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RESEARCH

Closing Community Infrastructure Gaps

Indigenous-Driven Solutions

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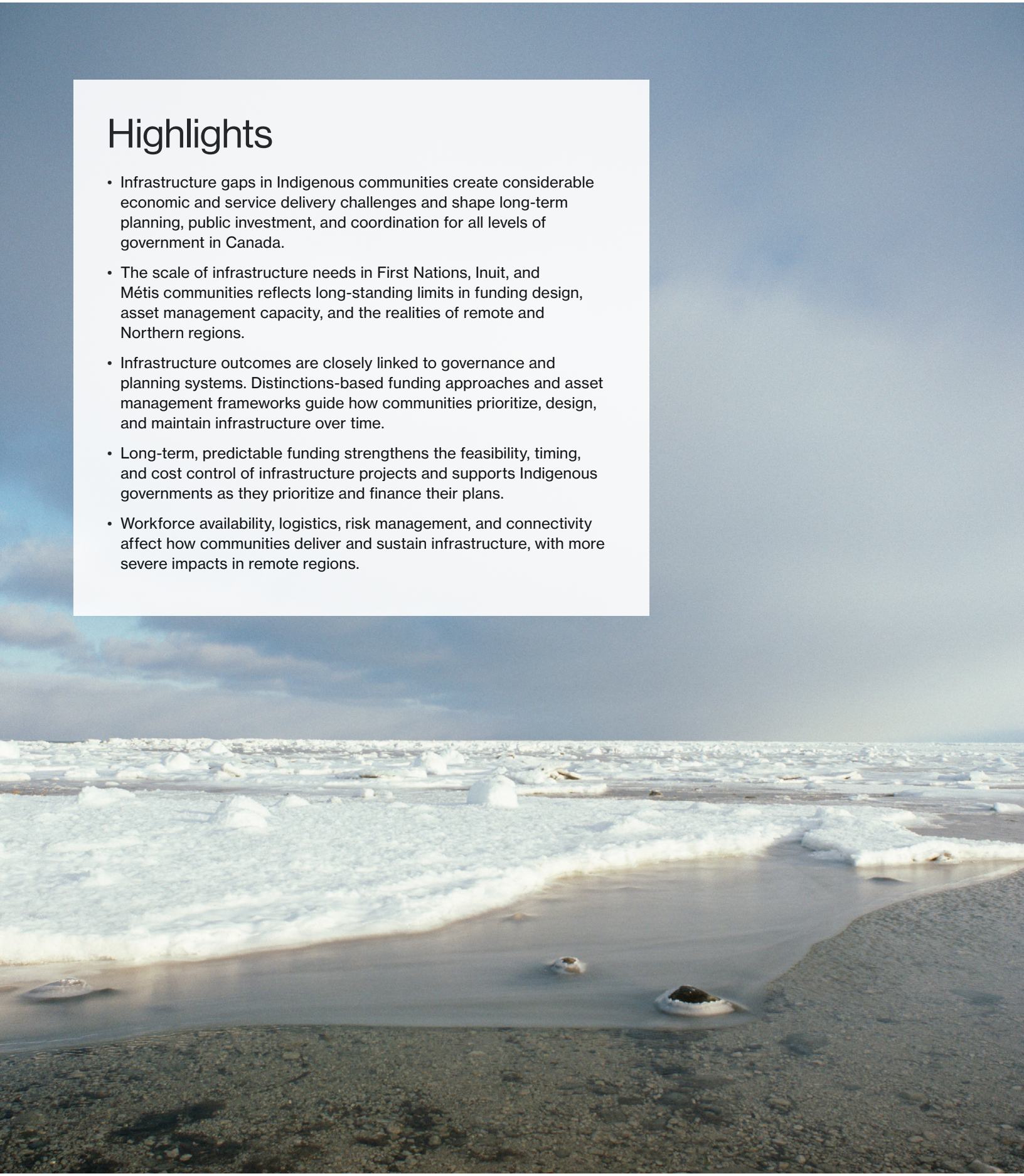
Contents



Highlights

- Infrastructure gaps in Indigenous communities create considerable economic and service delivery challenges and shape long-term planning, public investment, and coordination for all levels of government in Canada.
- The scale of infrastructure needs in First Nations, Inuit, and Métis communities reflects long-standing limits in funding design, asset management capacity, and the realities of remote and Northern regions.
- Infrastructure outcomes are closely linked to governance and planning systems. Distinctions-based funding approaches and asset management frameworks guide how communities prioritize, design, and maintain infrastructure over time.
- Long-term, predictable funding strengthens the feasibility, timing, and cost control of infrastructure projects and supports Indigenous governments as they prioritize and finance their plans.
- Workforce availability, logistics, risk management, and connectivity affect how communities deliver and sustain infrastructure, with more severe impacts in remote regions.

Indigenous infrastructure investment drives prosperity

Canada's prosperity is tied to closing the persistent infrastructure gaps that limit the well-being and economic potential of Indigenous communities. These gaps span housing, schools, health centres, water systems, broadband networks, roads, and emergency services—the foundational assets most Canadians take for granted.

The scale of the challenge is substantial. Closing the infrastructure gap in First Nations communities alone will cost between $349.2 billion and $527 billion, depending on how quickly action is taken.[1] Closing that gap by 2030 would minimize costs, while creating 2.4 million jobs, generating $86.8 billion in tax revenues, and producing $1.82 in national economic output for every dollar invested—lifting Canada's GDP growth to the top of the G7 countries.[2] Extending these investments to Inuit and Métis communities would help to ensure that all Indigenous peoples in Canada have access to safe, reliable, and climate-resilient infrastructure.

This primer takes a descriptive, evidence-based approach to show how Indigenous communities are responding to infrastructure challenges. Instead of promoting a single policy solution, it describes Indigenous-led models and practices already in use across Canada. This approach helps policy-makers, practitioners, and community leaders understand how different tools and systems work in practice, and how they connect across funding, governance, planning, and delivery. Using real-world examples, the primer identifies common patterns and conditions that support effective outcomes in different contexts.

