

Reports of the Auditor General of Canada
to the Parliament of Canada

Connectivity in Rural and Remote Areas

Report 2



**Independent Auditor's
Report | 2023**



Office of the
Auditor General
of Canada

Bureau du
vérificateur général
du Canada

Performance audit reports

This report presents the results of a performance audit conducted by the Office of the Auditor General of Canada (OAG) under the authority of the *Auditor General Act*.

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- report both positive and negative findings
- conclude against the established audit objectives
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At a Glance



Overall message

Connectivity to high-speed Internet and mobile cellular services is not equal for all Canadians. Since the release of Canada's connectivity strategy in 2019, Internet and mobile cellular coverage has improved both nationally and in rural and remote communities. However, a digital divide still exists between people living in urban areas and people living in rural and remote areas, including First Nations reserves.

The strategy introduced targets for high-speed Internet and included a suite of funding initiatives to support infrastructure projects intended to improve connectivity in rural and remote areas. However, both Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission (CRTC) had few indicators to measure progress on the quality and affordability of Internet and mobile cellular access. The approach by both the department and the CRTC to measuring affordability focused only on price, without considering income. However, price alone does not indicate whether a Canadian household can afford Internet or mobile cellular service. Connectivity, if unaffordable or of poor quality, is no more of an improvement to the lives of Canadians living on First Nations reserves or in rural and remote areas than having no connectivity at all.

In addition, we found delays in the rollout of a number of federal connectivity initiatives along with a small percentage of funding spent under these initiatives, resulting in some Canadians waiting even longer for access to high-speed Internet and mobile cellular connectivity.

Being connected is no longer a luxury but a basic essential service for Canadians. This fact became more apparent as a result of the COVID-19 pandemic, which transformed how many Canadians live, work, and learn. Without access to fast, reliable, and affordable high-speed Internet and mobile cellular services, people residing in remote communities do not have the same opportunities as people residing in more urban areas. In other words, people in remote communities cannot participate in the digital economy and cannot access online education, work, and medical and government services.

Key facts and findings



- The federal government's **minimum high-speed Internet connectivity target** for all Canadians: **50/10 Mbps** (50 megabits per second for downloads and 10 megabits per second for uploads).
- High-speed Internet and mobile cellular connectivity is not available for Canadians in many rural, remote, and First Nations communities, affecting their ability to access online services and participate in the digital economy.
- Results as of 2021: **90.9%** of households had access to minimum connection speeds across Canada but only **42.9%** of households on **First Nations reserves** had access at those speeds and **only 59.5%** of households in **rural and remote areas** had access at those speeds.
- One key factor related to access—affordability—is not fully measured by Innovation, Science and Economic Development Canada or by the Canadian Radio-television and Telecommunications Commission.
- The federal government committed to connecting **90%** of Canadians to high-speed Internet by **2021** and **98%** of Canadians by **2026** and **100%** of Canadians by **2030**.
- Innovation, Science and Economic Development Canada has improved its management of spectrum (radio waves that are used for wireless communication).
- 10-year spending commitments: **\$8 billion** of funding committed to connectivity. Of the federal funding available for use by the 2022–23 fiscal year, **40% was spent** as of January 2023 (that's **\$949 million** of the **\$2.4 billion available** by the 2022–23 fiscal year).

See **Recommendations and Responses** at the end of this report.

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Introduction

Background

Internet and mobile cellular connectivity for all Canadians

2.1 In 2019, the Government of Canada released High-Speed Access for All: Canada's Connectivity Strategy, in which it committed to closing the urban and rural digital divide by 2030. This divide is between Canadians with and Canadians without high-speed Internet access. The government acknowledges that Internet access is not a luxury. It is a necessity that allows Canadians to participate in the digital economy and to access online education, work, and medical and government services.

2.2 The connectivity strategy defines objectives for delivering Internet (or fixed broadband) and mobile cellular connectivity to Canadians. The minimum high-speed Internet connectivity target for all Canadians is 50 megabits per second for downloading data and 10 megabits per second for uploading data (50/10 Mbps). The government committed to the goal of bringing these speeds to 90% of Canadians by 2021, 98% by 2026, and 100% by 2030.

2.3 Smartphones and other mobile devices are also increasingly integral to the daily lives of Canadians. Therefore, a fully connected Canada must also include access to high-speed mobile cellular services. The government recognizes that there are substantial gaps in mobile cellular connectivity, particularly along rural and remote highways and roads and on First Nations reserves. These gaps can pose safety concerns for people in need of emergency services. As a result, the government also committed in the connectivity strategy to the goal of improving mobile cellular services from coast to coast to coast.

2.4 The connectivity strategy is the government's plan to coordinate federal initiatives to ensure a connected Canada. Along with initiatives led by Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission, connectivity efforts are also supported through initiatives administered by the Canada Infrastructure Bank, Infrastructure Canada, Indigenous Services Canada, and the Canada Revenue Agency. Collectively, these initiatives offer various types of support, such as tax incentives or funding for projects through contributions or loans. Some initiatives were in place prior to the development of the connectivity strategy, while others were announced as part of federal budgets and economic statements since 2019. This brings federal funding commitments for high-speed connectivity to more than \$8 billion over more than 10 years.

Roles and responsibilities

2.5 **Innovation, Science and Economic Development Canada.** The department has overall responsibility for Canada's 2019 connectivity strategy and for ensuring that the strategy's goals are met. It is responsible for supporting access to Internet and mobile cellular connectivity, setting legislative and policy frameworks, and managing **spectrum**¹ frequencies efficiently and effectively to maximize public benefits. The department also leads whole-of-government reporting on the suite of federal connectivity initiatives, which includes providing regular updates on the investments, progress, and impact of all federal connectivity projects across Canada.

2.6 **The Canadian Radio-television and Telecommunications Commission (CRTC).** The CRTC is an administrative tribunal that regulates and supervises Canadian broadcasting and telecommunications. It operates at arm's length from the Government of Canada. The CRTC collects data on connectivity by conducting an annual survey of telecommunications service providers that offer Internet or wireless services. It uses that data to produce updates on Internet and mobile cellular connectivity coverage across Canada, and reports its updates through its Communications Market Reports. The CRTC also shares connectivity data with Innovation, Science and Economic Development Canada so that the department can update its internal database on connectivity coverage and the public National Broadband Internet Service Availability Map.

2.7 The federal government is not alone in supporting the development of Internet and mobile cellular connectivity in Canada. A range of stakeholders also have a role to play in achieving the federal government's national connectivity objectives, including other levels of government and the private sector.

Previous audit work

2.8 In 2018, the Office of the Auditor General of Canada published Report 1—Connectivity in Rural and Remote Areas. The audit found that there was no strategy in place to meet the connectivity needs of Canadians in rural and remote areas. People in these areas had less access to important online services and did not have information about when they could expect better access.

Focus of the audit

2.9 This audit focused on whether Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission had improved the accessibility, affordability, and quality of high-speed Internet and mobile cellular connectivity for Canadians in rural and remote areas.

1 **Spectrum**—The full range of radio waves that are used for wireless communication.

