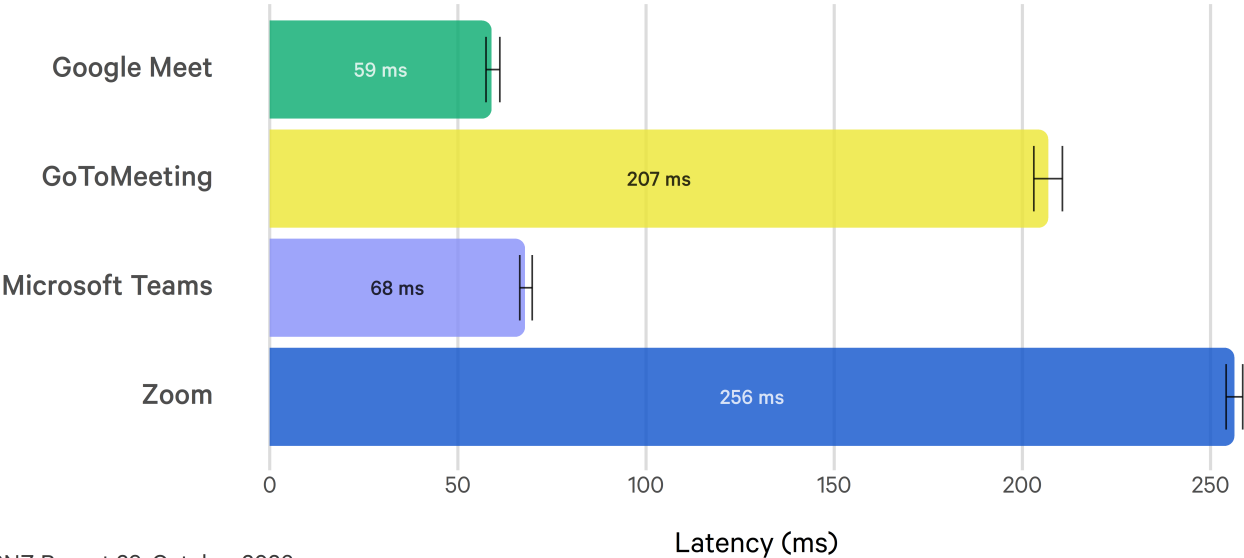
MBNZ Report 29, October 2026

¹ Results for 4G Fixed Wireless are based on a sample size of 24 Whiteboxes.

Spark embedded results continue to mark the first insight into application performance for 5G Fixed Wireless technology within the MBNZ programme. Given that each RSP has different fixed wireless infrastructure, these results should not be directly compared across RSPs.

Figure 29: The Latency to Servers of Different Video Conferencing Services for Spark’s 5G Fixed Wireless plan

*Results are using free accounts only.
Average of household average latency, lower is better.*



MBNZ Report 29, October 2026

Key Observations

- Results for video conferencing are broadly consistent with the previous report.