The focus on Indigenous-driven solutions reflects their central importance to achieving durable infrastructure outcomes. Indigenous governments and organizations are best positioned to align infrastructure decisions with local priorities, cultural values, land-use realities, and long-term community objectives. Evidence across multiple sectors shows that when Indigenous communities lead planning, financing, and service delivery, infrastructure investments are more likely to be maintained, adapted over time, and integrated with broader economic development goals. For this reason, the primer's focus is on initiatives where Indigenous leadership is foundational, not peripheral.

While the Centre for the North focuses on the economic and social conditions of Northern Indigenous communities, this primer adopts a national lens because northern infrastructure outcomes are shaped by policy and funding systems designed at the federal and pan-regional levels. Understanding how these systems operate across Canada helps explain why infrastructure challenges are more acute in the North and highlights approaches that can be adapted to northern realities. (See "What do we mean by Northern and remote?") This perspective allows the primer to remain grounded in the Centre's mandate while drawing on evidence from across the country.

1 Assembly of First Nations, *Closing the Infrastructure Gap*.

2 Conference of Board Canada, The, *Benefits for All Canadians (Part 1)*.

What do we mean by Northern and remote?

Within this national scope, the terms “northern” and “remote” are used in a specific way. “Northern” refers to communities located in Canada’s territorial North and in the Northern regions of provinces, where climate, distance, and limited transportation networks shape infrastructure costs and feasibility. “Remote” refers more broadly to communities that are geographically isolated from major service centres or supply chains, regardless of latitude. These conditions are not unique to the North but are more prevalent there, and they intensify challenges related to construction seasons, workforce availability, logistics, risk management, and service delivery.

This primer explores two interrelated questions:

1. How can Canada close Indigenous community infrastructure gaps in ways that reflect local priorities and support long-term outcomes?
2. How can infrastructure investment strengthen Indigenous leadership, planning, and systems over time?

Addressing these questions requires moving beyond short-term, fragmented funding toward approaches that attract long-term investment, build community capacity, and strengthen Indigenous self-determination.[3] Across the country, there are examples of Indigenous governments and organizations that are already demonstrating practical innovations in financing, asset management, procurement, logistics, and workforce development.

The following sections highlight Indigenous-led innovations and enabling policies that help to advance seven goals:

1. Asset management systems that strengthen long-term planning and fiscal sustainability.
2. Service transfers that build local control and governance capacity.
3. Distinctions-based funding that supports flexible, community-driven investment.
4. Financing innovations that unlock capital through long-term, stable commitments.
5. Workforce and mentorship programs that sustain local expertise in construction and operations.
6. Logistics and construction innovations that adapt to Northern and remote realities.
7. Insurance and telecommunications models that reduce risk and expand access to essential services.

Together, these strategies illustrate how Indigenous communities and their partners are not only closing infrastructure gaps, but are also reshaping the systems that determine how infrastructure is planned, financed, and maintained in Canada.

3 National Indigenous Economic Development Board, *National Indigenous Economic Strategy*.

Asset management can strengthen strategic planning

Closing the Indigenous infrastructure gap requires more than new construction. It demands long-term funding and planning systems that ensure assets are maintained, renewed, and adapted over time.

Asset management provides this foundation.[4] Communities can use asset management to align infrastructure decisions with long-term needs and priorities—forecasting costs and service levels over the long term to anticipate major repairs and replacements, manage risks like extreme weather, and take other proactive measures to extend asset lifespans, reduce maintenance costs, and improve service.[5] This strategic approach to tracking the condition and lifecycle of assets can help support communities in making informed choices about maintenance, renewal, and future growth—strengthening both planning and fiscal sustainability.

A range of programs and resources now support this work:

- **Indigenous Services Canada (ISC):** Launched the Asset Management Program in 2019 to support First Nations in developing and implementing asset management frameworks.[6]
- **Federation of Canadian Municipalities (FCM):** Provides the Asset Management Readiness Scale to help communities assess and advance their practices.
- **International Organization for Standardization (ISO) / Institute of Asset Management:** Offers the ISO 55000 asset management standards and related resources.[7]
- **Ontario First Nations Technical Services Corporation (OFNTSC):** Developed the FN Infrastructure Resilience Toolkit, a customizable resource that integrates contemporary engineering with Traditional Knowledge.[8]
- **Indigenous community-led frameworks:** Grounded in Indigenous values, traditions, and capacity-building, this approach emphasizes community ownership of planning and implementation initiatives. It strengthens infrastructure resilience by embedding cultural knowledge, local training, and stewardship into asset management practices.[9]

In addition to technical and planning tools, a range of Indigenous financial institutions contributes to infrastructure-related governance, financing, and capacity development. The First Nations Finance Authority (FNFA),[10] First Nations Infrastructure Institute (FNII),[11] First Nations Financial Management Board (FNFMB),[12] First Nations Tax Commission (FNTC),[13] National Aboriginal Capital Corporations Association (NACCA) Indigenous Growth Fund,[14] Nunavik Investment Corporation,[15] and NWT Métis–Dene Development Fund (MDDF)[16] provide services related to financial administration, capital planning, and revenue generation. The FNII, for example, provides free, by-request support to

4 Assembly of First Nations, *Closing the Infrastructure Gap*.
5 Ontario First Nations Technical Services Corporation, “About the Toolkit.”
6 Indigenous Services Canada, “Asset Management Program.”
7 Ontario First Nations Technical Services Corporation, “North Shore Tribal Council Asset Management.”
8 Ontario First Nations Technical Services Corporation, “About the Toolkit.”
9 Ontario First Nations Technical Services Corporation, “First Nations Infrastructure Resilience Toolkit.”
10 First Nations Finance Authority, “About the FNFA.”
11 First Nations Infrastructure Institute, “About Us.”
12 First Nations Financial Management Board, “About FMB.”
13 First Nations Tax Commission, “Welcome to the FNTC.”
14 National Aboriginal Capital Corporations Association, “Indigenous Growth Fund.”
15 Nunavik Investment Corporation, “Corporate Profile.”
16 Métis–Dene Development Fund, “About Us.”

help communities plan, procure, own, and manage assets through templates, workshops, and advisory services.[17] Regional programs, such as the Cree Real Estate Entrepreneurship Program,[18] offer training and business development support linked to community infrastructure. Together, these institutions expand the range of financing and planning options available to Indigenous governments beyond federal and provincial funding sources.