2.10 This audit is important because connectivity is an essential service that provides for personal and professional communications. Connectivity also supports Canadians as they grow businesses, apply for jobs, pursue online education, and access medical and government services. In 2019, the Government of Canada recognized that high-speed connectivity will become more critical as Canada's economy evolves and embraces the technologies of tomorrow. The **coronavirus disease (COVID-19)**² pandemic accelerated this evolution as it shifted much of Canadians' lives online. This made it more important than ever that individual Canadians and small businesses in every corner of this country have access to fast and reliable high-speed Internet and mobile cellular connectivity.

2.11 More details about the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this report.

Findings and Recommendations

Innovation, Science and Economic Development Canada developed a national connectivity strategy, but many rural and remote communities still do not have access to high-speed Internet and mobile cellular services

Why this finding matters

2.12 This finding matters because Canadians need access to affordable and quality high-speed Internet and mobile cellular connectivity to participate in the digital economy and to access online education, work, and medical and government services. Connectivity is also a driver of economic growth for communities across the country—whether they are urban, rural, or remote.

2.13 Measuring progress on the affordability and quality of Internet and mobile cellular connectivity is as important as having access to these services. Connectivity that is unaffordable or of poor quality will be little improvement over having no connectivity at all for Canadians. The impact of unaffordable access is felt by those communities who need it most, namely those living on First Nations reserves or in rural and remote areas.

² **Coronavirus disease (COVID-19)**—The disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Context

2.14 In 2018, both the House of Commons Standing Committee on Industry, Science and Technology and the Office of the Auditor General of Canada recommended that Innovation, Science and Economic Development Canada develop a comprehensive national broadband strategy to meet the connectivity needs of Canadians in rural and remote areas. Our office recommended that the department

- define a minimum level of reliable and high-quality service to be made available to Canadians
- set clear timelines to achieve this service
- estimate proper resourcing for improving broadband deployment
- monitor whether improved access leads to adoption of those Internet services

Strategy in place to improve rural and remote connectivity

Findings

2.15 In 2019, Innovation, Science and Economic Development Canada published the Government of Canada's High-Speed Access for All: Canada's Connectivity Strategy, responding to a recommendation in our 2018 audit report, Report 1—Connectivity in Rural and Remote Areas. We found that the strategy included quantitative and time-bound targets for high-speed Internet. The government established a connectivity speed goal of 50 megabits per second for downloads and 10 megabits per second for uploads (50/10 Mbps) for Internet access. The government set out timelines for this achievement to connect 90% of Canadians by 2021, 95% by 2026 (later changed to 98%), and 100% by 2030.

2.16 The strategy also committed the government to improving access to the latest mobile wireless services where Canadians live and work and along highways and major roads. However, we found that the strategy contained no targets or timelines for this mobile cellular connectivity goal.

2.17 Addressing another recommendation from the 2018 audit report, the strategy included a suite of funding initiatives to support infrastructure projects intended to improve connectivity in rural and remote areas. The connectivity strategy is the government's plan to coordinate the more than \$8 billion in federal investments in connectivity announced since the 2014–15 fiscal year. However, we found that the department had not yet identified the total funding needed under this plan to meet the 2030 goal of bringing affordable and quality high-speed Internet to 100% of Canadians.

2.18 In 2018, we also recommended that the department monitor, as part of a national strategy, whether investments to improve access to Internet infrastructure would lead to an increase in the number of Canadians subscribing to Internet services. We found that although the department tracked improvements in Internet and mobile cellular coverage across the country, it was not monitoring and reporting on actual Internet and mobile cellular adoption rates stemming from the billions of federal investments committed.

2.19 We also found that the 2019 connectivity strategy did not include the requirement to re-evaluate the minimum target speed of 50/10 Mbps to ensure that it will still be considered a sufficient minimum high-speed standard by 2026 and 2030. The strategy stated that efforts would be made to ensure that funded projects were scalable to faster speeds in the future and acknowledged that connectivity demands were expected to continue to increase. However, the strategy also noted that the available networks in rural and remote communities were not meeting these growing needs, such as in medical facilities. In these types of facilities, connectivity requirements are constantly increasing as new technologies emerge.

Recommendation

- 2.20 Innovation, Science and Economic Development Canada should
- determine the funding that will be needed to bring affordable and quality high-speed Internet to 100% of Canadians by 2030 and, if needed, seek resources to meet this target
 - establish a quantitative and time-bound mobile cellular connectivity target
 - monitor actual Internet and mobile cellular adoption rates as a result of federal investments
 - evaluate whether the Internet speed goal of 50 megabits per second for downloads and 10 megabits per second for uploads will still be a sufficient minimum standard to enable Canadians to meet their professional and personal requirements by the connectivity strategy's 2026 and 2030 target dates, and update the strategy if needed

Innovation, Science and Economic Development Canada's response. Agreed.

See **Recommendations and Responses** at the end of this report for detailed responses.

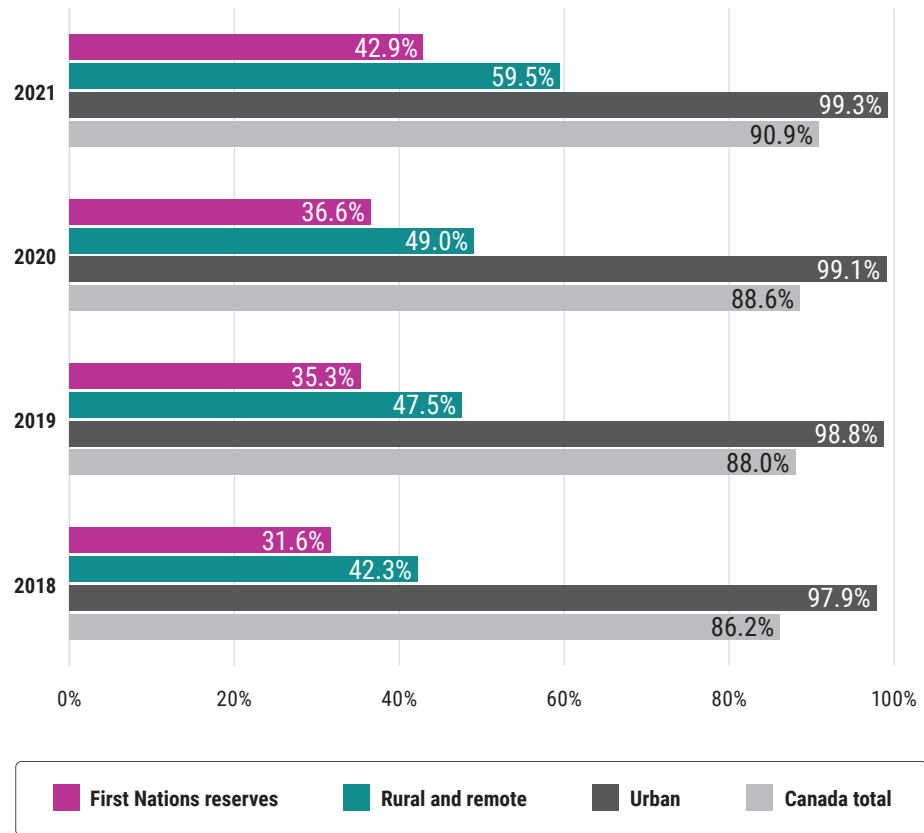
Limited access to Internet and mobile cellular connectivity for many Canadians

Findings

2.21 We found that since our 2018 audit, the federal government had made progress in improving access to Internet connectivity for Canadian households. Our calculations, using data provided by Innovation, Science and Economic Development Canada, showed that the overall coverage in Canada increased from 86.2% in 2018 to 90.9% in 2021. The government therefore met its connectivity target to bring Internet speeds of 50 megabits per second for downloads and 10 megabits per second for uploads (50/10 Mbps) to 90% of Canadian households by 2021. However, the remaining households that did not have access to these Internet speeds represented 1.4 million unserved or underserved households.

