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Policies and Policy Strategies for Addressing the Infrastructure Gap

A Review of Senior government funding policy for rural infrastructure in Canada

Chloe Boyle,
M.R.M. Candidate, School of Resource and Environmental Management,
Simon Fraser University

Dr. Sean Markey,
Associate Professor, Resource and Environmental Management
Simon Fraser University

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Acronyms

AMO	Association of Municipalities Ontario
CCC	The Canadian Chamber of Commerce
CCME	Canadian Council of the Ministers of the Environment
CRRF	Canadian Rural Revitalization Foundation
CSCD	British Columbia Ministry of Community, Sport, and Cultural Development
CUPE	Canadian Union of Public Employees
EC	European commission
EU	European Union
FCM	Federation of Canadian Municipalities
GDP	Gross Domestic Product
IC	Industry Canada
INFC	Infrastructure Canada
OECD	Organization for Economic Co-operation and Development
OM	Operations and Maintenance
PPP	Public Private Partnerships
US	United States

Executive Summary

The Infrastructure Gap refers to the difference between the current investment in infrastructure, and what is necessary to meet the maintenance of existing infrastructure requirements. The infrastructure gap in Canadian rural communities is more pronounced compared to their urban counterparts, due to historical circumstances and the particular challenges inherent to rural areas. Rural communities share common issues of low populations and low population density, high remoteness, extreme climatic conditions, and a lack of good quality data. However, rural communities across Canada are extremely diverse in terms of skills and resources. Similar to urban areas, rural communities rely on senior government funding for infrastructure procurement. While more funding may begin to address the infrastructure gap, money alone will not be sufficient. New policies are needed which recognize the particular challenges rural communities face.

This research aims to provide an overview of the ways in which rural communities currently fund infrastructure projects, and review senior government funding policies in Canada, the United States, and the European Union. Local infrastructure projects are typically funded through a mix of internal sources, including taxes and user fees, and external sources, including loans and grants from senior government. External funding can be broken down further into unconditional transfers, conditional project-specific grants, low interest loans, public-private partnerships and capacity-building funding. Each funding program type has inherent advantages and disadvantages, and a mix of programs are provided by senior governments for different purposes. Generally, unconditional transfers and capacity-building programs better address local needs in rural areas when compared to conditional grants, loans, and public-private partnerships. Though noted as critical, external funding for post-project monitoring, and operations and maintenance is lacking. By reviewing funding policy through a rural perspective, the hope is that some of the current policy limitations can be addressed.

Opportunities for improving funding policy to address the rural infrastructure gap were identified through this research. Long-term, stable, and predictable funding builds trust and social capital between local communities and funding agencies. Long-term funding also requires long-term planning, asset management and full cost accounting. To address the diversity and access local expertise, flexible and adaptable policies should be created with authentic local engagement, and enable local-decision making. Directing resources towards capacity-building allows communities to gain the management and planning skills necessary for infrastructure procurement. Infrastructure planning at multiple government levels would promote horizontal and vertical synergy, focusing funding on priority areas. Finally, monitoring infrastructure projects and the funding programs themselves enables data collection to provide a basis for future decisions. The implementation of these recommendations can be made easier by the use of the best available technology. There is no easy 'fix' to the infrastructure gap in rural communities, however, policy adjustments can make progress in the right direction.

Introduction

Infrastructure supports the critical services that allow goods to be produced, goods and people to move efficiently, and ensure a standard of living to attract and retain skilled workers (Breen, 2015). Economic researchers consistently report that investments in public infrastructure enhance economic productivity and societal development (Fox & Porca, 2001; The Canadian Chamber of Commerce [CCC], 2013). Although there is no formal agreed upon definition of infrastructure, similar to Breen (2015), infrastructure here will refer to the 'built environment that provides the foundation supporting the existence, development and survival of society'. More specifically, physical infrastructure includes drinking water, wastewater, municipal roads and bridges, community and social infrastructure, sports and recreation infrastructure owned and operated by local governments (Breen, 2015).

In Canada, the vast stock of infrastructure was built in the 1950's through to the 1970's, and was followed by a period of low investment from the 1980's to 1990's (CCC, 2013). As a result, infrastructure in Canada is now close to the end of its service life (Federation of Canadian Municipalities [FCM], 2012). In the early 2000's the federal, provincial, and territorial governments began reinvesting through various governmental transfer programs. However, the investment remains lower than required to support the current and projected Canadian population (FCM, 2012). The difference between the current investment, and what is needed to meet the require maintenance of existing infrastructure is known as the Infrastructure gap (Breen, 2015). The estimated deficit in Canada ranges from $50 billion to $570 billion, depending on the source (CCC, 2013).

Federal and provincial governments have been downloading the responsibility for infrastructure to the municipal level (Association of Municipalities Ontario [AMO], 2015; Canadian Rural Revitalization Foundation [CRRF], 2015). Municipalities now own more than 60% of the local infrastructure (FCM, 2012; Fletcher & Mcarthur, 2010; CCC, 2013). Municipal governments receive financial authority from the provinces and territories; and, provinces establish the standards for service provision, determine revenue options, and limit borrowing capacity (British Columbia Ministry of Community, Sport, and Cultural Development [CSCD], 2012; Lidstone, 2004). Municipalities fund infrastructure investment through a mix of taxes, user fees, loans, and transfers from higher levels of government (FCM, 2008). Municipalities are permitted to borrow for infrastructure capital expenditures, but unlike higher levels of government, cannot borrow for general operating expenses (FCM, 2001; Kitchen & Slack, 2003).

Municipalities in Canada are more limited in the available financing tools compared to other countries in the Organisation for Economic Co-operation and Development (OECD) (Lidstone, 2004). Internal tax revenue in Canadian municipalities is primarily from property taxes, which account for 90% of the revenue raised by taxes, compared to 70% in the United States (US), and less than 20% in European Union (EU) member countries (Canadian Union of Public Employees [CUPE], 2015; FCM, 2013). US and European municipalities use other forms of taxation, including income tax, sales tax, and special earmarked taxes, to obtain revenue from non-resident beneficiaries of municipal government service (FCM, 2001). The debt limitations in US and EU are not as strict, and municipalities borrow more from financial institutions or government owned banks (FCM, 2001). Additionally, US municipalities are also able to provide more tax incentives to attract private sector investment (FCM, 2001)

The infrastructure gap in Canadian rural communities is more pronounced, due to the particular challenges inherent in rural areas (Breen, 2015; Canadian Council of Ministers of the Environment [CCME], 2006). The concept of rural is characterized by low population and low density, and high distance to density (CRRF, 2015). Additionally, in Canada rural communities are situated in geographic locations with more extreme terrain and climactic conditions. These factors contribute to a higher per capita cost of infrastructure provision, and a lower tax base (CCME, 2006; FCM, 2012; Kitchen & Slack, 2003). Rural communities are often resource dependent, and more vulnerable to economic 'boom and bust' cycles (AMO, 2015; Stedman, Parkins, & Beckley, 2004). Taxes, user fees, and borrowing capacity are not perceived to be enough to cover infrastructure costs, creating a reliance of rural communities on grants from higher levels of government (AMO, 2015; Infrastructure Funding Council, 2011).

The image of rural Canada as 'rapidly depopulating resource bank for provincial, territorial, and national economies, or as quaint relics of a less developed past' is misleading (CRRF, 2015). Rural communities are vital to Canada, providing significant economic activity and linked to primary production of food, resource extraction, and energy generation (CRRF, 2015; FCM, 2006). Non-metro Canada is the home of 31% of Canada's population, 28% of employed Canadians and responsible for approximately 30% of Canada's GDP (CRRF, 2015). Rural and urban Canada are inextricably linked, and rural community development benefits the nation as a whole (CRRF, 2015). Infrastructure provides the basis for community development, and current development policy from senior levels of government is not addressing the root causes of the infrastructure gap (CRRF, 2015). A thriving rural Canada will require creative and innovative funding policy for rural infrastructure investment (Breen, 2015; CRRF, 2015; FCM, 2016b).

This research aims to provide an overview of infrastructure funding programs from higher levels of government, examining the program policies through a rural lens. The rural lens views policy from the frame of communities with the challenges of lower population and higher remoteness (CRRF, 2015). Rural communities in OECD countries whether in Canada, US, or EU members, rely on external funding for infrastructure (OECD, 2006). Over 100 funding programs were examined at the Provincial and National level in Canada, the national level in US, and EU-wide (see Appendix A). Though other OECD countries have different regulatory contexts, this research does not examine the advantages and disadvantages of all revenue raising powers (Lidstone, 2004). The research is by no means a comprehensive analysis of every infrastructure policy financing mechanism, but rather an introduction to how infrastructure is funded in rural communities.

The paper is divided into (1) a description of Infrastructure funding mechanisms, (2) a description of external funding program policies, and (3) a discussion of the programs and policies through a rural lens. Infrastructure funding mechanisms will describe the most common sources of revenue used for infrastructure, both internally and externally. External funding program policies outline the common methods of funding infrastructure through outside sources. The categories were established based on common policies identified in reviewing funding programs (see Appendix A). The particular strengths and weaknesses of the programs are discussed, and the program policies are examined through the rural lens. Finally, the paper outlines concrete recommendations for developing rural infrastructure funding policy.

Infrastructure Funding Mechanisms

Municipalities invest in capital infrastructure projects using four main methods: taxes, user fees, loans, and grants (Kitchen & Slack, 2003). Taxes and user fees are internal sources of revenue, and loans and transfers are external. Depending on the municipality's authority and financial situation, certain mechanisms may be used more than others.

Taxes

Municipalities may have the authority to tax goods and services to generate revenue. Property taxes rely on assessments of property values, and are stable and predictable; however, property taxes do not grow with a municipality's economy (AMO, 2015; FCM, 2012; Kitchen & Slack, 2003). Income and sales taxes increase when a municipality's economy is doing well, but fluctuate with the financial market (CUPE, 2013; Kitchen & Slack, 2003). Fuel taxes, hotel taxes, and 'sin' taxes (alcohol and tobacco) may also be used, but do not generate the same returns (CSCD, 2012; Kitchen & Slack, 2003). Taxes can be added to a general fund, or earmarked for specific purposes (CSCD, 2012).

User Fees

User fees are the charges paid by users of the service public infrastructure provides. User fees are appropriate for paying for general infrastructure operations and maintenance. Certain infrastructure services lend themselves well to funding through user fees, where a defined user group benefits and non-payers can be excluded (FCM, 2006, 2008; Kitchen, 2006). However, certain infrastructure is non-excludable, and user fees are not possible (e.g. sidewalks). Using user fees to cover the capital costs for large-scale, long-term projects violates intergenerational equity, as those who are paying for the infrastructure will not be the ones using it (Infrastructure Funding Council, 2011; Kitchen, 2006). In addition, the user fees requires may be unreasonably high in certain areas to cover the complete costs of operations and maintenance (Kitchen, 2006; Kitchen & Slack, 2003).

Loans

Municipal borrowing for infrastructure is reserved for capital projects only, and limited by provincial legislation (Kitchen & Slack, 2003). Municipalities can issue municipal bonds to fund specific capital projects (FCM, 2015; US Securities and Exchange Commission, 2009). Municipal bonds can be backed by project specific user fees, or through general financing (FCM, 2015; US Securities and Exchange Commission, 2009). Lenders may also provide other financial instruments, including loan guarantees, and lines of credit (European Investment Bank, 2015).

Grants and Transfers

Grants and transfers are commonly provided from higher levels of government for funding local infrastructure (FCM, 2008). Grant funding may be unconditional or conditional. Conditional transfers are provided for a specific use, whereas unconditional grants are provided with 'no strings attached' (FCM, 2008). Conditional grants may also require cost-sharing, where municipalities are required to allocate a certain amount of funding towards the infrastructure project (FCM, 2008).

External Infrastructure Funding Program Policies

The programs here were delineated according to differences in the goal and the administration of the funding. Policies for external infrastructure funding programs were broadly categorized based on the common policies identified in the literature (see Appendix A): (1) 'unconditional' grants for equalization, (2) conditional project-specific grants, (3) revolving and low interest loan programs, (4) public-private partnerships, and (5) capacity-building programs. It is important to note that while funding programs were divided into five categories, funding programs can be a mix of policies with differing objectives.

'Unconditional' Transfers for Equalization

'Unconditional' transfers, sometimes called block grants or lump-sum transfers, are used to cover a fiscal imbalance and to ensure equitable service provision. Transfers are provided by higher levels of government to ensure that adequate and comparable levels of service are provided for reasonable and comparable taxes and user fees (FCM, 2008). A vertical fiscal imbalance results from higher levels of government collecting more revenue compared to the services they provide. A horizontal fiscal imbalance results from differing costs and revenues between municipalities; the need and cost for certain services may be greater in one area compared to another (CSCD, 2012; FCM, 2008). To cover a vertical fiscal imbalance, funding is allocated to all municipalities; however to cover a horizontal imbalance funding may only be allocated to communities under greater financial stress (FCM, 2008).

Unconditional transfers are characterized by flexible funding provided to municipalities up-front on a regular basis. The funding agency provides funding directly to municipalities for infrastructure, and has no role in the selection or approval of specific projects (FCM, 2008; Infrastructure Canada [INFC], 2015b). The allocation of funds tends to be through a population-based formula, which may additionally consider expenditure needs (FCM, 2008; Muniscope, 2008). The total amount of funding may be budgeted in advance, or depend on revenues raised (European Commission [EC], 2015; INFC, 2015b). Unconditional transfer funding programs tend to be implemented over longer term (around 10-20 years) (EC, 2015; INFC, 2015b).

Conditional Project-specific Grants

Conditional grants are allocated for specific projects, and for specific recipients (FCM, 2008; Muniscope, 2008). Conditional grants encourage local governments to spend on a particular service that they otherwise would not have invested in (CSCD, 2012; FCM, 2008; Slack, 2009). These grants may be for the objective of providing services with benefits that spillover municipal boundaries, which municipalities may under-allocate resources towards. Conditional grants may also be used to enforce a minimum standard of service, where government has a responsibility, but the activity is more effectively produced by local government (CSCD, 2012; FCM, 2008; Slack, 2009). The grants may or may not require matching funds or minimum spending from local government.

Conditional grants have detailed policies outlining specific projects where funds can be used, and/or restrictions on which communities are eligible to apply (INFC, 2015a). Eligible recipients under conditional grants can include non-governmental agencies, such as business, institutions, and not-for-profits (European Investment Bank, 2015; FCM, 2008; INFC, 2015a). Applicants are required to submit project proposals, and the funding agency prioritizes the potential projects. Criteria for funding priority may include: safety risk, environmental risk, economic potential, funding leveraged, and 'shovel-readiness' (INFC, 2012). The ultimate funding decision is made by the funding agency (INFC, 2015a). Conditional funding programs are generally provided with a set budget beforehand, a defined program length, and set intake proposal period. Funding maximums may be set in terms of eligible cost fraction or maximum funding amount (EC, 2014b; FCM, 2008; INFC, 2015a, 2015c). Recipients generally pay for projects themselves, and receive reimbursements from the agency after demonstrating project completion (INFC, 2015a).

Low Interest Loan Programs

Low interest loans can be administered by higher levels of government, governmental agencies, or independent agencies with seeded government funding (CUPE, 2013; European Investment Bank, 2015; FCM, 2015). Similar to conditional grant funding, eligible recipients may include non-governmental agencies. Maximum funding amount is determined by borrowing restrictions, and all funds are repayable (FCM, 2008; US Environmental Protection Agency, 2015a, 2015b). Eligible recipients have to apply to the loaning agency, and similar to conditional grant funding, projects are considered based on individual merits (European Investment Bank, 2015). Project applications may be similar to conditional grant project proposals, or financial loan applications (European Investment Bank, 2015; Northern Development Initiative Trust Board, 2016).

There are two common structures for allocating low interest loans to municipalities in Canada: municipal financing authorities and corporations, and revolving loan funds (CSCD, 2012; CUPE, 2015; FCM, 2008). Municipal financing authorities or corporations are centralized provincial lending agencies with high credit ratings that are able to borrow funds on behalf of municipalities at low interest rates and low transaction costs (CUPE, 2013). The corporations pool funds, and agencies can borrow long-term through the authority or corporation for low interest rates (CUPE, 2013). Revolving loans are allocated a fixed capital sum, with regulation or policy that sets out the specific purposes for which the revolving loan fund can be used (Canada Mortgage and Housing Corporation, 2016). The funding is awarded through repayable loans, and interest rates are lower than the prevailing commercial rate (Canada Mortgage and Housing Corporation, 2016). As the recipients repay the loan back into the fund, loans can be re-awarded for new projects (Canada Mortgage and Housing Corporation, 2016; FCM, 2015)

Public-Private Partnerships

Public-private partnerships (PPP) are short or long-term contractual arrangements between the public and private sector (EC, 2015; Loxley, 2012). For infrastructure projects, the private sector delivers a service or project, and assumes a measure of financing, technical, or operating risk (Hanniman, 2013). The contracts bundle the finance, design, construction, operation, and maintenance, and allow private sector bidding (Hanniman, 2013). PPP aim to improve delivery of investments through ensured financial transparency, and measurable and enforceable asset management (Cautillo, Zon, & Mendelsohn, 2014; EC, 2015). The necessity of recovering all the costs may impose stronger fiscal discipline, and the projects may provide better value for money compared to conventional procurement (Bosworth & Milusheva, 2013; Cautillo et al., 2014).