Across Canada, Indigenous organizations are adapting these tools to their own needs.

For example, the North Shore Tribal Council in Ontario is implementing a three-phase asset management initiative—awareness, planning, and implementation—supported by ISC funding. The project builds shared regional capacity across seven member First Nations, improving infrastructure planning and long-term service sustainability.[19]

Lheidli T'enneh First Nation, in Prince George, British Columbia, used the FCM Readiness Scale to establish a comprehensive asset management policy and plan. This framework supports the full lifecycle of infrastructure—from design and construction to maintenance and decommissioning—ensuring more reliable and cost-effective services.[20]

The Waabnoong Bemjiwang Association of First Nations in Georgian Bay developed a GIS-based asset management system that extends the life of community assets such as roads, buildings, and water systems. A key innovation is remote water and wastewater monitoring, which enables real-time oversight and improved public safety.[21]

In Bella Coola, the Nuxalk Nation designed and built climate-resilient homes featuring one-metre roof overhangs, mould-resistant drywall, and triple-pane windows to withstand heavy rainfall and reduce energy use. The initiative also trained 32 local apprentices, creating skilled jobs while reducing reliance on external contractors.[22]

Together, these examples demonstrate how Indigenous communities can combine federal programs, technical tools, and culturally grounded frameworks to strengthen long-term infrastructure planning, risk management, and community capacity.

Local control can drive long-term stability

When Indigenous communities gain control over how their infrastructure is planned, financed, and managed, they can create opportunities to make proactive decisions that reflect local priorities, develop and retain skilled staff, and reinvest revenues to support sustainable long-term growth.[23]

Since 2017, Indigenous Services Canada (ISC) has supported the transfer of responsibility for housing and community infrastructure programs to First Nations. By December 2025, 18 initiatives were under way involving housing, education, water, wastewater, and solid waste management, with four framework agreements in place. For participating First Nations communities, these agreements replace short-term, proposal-based funding with long-term capital planning, efficiencies that reduce operations and maintenance costs, and new career pathways in technical roles related to infrastructure management.[24]

17 First Nations Infrastructure Institute, "How will FNII work?"
18 Cree Nation Government, "Cree Real Estate Entrepreneurship Development (CREED) Program."
19 Ontario First Nations Technical Services Corporation, "North Shore Tribal Council Asset Management."
20 Abedin, "Implementing Asset Management Systems in Small Communities."
21 Burke, "How asset management systems can impact consultation."
22 Indigenous Services Canada, "Nuxalk Nation in British Columbia builds homes."
23 First Nations Financial Management Board, "About FMB."
24 Indigenous Services Canada, "Housing and infrastructure service delivery transfer."

The Atlantic First Nations Water Authority (AFNWA) offers a leading example of this model in action. Established in 2022, it is the first Indigenous-owned and -operated non-profit utility responsible for the operation, maintenance, and capital upgrades of water and wastewater systems across participating First Nations. Its governance model combines First Nations leadership and technical expertise, while a decentralized structure supports community-based operators through regional hubs of expertise.[25] The service delivery transfer agreement between ISC and AFNWA helped define a framework for future transfers of water and wastewater services.

Building on this precedent, Weso'tmk Samqwan Incorporated, a Mi'kmaw-led organization in New Brunswick, signed an ISC service transfer agreement in February 2025 to provide water and wastewater management services for First Nations communities in the province.[26] This agreement represents the further application of the transfer model to regional water service delivery and reflects continued interest among First Nations in assuming responsibility for infrastructure-related services.[27]

A persistent barrier to advancing additional transfer agreements is internal capacity—the need for policy frameworks, qualified staff, and systems that support asset management, project delivery, and financial oversight. AFNWA addressed these challenges through FNII, which provided guidance on planning, procurement, and cost recovery.[28]

This collaboration illustrates how institutions operating under the *First Nations Fiscal Management Act* can work together to support local control of infrastructure and service delivery. The Act provides a legislative framework that strengthens fiscal governance and expands the tools available to participating First Nations. Each institution created under the Act plays a specific role: First Nations Infrastructure Institute (FNII) strengthens project planning; First Nations Finance Authority (FNFA) provides long-term financing; First Nations Financial Management Board (FNFMB) builds financial management and lifecycle infrastructure costing capacity; and First Nations Tax Commission (FNTC) supports infrastructure cost recovery through property and service taxes, development charges, and user fees.[29] Together, these institutions form an integrated system that helps First Nations manage infrastructure responsibilities.

The National Indigenous Economic Development Board (NIEDB) has urged governments to accelerate these efforts—to transfer housing and infrastructure services to Indigenous control at the local level, and to establish a national Indigenous Infrastructure Institute to coordinate support.[30] NIEDB has also long advocated for a faster additions to reserve (ATR) process that would allow First Nations to designate land for infrastructure with greater certainty. Reaching this goal would require developing more First Nations auditors, tax assessors, and land surveyors—capacity bottlenecks that FNFMA institutions are again well-placed to address.[31]

Current ISC funding for service delivery transfer initiatives is set to expire in 2026. Renewing and expanding this program should help to reinforce the growing collaboration between FNFMA institutions and First Nations governments, supporting communities to build the policies, capacity, and tools needed to sustain full ownership of their infrastructure over the long term.