2.22 We found that availability of Internet access at target speeds of 50/10 Mbps in urban areas reached 99.3% by the end of 2021. However, in rural and remote areas we found only 59.5% of households had access to Internet coverage at the target speeds and on First Nations reserves only 42.9% of households had access (Exhibit 2.1). These figures demonstrated that there was still a long way to go to close the connectivity gap.

Exhibit 2.1—The percentages of rural and remote areas and First Nations reserves with access to minimum Internet speeds of 50/10 Mbps* lagged behind urban areas (2018–2021)



* 50 megabits per second (Mbps) for downloads and 10 Mbps for uploads

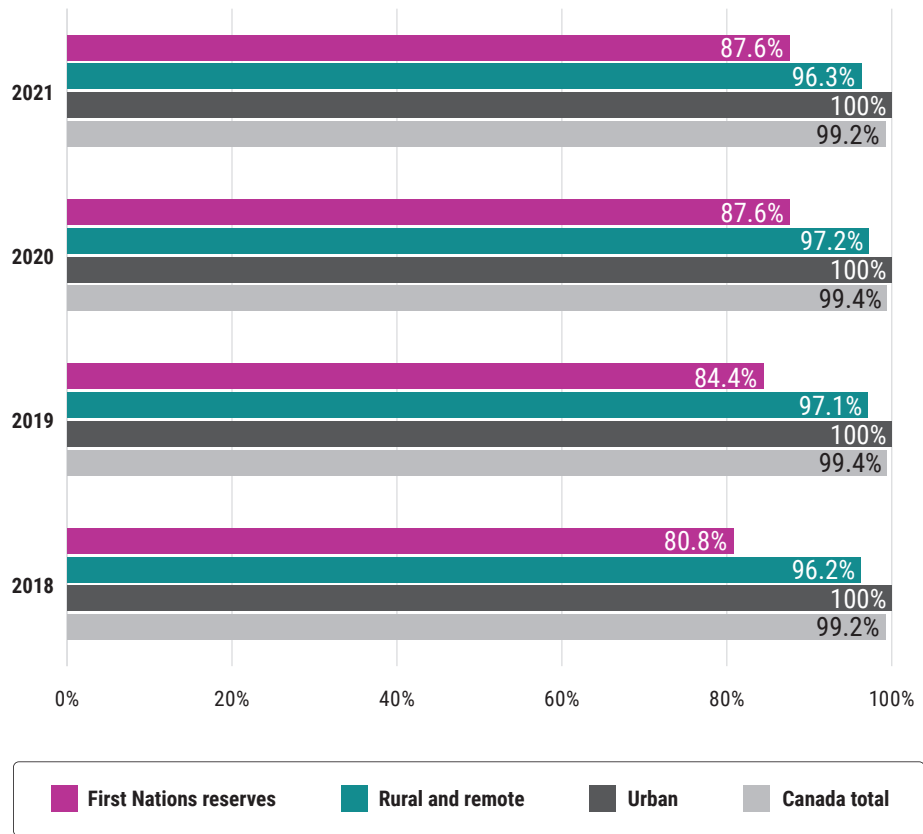
Note: Percentages have been rounded.

Source: Based on data sets provided by Innovation, Science and Economic Development Canada

2.23 The 2019 connectivity strategy did not include targets for mobile cellular connectivity. However, we noted that the Canadian Radio-television and Telecommunications Commission (CRTC) had established a mobile cellular target to reach 100% coverage of **long-term evolution (LTE)**³ in households by 2026. We found that by the end of 2021, 99.2% of Canadian households had access to mobile coverage. However, we also found that First Nations reserves lagged behind in mobile cellular connectivity, with only 87.6% coverage in 2021 (Exhibit 2.2).

³ **Long-term evolution (LTE)**—A protocol or standard used for communications between a mobile phone and cell towers in mobile networks. LTE is also referred to as 4G (fourth generation) cellular technology.

Exhibit 2.2—The percentages of rural and remote areas and First Nations reserves with access to mobile cellular coverage* lagged behind urban areas (2018–2021)



* This mobile coverage is for long-term evolution (LTE) only. LTE is also referred to as 4G (fourth generation) cellular technology.

Note: Percentages have been rounded.

Source: Based on data sets provided by Innovation, Science and Economic Development Canada

2.24 Telecommunications service providers are required to provide data related to mobile cellular connectivity coverage to the CRTC and to Innovation, Science and Economic Development Canada. However, we found that neither organization verified any of the data, nor did they require service providers to submit mobile coverage data in a consistent manner or according to an established methodology.

Recommendation

2.25 Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission should

- establish consistent methods for telecommunications service providers to report the coverage of mobile cellular connectivity
- verify the mobile cellular connectivity data provided by telecommunications service providers

Response of each entity. *Agreed.*

See **Recommendations and Responses** at the end of this report for detailed responses.

Connectivity data not always complete or timely

Findings

2.26 The quality of connectivity is an essential aspect of accessibility. Households not only need to have coverage in their areas, but that coverage needs to be reliable. We found that, although the Canadian Radio-television and Telecommunications Commission (CRTC) collected data on Internet speeds available to households across Canada, it did not routinely collect data on other aspects of service quality. This included signal delays and jitter, which lead to video pixilation and “freezing.” The quality of the service provided is important, particularly for sensitive or real-time broadband applications such as video calls with health-care providers.

2.27 Innovation, Science and Economic Development Canada and the CRTC maintained data in a shared database that described the type and availability of Internet and mobile cellular connectivity in Canada. This database was updated with information collected from various sources, such as federally funded connectivity projects, and it was used by the department to update the National Broadband Internet Service Availability Map.

2.28 We found that 21 months had elapsed between the department’s last 2 map updates, on 21 January 2021 and 20 October 2022. In that same time period, some federal and provincial connectivity initiatives were rolling out and new connectivity projects were being considered for approval and funding. In our view, this long gap between map updates meant that applicants for these initiatives did not have up-to-date information on the unserved and underserved areas of Canada. This is information they could have used to develop their project proposals and funding applications. As a consequence of this gap, applicants potentially spent money and time on applications that were ineligible or that would need to be revised.

2.29 We also spoke with stakeholders representing Indigenous organizations, industry associations, and telecommunications service providers to understand their connectivity needs and concerns and their experiences as applicants to the federal connectivity initiatives. We were told that network coverage information on the National Broadband Internet Service Availability Map was not only out-of-date but also sometimes inaccurate. One potential consequence of these inaccuracies was that households or communities without coverage could be shown to have coverage. As a result, they could be deemed ineligible under

federal connectivity initiatives that prioritize funding to unserved or underserved areas. We also found that the onus was on stakeholders to demonstrate that the mapping information was incorrect.