In a PPP, the public sector turns over part, or the entirety, of the responsibility for building, operating, or maintaining a facility (Bosworth & Milusheva, 2013). The contracts range from minimum involvement, such as short-term design and build, or single service, to complex contracts involving design, build, and long-term operations and maintenance (FCM, 2015; Hanniman, 2013). The private sector makes returns on operational user fees, or regular payments from municipalities (Bosworth & Milusheva, 2013; Loxley, 2012). The private sector provides expertise, and projects may be more innovative and riskier (EC, 2015). Private contracts also ensure a degree of separation from the politics associated with raising tolls or user fees (Bosworth & Milusheva, 2013).

Capacity Building Funding

In addition to investments in capital projects, support may be provided for capacity building projects and community economic development initiatives. Funding can be provided directly to recipients for the technical training of staff, for project management, development of business cases, strategic plans, asset management plans, feasibility studies, research, and other non-capital non-physical projects (Community Futures Network of Canada, 2006; Industry Canada [IC], 2014; Ministry of Forests Lands and Natural Resource Operations, 2016). Direct financial support may be provided (Community Futures Network of Canada, 2006). Eligible recipients commonly include local governments, first nations, not-for-profits, and for-profit businesses, and partnerships are typically encouraged (Ministry of Forests Lands and Natural Resource Operations, 2016).

In addition to direct funding, government supported agencies may be created to provide assistance with projects that require more expertise. These agencies can be part of higher level government or non-governmental agencies (Community Futures Network of Canada, 2006). The non-governmental agencies may be composed of partnerships between local government, higher level government, business, and not-for-profits; and individuals may be paid or participate on a voluntary basis (Community Futures Network of Canada, 2006; EC, 2006). Depending on the authority, agencies may have project decision-making power, or solely the authority to assist other eligible entities (Community Futures Network of Canada, 2006; EC, 2006). Agencies may provide programs and services, including training, networking activities, partnerships, and provide assistance to recipients applying or external capital funding (Community Futures Network of Canada, 2006).

Discussion: The Rural Lens

According to the principle of subsidiarity, governments closer to the people are better able to adjust services to their demands (Alm, 2010). Local governments must be able to act on their own initiative on any issue that is not exclusively under the authority of another entity, and to not be excluded in decision-making that has local implications (FCM, 2001; Lidstone, 2004). The rationales associated with subsidiarity include that local governments know their communities best, better understand local needs, and can build on the expertise and experience of local people (CRRF, 2015). However, the principles of local self-government are not recognized in Canadian constitution, or in provincial or territorial legislation (Lidstone, 2004). Municipalities are creatures of the province, and receive only authority allocated by provincial government (Lidstone, 2004).

Collecting enough internal revenue from user fees and taxes to provide the necessary community services would promote local autonomy and self-government (CCME, 2006; Kitchen & Slack, 2003). If paid through internal sources of revenue, those who receive the service are those who pay for it, retaining the most efficiency and accountability (Kitchen & Slack, 2003). Different taxes and user fees would create a competitive environment, stimulating competition between local jurisdictions to offer the best mix of taxes and services (Alm, 2010). However, due to uncontrollable external factors rural communities cannot afford to fund infrastructure through internal revenue alone (CRRF, 2015; Indian and Northern Affairs Canada, 2010; Kitchen & Slack, 2003).

Rural communities, much like their urban counterparts, rely on external funding, and federal, provincial, and municipal governments all have roles to play in infrastructure funding and rural policy (Breen, 2015; Brodhead, Darling, & Mullin, 2014; IC, 2014). Currently most transfers to municipalities come from provincial and territorial governments. Direct federal funding to municipalities accounts for less than 10% of total external funding (FCM, 2008). The bulk of federal funding for infrastructure is currently allocated through two main programs: the Gas Tax Fund, and the New Building Canada Fund (INFC, 2014). In contrast, Provincial and Territorial funding may be allocated through many small separately administered programs, or one all-encompassing program, may be legislated or unattached to law (Muniscope, 2008). Provinces and territories rely primarily on conditional grants, which accounts for 85% of external municipal funding (Muniscope, 2008; Slack, 2009).

Though facing the common challenges of remoteness and low population density, rural communities are diverse in size, location, capacity, and economic base (AMO, 2015; CRRF, 2015; FCM, 2006; Fletcher & Mcarthur, 2010; OECD, 2006). Demographic and financial trends in rural communities are less predictable than urban areas (FCM, 2006, 2012; CRRF, 2015). The diversity in rural communities suggests there is no single best rural policy for rural community development, which is particularly true for rural infrastructure funding (Alm, 2010; FCM, 2006, 2008). Higher level governments may attempt to address diversity through providing several funding arrangements, with the hope that municipal governments will choose which funding arrangement best suits the local context (Bradford, 2010; CCC, 2013). Each type of external funding has inherent benefits and challenges, again there is no single best approach for infrastructure funding (Alm, 2010).

Transfers in general reduce accountability, because the government making decisions with funding is not the same level of government that raises the revenues (Kitchen, 2004). Local governments do not set tax rate, determine the tax base, collect or distribute the taxes (FCM, 2008; Kitchen & Slack, 2003). Critics of transfers suggest municipalities have little incentive to be efficient when using higher level funding (Bosworth & Milusheva, 2013; Muniscope, 2008; Slack, 2009). However, because block transfers are up front, the funds can adapt to unforeseen challenges that may arise. Hence, block transfers are usually well received by rural municipalities, because the flexibility allows the funds to be allocated to where they are most needed (FCM, 2008).

Conditional transfers further reduce local government autonomy, as municipalities are required to allocate the funds for specific purposes outlined in funding programs (Bosworth & Milusheva, 2013; Cautillo et al., 2014; Muniscope, 2008). Lowering the price of specific infrastructure encourages municipalities to spend more, which is beneficial where externalities exist, but inappropriate otherwise (Kitchen & Slack, 2003). Conditional grants are typically designed for promoting a provincial or federal agenda at the local scale, rather than for promoting fiscal autonomy (INFC, 2015a; Slack, 2009). Conditional transfers are rarely stable, coinciding with the priorities of provincial government cycles (AMO, 2015; Slack, 2009). However, conditional transfers may encourage non-monetary spillover benefits, such as environmental benefits associated with innovative projects (EC, 2014b; FCM, 2008). Additionally, conditional grants may encourage research and innovation through supporting non-traditional infrastructure projects (Bradford, 2010; FCM, 2008; US Department of Transportation, 2015).

Municipal borrowing, as opposed to grants and transfers, would enable municipalities to distribute the costs of the asset over the life of the asset (Hanniman, 2013). Loan funded infrastructure would promote intergenerational equity, by spreading the cost of infrastructure over all generations that benefit (Hanniman, 2013). Centralized credit assistance has less impact on federal and provincial budgets than grants and transfers (US Government Accountability Office, 2012). However, borrowing can lock municipalities into unsustainable spending patterns depending on the credit conditions (Hanniman, 2013). Provinces are reluctant to reduce borrowing limitations as ultimately the provinces are financially responsible for municipalities (Hanniman, 2013). In addition, revolving loans, and centralized credit assistance require additional costs to administer the fund, which may not always be profitable (FCM, 2015).

Rural communities struggle with conditional matching and loan programs ((CSCD, 2012; FCM, 2008; Muniscope, 2008). Application guidelines and monitoring requirements can be complex and burdensome for rural communities with limited human capacity (CRRF, 2015; Indian and Northern Affairs Canada, 2010; INFC, 2015c). Proposal-based grant and loan programs often have short application windows. With smaller pools of skilled workers, rural municipalities may not be able to apply within the set time-frame (INFC, 2012, 2015a). Rural communities with a lower tax base unable to meet matching fund requirements for conditional programs (INFC, 2015a). Additionally, borrowing restrictions are imposed primarily based on municipal revenues, which limits rural communities' ability to obtain loans (FCM, 2015; US Government Accountability Office, 2012). Communities struggle to finish projects within imposed deadlines, often due to unforeseen climactic circumstances that are out of municipal control (Indian and Northern Affairs Canada, 2010; INFC, 2012).

Public-private partnerships are not usually suitable for rural communities. Though the private sector may achieve more value for money, efficiencies, and innovation, the benefits must be considered against the potential risks. Firstly, PPP incur significant transaction costs in terms of consultants and the legal resources required, which means small scale projects are usually not suitable (FCM, 2015; Hamel, 2007; Loxley, 2012). Municipalities generally already work with the private sector for infrastructure procurement, and with PPP large contractors displace small and medium-sized local business (Hamel, 2007; Loxley, 2012). Day-to-day management of the facilities by business rather than public sector reduces accountability and transparency (Hamel, 2007; Loxley, 2012). Lastly, long-term operation by the private sector eventually erodes the skills and abilities in local public sector to management infrastructure (Hamel, 2007; Loxley, 2012).

Municipalities may be able to pool financial workforce and share resources through formal or informal partnerships (Alm, 2010; CCME, 2006). Certain infrastructure services, such as water infrastructure or public transit, are more efficiently provided at a regional level (Alm, 2010; CCME, 2006). Well established formal entities can coordinate large-scale regional infrastructure services at the regional level with local infrastructure, while respecting local diversity (Bradford, 2010;

Community Futures Network of Canada, 2006; Quebec Affaires municipales et Ocupation du Territoire, 2015). However, large territories composed of many small communities still pose challenges for regional service provision, and regional consolidation of services may not be enough to ensure adequate provision (CRRF, 2015; IC, 2014). Additional issues in regional service provision arise when smaller communities view each other as competitors as opposed to collaborators (CRRF, 2015).

The necessity of monitoring rural policy performance with relevant quantitative measurements is stressed across the literature (INFC, 2015a; Kitchen, 2006; OECD, 2006; CCC, 2013; US Government Accountability Office, 2012). Reliable data collected in rural communities is lacking, but this data is required to make informed decisions on how to address the rural infrastructure challenge (Alm, 2010; Breen, 2015; CRRF, 2015; OECD, 2006). Though formal evaluations exist for large-scale programs, at a regional level, evaluations are lacking (see appendix A). Feedback may also be found in financial or annual reports; however, these reports contain only limited information (see appendix B). Even programs with full evaluations recommend improving performance monitoring (European Court of Auditors, 2015; Indian and Northern Affairs Canada, 2010; IC, 2011, 2014; INFC, 2015a). Performance is often evaluated based solely on economic criteria, and too shortly after project completion to capture the full benefits (European Court of Auditors, 2015; Indian and Northern Affairs Canada, 2010; IC, 2011; OECD, 2006). Infrastructure affects all areas of society, including social, environmental, and economic, which are not currently reflected in performance monitoring (European Court of Auditors, 2015; OECD, 2006).

Lastly, it's important to note that financially supporting infrastructure maintenance is the most effective way to ensure infrastructure quality, life span, and economic returns (Fox & Porca, 2001). Operations and maintenance (OM) have been considered separate from capital funding, when in reality both factor into the total cost of providing a service to the community (Fox & Porca, 2001; Kitchen, 2006). Current transfer programs are generally restricted to construction of capital projects, and OM funding is expected to be covered by user fees and taxes (AMO, 2015; Indian and Northern Affairs Canada, 2010). New infrastructure grants incentivize building new structures instead of up keeping existing infrastructure, costing much more in the long run (Bosworth & Milusheva, 2013; European Court of Auditors, 2015). Opponents of external funding for operations and maintenance suggest the real cost of infrastructure would be further distorted (Lidstone, 2013). However, in rural communities OM funding may facilitate better management of existing infrastructure (CCME, 2006; Indian and Northern Affairs Canada, 2010; Manitoba Water Services Board, 2015).

Recommendations

Best practices in rural infrastructure funding have been identified in reviewing program policies, government evaluations, and academic literature. The recommendations are not listed in order of importance; they are all valuable aspects of infrastructure funding policy: (1) long-term, stable, predictable funding, (2) long-term planning, asset management, and full cost accounting, (3) local decision-making and authentic engagement, (4) flexibility to respond to rural diversity, (5) resources directed towards capacity building, (6) horizontal and vertical synergy in identifying infrastructure priorities, (7) long-term monitoring of projects and programs, and (8) using the best available technology. Note that while each best practice is listed individually, many are inextricably linked, and therefore all the recommendations should be considered as a whole.

1. Long-term, stable, predictable funding

A common refrain from all sources was the necessity of long-term, dedicated, stable, and predictable investments in infrastructure (AMO, 2015; Breen, 2015; CRRF, 2015; FCM, 2016a; CCC, 2013). Stability and permanence of funding policy builds trust between all actors involved; programs running over decades build on successes, and are well received by local actors (IC, 2014; INFC, 2015a; Manitoba Water Services Board, 2015). Longer term programs ensure funding is available when most needed, instead of a 'funding lottery' where communities receive short-term funding for projects that may not be the priority in communities (FCM, 2012, 2016a). The CCC compares the need for infrastructure funding to that of healthcare, education, and public safety, which receive permanent investment from senior government (CCC, 2013).

2. Long-term planning, asset management, full cost accounting

Long-term funding policies and programs go hand in hand with long-term planning and asset management (AMO, 2015; FCM, 2012; Kitchen, 2004). Asset management plans provide an infrastructure inventory, along with information on their condition, performance, and valuation (Kitchen, 2004). Within long-term planning is the need for full cost accounting, where the costs over the entire life-cycle of the infrastructure are considered, from planning and feasibility, to operations, maintenance and decommissioning (CCME, 2006; European Court of Auditors, 2015; Infrastructure Funding Council, 2011; Kitchen, 2004). Through asset management plans and full-cost accounting, municipalities plan for fair user fees and taxes for the maintenance of services over their life span (Indian and Northern Affairs Canada, 2010; Kitchen, 2004).

3. Local decision-making and authentic engagement

Local decision-making bodies are best able to incorporate local information into planning service delivery (Fox & Porca, 2001; OECD, 2006). By focusing on what assets are already available, and what is missing, local expertise will guide where funding should be spent (CRRF, 2015; EC, 2006). Local expertise should be used to identify and target funding towards existing infrastructure gaps (IC, 2011; OECD, 2006). As opposed to top-down imposed conditions, programs that allow local government to invest in their own priorities are well received by rural communities (IC, 2011, 2014). Authentic local engagement means that community members are involved in any decision that will affect them (CRRF, 2015). Not only must local actors be active in the selection of infrastructure projects, but also in the development of funding policies themselves (CRRF, 2015;

Infrastructure Funding Council, 2011; Ministry of Forests Lands and Natural Resource Operations, 2016).

4. Flexible programs to respond to rural diversity

To allow for local decision-making, programs should be flexible to respond to and accommodate the diversity of rural communities (CRRF, 2015). There is no one-size fits all funding scheme, different municipalities will need mix of different resources depending on their local situation (Kitchen & Slack, 2003). Flexibility can be worked into budget timing, project type, funding type, and eligible recipient. Flexible budgeting should allow for funds to roll-over multiple years, and allow money to be allocated based on construction schedules (Indian and Northern Affairs Canada, 2010). Flexible project type could allow for studies and plans, and operations and maintenance to be financed in addition to capital projects (AMO, 2015; Gouvernement du Quebec, 2016; Ministry of Forests Lands and Natural Resource Operations, 2016). Flexible funding could combine of grants and loans, delivered over time periods that match the specific project (Northern Development Initiative Trust Board, 2016). Flexibility in eligible recipients could include local business, not-for-profits, and educational institutions (CRRF, 2015; IC, 2014).

5. Resources directed towards capacity building

Funding for capacity development supports local communities with bottom-up local development (CRRF, 2015). Funding can be provided for communities to undertake their own capacity building, such as funding for workforce training and hiring new personnel (Ministry of Forests Lands and Natural Resource Operations, 2016). Separate entities, such as the formation of regional governments or regional not-for-profits, can also be set-up and funded to provide resources to communities (Community Futures Network of Canada, 2006; IC, 2011; Quebec Affaires municipales et Ocupation du Territoire, 2015). Resources can include coordinating workshops, producing best practices documents, providing courses in technical training and project management, and providing networking opportunities (Community Futures Network of Canada, 2006; Indian and Northern Affairs Canada, 2010). Assistance can also be provided by the agencies that allocate funds, through formal or informal arrangements, to help eligible recipients apply for and implement infrastructure projects (Manitoba Water Services Board, 2010; Northern Development Initiative Trust Board, 2016). Positive evaluations of capacity building programs highlight the importance of communities trained to help themselves (IC, 2011, 2014).

6. Horizontal and vertical synergy in infrastructure priorities

Infrastructure across Canada should function as a network, and the most efficient use of funding would minimize overlaps and ensure complementarity in funding. To accomplish this, all levels of government should develop long-term plans for rural infrastructure, at the local, regional, provincial and national level (Brodhead et al., 2014; CRRF, 2015; EC, 2006; FCM, 2006). With provincial and national rural development plans, the funding can be harmonized to ensure vertical synergy between programs. At the local level, horizontal synergy would involve local government, business, not-for-profits and institutions in decision-making, working collaboratively to address issues (IC, 2011;

OECD, 2006). Project level synergy could be enabled through successive infrastructure projects that build on each other, or parallel projects that occur simultaneously and complement each other (EC, 2014a). Coordinating between stakeholders should not be limited to the planning stage; implementation, monitoring and reporting would benefit from communication between all levels of government, departments, and local actors.