25 Indigenous Services Canada.
26 Indigenous Services Canada, "Weso'tmk Samqwan Incorporated signs agreement."
27 National Indigenous Economic Development Board, "Atlantic First Nation Water Authority."
28 Indigenous Services Canada, "Evaluation of the Education Facilities Program."
29 First Nations Infrastructure Institute, "Frequently Asked Questions."
30 National Indigenous Economic Development Board, *2019 Indigenous Economic Progress Report*.
31 National Indigenous Economic Development Board, "NIEDB Consultation Response."

Distinctions-based funding can build momentum

Empowering Indigenous communities to lead infrastructure development also requires funding models that match their governance and planning capacity.[32] Distinctions-based programs—designed separately for First Nations, Inuit, and Métis—allow communities to pursue priorities specific to their regions and realities.[33]

Launched in 2021, the Indigenous Community Infrastructure Fund (ICIF) marked an important shift toward this approach. With a budget of $4.3 billion over four years, ICIF invested in shovel-ready projects such as housing, water and wastewater systems, schools, healthcare facilities, and cultural spaces. For the first time, communities had clear, distinctions-based funding allocations, allowing them to plan proactively rather than competing through pan-Indigenous or proposal-based programs.[34]

ICIF also introduced greater flexibility than past federal programs. Funds could cover the full lifecycle of assets—from operations and maintenance to planning for environmental and logistical challenges.[35] In some cases, communities combined ICIF support with Canada Infrastructure Bank (CIB) financing to build revenue-generating, community-owned infrastructure.[36] For example, the Netmizaaggamig Nishnaabeg Reserve Extension leveraged both ICIF and CIB resources to construct roads and extend utilities for 55 new residential lots, positioning the community for growth linked to forestry and mining projects.[37] Similar models could help address a major bottleneck—nearly 70 per cent of First Nations lack enough serviced lots to support housing development.[38]

Despite its success, ICIF's short funding horizon remains a major weakness. The program expired in March 2025, ending operations and maintenance support for many funded projects. The Nunavut Inuit Infrastructure Coalition has warned that distinctions-based investments for Inuit are already declining, even as infrastructure deficits persist.[39]

Renewing ICIF—and establishing it as a long-term, reliable funding stream—could work to lock in recent gains and reduce reliance on fragmented project-by-project funding. A sustained distinctions-based model would help more Indigenous governments to plan across the full lifecycle of infrastructure, attract co-investment, and replicate success stories like Netmizaaggamig Nishnaabeg nationwide.

32 First Nations Financial Management Board, "About FMB."
33 Indigenous Services Canada, "Indigenous Community Infrastructure Fund."
34 Indigenous Services Canada.
35 Inuit Tapiriit Kanatami, *Infrastructure Midterm Review.*
36 Canada Infrastructure Bank, "Infrastructure for Housing Initiative"; and Canada Infrastructure Bank, Indigenous Community Infrastructure Initiative Guide.
37 Canada Infrastructure Bank, "Netmizaaggamig Nishnaabeg Reserve Extension."
38 Indigenous Services Canada, "Evaluation of the On-Reserve Housing Program."
39 Nunavut Inuit Infrastructure Coalition, "Submission to the House of Commons Finance Committee."

Long-term funding can accelerate development

Flexible and distinctions-based funding has helped Indigenous communities plan and deliver projects. But predictable, long-term financing is still missing. Without it, communities are less likely to secure the same affordable borrowing options available to municipalities, provinces, and territories.

Most Canadian municipalities finance infrastructure through monetization—the practice of servicing debt over time by pledging stable revenue streams like property taxes and user fees. This can reduce risk for lenders and enable construction today rather than decades later. For Indigenous communities, long-term federal transfers could provide the same stability, unlocking access to low-cost capital for housing and infrastructure projects.[40]

Currently, federal infrastructure spending is dominated by short-term, proposal-based programs that must be renegotiated every year. Often, these unpredictable funds cannot be used as collateral for loans, effectively closing Indigenous governments out of standard public-financing tools.[41] An Indigenous-led solution already exists. The First Nations Finance Authority (FNFA), a First Nations-controlled institution that provides access to pooled, low-cost capital markets, has demonstrated how monetization could work if supported by stable federal commitments. FNFA estimates that a 20-year federal pledge of $200 million annually could unlock $3.6 billion in capital now for homebuilding across First Nations communities —accelerating progress at a fraction of the long-term cost.[42]

Building infrastructure now and paying for it over time could allow communities to offset costs through future revenues and program savings while avoiding the escalating costs of delay from inflation, labour shortages, and asset deterioration.[43]

Some First Nations already monetize their own-source revenues to finance community infrastructure. For example, Tsawwassen First Nation used a combination of lease revenue, taxes, and development cost charges to secure a bank loan needed to build a $27-million sewage treatment plant. Building the treatment plant opened up additional economic development opportunities by servicing new residential, commercial, and industrial development on Tsawwassen lands. This in turn allowed the First Nation to finance more infrastructure investments, including roads, drainage systems, and water systems.[44]

By committing to multi-decade, predictable funding streams, the federal government can empower Indigenous governments to make greater use of monetization—turning fragmented annual funding into generational investments that can compound into a source of sustainable infrastructure financing.[45]

40 First Nations Finance Authority, “Monetization.”

41 First Nations Finance Authority, “Reducing the barriers to Indigenous economic growth.”

42 First Nations Finance Authority, “Potential Impact of Monetization.”

43 Yantha, *Financing Infrastructure Is Not a One-Time Grant*.

44 Baird and Podlasly, *The Opportunity for Indigenous Infrastructure*.

45 First Nations Finance Authority, “Potential Impact of Monetization”; and Assembly of First Nations, *Closing the Infrastructure Gap*.