Recommendation

2.30 Innovation, Science and Economic Development Canada should provide more regular and timely updates to the public National Broadband Internet Service Availability Map in order for applicants to federal connectivity initiatives to better plan connectivity projects.

Innovation, Science and Economic Development Canada's response. Agreed.

See **Recommendations and Responses** at the end of this report for detailed responses.

Recommendation

2.31 The Canadian Radio-television and Telecommunications Commission should routinely collect and verify data from telecommunications service providers on other aspects of connectivity quality in addition to speed.

The Canadian Radio-television and Telecommunications Commission's response. Agreed.

See **Recommendations and Responses** at the end of this report for detailed responses.

Progress on affordability not measured

Findings

2.32 Along with coverage and quality, affordability is also an essential element of Internet and mobile cellular connectivity. Together, these elements determine whether Canadians can participate in the digital economy and access online education, work, and medical and government services. Canada's connectivity strategy noted that the number one challenge rural and remote communities identified as impeding their economic growth was access to affordable high-speed Internet.

2.33 Innovation, Science and Economic Development Canada's definition of affordability is found in the strategy and is based on price. We found that the department assessed prices for telecommunications services in relation to available comparative prices within Canada and internationally. However, we found that the strategy did not include any national indicators or targets to evaluate whether its affordability outcomes were being achieved.

2.34 We also found that income was not considered in the strategy's definition of affordability. However, income has been recognized as a component in affordability. Examples include the following:

- The department acknowledged that the concept of affordability is multi-faceted and includes factors such as income, pricing, and the speed and packages offered.
- The Canadian Radio-television and Telecommunications Commission recognized that affordability is tied to a person's means, such as their income and access to credit.
- Others, including Canada's parliamentary Standing Committee on Industry, Science and Technology (subsequently renamed the Standing Committee on Industry and Technology) and the Organisation for Economic Co-operation and Development, noted the importance of household income in measuring the affordability of telecommunication services.

2.35 In our view, consideration of income is essential in measuring affordability because prices alone do not determine whether a Canadian household can afford Internet or mobile cellular service.

Recommendation

2.36 Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission should identify, collect, and analyze data, including consideration of household income, to measure progress against the affordability objective of Canada's connectivity strategy to support improved Internet and mobile cellular connectivity in rural and remote areas, including in Indigenous communities.

Response of each entity. *Agreed.*

See **Recommendations and Responses** at the end of this report for detailed responses.

Mechanisms in place to coordinate connectivity efforts

Findings

2.37 We found that, overall, there was good governance in place to oversee and coordinate the federal government's connectivity efforts. While Canada's connectivity strategy was not officially designated as a horizontal initiative, we found that it did have a number of the elements of a horizontal initiative that helped facilitate informed decision making among federal partners and the reporting of progress toward shared outcomes. For example, the government developed a Federal Broadband Coordination Framework for connectivity initiatives.

2.38 Innovation, Science and Economic Development Canada also established federal level working groups and committees, including at the senior level; a committee to bring together federal, provincial, and territorial officials; and a working group for Indigenous stakeholders. These committees and working groups were set up to

- set national broadband priorities and align federal efforts, including data, mapping, and whole-of-government reporting across the departments and agencies involved, to avoid duplication
- coordinate planning efforts and support collaboration across government levels
- address federal broadband challenges specific to Indigenous communities

2.39 The department also established memoranda of understanding (MOUs) with 7 provinces between July 2021 and July 2022. Six of these MOUs coordinated provincial connectivity initiatives with the department's Universal Broadband Fund initiative for co-funded projects. We found that 5 of the provinces reduced the administrative burden by aligning application processes and criteria where possible. We also found that 6 of the MOUs included a commitment that the provinces would provide the department with data on connectivity coverage from the co-funded projects. The department would use that data to update the public National Broadband Internet Service Availability Map.

Connectivity spending and project approvals rolled out slowly

Why this finding matters

2.40 This finding matters because the timely administration and efficient coordination of federally funded projects under the connectivity initiatives are central to meeting the federal government's target of high-speed Internet access for all by 2030.

Context

2.41 Since the 2014–15 fiscal year, the federal government has allocated approximately \$8 billion across multiple departments and agencies to initiatives that support improving Internet or mobile cellular connectivity, or both. The majority of this funding has been announced since the 2019–20 fiscal year, with some of the allocations to be spent through to the 2031–32 fiscal year. This funding is being provided through various types of initiatives, including those that provide funding to successful applicants to implement connectivity projects.

Project implementation delayed by long application review and approval process

Findings

2.42 We examined applications under the Broadband Fund of the Canadian Radio-television and Telecommunications Commission (CRTC) and under the Universal Broadband Fund of Innovation, Science and Economic Development Canada to assess the time it took to review and approve (or reject) project proposals and to make a decision whether to award funding. We found that the review and approval processes exceeded the organizations' expected timelines.

2.43 Under the Broadband Fund, the CRTC originally estimated it would take approximately 10 months to make an initial decision to award funding from the date the calls for applications were closed. However, the CRTC received significantly more applications to its second call for proposals than anticipated; therefore, it no longer followed that estimated timing. We found that it took the CRTC, on average, 17 months to reach an initial decision to award funding and an additional 5 months to grant final approval.

2.44 We also found that when applications to CRTC's Broadband Fund were on hold, not selected, or deemed ineligible, the CRTC did not notify applicants of the status of their applications. In our view, it was not a good management practice to make applicants wait for 2 or more years for a decision.

2.45 Under the Universal Broadband Fund, Innovation, Science and Economic Development Canada estimated that it would take 5 weeks for conditional approval of projects under the Rapid Response Stream. However, after receiving more applications than anticipated, the department no longer followed that timeline. We found that the department took, on average, a little over 13 weeks to grant conditional approval and an additional 38 weeks to grant final approval. While conditional approval allows applicants to spend money, applicants' investments may be at risk if final approvals are not ultimately obtained.

2.46 We also note that the department initially allocated Rapid Response Stream funding to projects that were expected to be completed by 31 March 2022, which the department later extended to 31 December 2023. This stream was designed to distribute funding quickly, so the delays postponed some connectivity benefits for Canadians.

2.47 We interviewed a range of stakeholders, including large and small telecommunications service providers, industry associations in the telecommunications sector, provinces with connectivity initiatives, and organizations that support deployment of broadband technologies

to underserved and unserved rural and remote communities. Nearly all stakeholders indicated that it took too long to make funding decisions under these 2 federal initiatives.

2.48 We also examined the extent of spending to date on federal connectivity initiatives. The amount of \$2.4 billion in federal funding for connectivity initiatives was available for use by the end of the 2022–23 fiscal year. We found, however, that by January 2023, only 40% of this funding had been spent (Exhibit 2.3).