7. Long-term monitoring of projects and programs

Infrastructure projects and the funding programs should be monitored over the long-term to support much needed data collection in rural areas (European Court of Auditors, 2015; OECD, 2006). Without performance measurement, policy will continue to be ad-hoc and irrelevant to rural challenges (OECD, 2006). Infrastructure supports social, cultural, and natural capital development which are often not reflect in monitoring requirements (CRRF, 2015; OECD, 2006). Monitoring through short-term economic indicators are not enough to encompass successful infrastructure implementation. (IC, 2011; INFC, 2015c). Pertinent monitoring indicators should be determined and used to monitor projects over the long-term (European Court of Auditors, 2015). More research may be needed into identifying relevant indicators that are reliable and affordable to collect, which reflect the quality of life improvements from infrastructure.

8. Make use of the best available technology

With advances in available technology, infrastructure projects can now be catalogued in online systems (Alberta Transportation, 2005; Gouvernement du Quebec, 2016). An online database of infrastructure projects would permit asset management plans, accounting, and monitoring in one central system. If multiple funding programs share the same database, the system promotes horizontal and vertical synergy, while eliminating burdensome duplication of monitoring or reporting requirements. Existing and planned infrastructure could be updated over regular time periods, and if properly designed, would promote long-term effective operation and maintenance of infrastructure. Online systems could be used in funding decision-making, and if communicated correctly, ensure transparency, promoting successful infrastructure practices (European Court of Auditors, 2015; Kitchen, 2004).

Conclusion

The pronounced infrastructure gap in rural communities affects the whole of Canada, and will require changing current infrastructure funding policy (Breen, 2015; FCM, 2016b). Rural communities will continue to rely on external sources of funding, but current funding program policies do not respond to the challenges or the diversity of rural communities. The structure of infrastructure funding primarily through conditional grants is overly burdensome for small communities with limited human and financial capital, and does not enhance accountability and local autonomy. Long-term flexible infrastructure funding is required to respond to the diversity of communities, created with authentic local engagement and allowing for local decision-making. Shifting the focus of infrastructure funding from capital projects to providing for operations and maintenance, capacity building, and long-term monitoring can fill the funding gaps that have resulted in the infrastructure gap observed today. There is no easy fix to the infrastructure gap in rural communities; however, through policy adjustments progress can be made in the right direction.

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Acronym	Program	Region	Government Level	Agency	Sector	Program Type	Formal Evaluation?
BCF-CC	Building Canada Fund - Communities Component	Canada	Federal	Federal Government - Infrastructure Canada	All	Conditional matching	Y
BCF-MIC	Building Canada Fund - Major Infrastructure Component	Canada	Federal	Federal Government - Infrastructure Canada	All	Conditional matching	Y
BMTG	Basic Municipal Transportation Grant	Canada	Provincial	Province of Alberta	Transportation	Unconditional	N
CCSF	Canada Cultural Spaces Fund	Canada	Federal	Federal Government - Canadian Heritage	Public Space	Conditional non-matching	Y
CFMP	Capital Facilities and Maintenance Program	Canada	Federal	Aboriginal Affairs and Northern Development	All	Unconditional & Conditional non-matching	Y
CFP	Community Futures Program	Canada	Federal	Federal Government - Federal Delivery Partners	Community Development	Capacity building	Y
CIIF	Community Infrastructure Improvement fund	Canada	Federal	Federal Governemnt - Federal Delivery Partners	All	Conditional non-matching	N
CIP 150	Community Infrastructure Program 150		Federal	Federal Government	Public Space	Conditional matching	N
CRP	Canadian Rural Partnership	Canada	Federal	Agriculture and Agri-Food Canada	All	Capacity building, & conditional non-matching	N
CSIF	Canada's Strategic Infrastructure Fund	Canada	Federal	Federal Government - Infrastructure Canada	All	Conditional non-matching	Y
DWP	Canada-Ontario First Nations Pilot to Improve Drinking Water Quality	Canada	Federal	Aboriginal Affairs and Northern Development, Development Canada, Province of Ontario, Ontario First Nations Technical Services Corporation	Water	Unconditional	N
FNIF	First Nation Infrastructure Fund	Canada	Federal	Aboriginal Affairs and Northern Development	All	Unconditional & Conditional non-matching & Capacity building	Y
FNWWAP	First Nations Water and Wastewater Action Plan	Canada	Federal	Aboriginal Affairs and Northern Development, Health Canada	Water	Unconditional (Through the FNIF)	Y
GIF	Canada's Green Infrastructure Fund	Canada	Federal	Federal Governemnt - Infrastructure Canada EAP	All	Conditional matching	N
GMF	Green Municipal Fund	Canada	Federal	Federation of Canadian Municipalities	All	Conditional matching, Revolving loan	Y
GTF	Gas Tax Fund	Canada	Federal	Federal Government - Infrastructure Canada	All	Unconditional	Y

ISF	Infrastructure Stimulus Fund	Canada	Federal	Infrastructure Canada	All	Conditional matching	Y
MIII	Municipal Infrastructure Investment Initiative	Canada	Provincial	Ontario	All	Conditional non-matching	N
NRTP	National Recreational Trails Program	Canada	Federal	Federal Government, National Trails Coalition	Recreation	Conditional matching	Y
OCIF	Ontario Community Infrastructure Fund	Canada	Provincial	Ontario	All	Unconditional formula & conditional top-up	N
OPWP	Ontario Potable Water Program	Canada	Provincial	Ontario	Water	Conditional matching	N
P3	Public-private partnership fund	Canada	Federal	Federal Government - PPP Canada	All	Public private partnership	Y
PTBase	Provincial-Territorial Infrastructure Base Fund	Canada	Federal	Federal Government - Infrastructure Canada	All	Unconditional	N
PTF	Public Transit Fund	Canada	Federal	Federal Government - Infrastructure Canada	Transportation	Conditional matching	Y
PTIC-SCF	New Building Canada Fund: Provincial-Territorial Infrastructure Component Small Communities Fund	Canada	Federal	Federal Government	All	Conditional matching	N
RADF	Rural Alberta Development Fund	Canada	Provincial	Alberta	All	Capacity building agency & direct conditional	Y
RED	Ontario's Rural Economic Development Program	Canada	Provincial	Ontario Ministry of Agriculture, Food and Rural	Community Development	Capacity building & conditional non-matching	N
MSI	Municipal Sustainability Initiative	Canada	Provincial	Alberta	All	Unconditional	N
NBCF-NIC	New Building Canada Fund - National Infrastructure Component	Canada	Federal	Infrastructure Canada	All	Conditional matching	N
PTIC-NRP	New Building Canada Fund: Provincial-Territorial Infrastructure Component National and Regional Projects	Canada	Federal	Infrastructure Canada	All	Conditional matching	N
BCRD	British Columbia Rural Dividend	Canada	Provincial	British Columbia	Community Development	Capacity building & conditional non-matching	N
MRIF	Municipal Rural Infrastructure Fund	Canada	Federal	Infrastructure Canada	All	Conditional matching	Y
AMIP	Alberta Municipal Infrastructure Program	Canada	Provincial	Alberta	All	Unconditional	N

GreenTRIP	Green Transit Incentives Program	Canada	Provincial	Alberta	Transportation	Conditional matching	N
ACP	Alberta Community Partnership	Canada	Provincial	Alberta	Community Development	Capacity building & conditional non-matching	N
AMWWP	Alberta Municipal Water / Wastewater Partnership (& Water for Life)	Canada	Provincial	Alberta	Water	Conditional matching	N
STIP	Strategic Transportation Infrastructure Program	Canada	Provincial	Alberta	Transportation	Conditional matching	N
OMPF	Ontario Municipal Partnership Fund	Canada	Provincial	Ontario	All	Unconditional	Y
NODP	Northern Ontario Development Program	Canada	Provincial	FedNor (Federal)	Community Development	Capacity building	Y
OSTAR	Ontario Small Town and Rural Development Infrastructure Initiative	Canada	Provincial	Ontario	Community Development	Conditional	N
SIDIT	Souther interior Development Initiative Trust	Canada	Provincial	British Columbia	All	Conditional non-matching & Revolving Loan	Y
BCCWIP	British Columbia Community Water Improvement Program	Canada	Provincial	British Columbia	Water	Conditional matching	Y
BCCRP	British Columbia Community Recreation Porgram	Canada	Provincial	British Columbia	Recreation	Conditional matching	N
BCULG	British Columbia Unconditional Local	Canada	Provincial	British Columbia	All	Unconditional	N
NDIT	Northern Development Initiative Trust	Canada	Provincial	British Columbia	All	Capacity building & Conditional matching & Revolving Loan	Y
BMF	Building Manitoba Fund	Canada	Provincial	Manitoba	All	Unconditional	N
MWSB	Manitoba Water Services Board	Canada	Provincial	Manitoba	Water	Unconditional & Conditional non-matching & Capacity building	N
MRBP	Manitoba New Municipal Road and Bridge Program	Canada	Provincial	Manitoba	Transportation	Conditional matching	N
QTDF	Quebec Territorial Develompent Fund	Canada	Provincial	Quebec	All	Unconditional & Capacity building	N
NCDF	Nunavut Community Development Fund	Canada	Territory	Nunavut	All	Conditional non-matching	N
WSSS	Nunavut Water and Sewage Services Subsidy	Canada	Territory	Nunavut	Water	Conditional non-matching	N

MCBF	Nunavut Minor Capital Block Funding	Canada	Territory	Nunavut	All	Unconditional	N
NGLPT	Nunavut Grants in Lieu of Property Taxes	Canada	Territory	Nunavut	All	Unconditional	N
NMFP	Nunavut Municipal Funding Program	Canada	Territory	Nunavut	All	Unconditional	N
SRGC	Nunavut Sports and Recreation Grants and Contributions	Canada	Territory	Nunavut	Recreation	Conditional non-matching	N
CPIF	Community Public Infrastructure Funding	Canada	Territory	Northwest Territories	Recreation	Unconditional	N
NTOMF	Northwest Territories Operations and Maintenance Funding	Canada	Territory	Northwest Territories	All	Unconditional	N
WSSF	Water and Sewage Services Funding	Canada	Territory	Northwest Territories	Water	Conditional non-matching	N
PIQM	Programme Infrastructures Quebec - Municipalites	Canada	Provincial	Quebec - Municipal Affairs	All	Conditional matching	N
PRIMEAU	Programme Infrastructure Municipal d'Eau	Canada	Provincial	Quebec - Municipal Affairs	Water	Conditional matching	N
RIRL	Rehabilitation of the Local Road Infrastructure	Canada	Provincial	Quebec - Department of Transportation	Transportation	Conditional matching	N
PAARRM	Local Road Network Improvement Program	Canada	Provincial	Quebec - Department of Transportation	Transportation	Conditional non-matching	N
NCGP	Northern Capital Grants Program	Canada	Provincial	Saskatchewan - Northern Municipal Services Branch	All	Conditional matching	N
NWSP	Northern Water and Sewer Program	Canada	Provincial	Saskatchewan	Water	Conditional non-matching	N
SIGI	Saskatchewan Infrastructure Growth Initiative	Canada	Provincial	Saskatchewan	All	Unconditional	N
SIGI2	Saskatchewan Infrastructure Growth Initiative 2	Canada	Provincial	Saskatchewan	All	Unconditional	N
MSS	Main Street Saskatchewan	Canada	Provincial	Saskatchewan	Public Space	Conditional matching	N
MCDP	Municipal Capacity Development Program	Canada	Provincial	Saskatchewan	Community Development	Capacity building direct conditional	N
ASF	Agrispirit Fund	Canada	Federal	Farm Credit Canada	All	Conditional non-matching	N
NSEG	Nova Scotia Equalization Grant	Canada	Provincial	Nova Scotia	All	Unconditional	N

NSMFC	Nova Scotia Municipal Finance Corporation	Canada	Provincial	Nova Scotia	All	Loan	Y
NBUG	New Brunswick Unconditional Grant	Canada	Provincial	New Brunswick	All	Unconditional	N
MCW	Municipal Capital Works Funding	Canada	Provincial	New Found Land	All	Conditional matching	N
DWSI	Drinking Water Safety Initiative	Canada	Provincial	New Found Land	Water	Conditional non-matching	Y
MOG	Municipal Operating Grant	Canada	Provincial	New Found Land	All	Unconditional	N
CSP	Community Sustainability Partnership	Canada	Provincial	New Found Land	Community Development	Unconditional & Conditional & Capacity building	N
WMF	Waste Management Funding	Canada	Provincial	New Found Land	Waste	Conditional non-matching	N
CMG	Comprehensive Municipal Grant	Canada	Territory	Yukon	All	Unconditional	Y
REDF	Regional Economic Development Fund	Canada	Territory	Yukon	Community Development	Conditional matching	N
CDF	Community Development Fund	Canada	Territory	Yukon	Community Development	Conditional non-matching	Y
RRMP	Rural Road Maintenance Program	Canada	Territory	Yukon	Transportation	Conditional non-matching	N
CDBG - EC	Community Development Block Grant Program	United States	National	US Department of Housing and Urban Development	Housing	Unconditional and Loan	Y
WEP	Water and Environmental Programs	United States	National	United States Department of Agriculture - Rural	Water and Wastewater	Conditional and Loan	Y
CCG	Community Connect Grants	United States	National	United States Department of Agriculture - Rural	Communication	Conditional non-matching	N
ROIF	Rural Opportunity Investment Fund	United States	National	United States Department of Agriculture, CoBank, Capital Peak Asset Management	Any sector	Public Private Partnership (municipal bonds)	N
DWSRF	Drinking water state revolving fund	United States	National	Environmental Protection Agency and States	Water and Wastewater	Revolving Loan	Y
CWSRF	Clean water state revolving fund	United States	National	Environmental Protection Agency and States	Water and Wastewater	Revolving Loan	Y
TIFIA	Transportation Infrastructure Finance and Innovation Act Program	United States	National	United States Department of Transportation	Transport	Revolving Loan	N
TIGER	Transportation Investment Generating Economic Recovery	United States	National	United States Department of Transportation	Transport	Conditional non-matching	Y

STBG	Surface Transportation Block Grants	United States	National	United States Department of Transportation	Transport	Unconditional	Y
LTAP	Local Technical Assistance Program	United States	National	United States Department of Transportation	Transport	Capacity Building	N
CEF	Connecting Europe Facility	European Union	Europe-wide	European Union	Energy, Transport, Digital	Unconditional	Y
CF	Cohesion Fund - Under ESIF	European Union	Europe-wide	European Union	Sustainable Development	Unconditional	Y
EAFRD	European Agricultural Fund for Rural Development - Under ESIF	European Union	Europe-wide	European Union	Rural development	Unconditional	Y
EFSI	European Fund for Strategic Investment	European Union	Europe-wide	European Union & European Investment Bank	All	Loan	Y
ELENA	European Local Energy Assistance	European Union	Europe-wide	European Investment Bank	Energy	Loan	N
ERDF	European Regional Development Fund - Under ESIF	European Union	Europe-wide	European Union	Sustainable Development - All Infrastructure	Unconditional	Y
ESF	European Social Fund - Under ESIF	European Union	Europe-wide	European Union	Sustainable Development	Unconditional	Y
ESIF	European Structural & Investment Funds	European Union	Europe-wide	European Union	Encompasses ERDF, CF, EAFRD,	Unconditional	Y
FP7	7th Framework Programme for Research and Technological Development	European Union	Europe-wide	European Union	Energy	Conditional	Y
H2020	Horizon 2020	European Union	Europe-wide	European Union	All innovative infrastructure	Conditional	Y
IPA	Instrument for Pre-accession Assitance	European Union	Europe-wide	European Union	Regional development	Unconditional	Y

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Appendix B provides brief summaries of selected infrastructure funding programs in Canada, United States, and the European Union. The descriptions are provided as concrete examples of infrastructure funding that is available to rural communities. The programs were chosen because they are either representative of typical funding program policies, or demonstrate particular challenges or innovations. Each summary includes information about the type of program, eligible applicants and eligible projects, funding allocation process, and monitoring requirements. If programs have been formally or informally evaluated, and this information is public, key details from the evaluation are also included in the description. Canadian examples are provided at the national, provincial and territorial level. Due to time constraints, examples from the United States and European Union were taken only at the national and supranational level respectively.

Canadian Federal programs

Gas Tax Fund

The Gas Tax Fund (GTF) provides federal unconditional funding for vertical equalization purposes. The fund consists of reallocating federally collected gas taxes to all Canadian municipalities. The fund was launched in 2005, and in 2011 the Federal Government legislated the GTF as a permanent source of infrastructure funding for municipalities, providing $2 billion annually (Infrastructure Canada [INFC], 2015). The fund is provided up front, twice a year, to provinces and territories who then flow funding to municipalities (INFC, 2014).

The GTF is implemented through agreements between the government of Canada and each province or territory, except for British Columbia and Ontario where municipal associations are responsible. All municipalities within Canada receive funding allocated on a per-capita basis, except for the three territories and Prince Edward Island, where municipalities receive 0.75% of the total annual national funding (INFC, 2015). Allocation formulas for municipalities are developed by each jurisdiction that receives initial funding, which can be a combination of per capita allocation, base allocation, or dedicated funds (INFC, 2015). Infrastructure Canada transfers a portion of the funds to Indigenous and Northern Affairs Canada (INAC), where it's administered through the First Nations Infrastructure Fund to on-reserve First Nations communities (INFC, 2015).