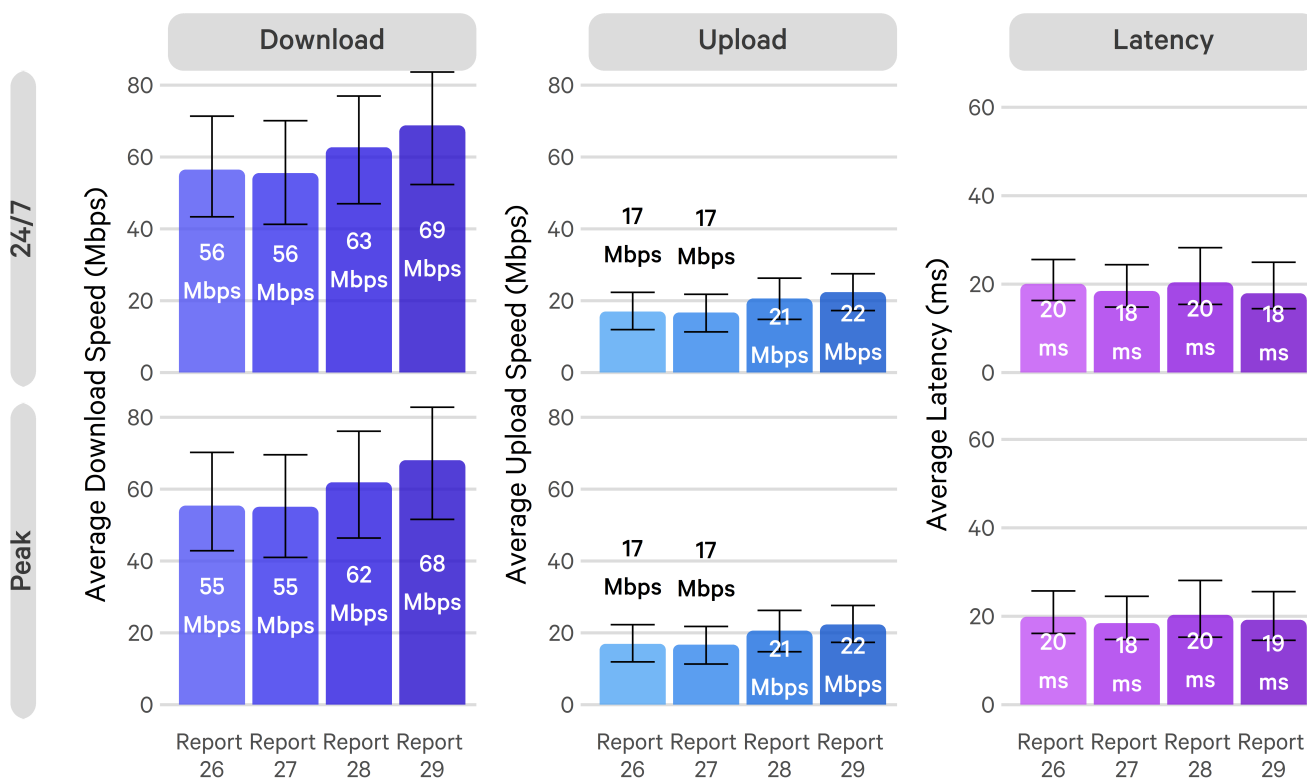
Previous Report Comparison

The following charts compare results from previous MBNZ reports across the past year for popular plans in New Zealand for quality of service speed metrics (download and upload).