Exhibit 2.3—A low percentage of the available funding was spent on federal connectivity initiatives

Description of the initiative	Available funding for use by the 2022–23 fiscal year	Funding spent (as of January 2023)	Percentage of the available funding spent
<p>Broadband Fund (up to \$750 million from 2020 to 2024) Canadian Radio-television and Telecommunications Commission</p> <p>The funding comes from a levy on large Canadian telecommunications service providers with annual revenues of at least \$10 million. Project proponents submit applications to be considered for funding of Internet and mobile cellular connectivity infrastructure.</p>	\$226 million*	\$58 million	26%
<p>Universal Broadband Fund (\$3.06 billion from 2020–21 to 2026–27) Innovation, Science and Economic Development Canada</p> <p>Project proponents submit applications to be considered for funding of Internet and mobile cellular connectivity infrastructure.</p>	\$1.3 billion	\$324 million	25%
<p>Low Earth Orbit (LEO) Capacity Agreement (\$600 million from 2022–23 to 2031–32) Innovation, Science and Economic Development Canada</p> <p>Agreement with Telesat Canada to secure dedicated capacity on the company’s planned low Earth orbit satellite constellation to support connectivity in remote communities.</p>	\$60 million	\$0**	0%

Description of the initiative	Available funding for use by the 2022–23 fiscal year	Funding spent (as of January 2023)	Percentage of the available funding spent
<p>Connect to Innovate</p> <p>(\$563 million from 2016–17 to 2022–23)</p> <p>Innovation, Science and Economic Development Canada</p> <p>Project proponents submit applications to be considered for funding of Internet connectivity infrastructure.</p>	\$563 million	\$370 million	66%
<p>Connecting Canadians</p> <p>(\$225 million from 2014–15 to 2019–20)</p> <p>Innovation, Science and Economic Development Canada</p> <p>Project proponents submit applications to be considered for funding of Internet connectivity infrastructure.</p>	\$225 million	\$197 million	88%
Total	\$2.4 billion	\$949 million	40%

Note: Dollar amounts and percentages in the table are rounded.

* This amount is for calendar years in the case of the Canadian Radio-television and Telecommunications Commission.

** Innovation, Science and Economic Development Canada confirmed that because of delays from the vendor, the low Earth orbit satellite constellation will not be in place until 2026.

2.49 In addition to the initiatives outlined in Exhibit 2.3, the Growth Plan of the Canada Infrastructure Bank had another \$2 billion available to support selected large-scale connectivity infrastructure projects by providing loans or equity financing. We noted that the Canada Infrastructure Bank relied largely on the assessments and approvals made by the department under the Universal Broadband Fund. Because loans are drawn as construction occurs, as of September 2022, only \$40 million had been disbursed.

2.50 The Accelerated Investment Incentive, administered by the Canada Revenue Agency, was also part of Canada's strategy to support Internet and mobile cellular connectivity. This tax incentive, available from the 2018–19 to the 2027–28 fiscal years, was designed to encourage the private sector to invest in infrastructure across many areas, including the telecommunications sector. However, we found that Innovation, Science and Economic Development Canada could provide no information on the adoption of this incentive by the telecommunications sector.

2.51 Given both the average time it took Innovation, Science and Economic Development Canada and the CRTC to review and approve applications and the percentage of funding spent on the federal connectivity initiatives thus far, some Canadians will wait even longer for access to high-speed Internet and mobile cellular connectivity.

Recommendation

2.52 Innovation, Science and Economic Development Canada should improve the application review and approval process to meet its expected timelines for the Universal Broadband Fund in order to speed up funding and implementation of connectivity projects.

Innovation, Science and Economic Development Canada's response. Agreed.

See **Recommendations and Responses** at the end of this report for detailed responses.

Recommendation

2.53 The Canadian Radio-television and Telecommunications Commission (CRTC) should expedite the application review and approval process for its Broadband Fund to speed up funding and implementation of connectivity projects. The CRTC should also notify applicants in a timely manner when their project proposals have been put on hold, deemed ineligible, or not selected.

The Canadian Radio-television and Telecommunications Commission's response. Agreed.

See **Recommendations and Responses** at the end of this report for detailed responses.

The department improved its management of spectrum, but the full impacts on rural connectivity remained to be seen

Why this finding matters

2.54 This finding matters because in 2021, an estimated 991,000 households relied on fixed wireless and satellite technologies for their Internet connection. These technologies, in turn, rely on access to radio frequency spectrum bands. Fixed wireless and satellite deliver connectivity in the short term while the government and industry work toward longer-term connectivity solutions (for example, extending fibre optic networks into rural and remote areas). Improvements to spectrum management should result in more telecommunications service providers being able to offer services. This increased competition could result in lower prices for consumers.

Context

2.55 Radio frequency spectrum bands are regulated by Innovation, Science and Economic Development Canada. Spectrum can be used for various purposes. In some cases, the use is determined by a licence. A band (that is, a specific frequency range) can be licensed for a specific purpose (such as mobile cellular connectivity, fixed wireless Internet, or satellite), or it can be licensed for more than 1 use.

2.56 The regulation of spectrum is part of High-Speed Access for All: Canada's Connectivity Strategy. The federal government's objectives in this regard are to ensure that spectrum is available to telecommunications service providers that offer various connectivity services to Canadians, including those living in rural and remote areas. The objectives also include managing the licensing frameworks with the goals of facilitating access to spectrum, considering new approaches that will support and encourage service provision in rural and remote areas, and preparing for next generation satellites.

2.57 Spectrum is finite, and the demand to use it is high. When the department expects that demand is greater than supply for a specific band, it will typically organize an auction. In an auction, the winners receive licences that give them the right to transmit signals over those spectrum bands in a specific geographic area for a specific period of time (typically 20 years).

Increased opportunity for small and regional service providers to provide access in areas outside major urban centres

Findings

2.58 We found that Innovation, Science and Economic Development Canada made changes to the size of the geographic areas used in spectrum auctions, as we recommended in our 2018 audit. When spectrum is auctioned, Canada's territory is divided into specific geographic areas called "tiers." A spectrum auction took place in 2021, and another one was expected to take place in 2023 (at the time of the audit, the department had already published the rules for this auction). We found that both auctions used or will use smaller geographic areas (tiers) than those used in 2019. Specifically, in the 2019 auction, Canada was subdivided into 16 geographic areas, whereas in the 2021 auction it was subdivided into 172 geographic areas. This was expected to result in increased competition and participation in spectrum auctions and licence holding.

Improved spectrum sharing needed

Findings

2.59 We found that while Innovation, Science and Economic Development Canada published some information about the spectrum licences, it did not publish a map or comprehensive database of the deployment and use of the licences required to provide service to consumers. Furthermore, the department did not have up-to-date information about the exact areas where service had been provided by the licence holders. The detailed information in a map or comprehensive database could help with spectrum sharing, which is a process that allows multiple service providers to share the same frequency bands.

2.60 We noted that in 2021 and 2022, the department consulted with stakeholders about licensing arrangements that could improve spectrum sharing:

- Subordinate licensing allows the primary licensee to lease a licence to another service provider. The department consulted about ways to streamline the subordinate licensing process to encourage use of this type of licensing arrangement.
- Access licensing is a proposed process to offer service providers a licence on a first-come, first-served basis in rural and remote geographic service areas where the existing primary or subordinate licensees have not deployed services.
- Non-competitive local licensing is a proposed new type of licensing that would give a broad range of users, such as businesses and communities (particularly Indigenous communities) the opportunity to acquire spectrum licences in localized areas across the country.