The GTF must be used by municipalities for the purpose of infrastructure. Eligible costs include construction, renewal, material enhancement in transportation, water, wastewater, solid waste, community energy systems, tourism and recreation, and capacity building (INFC, 2015). The Federal Government has no role in the selection or approval of projects; local governments make decisions according to local priorities (INFC, 2014).

The program is not cost-shared, but local governments commit to maintaining capital infrastructure spending at a pre-determined level. Municipalities can pool, bank, and borrow against the funding providing financial flexibility (INFC, 2014).

The GTF program was evaluated in 2015, and found to be one of the most efficient infrastructure programs implemented by the federal government. Interviews with employees of municipality that received funding were very positive (INFC, 2015). The program did not replace regular municipal funding, and the fund provided environmental, community, and economic benefits that aligned with federal government priorities (INFC, 2015).

Infrastructure Canada. (2014). *The Federal Gas Tax Fund: Permanent and predictable funding for municipalities*. Retrieved from Infrastructure Canada website: http://www.infrastructure.gc.ca/plan/gtf-fte-eng.html

Infrastructure Canada. (2015). *Final Report – Evaluation of the Gas Tax Fund*. Retrieved from Infrastructure Canada website: http://www.infrastructure.gc.ca/pd-dp/eval/2015-gtf-fte-eng.html

Building Canada Fund, Communities Component

The Building Canada Fund Communities Component (BCF-CC) is a federally implemented conditional cost-sharing program. The BCF-CC provided $1.5 billion in funding for small communities located in the provinces. The program originated as $1 billion fund, and was expanded as part of Canada's Economic Action Plant with a top-up of $500 million (Treasury Board of Canada Secretariat [TBCS], 2015). The program was based off of the Municipal Rural Infrastructure Program (MRIF), and used identified best practices (INFC, 2015).

Total funding allocated in each province was determined on a per capita basis. Eligible recipients of the fund were limited to communities with populations of less than 100,000. Infrastructure projects were selected through a competitive application-based process; municipalities had to apply through calls for proposals. All projects were cost-shared, with most projects funded on one-third basis, the provinces contributing an additional one-third of eligible costs. In certain circumstances, the maximum federal contribution could increase to 50% (TBCS, 2015).

An evaluated conducted in 2015 determined that many small municipalities did not apply because they lacked the financial capacity to pay their one-third contribution. The program was oversubscribed, with about half of the municipalities that applied for funding being rejected. In some scenarios, municipalities pooled together resources to fund regional projects that would benefit all communities. In these cases, project recipients viewed the program and partnerships positively (INFC, 2015). The 2012 audit noted that the program may have redundancy between Infrastructure Canada and other oversight entities, resulting in over- governance and administrative burden (INFC, 2012).

In 2009, in conjunction with the Infrastructure Stimulus Fund, the federal government announced a top-up for the BCF-CC. The program provided an extra $500 million over two years. Funding was conditional on recipients already committing existing BCF-CC funding. To receive funding through the top-up, municipalities had to prove that projects could be completed by March 31, 2011. Small communities struggled with the capacity to respond to accelerate delivery, and around a third of the recipients sought an extension after the deadline (INFC, 2012).

Evaluation Directorate, Infrastructure Canada. (2012). Building Canada Fund Communities Component Top-Up. *Evaluations*. Retrieved from Infrastructure Canada website: http://www.infrastructure.gc.ca/pd-dp/eval/eap-pae/2012-eap-pae-eng.html#toc21

Infrastructure Canada. (2015). *Evaluation of the Building Canada Fund – Communities component*. Retrieved from Infrastructure Canada website: http://www.infrastructure.gc.ca/pd-dp/eval/2015-bcfcc-vcfcc-eng.html#table7

Treasury Board of Canada Secretariat. (2015) *Building Canada Fund: Plans, Spending and Results*. Retrieved from Treasury Board of Canada Secretariat website: https://www.tbs-sct.gc.ca/hidb-bdih/initiative-eng.aspx?Hi=92

Community Futures Program: Nation-wide federal capacity building program

The Community Futures Program (CFP) is an example of a capacity building economic development program funded by the federal government and managed by independent agencies. The program was created in 1985 by the federal government to support rural economic development. The CFP aims to provide communities, individuals, and organizations with information and planning services to initiate local socio-economic development. The CFP provides support for both business development and community development, and the funding is administered to Community Futures Development Corporations (CFDCs) (Reseau des SADC et CAE, 2015).

The CFDCs are private, not-for-profit organizations that are independent of the federal government. The CFDCs serve a population of close to 15 million residents, accounting for 45% of the Canadian population. CFDCs typically operate in rural communities with 20,000 to 50,000 people. The CFDCs are community based and staffed by local volunteers and professionals. Evaluations of the program have found that the governance structure has been the foundation of the CFP's success (Reseau des SADC et CAE, 2015).

CFDCs offer a wide variety of programs and services, including strategic community planning, investment for community-based projects, business information and planning, and access to capital for small and medium sized businesses. The CFDCs can grant loans, loan guarantees, or equity investments to small businesses and social enterprises, and in this way act as a revolving loan fund (Ontario Association of Community Futures Development Corporations [OACFDC], 2015b). Community Economic Development initiatives include economic sectors such as tourism, agriculture and manufacturing, as well as projects targeted at vulnerable population groups (FedDev, 2014).

Direct funding for capital infrastructure development is unavailable through the CFP; however, funding and support may be given to municipalities in an advisory or promotional capacity (FedNor, 2015). Community Strategic Planning connects municipal governments with other local organizations to identify opportunities, assess local challenges, and develop and update strategic plans. In the 2014 program evaluation, the CFDCs were seen as vital partners of local government in providing support to municipal governments in accessing community economic development grants (FedDev, 2014).

FedDev Ontario. (2014). *Evaluation of the Community Futures Program*. Retrieved from FedDev Ontario website: http://www.feddevontario.gc.ca/eic/site/723.nsf/eng/02069.html#s11

FedNor Ontario. (2015). *Insights from comparing the Community Futures Program in Ontario with LEADER in Sweden*. Retrieved from FedNor Ontario website: http://fednor.gc.ca/eic/site/fednor-fednor.nsf/eng/fn03568.html

OACFDC. (2015). Access to Capital for Small and Medium Sized Businesses and Social Enterprises. *CF Program*. Retrieved from Ontario Association of Community Futures Development Corporations website: http://oacfdc.com/public-information/access-to-capital

Ontario Association of Community Futures Development Corporations. (2015). Who We Are. *CF Program*. Retrieved from Ontario Association of Community Futures Development Corporations website: http://oacfdc.com/public-information

Reseau des SADC et CAE. (2015). *The CFDCs and CBDCS: A Winning Approach for Community Futures*. Retrieved from Community Futures Canada website: http://communityfuturescanada.ca/wp-content/uploads/booklet_web.pdf

Canada 150 Community Infrastructure Program

The Canada 150 Community Infrastructure Program (CIP150) was a program developed to celebrate Canada's 150th anniversary; an example of a a typical short term conditional funding program. The program started July 2015, and will run until March 2018, investing $150 million over two years in community infrastructure (Western Diversification Canada [WD], 2016). The funding is currently delivered through federal delivery partners, with mandatory project completion by March 31, 2018 (Atlantic Canada Opportunities Agency [ACOA], 2014).

The program funds projects that rehabilitate existing community facilities across Canada, to improve long-term growth and vibrancy. Eligible projects include community centers, cultural centers and museums, parks, recreational trails, and tourism infrastructure. In addition, the projects must be community oriented, non-commercial, and open for use to the public. Projects are selected by the federal delivery partners on basis of readiness, funds leveraged, anticipated completion date, and economic benefits (ACOA, 2014).

Eligible recipients include municipal or regional governments, a band council under the Indian Act, other public-sector bodies, and not-for-profit organizations (ACOA, 2014). The recipients must directly own infrastructure assets, facility, or land which is being renovated; or have a long-term lease in place (WD, 2016). Eligible recipients submit proposal that include the project description, source of additional funding, and demonstrate how the project will contribute to Canada's legacy and have a lasting impact on Canada's infrastructure (ACOA, 2014).

Federal funding cannot exceed 50%, with a maximum amount of $500,000 (WD, 2016). Priority is given to projects that require less federal funding (ACOA, 2014). In addition, the maximum contribution from all government of Canada sources cannot exceed 50%. In kind contributions are not eligible for support under the CIP150, and will not be included in the total project costs (WD, 2016). All recipients are required to submit progress reports to the regional development agencies until the projects are completed (FedDev, 2015).

Atlantic Canada Opportunities Agency. (2015). *Canada 150 Community Infrastructure Program*. Government of Canada. Retrieved from the Atlantic Canada Opportunities Agency website: http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/Canada-150-Infrastructure-Program.aspx

FedDev Ontario. (2015). *Canada 150 Community Infrastructure Program*. Government of Canada. Retrieved from the FedDev Ontario website: http://www.feddevontario.gc.ca/eic/site/723.nsf/eng/02198.html

Western Economic Diversification Canada. (2016). *Canada 150 Community Infrastructure Program*. Retrieved from the Wester Economic Diversification Canada website: http://www.wd-deo.gc.ca/eng/18872.asp

Public Private Partnership Fund

The P3 fund provided nation-wide conditional public-private partnership funding. The program was created along with PPP Canada as part of Canada's Economic Action in

2009. PPP Canada is a federal Crown corporation with a mandate to improving infrastructure procurement through P3s. The fund provides grants to public private partnerships (PPPs) for infrastructure projects. The funds were allocated based on merit, to incentivize the use of PPPs in public infrastructure procurements (Public Private Partnerships Canada [PPP Canada], n.d.a).

Eligible applicants for the P3 Fund included partnerships between private companies and provincial, territorial, municipal governments, and First Nations equivalent governing bodies. Combined funding from the P3 Fund and other federal sources could not exceed 25% (PPP Canada, n.d.a). Eligible projects included the construction, renewal, or material enhancement of core public infrastructure areas including: transport, water, energy, solid waste, culture, security, tourism and connectivity. Applications are accepted on an annual basis. There was no minimum or maximum project size or cap for funding; however, larger projects were typically viewed more positively (PPP Canada, n.d.b).

The Economic Action Plan in 2013 renewed P3 funding with another $1.25 billion, incorporating the fund with the new building Canada plan. The New Building Canada Plan includes, a P3 'screen' to be applied to project applications with capital costs of more than $100 million. Through the P3 screen, projects are assessed to determine if they would provide better value for money through a P3 procurement. Through the screening process, PPP Canada aims to raise awareness and consideration of the P3 model. If projects are accepted for funding under the P3 screen, 25% of project costs are funded by the federal government (PPP Canada, n.d.b).

When the program was evaluated in 2012, the projects that were funded demonstrated positive value for money. The P3 Fund raised awareness about P3 procurement, and raised the capacity for recipients to undertake P3 projects. The resources and technical assistance provided by PPP Canada was well-received by applicants and recipients. However, administrative delays caused some issues in certain projects. The performance of the fund was also negatively affected by external uncontrollable factors such as public opinions on privatization and the political environment. Future recommendations included providing repayable funding in addition to grants, and widening the eligible costs to include legal and asset management, and operations and maintenance (Ernst and Young, 2012).

Public Private Partnerships Canada. (no date) *Achieve better value, timeliness, and accountability to taxpayers through Public-Private Partnerships*. Retrieved from Public Private Partnerships Canada website: http://www.p3canada.ca/~/media/english/resources-library/files/revised/about%20ppp%20canada%20en.pdf

Public Private Partnerships Canada. (no date) *P3s and the New Building Canada Fund*. Retrieved from Public Private Partnerships Canada website: http://www.p3canada.ca/screening-and-advisory-services/the-building-canada-fund/p3s-and-the-building-canada-fund/

Ernst and Young. (2012). *Formative Evaluation of the P3 Canada Fund*. Retrieved from Public Private Partnerships Canada website:

http://www.p3canada.ca/~/media/english/audit%20and%20evaluation/files/formative%20evaluation%20of%20the%20p3%20canada%20fund%20en.pdf

Green Municipal Fund: Nation-wide Government seeded revolving loan and grant program

The Green Municipal Fund (GMF) is an example of a national revolving fund seeded by the federal government and administered through an independent organization, the Federation of Canadian Municipalities (FCM). The program was created in 2000 with $550 million from the federal government to use as a long-term reserve of loan and grant financing. The objective of the program is to benefit the environment, economy and society through investments in energy, transportation, waste, water and brownfield redevelopment (Federation of Canadian Municipalities [FCM], 2014).

The GMF program funds plans, studies and capital projects. The planning category includes sustainable neighborhood action plans, community brownfield action plans, and greenhouse gas reduction plans. Studies include feasibility studies, tests, and pilot projects to evaluate new technology or solutions. The /GMF offers grants for plans and studies which cover up to 40% of eligible costs to a maximum of $175,000. Capital projects include retrofitting construction, replacement, expansion or purchase and installation of fixed assets or infrastructure. Up to 80% of eligible costs are provided by the GMF through a combination of low interest loans and grants. Eligible costs are not to exceed $10 million, and grants cannot be more than 20% of the loan value (FCM, 2014).

Eligible participants include all municipal governments and their partners, regulatory authorities with the same power in municipal affairs, First Nations communities, and not-for-profit or for-profit partners that are municipally owned or collaborating with municipalities (FCM, 2015a). Projects are funded on a competitive basis through project proposals submitted by eligible participants. The FCM provides advisory and technical support for eligible applicants. The FCM website provides online tools and resources, as well as detailed instructions for completing applications (FCM, 2015b).

The final decisions on GMF funding allocations are made by the FCM committee based on input from the GMF council. The GMF council comprises 15 members from federal, municipal and environmental sectors. The council is comprised a third of federal government representatives, a third municipal officials, and a third external members representing the public, private, academic, and environmental sectors (FCM, 2015c).

The GMF program was evaluated independently in 2009 by the KPMG, and was found to be extremely successful. GMF was efficient and effective in the funding of projects, and little resources were wasted. The FCM was responsive to stakeholder needs, effectively engaging all stakeholders to understand the existing municipal capacity. The monitoring practices that were in place were transparent and the funded projects met the objectives set out by the GMF (KPMG, 2009).

Federation of Canadian Municipalities. (2014). Performance Audit of the Green Municipal Fund. Ottawa, ON: Federation of Canadian Municipalities. Accessed on September 10, 2016 from: https://www.fcm.ca/Documents/reports/GMF/2014/Federation_of_Canadian_Municipalities_Performance_Audit_of_the_Green_Municipal_Fund_Final_Report_EN.pdf

Federation of Canadian Municipalities. (2015). Apply for Funding. Retrieved from the Federation of Canadian Municipalities website: http://www.fcm.ca/home/programs/green-municipal-fund/apply-for-funding.htm

Federation of Canadian Municipalities. (2015). Green Municipal Fund Annual Report 2014-2015. Ottawa: Federation of Canadian Municipalities. Retrieved from Federation of Canadian Municipalities website: http://www.fcm.ca/Documents/corporate-resources/annual-report/Green_Municipal_Fund_Annual_Report_2014_2015_EN.pdf

Federation of Canadian Municipalities. (2015). Green Municipal Fund Council. Retrieved from Federation of Canadian Municipalities website: http://www.fcm.ca/home/about-us/green-municipal-fund-council.htm

Federation of Canadian Municipalities. (2016). 2016 FCM Sustainable Communities Awards: City of Saint-Hyacinthe, QC. Retrieved from Federation of Canadian Municipalities website: http://www.fcm.ca/home/awards/fcm-sustainable-communities-awards/2016-winners-case-studies/2016-waste-program.htm

KPMG. (2009). Performance Audit of the Green Municipal Fund. Ottawa, ON: Federation of Canadian Municipalities. Retrieved from the Federation of Canadian Municipalities website: https://www.fcm.ca/Documents/corporate-resources/annual-report/Perfomance_Audit_of_the_Green_Municipal_Fund_Final_Audit_Report_EN.pdf

Canadian Provincial and Territorial Programs

Municipal Sustainability Initiative

The Municipal Sustainability Initiative (MSI) provides an example of provincial unconditional funding for horizontal and vertical equalization purposes. The initiative was launched in 2007 by the Province of Alberta, and is administered by the Department of Municipal Affairs. The funds can be used for either capital infrastructure projects, operating costs including repairs and maintenance, or for capacity building and planning purposes (Alberta Municipal Affairs, 2016a). Eligible recipients include all municipalities in Alberta, metis settlements, and regional administrative bodies (Alberta Municipal Affairs, 2016a).

Since 2007, funding has been allocated annually through base funding, and an additional amount based on municipal populations, education property tax requisitions and kilometers of local roads. Unspent funds on operating costs may be carried into the next year, and capital funds may be carried forward a total of six years. The initiative was originally implemented through a temporary operating funding agreement between municipalities and the province, which later turned into a long-term Memorandum of Agreement. As part of the Memorandum of Agreement, municipalities are required to provide operating spending plans and the annual reports for the previous year (Alberta Transportation, 2016a).

As of 2014, the Basic Municipal Transportation Grant (BMTG) was consolidated under the MSI program. Prior to 2014, the Basic Municipal Transportation Grant provided funding for transportation infrastructure in Alberta municipalities. Allocated funds could be spent on capital construction and rehabilitation of structures including roads, bridges, and public transit. The current additional BMTG funding within MSI is based on municipal status, with municipalities receiving funding through a formula based on population and highway length (Alberta Transportation, 2013).