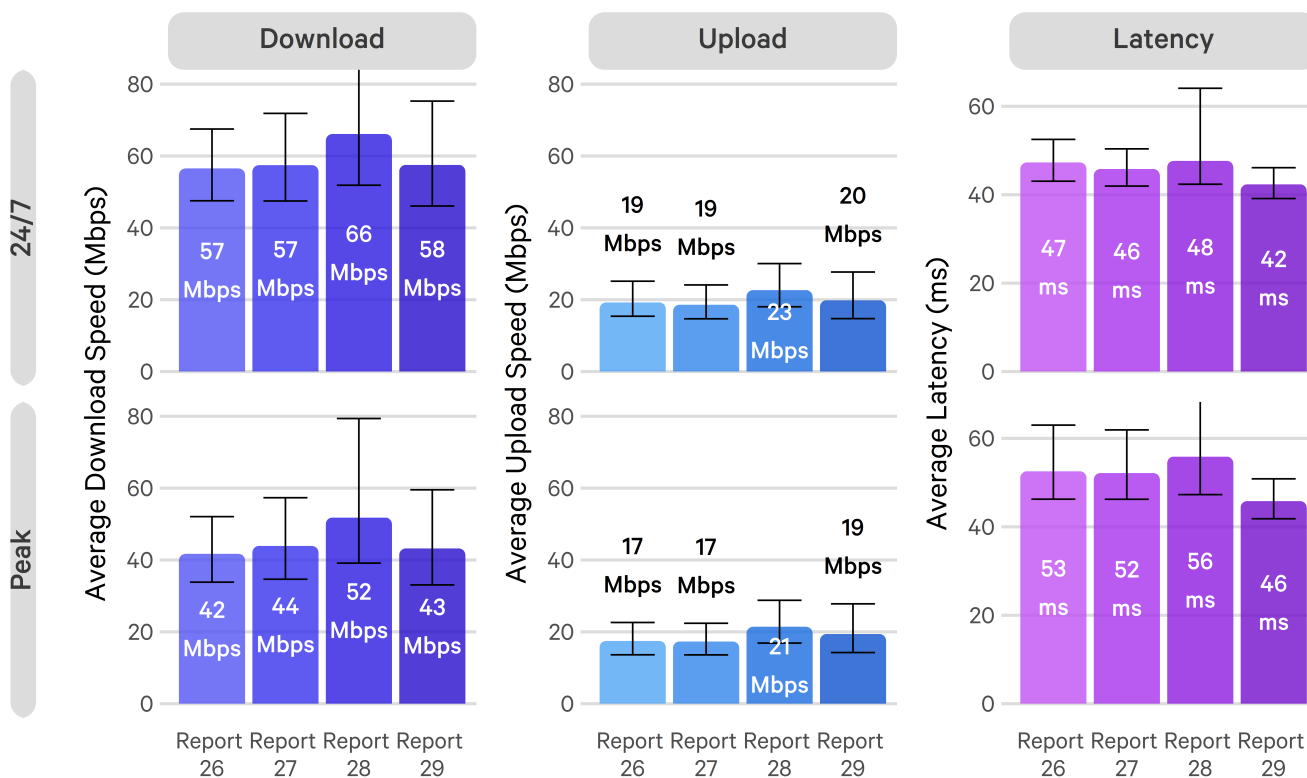
Table 1: Previous MBNZ Reports

MBNZ Report	Measurement Month	Publication Month
Report 26	November 2025	January 2026
Report 27	January 2026	April 2026
Report 28	April 2026	June 2026
Report 29	July 2026	October 2026