2.61 Officials told us they planned to publish the decisions resulting from these consultations in 2023. Therefore, it was too soon to tell what impact these initiatives will have on rural and remote connectivity.

2.62 In our view, a map and comprehensive database could help with spectrum sharing. Service providers could use this information to apply for subordinate licences. In addition, the department could use the information to select the licences that should be available for access licensing.

Recommendation

2.63 In order to facilitate spectrum sharing, Innovation, Science and Economic Development Canada should

- collect accurate information on the licences being used or not used, the name of the licensees, and the geographic coverage area of the licences

- publish and regularly update a map and the associated database with this information

Innovation, Science and Economic Development Canada's response. Agreed.

See **Recommendations and Responses** at the end of this report for detailed responses.

Modernized licensing and fee framework for satellites

Findings

2.64 We found that Innovation, Science and Economic Development Canada took actions to implement new measures to modernize the satellite licensing and fee regime. This modernization of the satellite licensing and fee regime occurred following consultations with stakeholders that highlighted the administrative complexity and prohibitive cost of deploying modern satellite technology, particularly for broadband and low Earth orbit satellites.

2.65 The department expected that changes to the licensing and fee framework would take effect during the 2023–24 licensing year, and that these changes would have a positive impact for satellite connectivity service providers. The department further expected that this would facilitate the deployment of broadband Internet services to areas that were either unserved or underserved. However, we found no evidence of analysis conducted regarding the potential impact of those measures for end users in terms of making satellite connectivity more affordable.

2.66 For certain rural and remote regions, satellite is likely to be the only solution to provide access to connectivity for Canadians. In our view, it is important that the satellite fee regime remains up to date so that satellite service providers continue to offer services to Canadians living in rural and remote areas.

Recommendation

2.67 Given the speed at which technology develops, especially in the satellite sector, Innovation, Science and Economic Development Canada should regularly monitor the fee regime for satellite connectivity to ensure that the regime meets its intended outcomes. The department should also make adjustments if warranted, including by consulting stakeholders on the regime's impact on connectivity in rural and remote regions across Canada.

Innovation, Science and Economic Development Canada's response. Agreed.

See **Recommendations and Responses** at the end of this report for detailed responses.

Conclusion

2.68 We concluded that a digital divide still existed in Canada when it came to access to high-speed Internet and mobile cellular connectivity. This divide was between Canadians living on First Nations reserves and in rural and remote areas and Canadians living in urban areas. Since our last audit in 2018, federal connectivity initiatives have contributed to an overall improvement in connectivity coverage in Canada, but the results were not equal for all Canadians.

2.69 We also concluded that neither Innovation, Science and Economic Development Canada nor the Canadian Radio-television and Telecommunications Commission could tell Canadians whether the affordability of Internet and mobile cellular connectivity had improved. They also could not provide a full picture of the quality of the connectivity that Canadians receive.

2.70 The department had improved its management of spectrum since our last audit in 2018. However, key information remained unavailable that would facilitate spectrum sharing, increase competition, and expand services.

About the Audit

This independent assurance report was prepared by the Office of the Auditor General of Canada on Internet and mobile cellular connectivity in rural and remote areas. Our responsibility was to provide objective information, advice, and assurance to assist Parliament in its scrutiny of the government's management of resources and programs and to conclude on whether the Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission complied in all significant respects with the applicable criteria.

All work in this audit was performed to a reasonable level of assurance in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3001—Direct Engagements, set out by the Chartered Professional Accountants of Canada (CPA Canada) in the CPA Canada Handbook—Assurance.

The Office of the Auditor General of Canada applies the Canadian Standard on Quality Management 1—Quality Management for Firms That Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements. This standard requires our office to design, implement, and operate a system of quality management, including policies or procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

In conducting the audit work, we complied with the independence and other ethical requirements of the relevant rules of professional conduct applicable to the practice of public accounting in Canada, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

In accordance with our regular audit process, we obtained the following from entity management:

- confirmation of management's responsibility for the subject under audit
- acknowledgement of the suitability of the criteria used in the audit
- confirmation that all known information that has been requested, or that could affect the findings or audit conclusion, has been provided
- confirmation that the audit report is factually accurate

Audit objective

The objective of this audit was to determine whether Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission had improved the accessibility, affordability, and quality of high-speed Internet and mobile connectivity for Canadians in rural and remote areas.

Scope and approach

The federal organizations audited were Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission (CRTC).

The first line of enquiry examined whether the department and the CRTC completed monitoring activities to obtain the data needed to determine whether they were on track to meet selected connectivity commitments and targets in High-Speed Access for All: Canada's Connectivity Strategy. We also examined the responsibilities relating to the reporting against these commitments. This line of enquiry examined whether there was improvement in connectivity since the strategy was implemented in 2019. We calculated the Internet and mobile cellular connectivity coverage figures in this audit report using data sets provided by Innovation, Science and Economic Development Canada which in turn incorporated 2016 census data on the number of households. This data was used for each year from 2018 to 2021 as presented in this audit report. We also examined the methodology the department used to produce its coverage results, but we did not audit the data inputs themselves. This line of enquiry also examined whether the data used in these activities was complete, accurate, timely, and disaggregated.

The second line of enquiry in this audit examined Innovation, Science and Economic Development Canada's leadership role in the implementation of the connectivity strategy. This included examining the department's responsibilities to coordinate federal connectivity-related initiatives to ensure that the goals of the strategy to connect Canadians in rural and remote areas to affordable high-speed Internet and to improve mobile cellular access were met. This line of enquiry also examined the population of applications to Innovation, Science and Economic Development Canada's Universal Broadband Fund and to the Canadian Radio-television and Telecommunications Commission's Broadband Fund. In both cases, we calculated the average length of time that elapsed from the dates when calls for proposals were closed to the dates when decisions were made to award funding in order to assess the efficiency of the review and approval processes.

The third line of enquiry in this audit examined Innovation, Science and Economic Development Canada's role in allocating and regulating spectrum, including the department's activities related to the management of the auction of spectrum and secondary markets.

As part of these lines of enquiry, the audit team considered whether gender-based analysis plus and Sustainable Development Goal 9 on industry, innovation, and infrastructure had been incorporated into the subject matter.

The audit approach included interviews with organization officials and stakeholders. The audit team also analyzed processes, documents, data, and other information sources.