Fire protection and Indigenous insurance innovation

Even with new financing tools, many Indigenous communities face another critical barrier to infrastructure development: the cost and availability of insurance.[46] Without affordable coverage, projects often stall and existing assets remain vulnerable to loss. The primary driver of these high costs is fire risk—and for many remote communities, limited fire protection services make insurance prohibitively expensive.[47]

Some communities are large enough to operate their own fire department, while others are close enough to another municipality to form agreements for shared fire services. Remote communities are more reliant on resiliency measures to improve fire safety and asset insurability, including capital investments in fire-resistant building materials and upgraded water infrastructure to support sprinkler systems.[48]

In 2025, FNFA and BFL Canada introduced a groundbreaking Indigenous-led collective insurance model aimed at improving both affordability and access. Under this approach, FNFA members and other Indigenous communities would pool their resources and a portion of their risk to purchase insurance collectively, thus achieving the same economies of scale found in FNFA financing.[49] Policy-holders would also co-own the insurer, meaning profits could be returned to communities as dividends or used to lower premiums.[50] The model would also expand bonding and surety options for First Nation–led construction firms and entrepreneurs currently excluded from conventional insurance markets.[51]

Parallel efforts are under way through the First Nations Fire Protection Strategy (2023–28), co-developed by the Assembly of First Nations and Indigenous Services Canada.[52] The strategy builds on earlier versions by incorporating the UN Sendai Framework's emphasis on resilience and risk reduction. It expands the scope of fire protection beyond reserves to include First Nations people living off reserve, and is supported by a $20.9-million federal commitment over three years to fund smoke alarms, extinguishers, and fire safety education in on-reserve homes and facilities.[53] The National Indigenous Fire Safety Council complements these efforts by working to build fire safety capacity in First Nations, Inuit, and Métis communities—including tailored supports through an Indigenous Fire Marshall Service that can assist as requested with inspections, equipment, training, funding, and other fire safety services.[54]

Despite recent funding commitments, First Nations organizations have long argued that federal investments remain far below actual risk levels.[55] Many communities continue to rely on aging housing stock that lacks basic fire safety features such as functioning alarms, suppression systems, and fire-resistant materials. Increasing annual funding —tied to community risk assessments—would enable a Build Back Better approach, which ensures that every renovation or replacement embeds essential fire protection upgrades, thereby improving both safety and long-term insurability.[56]

46 First Nations Finance Authority, "FNFA / BFL Insurance Feasibility Study."
47 Canada Mortgage and Housing Corporation, "Indigenous Insurance and Risk."
48 Indigenous Services Canada, "First Nations Fire Protection Strategy."
49 First Nations Finance Authority and BFL Canada, "Exploring an Indigenous Owned Insurance Model."
50 Canada Mortgage and Housing Corporation, "Indigenous Insurance and Risk."
51 First Nations Finance Authority, *Financing Your Future*.
52 Indigenous Services Canada, "First Nations Fire Protection Strategy."
53 Indigenous Services Canada, "Fire protection in First Nations communities."
54 National Indigenous Fire Safety Council, "The Indigenous Fire Marshal Service."
55 Clare and Robinson, *Cost–Benefit Decision Tool*; and Ontario First Nations Technical Services Corporation, *The Role and Position of the OFNTSC*.
56 Indigenous Services Canada, "First Nations Fire Protection Strategy."

Training partnerships can build skills and capacity

Closing infrastructure gaps requires more than funding and planning; it depends on a skilled Indigenous workforce capable of building, maintaining, and managing new community assets. Two federal–Indigenous programs are central to this effort: the Indigenous Skills and Employment Training (ISET) program and the Skills and Partnership Fund (SPF).

Co-developed with Indigenous organizations, these programs address both the supply-and-demand sides of workforce development. ISET provides long-term, locally designed supports—from pre-employment and apprenticeship training to wrap-around services like childcare and transportation. In contrast, SPF is demand-driven, funding partnerships between Indigenous communities and employers to deliver targeted skills training linked to real jobs. Together, they form a continuum: participants may start with ISET-funded pre-employment training, gain job-specific skills through SPF, and advance to apprenticeship programs through ISET.[57]

Several examples illustrate this approach in practice. The Indigenous Energy Project—a partnership between the Clean Foundation and the Native Council of Nova Scotia—combines education, career mentoring, and wage subsidies to prepare participants for jobs in the clean economy.[58] The Inuvialuit Regional Corporation uses ISET funding to support post-secondary partnerships, workplace readiness, and the Tuktoyaktuk Building Trades Helper program.[59] The Federal Housing Advocate has also identified expanded ISET funding as a pathway to strengthen Métis participation in homebuilding.[60]

Evidence shows that these partnerships deliver strong returns for both participants and the wider economy.[61] A 2022 federal evaluation found that ISET and SPF programs produce net positive societal benefits—higher lifetime earnings, increased tax revenues, and lower costs related to unemployment and health outcomes.[62] They also strengthen community–employer relationships, fostering cultural exchange and greater engagement ahead of major projects.[63]

Yet in remote and Northern communities, the model faces higher costs for childcare, meals, and travel, as well as fragile employer networks—where the loss of a single partner can halt a program. Making SPF funding more flexible to accommodate variable timelines and costs would help sustain participation and improve job retention.[64]

Governments can further strengthen results by expanding matchmaking and networking supports that connect ISET and SPF partners with small and medium-sized enterprises, and by leveraging public infrastructure projects as training platforms.[65] Coordinated across jurisdictions, these initiatives can help to ensure that Indigenous workers are at the centre of Canada's community infrastructure renewal.[66] Additional models can also contribute to skill-building partnerships, including provincial and territorial training agreements, industry-led apprenticeship programs, and private sector joint ventures that link workforce development to long-term employment opportunities.[67] These approaches offer complementary pathways for aligning training with labour market demand while supporting multi-party collaboration.[68]

57 Employment and Social Development Canada, *Engagement on the Future of the Skills and Partnership Fund*.
58 Aboriginal Peoples Training and Employment Commission, "Indigenous Energy Project."
59 Inuvialuit Regional Corporation, "Indigenous Skills and Employment Training Program."
60 Office of the Federal Housing Advocate, *Claiming the right to housing*.
61 Employment and Social Development Canada, "Evaluation of the Aboriginal Skills and Employment Training Strategy."
62 Employment and Social Development Canada, *Engagement on the Future of the Skills and Partnership Fund*.
63 Employment and Social Development Canada, "Evaluation of the Aboriginal Skills and Employment Training Strategy."
64 Employment and Social Development Canada, *Engagement on the Future of the Skills and Partnership Fund*.
65 Employment and Social Development Canada, "About the Indigenous Skills and Employment Training Program"; and Indigenous Services Canada, "Strategic Partnerships Initiative."
66 Employment and Social Development Canada, *Engagement on the Future of the Skills and Partnership Fund*.
67 Government of Ontario, "Funding for Indigenous economic development."
68 Canadian Council for Public-Private Partnerships, *Modernizing Canada's Approach*.