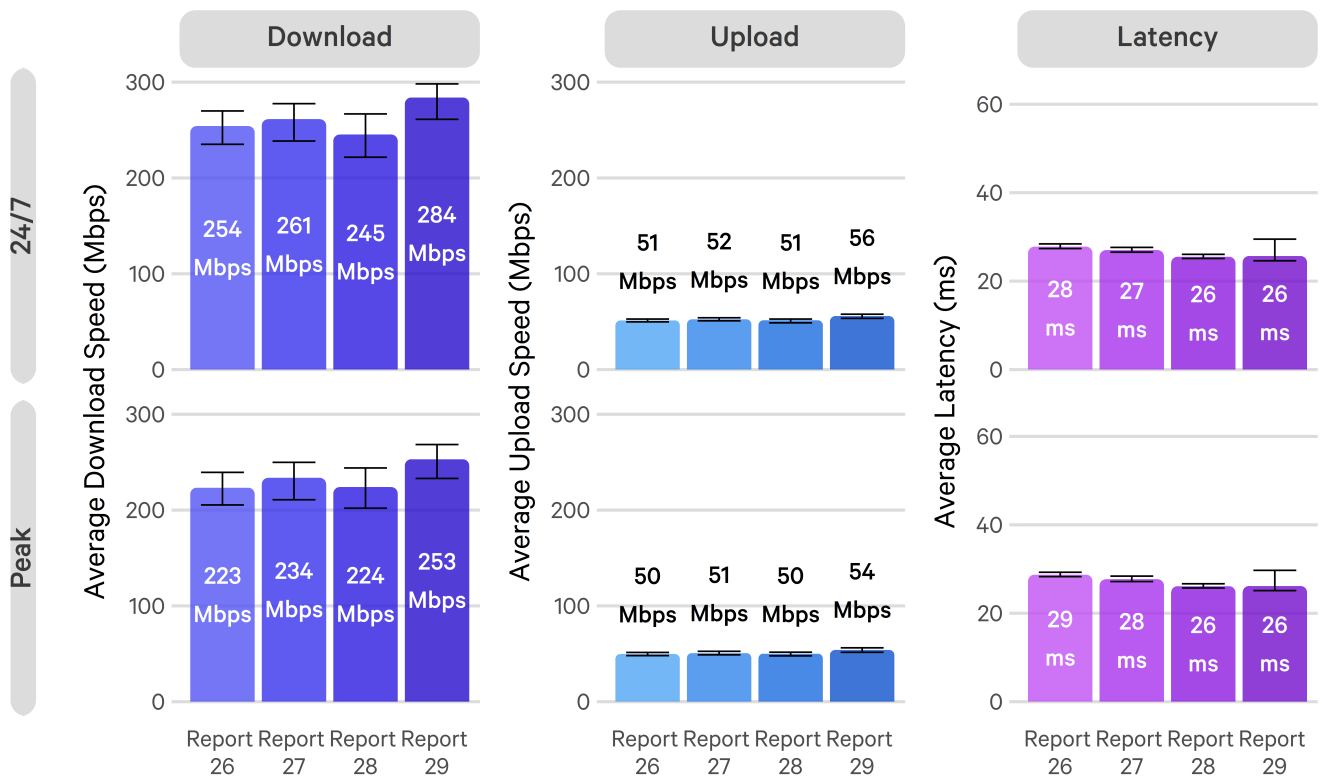
VDSL Performance across Reports



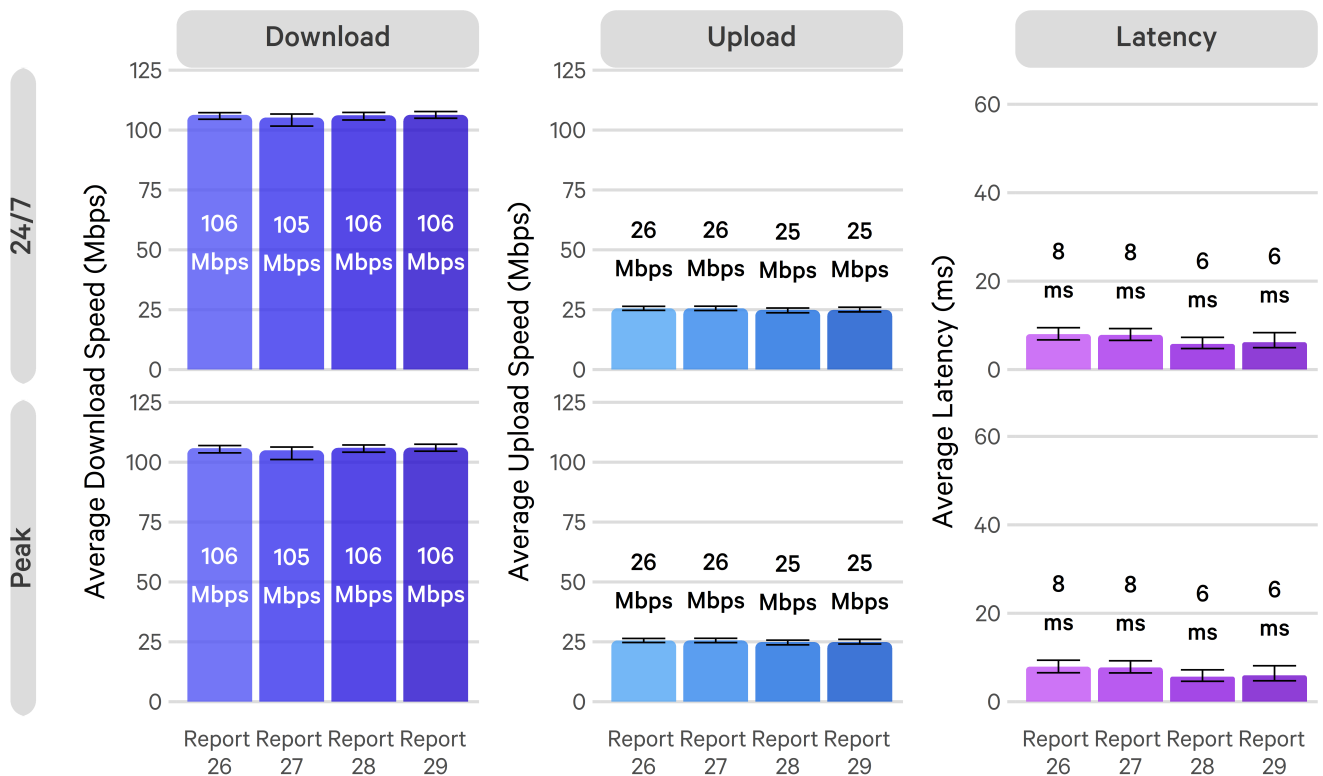
4G Fixed Wireless Performance across Reports