Alberta Municipal Affairs. (2016). Eligibility and Funding Allocations. Government of Alberta. Accessed September 10, 2016 from: http://municipalaffairs.alberta.ca/msi-funding-allocations-eligibility

Alberta Municipal Affairs. (2016). The Municipal Sustainability Initiative. Government of Alberta. Accessed September 10, 2016 from: http://municipalaffairs.alberta.ca/msi

Alberta Transportation. (2013). Basic Municipal Transportation Grant. (2013). Government of Alberta. Accessed September 10, 2016 from: https://www.transportation.alberta.ca/5407.htm

BC Community Water Improvement Program

The British Columbia Water Improvement Program (BCCWIP) conditionally funded eligible projects in drinking water and wastewater management and infrastructure (British Columbia Ministry of Community, Sport and Cultural Development [CSCD], 2013). The program was created in 2005 by the Ministry of Community, Sport, and Cultural Development in British Columbia, and provided $80 million in funding for local government (CSCD, 2012).

Funding was available for projects that developed infrastructure through construction or rehabilitation of physical assets, following the applicable planning and environmental legislation. Eligible projects include implementing components of drinking water plan, designing liquid waste management plans, projects demonstrating innovative technologies, supporting resource communities, regional growth strategies, or implementing drought management plans (CSCD, 2005). Eligible applicants include local governments, either municipalities or regional governments, including Vancouver and the greater region of Vancouver. Eligible recipients submitted applications to the Ministry with additional supporting documentation (CSCD, 2005).

The province provided up to 2/3 of the costs of local governments eligible infrastructure projects, and up to 75% in small communities for higher priority projects (CSCD, 2013). Eligible costs include all engineering, design, borrowing or capital costs towards implementing projects. Operational costs following construction must be borne by the project proponents (CSCD, 2005). Successful applicants were required to report progress to the Ministry, and grant reimbursement was provided after costs had be paid for by the municipality. The program continued to pay grants until 2010 (CSCD, 2005). The program required all funding to be allocated, and projects to be completed by 2012 (CSCD, 2012).

British Columbia Ministry of Community, Sport, & Cultural Development. (2005). B.C. Community Water Improvement Program Guide. Retrieved from the Ministry of Community, Sport, & Cultural Development website: http://www.cscd.gov.bc.ca/lgd/infra/library/community_water_improvement_guide.pdf

British Columbia Ministry of Community, Sport, & Cultural Development. (2012). B.C. Community Water Improvement Program – 2012 Annual Program Progress Report. Retrieved from the Ministry of Community, Sport, & Cultural Development website: http://www.cscd.gov.bc.ca/Lgd/infra/library/BCCWIP_2012_Annual_Program_Progress_Report.pdf

British Columbia Ministry of Community, Sport, & Cultural Development. (2013). B.C. Community Water Improvement Program. Infrastructure Grants. Retrieved from the Ministry of Community, Sport, & Cultural Development website: http://www.cscd.gov.bc.ca/lgd/infra/infrastructure_grants/community_water_improvement.htm

Alberta Community Partnership

The Alberta Community Partnership (ACP) provides conditional funding for capacity building and regional collaboration. In 2014, the program was the successor to the regional collaboration program, and incorporated the Municipal Sustainability Initiative operating grant, which had been in place since 2010 and 2007 respectively (Alberta Association of Municipal Districts and Counties, 2014).

The program is delivered by Alberta Municipal Affairs for projects that support new or enhanced regional municipal services, improve municipal capacity and for joint and collaborative activities (Alberta Municipal Affairs [AMA], 2016). Eligible projects and components include inter-municipal collaboration activities to expand regional municipal service delivery, metropolitan restructuring, mediation and cooperative processes, and municipal internships (AMA, 2016). Projects are funded up to a maximum of $350,000, and do not require any municipal contribution (AMA, 2015).

Eligible entities include municipalities, metis settlements, municipally controlled planning service agencies, administrative societies, and regional boards and partnerships. Other entities, such as for-profit and not-for-profit organizations, may receive grant funding under contract by an eligible entity (AMA, 2015). To receive funding, eligible applicants submit an application to municipal affairs. Once reviewed and approved, applicants enter funding agreements with an allocated time period to use the grant. Funding may be combined with funding from other grant programs, unless prohibited (AMA, 2016). Final reporting is required 60 days after the funding is used, also submitted to Municipal Affairs (AMA, 2015).

Alberta Association of Municipal Districts and Counties (2014). New Alberta Community Partnership Program Information Now Available. Retrieved from the Alberta Association of Municipal Districts and Counties website: http://www.aamdc.com/advocacy/member-bulletins/member-bulletin-archive/710-new-alberta-community-partnership-program-information-now-available

Alberta Municipal Affairs. (2015). Alberta Community Partnership Program Guidelines. Retrieved from the Alberta Municipal Affairs website: http://municipalaffairs.alberta.ca/documents/2015_ACP_Program_Guidelines.pdf

Alberta Municipal Affairs. (2016). Alberta Community Partnership (ACP). Retrieved from the Alberta Municipal Affairs website: http://www.municipalaffairs.alberta.ca/alberta-community-partnership

Quebec Territorial Development Fund: Provincial unconditional regional funding for capacity building

The newly established Quebec Territorial Development Fund (TDF) provides unconditional funding to regional governments, 'RCM', for capacity building and local capital projects. The fund was established in 2015, providing $100 million annually up-front to the RCM to support locally-led community economic development. RCM enter funding agreements with the Province of Quebec which will last until 2019. As part of the agreement, RCM create two policy funding strategies, for community development and business development (Ministere des Affaires municipals et Occupation du Territoire [MAMOT], 2015b).

The fund replaced 4 programs of conditional funding that were previously provided from the province to the RCMs. Through the new TDF, each RCM receives a base amount; additional funding is based on the population of each RCM, and a calculated index of economic vitality (Gouvernement du Quebec, 2015). All municipalities, RCM, indigenous communities and band councils, not-for-profit organizations, and businesses are eligible to receive funding from RCM through the TDF. The TDF is also able to fund administrative functions of the RCM (MAMOT, 2015a).

Eligible applicants apply to the RCM with projects that must fall under the priorities within the regional development plans created by the RCM. The TDF can fund training and workshops provided by the RCM to municipalities, as well as capital infrastructure projects at the local or regional level. Exact funding cost-sharing amounts for particular projects are outlined in each RCM's funding policy. For capital projects, total funding from all provincial and federal sources cannot exceed 80% of total eligible project costs. RCM must track and report on project progressing relation to the priorities set out in the regional plan (MAMOT, 2015a).

Gouvernment du Quebec. (2015). Accord de Parternariat aves les Municipalites. Retrieved from the Ministere des Affaires municipals et Occupation du territoire website: http://www.mamot.gouv.qc.ca/pub/grands_dossiers/entente_signee_accord_partenariat_municipalites.pdf

Quebec Ministere des Affaires municipals et de l'Occupation du territoire. (2015). Le Fonds de developpement des territoires pour appuyer les MRC dans leur competence en developpement local et regional. *Muniexpress*. Retrieved from the Ministere des Affaires municipals et Occupation du territoire website:http://www.mamrot.gouv.qc.ca/publications/bulletin-muni-express/2015/n-05-23-juin-2015/

Quebec Ministere des Affaires municipals et Occupation du territoire. (2015). Programmes Fonds de developpement des territoires. Retrieved from the Ministere des Affaires municipals et Occupation du territoire website: http://www.mamrot.gouv.qc.ca/developpement-territorial/programmes/fonds-de-developpement-des-territoires/

Southern Interior Development Initiative Trust Funding

The Southern Interior Development Trust (SIDIT) provides grant and low-interest loan funding seeded by the province of British Columbia. The SIDIT was enacted through legislation in 2006, with $50 million from the government of British Columbia (Southern Interior Development Trust [SIDIT], n.d.c). The Trust has the objective to encourage growth and diversification in the southern interior of BC through ecological development. The total yearly funding amount depends on the investment pool, trust income stream and operational performance. The ten key sector areas of investment are forestry, pine beetle recovery, transportation, tourism, mining, Olympic opportunities, small business, economic development, energy, and agriculture (*Southern Interior Development Trust Act* S.B.C. 2005).

Eligible recipients include municipalities, regional districts, First Nations, non-profit societies, institutions, and industry associations. For-profit business ventures can apply for loan and equity financing, but are ineligible to receive grant funding (SIDIT, n.d.a). Grants are non-repayable, and loans or equity investments are subject to principal and interest repayment (SIDIT, n.d. a,b). Grant funding up to a maximum of $25,000 or 25% of total project budget. Grants may be combined with loans up to a maximum of $1 million (SIDIT, n.d. a). Generally, SIDIT does not fund capital infrastructure projects that are funded through government programs; however, exceptions to the policy may be considered for small or rural communities (SIDIT, n.d. a).

Project proposals are prioritized according to alignment with SIDIT's strategic plan objectives (SIDIT, n.d. a). Loan applications require a business plan, financial statements, and outline of the project management structure (SIDIT, n.d. b). Applicants must provide confirmation of all other sources of project funding prior to entering funding agreements. Successful applicants receive funding once leveraged funds have been confirmed, and must report on key deliverables every five years (SIDIT, n.d.a)

Southern Interior Development Initiative Trust Act. SBC 2005. Chapter 39. Retrieved from the Government of British Columbia website: http://www.bclaws.ca/Recon/document/ID/freeside/00_05039_01

Southern Interior Development Trust. (no date). *Grant Applications*. Retrieved from Southern Interior Development Trust website: http://www.sidit-bc.ca/grant_applications.html

Southern Interior Development Trust. (no date). *Loan and Equity Funding*. Retrieved from Southern Interior Development Trust website: http://www.sidit-bc.ca/loan_funding.html

Southern Interior Development Trust. (no date). Overview. Retrieved from Southern Interior Development Trust website: http://www.sidit-bc.ca/overview.html

Manitoba Water Services Board

The Manitoba Water Services Board (MWSB) is a crown corporation that provides provincial funding for capacity building, grants and low-interest loans. The MWSB was established in 1972 under *The Manitoba Water Services Board Act* to assist local governments in providing water and sewerage infrastructure (Manitoba Water Services Board [MWSB], 2015). The board's objectives include the provision, distribution, and treatment of water; and the collection, treatment and disposal of wastewater. The MWSB provides both capital funding, project management and capacity building to local governments in Manitoba for water related infrastructure The MWSB receives revenue through water services fees, from the provincial budget, and may borrow from a bank or from the government (MWSB, 2015).

Eligible recipients for MWSB services include local governments in Manitoba, excluding the city of Winnipeg and aboriginal communities under the authority of INAC. The MWSB enters into agreements with eligible recipients for either capital funding or project management. The capital funding programs provided by the MWSB are the municipal water and sewer program and the Manitoba rural water development program. For both programs, the MWSB acts as project managers on behalf of municipal governments and registered water co-operatives to conduct engineering feasibility studies, contract administration and construction supervision (MWSB, 2010b).

Currently a two-tiered system is in place, where 30% of costs are covered for projects that are primarily local improvements, and 50% of eligible costs are covered for projects that are a priority health or environmental risk, or provide economic benefits to Manitoba (MWSB, 2015). The MWSB promotes regional water systems that can services many municipalities as cost-effective infrastructure. The MWSB may consider funding an extra 10% for projects north of 53rd parallel (MWSB, 2015).

The MWSB will prioritize municipal requests, and may work with the municipality to conduct feasibility studies or public interest surveys. Project support is dependent on the priority of the project and the availability of funding. The MWSB provides a one-year warranty and technical assistance after project completion; however, ownership, operation and maintenance is the municipality's responsibility after the warranty period. Municipalities may request MWSB to operate the system on behalf of he municipality, and in this case the MWSB sets water pricing and collects all revenue. The MWSB sets the prices and rates for water and sewage services to cover operating expenses (MWSB, 2010b).

Manitoba Water Services Board. (2010). Municipal Water and Sewer Program. Retrieved from the Province of Manitoba website: http://www.gov.mb.ca/ia/mwsb/mwsp.html

Manitoba Water Services Board. (2010). Rural Water Development Program. Retrieved from the Province of Manitoba website: http://www.gov.mb.ca/ia/mwsb/pubs/rwdfact.pdf

Manitoba Water Services Board. (2015). Annual Report of the Manitoba Water Services Board 2014-2015. Retrieved from the Province of Manitoba website: https://www.gov.mb.ca/ia/mwsb/pubs/2015annual.pdf

Manitoba Water Services Board Act C.C.S.M. c. W90. Retrieved from the Government of Manitoba website: http://web2.gov.mb.ca/laws/statutes/ccsm/w090e.php

United States National Programs

Surface Transportation Block Grant Program

The Surface Transportation Block Grant (STBG) Program provides national unconditional grant funding for capital surface transportation projects. The STBG program allocates roughly $10 billion annually from the Highway Trust Fund to State departments of Transportation and Local Transit Authorities (Federal Highway Administration [FHWA], 2016b). The STBG superseded the surface transportation Program (STP) through the Fixing America's Surface Transportation Act (2015) (FHWA, 2016a).

STBG is the most flexible of the federal aid transportation programs. Funding is allocated to each state through a formula consisting of a base amount and additional amount based on population. States receive funding and administer the funds according to policies aligning with the overall program policy. States may reserve up to 15% of the STBG funds for use in rural areas with population of 5,000 or less. To enhance flexibility, states may transfer up to 50% of the STBG to another formula program, as long as the program aligns with STBG policy. Funds are distributed by the states to urban areas based on the relative share of the population. States have a maximum of 4 years to allocate funds from any given year (FHWA, 2016a).

Within the program, various types of multi-modal transportation projects can be funded. Eligible projects include capital construction and renovation, planning and design, development of asset management plans, and operational costs. Specific policies for funding for particular areas and particular projects apply. Federal funding generally covers up to 80% of eligible costs, except for interstate projects where the federal share can be up to 90%. Funding for rural areas, and training and development activities can be covered up to 100% (FHWA, 2016c).

The U.S. Government Accountability Office noted in 2014 that the STBG was critical for local governments to meet transportation needs. The flexibility in funding multiple project types allowed local governments to address priorities that were not funded through other programs. Local government officials used the STBG funds based on state and local priorities, according to the policies already in place. Though the STBG funding did not generally make up a large portion of the overall transportation funding, funds had a large impact (United States Government Accountability Office, 2014).

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Fixing America's Surface Transportation Act of 2015 114 U.S.C. §§ 1001-89003 (2015)

Clean Water State Revolving Fund

The Clean Water State Revolving Fund (CWSRF) is a nationally and state funded revolving loan program. The CWSRF was established in 1987 through amendments to the *Clean Water Act*. With the same structure as the Drinking Water State Revolving Fund, the program is a partnership between United States Environmental Protection Agency (EPA) and each State (United States Environmental Protection Agency [EPA], 2016). The EPA allocates funds to all States, and each State contribute an additional 20% to match federal grants. The federal government allocates around $5 billion annually to States for their CWSRFs, which are operated by each State (EPA, 2015).

To receive funds, each State must provide intended use plans that describe the programs plans and goals for each fiscal year (Oregon State Department of Environmental Quality, 2015). The funds are placed into a dedicated revolving loan fund for eligible infrastructure projects. The loans provide assistance, and as the infrastructure makes money back the funds flow back into the dedicated fund. The CWSRFs have the flexibility to issue bonds for additional funding (EPA, 2015). CWSRF assistance is provided through various financial instruments, and the repayment terms are flexible. In 2009, congress authorized the CWSRF to provide further financial assistance through additional subsidization to small and disadvantaged communities (EPA, 2015).

Eligible recipients include any public entities such as municipal governments, federally recognized tribes, and any quasi-municipal corporations; nonprofit organizations are also eligible for certain projects (Washington State Department of Ecology, 2016). Eligible projects include construction of municipal wastewater facilities, green infrastructure and control of nonpoint source of pollution and other water quality projects. Part of the funds are set aside in a green project reserve targeting green infrastructure, energy and water efficiency improvements, and other environmentally innovative activities (EPA, 2016). Projects are selected based on priorities and ranking criteria. Applicants with projects on the priority list must complete environmental reviews, land-use compatibility statements, financial reports (Oregon State Department of Environmental Quality, 2015).

The U.S. Government Accountability Office evaluates the entire EPA program periodically, and the EPA itself conducts annual reviews of the state run programs to ensure fiscal integrity (United States Government Accountability Office [GAO], 2009). The EPA collects electronic data through expected benefits reporting system which all states use, and various states also report environmental monitoring data through the same system (GAO, 2009). In 2016, the Office of Inspector General of the EPA recommended that the EPA require post-project environmental monitoring and reporting for all funded projects, and that the data be made publicly available (EPA, 2016).

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Rural Infrastructure Opportunity Fund

The Rural Infrastructure Opportunity Fund is a national public-private partnership between CoBank, Capitol Peak Asset Management and the USDA. The fund was announced in July 2014, and invests in rural community facilities including health care and educations facilities, as well as water and wastewater systems, rural energy projects, rural broadband, and agribusiness. The program was created to complement existing government loan and grant programs (CoBank, 2016).

The fund serves as a co-lender for borrowers, and private lending for financing all types of rural infrastructure projects. CoBank committed $10 billion in lending capacity, and Capitol Peak Asset Management (CPAM) manages the fund as an independent asset management firm (CoBank, 2016). Capitol Peak Asset Management also assists in recruiting additional private investment, and provides consulting and communication services (Capitol Peak, 2014). The USDA rural development advises CoBank and CPAM, but ultimately does not make any allocation decisions (USDA, n.d.).