On-site mentorship builds capacity

Even when new infrastructure is built, remote Indigenous communities often struggle to sustain the workforce needed to operate and maintain it. Recruiting and retaining certified staff is difficult, and opportunities for continuous training are limited by distance, travel costs, and service disruptions.

One of the most effective responses to these challenges has been the Circuit Rider Training Program (CRTP), a mentorship model that rotates qualified water and wastewater experts through First Nations communities to train local system operators directly on-site. By delivering practical, in-community instruction, the program strengthens technical skills while keeping essential services running.[69]

Since its development by the Saskatchewan Water Corporation in 1978, the Circuit Rider model has expanded across the country through regional initiatives and now operates under the guidance of the Circuit Rider Trainer Professional Association, which coordinates standards and best practices. Circuit Riders have played a key role in reducing drinking water advisories by ensuring that operators can maintain and upgrade their licences without the time and cost of leaving their communities for training.[70]

Despite its proven success, CRTP still relies on annual federal renewals, which creates uncertainty for program delivery and community planning. Multi-year funding would go a long way to providing the stability needed to retain trainers, support certification pathways, and expand the model to other critical infrastructure roles such as housing, facilities, and energy management.[71]

By investing in long-term mentorship capacity, Canada can help ensure that infrastructure investments translate into lasting local expertise—not just physical assets.

Learning on wheels

Expanding access to hands-on training is essential for communities that face travel barriers or lack nearby post-secondary institutions.[72] Mobile training labs offer a practical solution by bringing equipment, instructors, and certification programs directly to remote Indigenous communities.[73]

Operated by a growing number of colleges and technical institutes, these mobile units are equipped with tools, simulators, and digital learning systems that replicate real work environments. Participants are able to gain practical experience without leaving their communities—reducing travel costs and improving program completion rates.[74]

The model has proven effective across Canada. Shoal Lake 40 First Nation partnered with Red River College Polytechnic to deliver construction trades training before launching a housing and family resource centre project, ensuring local workers were ready for employment as construction began. Saskatchewan Polytechnic's mobile training units, operating since 2006, have created certification pathways for welders, electricians, machinists, and industrial mechanics by offering day programs for high school students and evening classes for adults. Similar labs now support skills development in healthcare, manufacturing, and information technology.[75]

However, inconsistent funding models limit the reach and reliability of these programs. Some communities purchase access collectively through community-owned businesses, while others depend on short-term provincial or federal grants. These variations can create gaps in coverage and hinder long-term planning.

Establishing a dedicated national funding stream for mobile training initiatives—potentially linked to infrastructure and employment programs like ISET or SPF—could help stabilize delivery, scale up successful models, and ensure remote communities have continuous access to the training needed to sustain their infrastructure.

69 Indigenous Services Canada, "Circuit Rider Training Program."
70 SaskWater, "First Nations Training Program."
71 Indigenous Services Canada, "Evaluation of the On-Reserve Housing Program."
72 Employment and Social Development Canada, "Evaluation of the Aboriginal Skills and Employment Training Strategy."
73 Piché, "Building a 'very bright future'."
74 Employment and Social Development Canada, "Evaluation of the Aboriginal Skills and Employment Training Strategy."
75 Piché, "Building a 'very bright future'."

Tapping into northern logistics expertise

The supply chains and logistics required to effectively develop, maintain, and operate infrastructure in Canada's Northern regions face a range of unique challenges. Even when funding and skills are in place, northern logistics remain a major barrier to closing infrastructure gaps. Short construction seasons, limited transportation access, and high material costs can delay projects and inflate budgets. Some Indigenous communities are responding with innovative local solutions that reduce costs and extend construction timelines.[76]

In Arviat, Nunavut, Sakku Innovative Building Solutions, a subsidiary of the Kivalliq Inuit Development Corporation, launched a modular housing factory in 2025—the first of its kind in the region. The facility builds on earlier partnerships with RG Solution in Quebec and is expected to produce 35 modular homes annually while doubling as a trades training centre. Its dual purpose—housing production and workforce development—creates a model for sustainable regional growth.[77] A second modular housing factory, Qammaq 2.0, is proposed for construction in Iqaluit and is modelled after the Arviat facility.[78]

Ramping up this form of industrialized, off-site construction is what the Assembly of First Nations calls Canada's "best chance of success" for closing the infrastructure gap by 2030. Building homes and other infrastructure this way improves cost certainty and creates economies of scale by purchasing equipment and materials in bulk. It also reduces injuries by shifting more work into controlled factory environments and away from on-site tasks on roofs, scaffolding, and other elevated surfaces where fall risks are highest. Fully prefabricated buildings, components of buildings, or kits of parts can be quickly assembled on-site—a critical benefit for Northern and remote communities with short construction seasons.[79]

Other solutions are emerging to address high utility costs. Qillaq Innovations, an Inuit-owned construction firm based in Cambridge Bay, Nunavut, is piloting a new housing model that aims to increase efficiency and affordability by building four new homes in a cluster that shares a central utility building.[80] In the Northwest Territories, the Beaufort Delta Biomass Hub project aims to develop a more efficient biomass supply chain in Inuvik and the surrounding region, while the Deline Got'ine Government is exploring the potential of low-head hydro technology to displace diesel in meeting the community's baseload electrical demand.[81]

In Old Crow, Yukon, the planned Vuntut Gwitchin Housing Warehouse and Assembly Shop intends to use bulk purchasing to overcome intermittent road access. By stockpiling materials for multiple building seasons, the community aims to ensure a steady supply for homebuilders and avoid costly interruptions caused by transportation delays.[82] Consultations on federal infrastructure funding have also pointed to the potential for a whole-of-community procurement that bundles material purchases for multiple community projects to generate efficiencies.[83]

Investing in northern logistics expertise—from bulk purchasing hubs to Indigenous-owned modular factories—can transform one of the biggest barriers to northern development into a competitive advantage, driving both cost efficiency and local employment.