Criteria

We used the following criteria to conclude against our audit objective:

Criteria	Sources
<p>Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission are on track to achieve connectivity commitments and have reliable data demonstrating improvement.</p>	<ul style="list-style-type: none"> • High-Speed Access for All: Canada's Connectivity Strategy, Innovation, Science and Economic Development Canada • 2018 Fall Reports of the Auditor General of Canada, Report 1—Connectivity in Rural and Remote Areas • <i>Telecommunications Act</i> • Beijing Declaration and Platform for Action, United Nations Fourth World Conference on Women, United Nations • Transforming Our World: The 2030 Agenda for Sustainable Development, United Nations • The Canadian Indicator Framework for the Sustainable Development Goals, Statistics Canada • Canada's Federal Implementation Plan for the 2030 Agenda, Employment and Social Development Canada
<p>Innovation, Science and Economic Development Canada, through its leadership role on the connectivity strategy, targets federal broadband and mobile connectivity initiatives to meet the needs of Canadians in rural and remote areas.</p>	<ul style="list-style-type: none"> • High-Speed Access for All: Canada's Connectivity Strategy, Innovation, Science and Economic Development Canada • 2018 Fall Reports of the Auditor General of Canada, Report 1—Connectivity in Rural and Remote Areas • <i>Telecommunications Act</i> • <i>Canadian Gender Budgeting Act</i> • Beijing Declaration and Platform for Action, United Nations Fourth World Conference on Women, United Nations • Policy on Transfer Payments, Treasury Board • Guidance for Drafters of Treasury Board Submissions, Treasury Board of Canada Secretariat

Criteria	Sources
<p>Innovation, Science and Economic Development Canada allocates and regulates spectrum to increase connectivity in rural and remote areas.</p>	<ul style="list-style-type: none"> • High-Speed Access for All: Canada’s Connectivity Strategy, Innovation, Science and Economic Development Canada • 2018 Fall Reports of the Auditor General of Canada, Report 1—Connectivity in Rural and Remote Areas • <i>Telecommunications Act</i> • Beijing Declaration and Platform for Action, United Nations Fourth World Conference on Women, United Nations • Spectrum Policy Framework for Canada, Industry Canada

Period covered by the audit

The audit covered the period from 1 July 2018 to 6 January 2023. This is the period to which the audit conclusion applies. However, to gain a more complete understanding of the subject matter of the audit, we also examined certain matters that preceded the start date of this period.

Date of the report

We obtained sufficient and appropriate audit evidence on which to base our conclusion on 13 January 2023, in Ottawa, Canada.

Audit team

This audit was completed by a multidisciplinary team from across the Office of the Auditor General of Canada led by Sami Hannoush, Principal. The principal has overall responsibility for audit quality, including conducting the audit in accordance with professional standards, applicable legal and regulatory requirements, and the office’s policies and system of quality management.

Recommendations and Responses

In the following table, the paragraph number preceding the recommendation indicates the location of the recommendation in the report.

Recommendation	Response
<p>2.20 Innovation, Science and Economic Development Canada should</p> <ul style="list-style-type: none"> • determine the funding that will be needed to bring affordable and quality high-speed Internet to 100% of Canadians by 2030 and, if needed, seek resources to meet this target • establish a quantitative and time-bound mobile cellular connectivity target • monitor actual Internet and mobile cellular adoption rates as a result of federal investments • evaluate whether the Internet speed goal of 50 megabits per second for downloads and 10 megabits per second for uploads will still be a sufficient minimum standard to enable Canadians to meet their professional and personal requirements by the connectivity strategy's 2026 and 2030 target dates, and update the strategy if needed 	<p>Innovation, Science and Economic Development Canada's response. Agreed. The connectivity strategy commits to connecting all Canadians by 2030 and improving mobile cellular coverage.</p> <p>More than \$10 billion in investments are being implemented through federal and provincial/territorial initiatives and the private sector. Canada is on track to exceed 98% coverage by 2026. With respect to the final 1%, there is uncertainty on the precise level of progress given some project details are being finalized and uncertainty with certain separate private investments. Innovation, Science and Economic Development Canada will update its data regularly and will conduct another review of coverage and slated expansion over the course of 2023 as project details crystalize. In parallel in 2023, the department will conduct a review of the state of mobile coverage and planned investments. The department will then seek additional resources if necessary.</p> <p>Once projects are completed, the department will study how adoption rates are impacted as a result of federal investments. The department will develop a project plan by 2024 to advance this work.</p> <p>The department agrees that evaluating the 50 megabits per second for downloading data and 10 megabits per second for uploading data (50/10 Mbps) over time is prudent. The Universal Broadband Fund will support progression to faster speeds with 80% of funded projects capable of speeds of 1 gigabit per second. The department will evaluate the suitability of the 50/10 Mbps minimum in advance of the 2026 and 2030 target dates.</p>

Recommendation	Response
<p>2.25 Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission should</p> <ul style="list-style-type: none"> • establish consistent methods for telecommunications service providers to report the coverage of mobile cellular connectivity • verify the mobile cellular connectivity data provided by telecommunications service providers 	<p>Innovation, Science and Economic Development Canada’s response. Agreed. Reliable, accurate, and comprehensive data on mobile connectivity is essential for Canadians to make informed decisions and for government to assess the availability of wireless services as well as the state of the sector.</p> <p>Both Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission (CRTC) recognize the importance of collecting accurate mobile coverage data and are taking steps to improve the quality of data collected.</p> <p>On 26 May 2022, the Government of Canada announced a new policy direction to the CRTC. The policy direction touches on a range of issues including competition, affordability, and consumer rights. Of particular relevance to this recommendation, the policy direction directs the CRTC to collect, report publicly, and make available to consumers more information about mobile services. This includes requiring the CRTC to develop and implement a standardized and robust approach for reporting mobile wireless coverage.</p> <p>The policy direction came into force in 2023. The CRTC will determine how best to implement this requirement. In parallel in 2023, Innovation, Science and Economic Development Canada engineers will refine the department’s fixed wireless tool—which was developed to provide a more accurate assessment of fixed wireless coverage—to incorporate mobile considerations.</p> <p>The Canadian Radio-television and Telecommunications Commission’s response. Agreed. The Order Issuing a Direction to the Canadian Radio-television and Telecommunications Commission (CRTC) on a Renewed Approach to Telecommunications Policy directs the CRTC to develop and implement a standardized and robust approach for reporting mobile wireless coverage. The CRTC will be assessing how best to address reporting consistency and data validation over the coming year.</p>

Recommendation	Response
<p>2.30 Innovation, Science and Economic Development Canada should provide more regular and timely updates to the public National Broadband Internet Service Availability Map in order for applicants to federal connectivity initiatives to better plan connectivity projects.</p>	<p>Innovation, Science and Economic Development Canada's response. Agreed. Accurate public mapping data provides important information for project applicants, consumers, and the general public.</p> <p>The Canadian Radio-television and Telecommunications Commission's Annual Facilities Survey is the main vehicle for Internet service providers to provide coverage information. Survey information and updates from funding partners is continually assessed as program decisions are taken. Innovation, Science and Economic Development Canada works collaboratively to ensure partners have this information to better plan their projects.</p> <p>The accuracy of the National Broadband Internet Service Availability Map is of utmost importance. The map has been published and vetted over several years. In the event of another call for proposals, a pathfinder service will be again offered to applicants, including support on the mapping data and how discrepancies could be addressed. There is also an existing verification process where evidence can be submitted to correct perceived errors or data gaps to the map to ensure the government does not duplicate or overbuild investments. This process will be leveraged, and the department will increase visibility of its existence in the 2023–24 fiscal year to both stakeholders and users to ensure broader awareness of the National Broadband Internet Service Availability Map website.</p> <p>In 2023, the department plans to make regular public updates every 6 months to the National Broadband Internet Service Availability Map.</p>
<p>2.31 The Canadian Radio-television and Telecommunications Commission should routinely collect and verify data from telecommunications service providers on other aspects of connectivity quality in addition to speed.</p>	<p>The Canadian Radio-television and Telecommunications Commission's response. Agreed. The Canadian Radio-television and Telecommunications Commission (CRTC) notes that this recommendation reflects a similar intent as outlined in the government's Order Issuing a Direction to the CRTC on a Renewed Approach to Telecommunications Policy. The CRTC will be improving its measurement activities, including conducting hardware-based testing to measure the quality of connectivity (speed, packet loss, jitter, and latency) via an independent contractor in 2023, and expanding the data available to the CRTC on connectivity quality via direct data collection or independent measurement sources.</p>