Eligible applicants include both private and public entities, with the requirement that entities be US based and doing business in the US. Funds are available through loans, and the loan terms are project-specific, depending on the level of risk. Funds are primarily provided through senior debt financing, with CoBank the senior lender. Some projects may be funded entirely through private-sector dollars, in others the loans may leverage government loan and grant programs (Capitol Peak, 2014).

Project funding applications may be submitted at any time. Projects are required to benefit rural areas. The USDA defines rural areas as located within a city with a population no greater than 20,000 or outside an urban area with a population no greater than 50,000. However, projects located in urban centers may be considered if it's demonstrated that the project will benefit primarily rural areas. Loan requests range from $10 million to $50 million, however, some larger projects may receive loans up to $800 million (Capitol Peak, 2014).

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CoBank. (2016). Products and Services – Public Private Partnerships: The U.S. Rural Infrastructure Opportunity Fund. Retrieved from the CoBank website: http://www.cobank.com/Products-Services/Public-Private-Partnerships/US-Rural-Infrastructure-Opportunity-Fund.aspx

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Water and Environmental Programs

The Water and Environmental Programs (WEP) are a set of programs that administer grants and loans for capital projects and capacity building. The WEP are run under the USDA Rural Development (USDA, 2015b). Within the WEP, sub-programs allocate resources to rural communities across the United States for water and solid waste infrastructure (USDA, 2015b). The WEP is the only federal program focused on water and waste infrastructure for populations of 10,000 or less (USDA, 2015b). The program is administered jointly through the EPA national office, and trained staff in based in each State.

Within the sub-programs under the WEP, eligible recipients include rural public entities, native American tribal bodies, colonias, and private or nonprofit organizations. Public bodies make up the largest portion of borrowers and grantees. A portion of funding is reserved for very financially disadvantaged communities and communities qualifying for emergency assistance (USDA, 2015a). Eligible capital projects including drinking water, sanitary water, storm-water, and solid waste projects, with the majority of funding allocated towards water and sewer infrastructure projects (USDA, 2015a).

The majority of WEP funds are allocated to capital hard infrastructure projects through direct loan and grant programs, with loans accounting for around three-quarters of all approved projects. The cost-sharing, grant and loan amount is determined on a case-by-case basis according to location and project need. In addition to funding capital projects, the WEP provides funding to nonprofit and private organizations to assist communities with technical details such as feasibility studies, plans, and applications. The USDA office also provides assistance for rural community applications. Detailed financial reporting is required by all recipients (USDA, 2015a; Technical Assistance Grants Regulation, 2013).

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7 C.F.R. Ch. XCII (1-1-13 Edition) § 1774 – Technical Assistance Grants Regulation 2013. Retrieved from the United States Government Publishing Office website: https://www.gpo.gov/fdsys/pkg/CFR-2014-title7-vol12/pdf/CFR-2014-title7-vol12-part1775.pdf

Local and Tribal Technical Assistance Program

The Local Technical Assistance Program (LTAP) and the Tribal Technical Assistance Program (TTAP) are a network of 58 centers providing rural technical assistance and local capacity building (Local Technical Assistance Program [LTAP], n.d.). The program was initiated in 1982 through the Department of Transportation and Related Agencies Appropriate Act, and allocated $5 million from the Highway Trust Fund for rural technical assistance. The Federal Highway Administration along with state highway agencies and universities established a system of Technology Transfer centers across United States (Office of Technical Services, 2014). Annual funding is allocated from the Highway Trust Fund, and covers 50% of LTAP transfer center costs, and 100% of TTAP transfer center costs (Office of Technical Services, 2014).

The transfer centers provide essential capacity building to counties, small cities, and towns for building and maintaining surface transportation infrastructure. The centers operate under agreements with respective state highway agencies, which in turn have federal-aid agreements with the FHWA. Training courses, new and existing technology updates, and personalized technical l assistance is offered. The centers follow the strategic plans laid out at the state level (LTAP, n.d.). The centers are also served by the National LTAP Association, which builds awareness about LTAP, assists the Federal Highway Administration with developing strategies, and builds capacity of each center to meet the needs of customers (LTAP, n.d.). The FHWA continuously evaluates the national LTAP/TTAP through quantitative and qualitative performance measures in the areas of safety, infrastructure management, workforce development, and organizational excellence (Office of Technical Services, 2014).

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Office of Technical Services, Federal Highway Administration Technology Partnership Programs. (2014). LTAP/TTAP Strategic Plan. Retrieved from the Local Technical Assistance Program website: http://www.ltap.org/about/downloads/LTAP-TTAP_Strategic_Plan_2014.pdf

European Union Programs

European Agricultural Fund for Rural Development: European Union unconditional funding

The European Agricultural Fund for Rural Development (EAFRD) provides regionally allocated funding to member EU states, which is funneled down to rural areas. The program was created in 2005 to fund economic development projects in rural areas (European Commission [EC], 2005). The EAFRD is part of the European Structural and Investment Funds, and as of 2013 the program operates under the Common Provisions Regulation (EC, 2014).

To obtain funding, EU member states prepare partnership agreements (PA), which act as an overall strategic document of how the funds will be used. The objectives of the PAs must align with the overall Europe 2020 strategy (EC, 2015). The PAs are implemented through rural development programmes (RDPs). Every member state must set out an RDP, which specifies what funding will be spent on which measures (EC, 2016). The RDP's must be based on at least four of the six common EU priorities. At least 30% of each programme's budget is dedicated to specific environmental and climate-related measures, and at least 5% for administration of the LEADER approach (EC, 2015).

The LEADER approach stands for 'Liaison Entre Action de Developpement de l'Economie Rurale' – Links between the rural economy and development actions. The approach is a bottom-up method of delivering support to communities for rural development (EC, 2015). LEADER was launched in 1991, introduced as a community initiative implemented only in rural areas. In 2007, the program was funded under the EAFRD, and has now become part of the EAFRD regulation. Local public-private partnerships are created under LEADER, known as Local Action Groups (LAGs). LAGs are composed of local citizens, public sector employees, and business and not-for-profit professionals. LAGs have the authority to identify and implement the development strategy and make decisions regarding the allocation of resources. Each RDP must have a LEADER component for implementation. LEADER encourages networking and communication between rural and regional areas. This enables LAGs to cooperate and learn from other groups that have face similar issues (EC, 2006).

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European Commission. (2016). Agriculture and Rural Development. Rural Development 2014-2020. Retrieved from the European Commission website: http://ec.europa.eu/agriculture/rural-development-2014-2020/index_en.htm

Horizon 2020: European Union conditional funding

Horizon 2020 is the European Union's largest conditional funding program for research and innovation (EC n.d.). For the period 2014-2020 the EU has allocated 77 billion euros towards Horizon 2020 (EC, 2015). Infrastructure projects must fall under the category of (1) secure, clean and efficient energy, (2) smart, green, and integrated transport, and (3) climate action, environment, and resource efficiency (EC, 2014a).

The Horizon 2020 program is open to any legal entity, including public bodies, universities, and businesses. Standard research projects should be a partnership between at least three legal entities, but other programs may only require one legal entity. Unlike the programs under the European Structural and Investment Funds, Horizon 2020 is centrally managed through the European Commission (EC, 2014a). Funding opportunities are set out twice a year in work programmes, prepared in consultation with stakeholder's representatives from industry, research, and civil society. Trans-national partnership projects are highly encouraged with with impacts on a minimum of three countries (EC, 2014b).

As of 2014, all applications are made through the online participant portal, during the calls for proposals. (EC, 2014b). Applicants can receive additional guidance and assistance from the network of national contact points. The portal also helps applicants connect to potential partners with particular competences, facilities, or experience useful for the project (EC, 2014b). Funding covers research and innovation actions, and coordinating support actions. Up to 100% of eligible costs for research and innovation actions, but only a flat rate of 25% for supporting actions. Funding schemes are flexible, and use training and mobility grants, co-funding grants, debt financing and equity investments.

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European Fund for Strategic Investment: Europe-wide revolving loan

The European Fund for Strategic Investments (EFSI) is a joint initiative between the European Investment Bank (EIB) and the European commission (EC). EFSI comprises of a 16 billion guarantee from the EU budget, complemented by another 5 billion allocated from the EIB's own capital. With these funds, the EFSI aims to mobilize further private investment (Council Regulation Bo. 1017/2015; EIB, 2016b). The funds will focus on projects which could not be carried out under existing financial instruments without EFSI support (Council Regulation Bo. 1017/2015; EIB, 2015).

EFSI aims to fund economically viable projects which may have a higher risk profile than ordinary EIB activities. Projects should have high societal added value contributing to achieving EU policy objectives set out in the Europe 2020 strategy (Council Regulation Bo. 1017/2015). Project areas include strategic infrastructure; education, research, development and innovation; expansion of renewable energy and resource efficiency; and supporting smaller businesses and midcap companies (Council Regulation Bo. 1017/2015). The funds should complement ongoing regional, national and union wide programmes, as well as existing EIB operations and activities.

EFSI supports a wide range of financial products, including equity, debt, and guarantees. EFSI support should not substitute private market finance, but instead be a catalyst for private finance (Council Regulation Bo. 1017/2015). Eligible recipients include public sector entities, utilities, enterprises, banks, collective investment vehicles, and investment platforms (EIB, 2016a). Projects should be submitted following EIB regular loan application procedures (EIB, 2015). The funds are allocated and managed by and within existing EIB group structures (EIB, 2015). Projects are considered on individual merits, there are no geographic or sector quotas (EIB, 2015).

The European Investment Advisory Hub (EIAH) was created under the EFSI to provide support for project development. The hub provides technical assistance for investments and expertise free of charge for public project promoters. Information about the application process is also provided through the EIAH (Council Regulation Bo. 1017/2015).

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Acronym	Program	Region	Government Level	Agency	Sector	Program Type	Formal Evaluation?
BCF-CC	Building Canada Fund - Communities Component	Canada	Federal	Federal Government - Infrastructure Canada	All	Conditional matching	Y
BCF-MIC	Building Canada Fund - Major Infrastructure Component	Canada	Federal	Federal Government - Infrastructure Canada	All	Conditional matching	Y
BMTG	Basic Municipal Transportation Grant	Canada	Provincial	Province of Alberta	Transportation	Unconditional	N
CCSF	Canada Cultural Spaces Fund	Canada	Federal	Federal Government - Canadian Heritage	Public Space	Conditional non-matching	Y
CFMP	Capital Facilities and Maintenance Program	Canada	Federal	Aboriginal Affairs and Northern Development	All	Unconditional & Conditional non-matching	Y
CFP	Community Futures Program	Canada	Federal	Federal Government - Federal Delivery Partners	Community Development	Capacity building	Y
CIIF	Community Infrastructure Improvement fund	Canada	Federal	Federal Governemnt - Federal Delivery Partners	All	Conditional non-matching	N
CIP 150	Community Infrastructure Program 150		Federal	Federal Government	Public Space	Conditional matching	N
CRP	Canadian Rural Partnership	Canada	Federal	Agriculture and Agri-Food Canada	All	Capacity building, & conditional non-matching	N
CSIF	Canada's Strategic Infrastructure Fund	Canada	Federal	Federal Government - Infrastructure Canada	All	Conditional non-matching	Y
DWP	Canada-Ontario First Nations Pilot to Improve Drinking Water Quality	Canada	Federal	Aboriginal Affairs and Northern Development, Development Canada, Province of Ontario, Ontario First Nations Technical Services Corporation	Water	Unconditional	N
FNIF	First Nation Infrastructure Fund	Canada	Federal	Aboriginal Affairs and Northern Development	All	Unconditional & Conditional non-matching & Capacity building	Y
FNWWAP	First Nations Water and Wastewater Action Plan	Canada	Federal	Aboriginal Affairs and Northern Development, Health Canada	Water	Unconditional (Through the FNIF)	Y
GIF	Canada's Green Infrastructure Fund	Canada	Federal	Federal Governemnt - Infrastructure Canada EAP	All	Conditional matching	N
GMF	Green Municipal Fund	Canada	Federal	Federation of Canadian Municipalities	All	Conditional matching, Revolving loan	Y
GTF	Gas Tax Fund	Canada	Federal	Federal Government - Infrastructure Canada	All	Unconditional	Y

ISF	Infrastructure Stimulus Fund	Canada	Federal	Infrastructure Canada	All	Conditional matching	Y
MIII	Municipal Infrastructure Investment Initiative	Canada	Provincial	Ontario	All	Conditional non-matching	N
NRTP	National Recreational Trails Program	Canada	Federal	Federal Government, National Trails Coalition	Recreation	Conditional matching	Y
OCIF	Ontario Community Infrastructure Fund	Canada	Provincial	Ontario	All	Unconditional formula & conditional top-up	N
OPWP	Ontario Potable Water Program	Canada	Provincial	Ontario	Water	Conditional matching	N
P3	Public-private partnership fund	Canada	Federal	Federal Government - PPP Canada	All	Public private partnership	Y
PTBase	Provincial-Territorial Infrastructure Base Fund	Canada	Federal	Federal Government - Infrastructure Canada	All	Unconditional	N
PTF	Public Transit Fund	Canada	Federal	Federal Government - Infrastructure Canada	Transportation	Conditional matching	Y
PTIC-SCF	New Building Canada Fund: Provincial-Territorial Infrastructure Component Small Communities Fund	Canada	Federal	Federal Government	All	Conditional matching	N
RADF	Rural Alberta Development Fund	Canada	Provincial	Alberta	All	Capacity building agency & direct conditional	Y
RED	Ontario's Rural Economic Development Program	Canada	Provincial	Ontario Ministry of Agriculture, Food and Rural	Community Development	Capacity building & conditional non-matching	N
MSI	Municipal Sustainability Initiative	Canada	Provincial	Alberta	All	Unconditional	N
NBCF-NIC	New Building Canada Fund - National Infrastructure Component	Canada	Federal	Infrastructure Canada	All	Conditional matching	N
PTIC-NRP	New Building Canada Fund: Provincial-Territorial Infrastructure Component National and Regional Projects	Canada	Federal	Infrastructure Canada	All	Conditional matching	N
BCRD	British Columbia Rural Dividend	Canada	Provincial	British Columbia	Community Development	Capacity building & conditional non-matching	N
MRIF	Municipal Rural Infrastructure Fund	Canada	Federal	Infrastructure Canada	All	Conditional matching	Y
AMIP	Alberta Municipal Infrastructure Program	Canada	Provincial	Alberta	All	Unconditional	N

GreenTRIP	Green Transit Incentives Program	Canada	Provincial	Alberta	Transportation	Conditional matching	N
ACP	Alberta Community Partnership	Canada	Provincial	Alberta	Community Development	Capacity building & conditional non-matching	N
AMWWP	Alberta Municipal Water / Wastewater Partnership (& Water for Life)	Canada	Provincial	Alberta	Water	Conditional matching	N
STIP	Strategic Transportation Infrastructure Program	Canada	Provincial	Alberta	Transportation	Conditional matching	N
OMPF	Ontario Municipal Partnership Fund	Canada	Provincial	Ontario	All	Unconditional	Y
NODP	Northern Ontario Development Program	Canada	Provincial	FedNor (Federal)	Community Development	Capacity building	Y
OSTAR	Ontario Small Town and Rural Development Infrastructure Initiative	Canada	Provincial	Ontario	Community Development	Conditional	N
SIDIT	Souther interior Development Initiative Trust	Canada	Provincial	British Columbia	All	Conditional non-matching & Revolving Loan	Y
BCCWIP	British Columbia Community Water Improvement Program	Canada	Provincial	British Columbia	Water	Conditional matching	Y
BCCRP	British Columbia Community Recreation Porgram	Canada	Provincial	British Columbia	Recreation	Conditional matching	N
BCULG	British Columbia Unconditional Local	Canada	Provincial	British Columbia	All	Unconditional	N
NDIT	Northern Development Initiative Trust	Canada	Provincial	British Columbia	All	Capacity building & Conditional matching & Revolving Loan	Y
BMF	Building Manitoba Fund	Canada	Provincial	Manitoba	All	Unconditional	N
MWSB	Manitoba Water Services Board	Canada	Provincial	Manitoba	Water	Unconditional & Conditional non-matching & Capacity building	N
MRBP	Manitoba New Municipal Road and Bridge Program	Canada	Provincial	Manitoba	Transportation	Conditional matching	N
QTDF	Quebec Territorial Develompent Fund	Canada	Provincial	Quebec	All	Unconditional & Capacity building	N
NCDF	Nunavut Community Development Fund	Canada	Territory	Nunavut	All	Conditional non-matching	N
WSSS	Nunavut Water and Sewage Services Subsidy	Canada	Territory	Nunavut	Water	Conditional non-matching	N