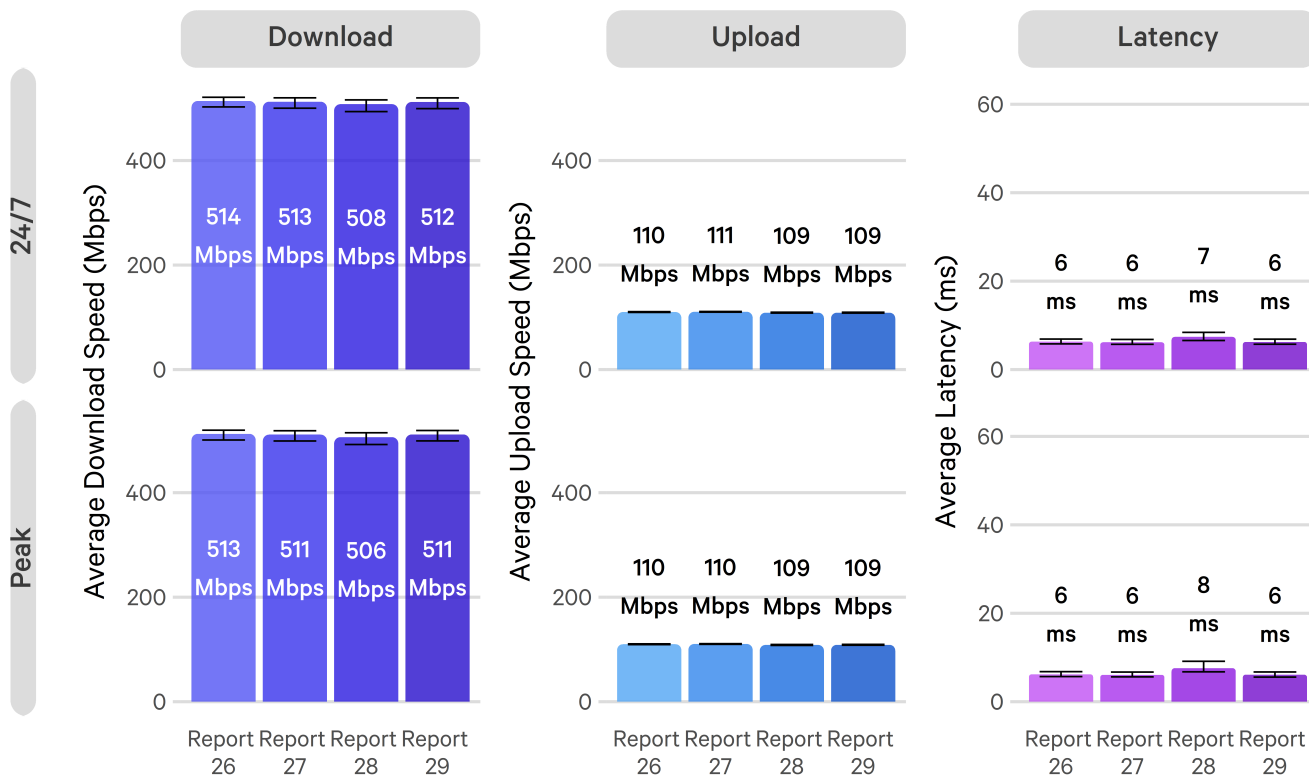
LEO Satellite (Max) Performance across Reports



Fibre 100 Performance across Reports



Fibre 500 Performance across Reports



Fibre Max Performance across Reports



How we test



Measuring home broadband across New Zealand

- The SamKnows Whitebox is a purpose-built testing agent that connects to your router.
- It runs regular, automated performance tests to record the quality and performance of your internet connection without interfering with your network.
- The Whitebox does not record any personal information or browsing history.

Join the MBNZ Programme!

We are always on the hunt for more volunteers to help us expand on the technologies reported on in the MBNZ programme. Joining our awesome volunteer network enables us to gather even more data so we can continue shining a light on different technologies, RSPs and regions in New Zealand! Sign up at the [following link](https://www.measuringbroadbandnewzealand.com/sign-up)¹, and if you're already a volunteer, encourage your friends and family to join too!

- Have 24/7 access to your own data.
- View all your data in one place via the SamKnows One platform.
- Create customised charts and save the results that mean the most to you.
- Track changes in your connection over time.