Recommendation	Response
<p>2.36 Innovation, Science and Economic Development Canada and the Canadian Radio-television and Telecommunications Commission should identify, collect, and analyze data, including consideration of household income, to measure progress against the affordability objective of Canada’s connectivity strategy to support improved Internet and mobile cellular connectivity in rural and remote areas, including in Indigenous communities.</p>	<p>Innovation, Science and Economic Development Canada’s response. Agreed. Innovation, Science and Economic Development Canada recognizes that additional action is needed. Through the policy direction to the Canadian Radio-television and Telecommunications Commission (CRTC) announced on 26 May 2022, the government has outlined clear goals to improve competition and affordability along several dimensions. The direction came into force in 2023 and the CRTC will incorporate it into its regulatory measures. Through the Universal Broadband Fund, prices will be improved substantially. As part of the program’s comparative assessment, the prices offered is an important criterion and the overall economics of the projects brings prices down.</p> <p>Starting in 2023, the department plans to augment its agreement with Statistics Canada to improve the frequency and breadth of data analyzed for Internet and mobile cellular services. Over the course of 2023, the department will also examine different measures of income to use in analysis and establish a plan for monitoring and analyzing these data going forward in relation to connectivity investments.</p> <p>In advancing this work in 2023, the department will engage with the CRTC while respecting its status as an arm’s-length tribunal.</p> <p>The Canadian Radio-television and Telecommunications Commission’s response. Agreed. The Canadian Radio-television and Telecommunications Commission’s (CRTC’s) Broadband Fund supports projects that improve Internet and mobile services in rural and remote areas, at comparable rates to those services offered in urban centres. The Order Issuing a Direction to the CRTC on a Renewed Approach to Telecommunications Policy also emphasizes the importance of affordable access to high-quality telecommunications services in all regions of Canada, including rural areas. Starting in 2023, the CRTC will work to augment the data it collects and shares with Innovation, Science and Economic Development Canada, for use by both parties in measuring success against the objectives of multiple initiatives, including the CRTC’s Broadband Fund, and the affordability objectives of Canada’s connectivity strategy.</p>

Recommendation	Response
<p>2.52 Innovation, Science and Economic Development Canada should improve the application review and approval process to meet its expected timelines for the Universal Broadband Fund in order to speed up funding and implementation of connectivity projects.</p>	<p>Innovation, Science and Economic Development Canada's response. Agreed. Ensuring the review and approval of proposals is conducted in an expeditious and rigorous manner is important. The Universal Broadband Fund allows proponents to spend a portion of the funds upon conditional approval to ensure timely project delivery. In fall 2022, the percentage proponents can spend upon conditional approval was increased to up to 30% of the funds. Rapid Response stream recipients continue to have the ability to spend 100% of conditionally approved funding.</p> <p>Innovation, Science and Economic Development Canada recognizes there are opportunities to further streamline certain processes. Work on internal process effectiveness is ongoing, particularly on improving our electronic tracking system for managing process steps during program delivery. The department will iterate and improve the tracking system in the 2023–24 fiscal year. Lessons learned will be applied to the present rollout, as well as future calls for proposals and/or initiatives.</p> <p>In the 2024–2025 fiscal year, the Universal Broadband Fund will be subject to a departmental program evaluation. Part of this will assess the effectiveness and efficiency of program processes and the administration of the program. Through this closer assessment, and lessons learned from past and present broadband programs, the department will be well positioned to make necessary improvements to accelerate the review and approval of broadband program proposals.</p>
<p>2.53 The Canadian Radio-television and Telecommunications Commission (CRTC) should expedite the application review and approval process for its Broadband Fund to speed up funding and implementation of connectivity projects. The CRTC should also notify applicants in a timely manner when their project proposals have been put on hold, deemed ineligible, or not selected.</p>	<p>The Canadian Radio-television and Telecommunications Commission's response. Agreed. The Canadian Radio-television and Telecommunications Commission will be imminently undertaking a broader policy review that will seek comments from the public on a broad range of topics, including potential improvements to the application process, and applicant notification considerations. The policy review is expected to launch by March 2023 and will likely be completed with a revised regulatory policy issued in 2024.</p>

Recommendation	Response
<p>2.63 In order to facilitate spectrum sharing, Innovation, Science and Economic Development Canada should</p> <ul style="list-style-type: none"> • collect accurate information on the licences being used, or not used, the name of the licensees, and the geographic coverage area of the licences • publish and regularly update a map and the associated database with this information 	<p>Innovation, Science and Economic Development Canada's response. Agreed. While the majority of the information that Innovation, Science and Economic Development Canada collects is accurate, the department recognizes the importance of collecting accurate information and making it available to stakeholders to facilitate spectrum sharing and support the creation, expansion, and improvement of wireless broadband services to consumers and businesses across Canada.</p> <p>Having recognized that there are some gaps in its data collection process, the department consulted on new data collection requirements in the Consultation on Amendments to Requirements for Spectrum Licensees to Submit Technical Information about Sites. The department will issue a decision in 2023 that will outline the new data collection requirements, including enhancements to the conditions of licence related to providing accurate site deployment data. As part of the new data collection process, the department also plans to deploy a new database in late 2023.</p> <p>Once the new database is deployed and the related enhanced conditions of licence have come into force, the improved site deployment data will allow the department to expand the spectrum information provided online, including the use of maps, as well as keep this information up to date to facilitate spectrum sharing and to provide transparency to stakeholders.</p>
<p>2.67 Given the speed at which technology develops, especially in the satellite sector, Innovation, Science and Economic Development Canada should regularly monitor the fee regime for satellite connectivity to ensure that the regime meets its intended outcomes. The department should also make adjustments if warranted, including by consulting stakeholders on the regime's impact on connectivity in rural and remote regions across Canada.</p>	<p>Innovation, Science and Economic Development Canada's response. Agreed. Innovation, Science and Economic Development Canada recognizes the importance of assessing the effectiveness of its regulatory regimes and has regularly reviewed and adjusted the satellite services regime to ensure it addresses transformations in the satellite industry. Most recently, in 2022, the Decision on Updates to the Licensing and Fee Framework for Earth Stations and Space Stations in Canada simplified the licensing approach and fee structure while reducing overall fees to support the evolution of the satellite industry and facilitate the deployment of innovative solutions, including those for broadband connectivity. These new satellite fees will come into force 1 April 2023, and earth station fees will come into force 1 October 2023.</p> <p>The department expects to review the effectiveness of this regime by 2027 as stakeholders gain experience with the new framework and as satellite technology continues to develop. The department will review and consult stakeholders on this basis, making adjustments when necessary, to facilitate the deployment of modern satellite services for Canadians, including in rural and remote regions across Canada.</p>