MCBF	Nunavut Minor Capital Block Funding	Canada	Territory	Nunavut	All	Unconditional	N
NGLPT	Nunavut Grants in Lieu of Property Taxes	Canada	Territory	Nunavut	All	Unconditional	N
NMFP	Nunavut Municipal Funding Program	Canada	Territory	Nunavut	All	Unconditional	N
SRGC	Nunavut Sports and Recreation Grants and Contributions	Canada	Territory	Nunavut	Recreation	Conditional non-matching	N
CPIF	Community Public Infrastructure Funding	Canada	Territory	Northwest Territories	Recreation	Unconditional	N
NTOMF	Northwest Territories Operations and Maintenance Funding	Canada	Territory	Northwest Territories	All	Unconditional	N
WSSF	Water and Sewage Services Funding	Canada	Territory	Northwest Territories	Water	Conditional non-matching	N
PIQM	Programme Infrastructures Quebec - Municipalites	Canada	Provincial	Quebec - Municipal Affairs	All	Conditional matching	N
PRIMEAU	Programme Infrastructure Municipal d'Eau	Canada	Provincial	Quebec - Municipal Affairs	Water	Conditional matching	N
RIRL	Rehabilitation of the Local Road Infrastructure	Canada	Provincial	Quebec - Department of Transportation	Transportation	Conditional matching	N
PAARRM	Local Road Network Improvement Program	Canada	Provincial	Quebec - Department of Transportation	Transportation	Conditional non-matching	N
NCGP	Northern Capital Grants Program	Canada	Provincial	Saskatchewan - Northern Municipal Services Branch	All	Conditional matching	N
NWSP	Northern Water and Sewer Program	Canada	Provincial	Saskatchewan	Water	Conditional non-matching	N
SIGI	Saskatchewan Infrastructure Growth Initiative	Canada	Provincial	Saskatchewan	All	Unconditional	N
SIGI2	Saskatchewan Infrastructure Growth Initiative 2	Canada	Provincial	Saskatchewan	All	Unconditional	N
MSS	Main Street Saskatchewan	Canada	Provincial	Saskatchewan	Public Space	Conditional matching	N
MCDP	Municipal Capacity Development Program	Canada	Provincial	Saskatchewan	Community Development	Capacity building direct conditional	N
ASF	Agrispirit Fund	Canada	Federal	Farm Credit Canada	All	Conditional non-matching	N
NSEG	Nova Scotia Equalization Grant	Canada	Provincial	Nova Scotia	All	Unconditional	N

NSMFC	Nova Scotia Municipal Finance Corporation	Canada	Provincial	Nova Scotia	All	Loan	Y
NBUG	New Brunswick Unconditional Grant	Canada	Provincial	New Brunswick	All	Unconditional	N
MCW	Municipal Capital Works Funding	Canada	Provincial	New Found Land	All	Conditional matching	N
DWSI	Drinking Water Safety Initiative	Canada	Provincial	New Found Land	Water	Conditional non-matching	Y
MOG	Municipal Operating Grant	Canada	Provincial	New Found Land	All	Unconditional	N
CSP	Community Sustainability Partnership	Canada	Provincial	New Found Land	Community Development	Unconditional & Conditional & Capacity building	N
WMF	Waste Management Funding	Canada	Provincial	New Found Land	Waste	Conditional non-matching	N
CMG	Comprehensive Municipal Grant	Canada	Territory	Yukon	All	Unconditional	Y
REDF	Regional Economic Development Fund	Canada	Territory	Yukon	Community Development	Conditional matching	N
CDF	Community Development Fund	Canada	Territory	Yukon	Community Development	Conditional non-matching	Y
RRMP	Rural Road Maintenance Program	Canada	Territory	Yukon	Transportation	Conditional non-matching	N
CDBG - EC	Community Development Block Grant Program	United States	National	US Department of Housing and Urban Development	Housing	Unconditional and Loan	Y
WEP	Water and Environmental Programs	United States	National	United States Department of Agriculture - Rural	Water and Wastewater	Conditional and Loan	Y
CCG	Community Connect Grants	United States	National	United States Department of Agriculture - Rural	Communication	Conditional non-matching	N
ROIF	Rural Opportunity Investment Fund	United States	National	United States Department of Agriculture, CoBank, Capital Peak Asset Management	Any sector	Public Private Partnership (municipal bonds)	N
DWSRF	Drinking water state revolving fund	United States	National	Environmental Protection Agency and States	Water and Wastewater	Revolving Loan	Y
CWSRF	Clean water state revolving fund	United States	National	Environmental Protection Agency and States	Water and Wastewater	Revolving Loan	Y
TIFIA	Transportation Infrastructure Finance and Innovation Act Program	United States	National	United States Department of Transportation	Transport	Revolving Loan	N
TIGER	Transportation Investment Generating Economic Recovery	United States	National	United States Department of Transportation	Transport	Conditional non-matching	Y

STBG	Surface Transportation Block Grants	United States	National	United States Department of Transportation	Transport	Unconditional	Y
LTAP	Local Technical Assistance Program	United States	National	United States Department of Transportation	Transport	Capacity Building	N
CEF	Connecting Europe Facility	European Union	Europe-wide	European Union	Energy, Transport, Digital	Unconditional	Y
CF	Cohesion Fund - Under ESIF	European Union	Europe-wide	European Union	Sustainable Development	Unconditional	Y
EAFRD	European Agricultural Fund for Rural Development - Under ESIF	European Union	Europe-wide	European Union	Rural development	Unconditional	Y
EFSI	European Fund for Strategic Investment	European Union	Europe-wide	European Union & European Investment Bank	All	Loan	Y
ELENA	European Local Energy Assistance	European Union	Europe-wide	European Investment Bank	Energy	Loan	N
ERDF	European Regional Development Fund - Under ESIF	European Union	Europe-wide	European Union	Sustainable Development - All Infrastructure	Unconditional	Y
ESF	European Social Fund - Under ESIF	European Union	Europe-wide	European Union	Sustainable Development	Unconditional	Y
ESIF	European Structural & Investment Funds	European Union	Europe-wide	European Union	Encompasses ERDF, CF, EAFRD,	Unconditional	Y
FP7	7th Framework Programme for Research and Technological Development	European Union	Europe-wide	European Union	Energy	Conditional	Y
H2020	Horizon 2020	European Union	Europe-wide	European Union	All innovative infrastructure	Conditional	Y
IPA	Instrument for Pre-accession Assitance	European Union	Europe-wide	European Union	Regional development	Unconditional	Y

Appendix B: Examples of Infrastructure Funding Programs

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Appendix B provides brief summaries of selected infrastructure funding programs in Canada, United States, and the European Union. The descriptions are provided as concrete examples of infrastructure funding that is available to rural communities. The programs were chosen because they are either representative of typical funding program policies, or demonstrate particular challenges or innovations. Each summary includes information about the type of program, eligible applicants and eligible projects, funding allocation process, and monitoring requirements. If programs have been formally or informally evaluated, and this information is public, key details from the evaluation are also included in the description. Canadian examples are provided at the national, provincial and territorial level. Due to time constraints, examples from the United States and European Union were taken only at the national and supranational level respectively.

Canadian Federal programs

Gas Tax Fund

The Gas Tax Fund (GTF) provides federal unconditional funding for vertical equalization purposes. The fund consists of reallocating federally collected gas taxes to all Canadian municipalities. The fund was launched in 2005, and in 2011 the Federal Government legislated the GTF as a permanent source of infrastructure funding for municipalities, providing $2 billion annually (Infrastructure Canada [INFC], 2015). The fund is provided up front, twice a year, to provinces and territories who then flow funding to municipalities (INFC, 2014).

The GTF is implemented through agreements between the government of Canada and each province or territory, except for British Columbia and Ontario where municipal associations are responsible. All municipalities within Canada receive funding allocated on a per-capita basis, except for the three territories and Prince Edward Island, where municipalities receive 0.75% of the total annual national funding (INFC, 2015). Allocation formulas for municipalities are developed by each jurisdiction that receives initial funding, which can be a combination of per capita allocation, base allocation, or dedicated funds (INFC, 2015). Infrastructure Canada transfers a portion of the funds to Indigenous and Northern Affairs Canada (INAC), where it's administered through the First Nations Infrastructure Fund to on-reserve First Nations communities (INFC, 2015).

The GTF must be used by municipalities for the purpose of infrastructure. Eligible costs include construction, renewal, material enhancement in transportation, water, wastewater, solid waste, community energy systems, tourism and recreation, and capacity building (INFC, 2015). The Federal Government has no role in the selection or approval of projects; local governments make decisions according to local priorities (INFC, 2014).

The program is not cost-shared, but local governments commit to maintaining capital infrastructure spending at a pre-determined level. Municipalities can pool, bank, and borrow against the funding providing financial flexibility (INFC, 2014).

The GTF program was evaluated in 2015, and found to be one of the most efficient infrastructure programs implemented by the federal government. Interviews with employees of municipality that received funding were very positive (INFC, 2015). The program did not replace regular municipal funding, and the fund provided environmental, community, and economic benefits that aligned with federal government priorities (INFC, 2015).

Infrastructure Canada. (2014). *The Federal Gas Tax Fund: Permanent and predictable funding for municipalities*. Retrieved from Infrastructure Canada website: http://www.infrastructure.gc.ca/plan/gtf-fte-eng.html

Infrastructure Canada. (2015). *Final Report – Evaluation of the Gas Tax Fund*. Retrieved from Infrastructure Canada website: http://www.infrastructure.gc.ca/pd-dp/eval/2015-gtf-fte-eng.html

Building Canada Fund, Communities Component

The Building Canada Fund Communities Component (BCF-CC) is a federally implemented conditional cost-sharing program. The BCF-CC provided $1.5 billion in funding for small communities located in the provinces. The program originated as $1 billion fund, and was expanded as part of Canada's Economic Action Plant with a top-up of $500 million (Treasury Board of Canada Secretariat [TBCS], 2015). The program was based off of the Municipal Rural Infrastructure Program (MRIF), and used identified best practices (INFC, 2015).

Total funding allocated in each province was determined on a per capita basis. Eligible recipients of the fund were limited to communities with populations of less than 100,000. Infrastructure projects were selected through a competitive application-based process; municipalities had to apply through calls for proposals. All projects were cost-shared, with most projects funded on one-third basis, the provinces contributing an additional one-third of eligible costs. In certain circumstances, the maximum federal contribution could increase to 50% (TBCS, 2015).

An evaluated conducted in 2015 determined that many small municipalities did not apply because they lacked the financial capacity to pay their one-third contribution. The program was oversubscribed, with about half of the municipalities that applied for funding being rejected. In some scenarios, municipalities pooled together resources to fund regional projects that would benefit all communities. In these cases, project recipients viewed the program and partnerships positively (INFC, 2015). The 2012 audit noted that the program may have redundancy between Infrastructure Canada and other oversight entities, resulting in over- governance and administrative burden (INFC, 2012).

In 2009, in conjunction with the Infrastructure Stimulus Fund, the federal government announced a top-up for the BCF-CC. The program provided an extra $500 million over two years. Funding was conditional on recipients already committing existing BCF-CC funding. To receive funding through the top-up, municipalities had to prove that projects could be completed by March 31, 2011. Small communities struggled with the capacity to respond to accelerate delivery, and around a third of the recipients sought an extension after the deadline (INFC, 2012).

Evaluation Directorate, Infrastructure Canada. (2012). Building Canada Fund Communities Component Top-Up. *Evaluations*. Retrieved from Infrastructure Canada website: http://www.infrastructure.gc.ca/pd-dp/eval/eap-pae/2012-eap-pae-eng.html#toc21

Infrastructure Canada. (2015). *Evaluation of the Building Canada Fund – Communities component*. Retrieved from Infrastructure Canada website: http://www.infrastructure.gc.ca/pd-dp/eval/2015-bcfcc-vcfcc-eng.html#table7

Treasury Board of Canada Secretariat. (2015) *Building Canada Fund: Plans, Spending and Results*. Retrieved from Treasury Board of Canada Secretariat website: https://www.tbs-sct.gc.ca/hidb-bdih/initiative-eng.aspx?Hi=92

Community Futures Program: Nation-wide federal capacity building program

The Community Futures Program (CFP) is an example of a capacity building economic development program funded by the federal government and managed by independent agencies. The program was created in 1985 by the federal government to support rural economic development. The CFP aims to provide communities, individuals, and organizations with information and planning services to initiate local socio-economic development. The CFP provides support for both business development and community development, and the funding is administered to Community Futures Development Corporations (CFDCs) (Reseau des SADC et CAE, 2015).

The CFDCs are private, not-for-profit organizations that are independent of the federal government. The CFDCs serve a population of close to 15 million residents, accounting for 45% of the Canadian population. CFDCs typically operate in rural communities with 20,000 to 50,000 people. The CFDCs are community based and staffed by local volunteers and professionals. Evaluations of the program have found that the governance structure has been the foundation of the CFP’s success (Reseau des SADC et CAE, 2015).

CFDCs offer a wide variety of programs and services, including strategic community planning, investment for community-based projects, business information and planning, and access to capital for small and medium sized businesses. The CFDCs can grant loans, loan guarantees, or equity investments to small businesses and social enterprises, and in this way act as a revolving loan fund (Ontario Association of Community Futures Development Corporations [OACFDC], 2015b). Community Economic Development initiatives include economic sectors such as tourism, agriculture and manufacturing, as well as projects targeted at vulnerable population groups (FedDev, 2014).

Direct funding for capital infrastructure development is unavailable through the CFP; however, funding and support may be given to municipalities in an advisory or promotional capacity (FedNor, 2015). Community Strategic Planning connects municipal governments with other local organizations to identify opportunities, assess local challenges, and develop and update strategic plans. In the 2014 program evaluation, the CFDCs were seen as vital partners of local government in providing support to municipal governments in accessing community economic development grants (FedDev, 2014).

FedDev Ontario. (2014). *Evaluation of the Community Futures Program*. Retrieved from FedDev Ontario website: http://www.feddevontario.gc.ca/eic/site/723.nsf/eng/02069.html#s11

FedNor Ontario. (2015). *Insights from comparing the Community Futures Program in Ontario with LEADER in Sweden*. Retrieved from FedNor Ontario website: http://fednor.gc.ca/eic/site/fednor-fednor.nsf/eng/fn03568.html

OACFDC. (2015). Access to Capital for Small and Medium Sized Businesses and Social Enterprises. *CF Program*. Retrieved from Ontario Association of Community Futures Development Corporations website: http://oacfdc.com/public-information/access-to-capital

Ontario Association of Community Futures Development Corporations. (2015). Who We Are. *CF Program*. Retrieved from Ontario Association of Community Futures Development Corporations website: http://oacfdc.com/public-information

Reseau des SADC et CAE. (2015). *The CFDCs and CBDCS: A Winning Approach for Community Futures*. Retrieved from Community Futures Canada website: http://communityfuturescanada.ca/wp-content/uploads/booklet_web.pdf

Canada 150 Community Infrastructure Program

The Canada 150 Community Infrastructure Program (CIP150) was a program developed to celebrate Canada's 150th anniversary; an example of a a typical short term conditional funding program. The program started July 2015, and will run until March 2018, investing $150 million over two years in community infrastructure (Western Diversification Canada [WD], 2016). The funding is currently delivered through federal delivery partners, with mandatory project completion by March 31, 2018 (Atlantic Canada Opportunities Agency [ACOA], 2014).

The program funds projects that rehabilitate existing community facilities across Canada, to improve long-term growth and vibrancy. Eligible projects include community centers, cultural centers and museums, parks, recreational trails, and tourism infrastructure. In addition, the projects must be community oriented, non-commercial, and open for use to the public. Projects are selected by the federal delivery partners on basis of readiness, funds leveraged, anticipated completion date, and economic benefits (ACOA, 2014).

Eligible recipients include municipal or regional governments, a band council under the Indian Act, other public-sector bodies, and not-for-profit organizations (ACOA, 2014). The recipients must directly own infrastructure assets, facility, or land which is being renovated; or have a long-term lease in place (WD, 2016). Eligible recipients submit proposal that include the project description, source of additional funding, and demonstrate how the project will contribute to Canada's legacy and have a lasting impact on Canada's infrastructure (ACOA, 2014).

Federal funding cannot exceed 50%, with a maximum amount of $500,000 (WD, 2016). Priority is given to projects that require less federal funding (ACOA, 2014). In addition, the maximum contribution from all government of Canada sources cannot exceed 50%. In kind contributions are not eligible for support under the CIP150, and will not be included in the total project costs (WD, 2016). All recipients are required to submit progress reports to the regional development agencies until the projects are completed (FedDev, 2015).

Atlantic Canada Opportunities Agency. (2015). *Canada 150 Community Infrastructure Program*. Government of Canada. Retrieved from the Atlantic Canada Opportunities Agency website: http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/Canada-150-Infrastructure-Program.aspx

FedDev Ontario. (2015). *Canada 150 Community Infrastructure Program*. Government of Canada. Retrieved from the FedDev Ontario website: http://www.feddevontario.gc.ca/eic/site/723.nsf/eng/02198.html

Western Economic Diversification Canada. (2016). *Canada 150 Community Infrastructure Program*. Retrieved from the Wester Economic Diversification Canada website: http://www.wd-deo.gc.ca/eng/18872.asp

Public Private Partnership Fund

The P3 fund provided nation-wide conditional public-private partnership funding. The program was created along with PPP Canada as part of Canada's Economic Action in

2009. PPP Canada is a federal Crown corporation with a mandate to improving infrastructure procurement through P3s. The fund provides grants to public private partnerships (PPPs) for infrastructure projects. The funds were allocated based on merit, to incentivize the use of PPPs in public infrastructure procurements (Public Private Partnerships Canada [PPP Canada], n.d.a).

Eligible applicants for the P3 Fund included partnerships between private companies and provincial, territorial, municipal governments, and First Nations equivalent governing bodies. Combined funding from the P3 Fund and other federal sources could not exceed 25% (PPP Canada, n.d.a). Eligible projects included the construction, renewal, or material enhancement of core public infrastructure areas including: transport, water, energy, solid waste, culture, security, tourism and connectivity. Applications are accepted on an annual basis. There was no minimum or maximum project size or cap for funding; however, larger projects were typically viewed more positively (PPP Canada, n.d.b).