¹ <https://www.measuringbroadbandnewzealand.com/sign-up>

Our tests

Test	Definition
Download	The speed at which data can be transferred from the SamKnows test server to your device, measured in megabits per second (Mbps).
Upload	The speed at which information is transferred from your device to the SamKnows test server, measured in megabits per second (Mbps).
Latency	How long it takes a data packet to go from your device to our test server and back to your device, measured in milliseconds (ms). The shorter the latency, the better.
Latency Under Load	How long it takes a data packet to go from your device to our test server and back to your device while a download/upload test is running, measured in milliseconds (ms). The shorter the latency, the better.
Jitter	The variation in the delay of received packets, measured in milliseconds (ms). Essentially it is a measure of the stability of latency.
Packet Loss	Packet loss counts packets that are sent over a network and do not make it to their destination, measured as a percentage of packets lost out of all packets sent.
Disconnection	A disconnection means that latency measurement packets were lost for 30 seconds or longer. Measured as the median of household daily rates.
Video Conferencing	Measures round-trip latency and reachability of a selection of video conferencing services.
Social Media	Measures round-trip latency and reachability of a selection of major social media services.
Online Gaming	Measures performance for a number of major games and supporting services, such as game distribution platforms.
Video Streaming	Measures the highest bitrate, and therefore quality level, you can reliably stream from real content servers.
Webpage Loading Time	The time it takes for a specific webpage to fully load. This is a combination test that includes download, latency and DNS in one test that accurately mimics real-world usage.
CDN Measurements	Measures download performance for the same (or very similar) object from a variety of popular Content Delivery Networks over HTTP.
Voice over IP	Measures the suitability of a broadband connection for VoIP calls.

Glossary

Term	Definition
ADSL	Asymmetric digital subscriber line. A broadband connection that uses existing telephone lines to send data.
Advertised speed	The speed at which broadband services are typically advertised or marketed, usually described in Mbps (megabits per second). On some networks like ADSL or Fixed Wireless, these are not given as a general maximum but vary from line to line as they do not transmit data without depreciation across distance.
Broadband	A network service or connection which is defined as “always on”, as opposed to historical dial-up internet.
Broadband speed	The speed at which data is transmitted over a broadband connection, usually measured in megabits per second (Mbps).
Disconnection	A disconnection means that latency measurement packets were lost for 30 seconds or longer.
Download speed	The speed that data travels from our test server to your router. Measured in megabits per second (Mbps); higher is better.
Fibre	A broadband connection that uses Fibre-Optic cables to send data to and from a property directly. Sometimes referred to as FTTH (Fibre-to-the-home) or FTTP (Fibre-to-the-premises).
Fixed Wireless	A broadband connection that uses radio waves to provide internet access to a premises.
Latency	The time it takes for a data packet to travel from your router to our test server and back. Measured in milliseconds (ms); lower is better.
Latency under load	The time it takes for a data packet to travel from your router to our test server and back while a download/upload speed test is running. Measured in milliseconds (ms); lower is better.
LEO Satellite	Low Earth Orbit Satellite. A broadband connection that is transmitted wirelessly using a satellite and ground based satellite dish.
Mbps	Megabits per second. A unit measuring broadband speed. Mbps is the equivalent of 1,000 kilobits per second.
Packet loss	The percentage of packets that were lost somewhere between your router and our test server. Measured as a percentage of all packets sent; lower is better.
Peak hours	The time of day when people are typically using their internet connection, defined in New Zealand as between 7pm and 11pm.
RSP	Retail Service Provider. A company that provides consumers with access to the internet.
Upload speed	The speed that data travels from your router to our test server. Measured in Mbps (megabits per second); higher is better.
VDSL	Very high speed digital subscriber line. A broadband connection that allows higher speeds than ADSL technologies.
WISP	Wireless Internet Service Provider. A company that delivers internet access to customers by transmitting data wirelessly from local towers to a receiver installed at the user’s home.

Table 2: All RSPs Included in MBNZ Programme

All RSPs Included in MBNZ
2degrees & Slingshot
Spark (Including Skinny & Bigpipe)
Starlink New Zealand
One New Zealand (Including Farmside)
Mercury
Sky New Zealand
Lightwire
Contact Energy
Voyager
Inspire Net
Electric Kiwi
Netspeed
Ultimate Broadband
Full Flavour
PureLink
WorldNet