76 Canada Mortgage and Housing Corporation, "Final Funding Recipients for Round 3."
77 Burnett, "First of its kind factory."
78 Qammaq.2.0, "What is Qammaq2.0."
79 Assembly of First Nations, *Closing the Infrastructure Gap.*
80 Canadian Northern Economic Development Agency, "Minister Chartrand announces $600,000 investment."
81 Natural Resources Canada, "Government of Canada Announces Funding."
82 Canada Mortgage and Housing Corporation, "Final Funding Recipients for Round 3."
83 Indigenous Services Canada, "Evaluation of the Education Facilities Program."

Indigenous telecommunications spectrum rights

Reliable broadband and cellular connectivity are no longer optional. They are the digital backbone of healthcare, education, emergency response, and economic participation.[84] Yet nearly half of First Nations communities still report inadequate broadband service,[85] and connectivity gaps persist in many Inuit[86] and Métis[87] communities across the North, leaving many residents without access to essential digital infrastructure.

Connectivity in Indigenous communities has historically lagged behind national broadband targets due to high infrastructure costs, low revenues for providers, short shipping and construction seasons, and delays resolving network issues in remote communities—challenges that are well documented in assessments of northern and Indigenous connectivity.[88]

The gap is not only technical but regulatory. In Canada, large telecommunications carriers hold exclusive rights to the spectrum needed to serve Indigenous regions but often fail to make the required investments. Some Indigenous governments are already calling for reallocation of unused or underutilized spectrum to Indigenous operators, arguing that where incumbents fail to meet service standards, the right to use the spectrum should revert to affected communities. Pilot projects have tested this idea. For example, in one initiative involving 12 Indigenous communities, temporary spectrum licences were issued but limited to one year—a term too short to support investment. Without longer licence horizons, communities cannot attract partners or financing for broadband infrastructure.[89]

The connectivity landscape is also changing as low-Earth-orbit satellite services become more widely available. Starlink has rapidly expanded access in remote regions where terrestrial networks remain limited.[90] In Nunatsiavut, for example, Bell Canada recently withdrew from its wireless broadband project after subscriber numbers fell by 70 per cent, a shift attributed in part to the availability of satellite alternatives.[91] This transition illustrates both the demand for reliable service and the competitive pressure that new technologies place on traditional carriers, particularly in regions where infrastructure investments have lagged. Inuit Tapiriit Kanatami (ITK) argues that the federal government has focused on investments that perpetuate satellite dependence, a practice out of step with other jurisdictions in the Arctic that are prioritizing the expansion of fibre infrastructure.[92]

84 Inuit Tapiriit Kanatami, *The Digital Divide*.
85 Assembly of First Nations, *Closing the Infrastructure Gap*.
86 Inuit Tapiriit Kanatami, *The Digital Divide*.
87 Métis National Council, *Think Growth*.
88 Collier, "Broadband Internet in Indigenous Communities."
89 Canadian Radio-television and Telecommunications Commission, "CRTC making it easier to connect Indigenous communities."
90 Starlink, "Reliable High-Speed Internet From Space."
91 Nunatsiavut Government, "Bell Canada's decision to withdraw."
92 Inuit Tapiriit Kanatami, *The Digital Divide*.

These shifts also underscore the importance of Indigenous-led organizations in closing connectivity gaps, particularly where long-term service reliability and local capacity are critical. Arrow Technology Group, based in Alberta and owned by Alexis Nakota Sioux Nation, operates as an Indigenous end-to-end IT and network service provider.[93] The organization delivers broadband infrastructure, network management, and technical services to First Nations in the region, illustrating how Indigenous-owned providers can help improve connectivity while building local technical capacity.

Established international models already exist. The U.S. Federal Communications Commission's Rural Tribal Priority Window (2020) granted tribes long-term rights to unassigned 2.5 GHz spectrum over their lands. The Southern Ute Indian Tribe leveraged this opportunity to create a tribally owned open-access network, delivering fibre service to 6,700 homes at half the previous cost and spurring local competition. Long-term spectrum access gave the tribe the certainty to plan, finance, and operate its own network—demonstrating how policy can enable Indigenous nations to control their digital futures.[94] In New Zealand, a Māori Spectrum Trust manages spectrum to encourage greater representation of Māori language and culture in media.[95]

Canada has begun to move in this direction. Innovation, Science and Economic Development Canada (ISED) has announced that upcoming licensing frameworks will include a "use-it-or-lose-it" rule to prevent spectrum hoarding and an Indigenous Priority Window for access to unassigned frequencies.[96]

To close the digital divide, Canada can go further by establishing things like secure, long-term spectrum rights for Indigenous governments that support investment, ownership, and innovation in telecommunications infrastructure. Doing so would help to place Indigenous connectivity on par with other forms of community infrastructure and ensure that the next generation of digital networks is Indigenous-led, equitable, and sustainable.

Building prosperity by building infrastructure

Addressing the infrastructure gap in Indigenous communities remains one of Canada's most pressing national challenges—and one of its greatest opportunities for shared prosperity. The evidence presented in this primer shows that some Indigenous communities are already advancing effective, locally driven models that combine long-term planning, flexible funding, and community ownership to deliver results.

Programs such as the Indigenous Community Infrastructure Fund, the Circuit Rider Training Program, and emerging Indigenous-led insurance and financing initiatives demonstrate how practical innovations can overcome financial, logistical, and risk management barriers. These models point to a larger systems shift—from short-term, proposal-based funding toward predictable, long-term investment that supports Indigenous self-determination in infrastructure planning and delivery.

Stable, multi-decade federal commitments can unlock financing, attract co-investment, and ensure that new infrastructure remains functional for generations. Asset management frameworks, service transfer agreements, and distinctions-based funding can maximize the return on these investments by aligning decision-making with community priorities. Meanwhile, regulatory reforms—such as long-term spectrum rights for Indigenous governments—can extend connectivity to remote regions and enable participation in the digital economy.

Remote and Northern communities continue to face complex logistical barriers, but many have also developed deep local expertise—from bulk purchasing and modular construction to mobile training and fire safety innovation. Expanding and stabilizing support for these community-led solutions can reduce costs, mitigate risks, and build lasting technical capacity.

93 Arrow Technology Group, "Managed IT Services & Support."

94 Federal Communications Commission, "2.5 GHz Rural Tribal Window."

95 Métis National Council, *Think Growth.*

96 Innovation Science and Economic Development Canada, "Government of Canada strengthens "use it or lose it" spectrum policy."

In the examples included in this primer, infrastructure functions not only as a means of delivering essential services but also as a foundation for broader economic activity. In many communities, capital projects and asset ownership contribute to longer-term outcomes such as local employment, revenue generation, and enhanced economic autonomy within community-led development pathways.

Safe, reliable infrastructure is key to building prosperity and fostering reconciliation. Closing the gap by 2030 would extend that foundation to millions of people in First Nations, Inuit, and Métis communities—empowering Canada's youngest and fastest-growing population while strengthening the nation's economy, resilience, and unity for decades to come.[97]

97 Conference Board of Canada, The, *Benefits for All Canadians (Part 2)*.

Appendix A

Methodology

About the research

Research questions

This primer explores Indigenous-led approaches to closing community infrastructure gaps in Canada. It was guided by two overarching research questions:

1. How can Canada close Indigenous community infrastructure gaps in ways that are locally driven, sustainable, and equitable?
2. How can new investments deliver lasting change by supporting Indigenous leadership, long-term planning, and systems transformation?

Research methods

To address these questions, the research team conducted a comprehensive literature review examining Indigenous community infrastructure across Canada between 2020 and 2025. The review focused on identifying recurring themes, institutional innovations, best practices, and policy gaps related to infrastructure planning, funding, and delivery.

Findings from this review informed the synthesis of key insights and the development of actionable recommendations presented throughout the primer. The analysis emphasizes Indigenous-led and partnership-based approaches that demonstrate measurable progress toward closing infrastructure gaps and achieving long-term, community-driven outcomes.

Detailed methods

Purpose of the primer

This primer provides an evidence-informed foundation for understanding and accelerating progress toward closing Indigenous community infrastructure gaps. It identifies Indigenous-led models and enabling policies that improve outcomes in planning, financing, and service delivery, and assesses how federal, provincial, territorial, and Indigenous policies interact to either enable or constrain development.

By highlighting practical examples across First Nations, Inuit, and Métis contexts, the primer supports policy-makers, practitioners, and community leaders in advancing locally driven, sustainable, and equitable approaches to infrastructure investment.

Analytic framework

Each source identified through the literature review was assessed for its relevance to the primer's guiding questions and analyzed across the following dimensions:

- Infrastructure challenges addressed—specific barriers or systemic issues targeted.
- Community and governance context—Indigenous populations, geographies, and institutional arrangements involved.
- Infrastructure domains—sectors discussed, including housing, water, energy, broadband, transportation, and community facilities.
- Policy and funding mechanisms—instruments, programs, or fiscal tools used to plan, finance, or deliver infrastructure.
- Observed outcomes—impacts on capacity development, service delivery, economic participation, or community well-being.
- Institutional partnerships—enabling organizations or frameworks, including those established under the *First Nations Fiscal Management Act*.
- Applicability by context—relevance to remote, northern, rural, or urban Indigenous communities.

Source Identification

Sources were included in the review if they met the following criteria:

- Focus: Addressed Indigenous community infrastructure development, governance, or policy in Canada.
- Recency: Published between 2020 and 2025.
- Authorship: Produced by Indigenous organizations and governments, federal or provincial agencies, academic institutions, or non-profit research bodies.
- Content: Presented original research findings, program evaluations, implementation examples, or policy analyses relevant to infrastructure development.

Sources were identified through targeted online searches of major institutional websites (e.g., Government of Canada, Assembly of First Nations, Inuit Tapiriit Kanatami, Métis Nation organizations), as well as through internal research databases, public repositories, and snowball sampling from bibliographies and reference lists.

Scope of review

The review incorporated a total of 88 sources, with a balance of Indigenous, governmental, and institutional perspectives reflected. These included Indigenous (First Nations, Inuit, Métis, pan-Indigenous):

- First Nations publications: 25
- Inuit publications: 6
- Métis publications: 3
- pan-Indigenous or institutional publications: 11
- federal government reports: 29
- provincial and territorial government reports: 3
- other grey literature: 11

This distribution reflects the current concentration of infrastructure-related research and reporting within First Nations and federal contexts, while acknowledging emerging evidence from Inuit, Métis, and pan-Indigenous initiatives.

Output of the primer

The literature review and analysis produced the following outputs:

- synthesis of best practices and Indigenous-led innovations addressing barriers in infrastructure planning, financing, and delivery;
- typology of institutional enablers and policy mechanisms that support Indigenous governance and long-term investment;
- curated inventory of case studies and potential interview candidates illustrating community-led approaches and partnership models;
- targeted policy recommendations focused on funding design, governance frameworks, workforce development, and infrastructure delivery in remote and northern contexts.

Together, these outputs provide an evidence-informed foundation for scaling up Indigenous-led approaches and improving the effectiveness of public investment.

Appendix B

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