Table 3: Download, Upload and Latency Performance by Plan

Plan	SFA Area	Peak or Off-Peak	Number of Units	Average Download (Mbps)	Average Upload (Mbps)	Average Latency (ms)
VDSL	All Areas	24/7	14	69 Mbps	22 Mbps	18 ms
	All Areas	Peak	14	68 Mbps	22 Mbps	19 ms
	Non-Fibre Areas	24/7	14	69 Mbps	22 Mbps	18 ms
	Non-Fibre Areas	Peak	14	68 Mbps	22 Mbps	19 ms
4G Fixed Wireless	All Areas	24/7	36	58 Mbps	20 Mbps	42 ms
	All Areas	Peak	36	43 Mbps	19 Mbps	46 ms
	Non-Fibre Areas	24/7	22	52 Mbps	15 Mbps	44 ms
	Non-Fibre Areas	Peak	22	37 Mbps	14 Mbps	46 ms
LEO Satellite (100 Mbps)	Non-Fibre Areas	24/7	60	97 Mbps	49 Mbps	24 ms
	Non-Fibre Areas	Peak	60	92 Mbps	48 Mbps	25 ms
LEO Satellite (Max)	Non-Fibre Areas	24/7	51	284 Mbps	56 Mbps	26 ms
	Non-Fibre Areas	Peak	51	253 Mbps	54 Mbps	26 ms
Fibre 100	Fibre Areas	24/7	55	106 Mbps	25 Mbps	6 ms
	Fibre Areas	Peak	55	106 Mbps	25 Mbps	6 ms
Fibre 500	Fibre Areas	24/7	270	512 Mbps	109 Mbps	6 ms
	Fibre Areas	Peak	270	511 Mbps	109 Mbps	6 ms
Fibre Max	Fibre Areas	24/7	266	880 Mbps	507 Mbps	5 ms
	Fibre Areas	Peak	266	875 Mbps	506 Mbps	5 ms
5G Fixed Wireless	All Areas		7			
WISP Fixed Wireless	All Areas		57			

Table 4: Fibre 500 and Fibre Max Download, Upload and Latency Summary by RSP

Plan	RSP	Peak or Off-Peak	Number of Units	Average Download (Mbps)	Average Upload (Mbps)	Average Latency (ms)
Fibre 500	2degrees & Slingshot	24/7	68	521 Mbps	111 Mbps	6 ms
		Peak	68	519 Mbps	111 Mbps	5 ms
	Mercury	24/7	42	510 Mbps	112 Mbps	6 ms
		Peak	42	509 Mbps	112 Mbps	6 ms
	One New Zealand	24/7	40	527 Mbps	115 Mbps	4 ms
		Peak	40	526 Mbps	115 Mbps	4 ms
	Spark	24/7	74	520 Mbps	108 Mbps	6 ms
		Peak	74	520 Mbps	108 Mbps	6 ms
Fibre Max	2degrees & Slingshot	24/7	89	887 Mbps	501 Mbps	6 ms
		Peak	89	878 Mbps	499 Mbps	6 ms
	Sky New Zealand	24/7	45	922 Mbps	519 Mbps	6 ms
		Peak	45	920 Mbps	518 Mbps	6 ms
	Spark	24/7	41	893 Mbps	511 Mbps	4 ms
		Peak	41	884 Mbps	509 Mbps	4 ms

Table 5: Latency to Various Video Conferencing Services by RSP, Fibre Plans Only

Video Conferencing Service	RSP	Number of Units	Average Latency
Zoom	2degrees & Slingshot	162	151 ms
	Spark	116	145 ms
	Mercury	76	144 ms
	One New Zealand	74	153 ms
	Sky New Zealand	63	151 ms
Microsoft Teams	2degrees & Slingshot	162	45 ms
	Spark	116	47 ms
	Mercury	76	45 ms
	One New Zealand	74	44 ms
	Sky New Zealand	63	45 ms
GoToMeeting	2degrees & Slingshot	162	195 ms
	Spark	116	201 ms
	Mercury	75	204 ms
	One New Zealand	74	187 ms
	Sky New Zealand	63	197 ms
Google Meet	2degrees & Slingshot	162	37 ms
	Spark	116	36 ms
	Mercury	76	34 ms
	One New Zealand	74	36 ms
	Sky New Zealand	63	35 ms
Cisco Webex	2degrees & Slingshot	162	52 ms
	Spark	116	37 ms
	Mercury	76	34 ms
	One New Zealand	74	35 ms
	Sky New Zealand	63	34 ms