The Economic Action Plan in 2013 renewed P3 funding with another $1.25 billion, incorporating the fund with the new building Canada plan. The New Building Canada Plan includes, a P3 'screen' to be applied to project applications with capital costs of more than $100 million. Through the P3 screen, projects are assessed to determine if they would provide better value for money through a P3 procurement. Through the screening process, PPP Canada aims to raise awareness and consideration of the P3 model. If projects are accepted for funding under the P3 screen, 25% of project costs are funded by the federal government (PPP Canada, n.d.b).

When the program was evaluated in 2012, the projects that were funded demonstrated positive value for money. The P3 Fund raised awareness about P3 procurement, and raised the capacity for recipients to undertake P3 projects. The resources and technical assistance provided by PPP Canada was well-received by applicants and recipients. However, administrative delays caused some issues in certain projects. The performance of the fund was also negatively affected by external uncontrollable factors such as public opinions on privatization and the political environment. Future recommendations included providing repayable funding in addition to grants, and widening the eligible costs to include legal and asset management, and operations and maintenance (Ernst and Young, 2012).

Public Private Partnerships Canada. (no date) *Achieve better value, timeliness, and accountability to taxpayers through Public-Private Partnerships*. Retrieved from Public Private Partnerships Canada website: http://www.p3canada.ca/~/media/english/resources-library/files/revised/about%20ppp%20canada%20en.pdf

Public Private Partnerships Canada. (no date) *P3s and the New Building Canada Fund*. Retrieved from Public Private Partnerships Canada website: http://www.p3canada.ca/screening-and-advisory-services/the-building-canada-fund/p3s-and-the-building-canada-fund/

Ernst and Young. (2012). *Formative Evaluation of the P3 Canada Fund*. Retrieved from Public Private Partnerships Canada website:

http://www.p3canada.ca/~/media/english/audit%20and%20evaluation/files/formative%20evaluation%20of%20the%20p3%20canada%20fund%20en.pdf

Green Municipal Fund: Nation-wide Government seeded revolving loan and grant program

The Green Municipal Fund (GMF) is an example of a national revolving fund seeded by the federal government and administered through an independent organization, the Federation of Canadian Municipalities (FCM). The program was created in 2000 with $550 million from the federal government to use as a long-term reserve of loan and grant financing. The objective of the program is to benefit the environment, economy and society through investments in energy, transportation, waste, water and brownfield redevelopment (Federation of Canadian Municipalities [FCM], 2014).

The GMF program funds plans, studies and capital projects. The planning category includes sustainable neighborhood action plans, community brownfield action plans, and greenhouse gas reduction plans. Studies include feasibility studies, tests, and pilot projects to evaluate new technology or solutions. The /GMF offers grants for plans and studies which cover up to 40% of eligible costs to a maximum of $175,000. Capital projects include retrofitting construction, replacement, expansion or purchase and installation of fixed assets or infrastructure. Up to 80% of eligible costs are provided by the GMF through a combination of low interest loans and grants. Eligible costs are not to exceed $10 million, and grants cannot be more than 20% of the loan value (FCM, 2014).

Eligible participants include all municipal governments and their partners, regulatory authorities with the same power in municipal affairs, First Nations communities, and not-for-profit or for-profit partners that are municipally owned or collaborating with municipalities (FCM, 2015a). Projects are funded on a competitive basis through project proposals submitted by eligible participants. The FCM provides advisory and technical support for eligible applicants. The FCM website provides online tools and resources, as well as detailed instructions for completing applications (FCM, 2015b).

The final decisions on GMF funding allocations are made by the FCM committee based on input from the GMF council. The GMF council comprises 15 members from federal, municipal and environmental sectors. The council is comprised a third of federal government representatives, a third municipal officials, and a third external members representing the public, private, academic, and environmental sectors (FCM, 2015c).

The GMF program was evaluated independently in 2009 by the KPMG, and was found to be extremely successful. GMF was efficient and effective in the funding of projects, and little resources were wasted. The FCM was responsive to stakeholder needs, effectively engaging all stakeholders to understand the existing municipal capacity. The monitoring practices that were in place were transparent and the funded projects met the objectives set out by the GMF (KPMG, 2009).

Federation of Canadian Municipalities. (2014). Performance Audit of the Green Municipal Fund. Ottawa, ON: Federation of Canadian Municipalities. Accessed on September 10, 2016 from: https://www.fcm.ca/Documents/reports/GMF/2014/Federation_of_Canadian_Municipalities_Performance_Audit_of_the_Green_Municipal_Fund_Final_Report_EN.pdf

Federation of Canadian Municipalities. (2015). Apply for Funding. Retrieved from the Federation of Canadian Municipalities website: http://www.fcm.ca/home/programs/green-municipal-fund/apply-for-funding.htm

Federation of Canadian Municipalities. (2015). Green Municipal Fund Annual Report 2014-2015. Ottawa: Federation of Canadian Municipalities. Retrieved from Federation of Canadian Municipalities website: http://www.fcm.ca/Documents/corporate-resources/annual-report/Green_Municipal_Fund_Annual_Report_2014_2015_EN.pdf

Federation of Canadian Municipalities. (2015). Green Municipal Fund Council. Retrieved from Federation of Canadian Municipalities website: http://www.fcm.ca/home/about-us/green-municipal-fund-council.htm

Federation of Canadian Municipalities. (2016). 2016 FCM Sustainable Communities Awards: City of Saint-Hyacinthe, QC. Retrieved from Federation of Canadian Municipalities website: http://www.fcm.ca/home/awards/fcm-sustainable-communities-awards/2016-winners-case-studies/2016-waste-program.htm

KPMG. (2009). Performance Audit of the Green Municipal Fund. Ottawa, ON: Federation of Canadian Municipalities. Retrieved from the Federation of Canadian Municipalities website: https://www.fcm.ca/Documents/corporate-resources/annual-report/Perfomance_Audit_of_the_Green_Municipal_Fund_Final_Audit_Report_EN.pdf

Canadian Provincial and Territorial Programs

Municipal Sustainability Initiative

The Municipal Sustainability Initiative (MSI) provides an example of provincial unconditional funding for horizontal and vertical equalization purposes. The initiative was launched in 2007 by the Province of Alberta, and is administered by the Department of Municipal Affairs. The funds can be used for either capital infrastructure projects, operating costs including repairs and maintenance, or for capacity building and planning purposes (Alberta Municipal Affairs, 2016a). Eligible recipients include all municipalities in Alberta, metis settlements, and regional administrative bodies (Alberta Municipal Affairs, 2016a).

Since 2007, funding has been allocated annually through base funding, and an additional amount based on municipal populations, education property tax requisitions and kilometers of local roads. Unspent funds on operating costs may be carried into the next year, and capital funds may be carried forward a total of six years. The initiative was originally implemented through a temporary operating funding agreement between municipalities and the province, which later turned into a long-term Memorandum of Agreement. As part of the Memorandum of Agreement, municipalities are required to provide operating spending plans and the annual reports for the previous year (Alberta Transportation, 2016a).

As of 2014, the Basic Municipal Transportation Grant (BMTG) was consolidated under the MSI program. Prior to 2014, the Basic Municipal Transportation Grant provided funding for transportation infrastructure in Alberta municipalities. Allocated funds could be spent on capital construction and rehabilitation of structures including roads, bridges, and public transit. The current additional BMTG funding within MSI is based on municipal status, with municipalities receiving funding through a formula based on population and highway length (Alberta Transportation, 2013).

Alberta Municipal Affairs. (2016). Eligibility and Funding Allocations. Government of Alberta. Accessed September 10, 2016 from: http://municipalaffairs.alberta.ca/msi-funding-allocations-eligibility

Alberta Municipal Affairs. (2016). The Municipal Sustainability Initiative. Government of Alberta. Accessed September 10, 2016 from: http://municipalaffairs.alberta.ca/msi

Alberta Transportation. (2013). Basic Municipal Transportation Grant. (2013). Government of Alberta. Accessed September 10, 2016 from: https://www.transportation.alberta.ca/5407.htm

BC Community Water Improvement Program

The British Columbia Water Improvement Program (BCCWIP) conditionally funded eligible projects in drinking water and wastewater management and infrastructure (British Columbia Ministry of Community, Sport and Cultural Development [CSCD], 2013). The program was created in 2005 by the Ministry of Community, Sport, and Cultural Development in British Columbia, and provided $80 million in funding for local government (CSCD, 2012).

Funding was available for projects that developed infrastructure through construction or rehabilitation of physical assets, following the applicable planning and environmental legislation. Eligible projects include implementing components of drinking water plan, designing liquid waste management plans, projects demonstrating innovative technologies, supporting resource communities, regional growth strategies, or implementing drought management plans (CSCD, 2005). Eligible applicants include local governments, either municipalities or regional governments, including Vancouver and the greater region of Vancouver. Eligible recipients submitted applications to the Ministry with additional supporting documentation (CSCD, 2005).

The province provided up to 2/3 of the costs of local governments eligible infrastructure projects, and up to 75% in small communities for higher priority projects (CSCD, 2013). Eligible costs include all engineering, design, borrowing or capital costs towards implementing projects. Operational costs following construction must be borne by the project proponents (CSCD, 2005). Successful applicants were required to report progress to the Ministry, and grant reimbursement was provided after costs had be paid for by the municipality. The program continued to pay grants until 2010 (CSCD, 2005). The program required all funding to be allocated, and projects to be completed by 2012 (CSCD, 2012).

British Columbia Ministry of Community, Sport, & Cultural Development. (2005). B.C. Community Water Improvement Program Guide. Retrieved from the Ministry of Community, Sport, & Cultural Development website: http://www.cscd.gov.bc.ca/lgd/infra/library/community_water_improvement_guide.pdf

British Columbia Ministry of Community, Sport, & Cultural Development. (2012). B.C. Community Water Improvement Program – 2012 Annual Program Progress Report. Retrieved from the Ministry of Community, Sport, & Cultural Development website: http://www.cscd.gov.bc.ca/Lgd/infra/library/BCCWIP_2012_Annual_Program_Progress_Report.pdf

British Columbia Ministry of Community, Sport, & Cultural Development. (2013). B.C. Community Water Improvement Program. Infrastructure Grants. Retrieved from the Ministry of Community, Sport, & Cultural Development website: http://www.cscd.gov.bc.ca/lgd/infra/infrastructure_grants/community_water_improvement.htm

Alberta Community Partnership

The Alberta Community Partnership (ACP) provides conditional funding for capacity building and regional collaboration. In 2014, the program was the successor to the regional collaboration program, and incorporated the Municipal Sustainability Initiative operating grant, which had been in place since 2010 and 2007 respectively (Alberta Association of Municipal Districts and Counties, 2014).

The program is delivered by Alberta Municipal Affairs for projects that support new or enhanced regional municipal services, improve municipal capacity and for joint and collaborative activities (Alberta Municipal Affairs [AMA], 2016). Eligible projects and components include inter-municipal collaboration activities to expand regional municipal service delivery, metropolitan restructuring, mediation and cooperative processes, and municipal internships (AMA, 2016). Projects are funded up to a maximum of $350,000, and do not require any municipal contribution (AMA, 2015).

Eligible entities include municipalities, metis settlements, municipally controlled planning service agencies, administrative societies, and regional boards and partnerships. Other entities, such as for-profit and not-for-profit organizations, may receive grant funding under contract by an eligible entity (AMA, 2015). To receive funding, eligible applicants submit an application to municipal affairs. Once reviewed and approved, applicants enter funding agreements with an allocated time period to use the grant. Funding may be combined with funding from other grant programs, unless prohibited (AMA, 2016). Final reporting is required 60 days after the funding is used, also submitted to Municipal Affairs (AMA, 2015).

Alberta Association of Municipal Districts and Counties (2014). New Alberta Community Partnership Program Information Now Available. Retrieved from the Alberta Association of Municipal Districts and Counties website: http://www.aamdc.com/advocacy/member-bulletins/member-bulletin-archive/710-new-alberta-community-partnership-program-information-now-available

Alberta Municipal Affairs. (2015). Alberta Community Partnership Program Guidelines. Retrieved from the Alberta Municipal Affairs website: http://municipalaffairs.alberta.ca/documents/2015_ACP_Program_Guidelines.pdf

Alberta Municipal Affairs. (2016). Alberta Community Partnership (ACP). Retrieved from the Alberta Municipal Affairs website: http://www.municipalaffairs.alberta.ca/alberta-community-partnership

Quebec Territorial Development Fund: Provincial unconditional regional funding for capacity building

The newly established Quebec Territorial Development Fund (TDF) provides unconditional funding to regional governments, 'RCM', for capacity building and local capital projects. The fund was established in 2015, providing $100 million annually up-front to the RCM to support locally-led community economic development. RCM enter funding agreements with the Province of Quebec which will last until 2019. As part of the agreement, RCM create two policy funding strategies, for community development and business development (Ministere des Affaires municipals et Occupation du Territoire [MAMOT], 2015b).

The fund replaced 4 programs of conditional funding that were previously provided from the province to the RCMs. Through the new TDF, each RCM receives a base amount; additional funding is based on the population of each RCM, and a calculated index of economic vitality (Gouvernement du Quebec, 2015). All municipalities, RCM, indigenous communities and band councils, not-for-profit organizations, and businesses are eligible to receive funding from RCM through the TDF. The TDF is also able to fund administrative functions of the RCM (MAMOT, 2015a).

Eligible applicants apply to the RCM with projects that must fall under the priorities within the regional development plans created by the RCM. The TDF can fund training and workshops provided by the RCM to municipalities, as well as capital infrastructure projects at the local or regional level. Exact funding cost-sharing amounts for particular projects are outlined in each RCM's funding policy. For capital projects, total funding from all provincial and federal sources cannot exceed 80% of total eligible project costs. RCM must track and report on project progressing relation to the priorities set out in the regional plan (MAMOT, 2015a).

Gouvernment du Quebec. (2015). Accord de Parternariat aves les Municipalites. Retrieved from the Ministere des Affaires municipals et Occupation du territoire website: http://www.mamot.gouv.qc.ca/pub/grands_dossiers/entente_signee_accord_partenariat_municipalites.pdf

Quebec Ministere des Affaires municipals et de l'Occupation du territoire. (2015). Le Fonds de developpement des territoires pour appuyer les MRC dans leur competence en developpement local et regional. *Muniexpress*. Retrieved from the Ministere des Affaires municipals et Occupation du territoire website:http://www.mamrot.gouv.qc.ca/publications/bulletin-muni-express/2015/n-05-23-juin-2015/

Quebec Ministere des Affaires municipals et Occupation du territoire. (2015). Programmes Fonds de developpement des territoires. Retrieved from the Ministere des Affaires municipals et Occupation du territoire website: http://www.mamrot.gouv.qc.ca/developpement-territorial/programmes/fonds-de-developpement-des-territoires/

Southern Interior Development Initiative Trust Funding

The Southern Interior Development Trust (SIDIT) provides grant and low-interest loan funding seeded by the province of British Columbia. The SIDIT was enacted through legislation in 2006, with $50 million from the government of British Columbia (Southern Interior Development Trust [SIDIT], n.d.c). The Trust has the objective to encourage growth and diversification in the southern interior of BC through ecological development. The total yearly funding amount depends on the investment pool, trust income stream and operational performance. The ten key sector areas of investment are forestry, pine beetle recovery, transportation, tourism, mining, Olympic opportunities, small business, economic development, energy, and agriculture (*Southern Interior Development Trust Act* S.B.C. 2005).

Eligible recipients include municipalities, regional districts, First Nations, non-profit societies, institutions, and industry associations. For-profit business ventures can apply for loan and equity financing, but are ineligible to receive grant funding (SIDIT, n.d.a). Grants are non-repayable, and loans or equity investments are subject to principal and interest repayment (SIDIT, n.d. a,b). Grant funding up to a maximum of $25,000 or 25% of total project budget. Grants may be combined with loans up to a maximum of $1 million (SIDIT, n.d. a). Generally, SIDIT does not fund capital infrastructure projects that are funded through government programs; however, exceptions to the policy may be considered for small or rural communities (SIDIT, n.d. a).

Project proposals are prioritized according to alignment with SIDIT's strategic plan objectives (SIDIT, n.d. a). Loan applications require a business plan, financial statements, and outline of the project management structure (SIDIT, n.d. b). Applicants must provide confirmation of all other sources of project funding prior to entering funding agreements. Successful applicants receive funding once leveraged funds have been confirmed, and must report on key deliverables every five years (SIDIT, n.d.a)

Southern Interior Development Initiative Trust Act. SBC 2005. Chapter 39. Retrieved from the Government of British Columbia website: http://www.bclaws.ca/Recon/document/ID/freeside/00_05039_01

Southern Interior Development Trust. (no date). *Grant Applications*. Retrieved from Southern Interior Development Trust website: http://www.sidit-bc.ca/grant_applications.html

Southern Interior Development Trust. (no date). *Loan and Equity Funding*. Retrieved from Southern Interior Development Trust website: http://www.sidit-bc.ca/loan_funding.html

Southern Interior Development Trust. (no date). Overview. Retrieved from Southern Interior Development Trust website: http://www.sidit-bc.ca/overview.html

Manitoba Water Services Board

The Manitoba Water Services Board (MWSB) is a crown corporation that provides provincial funding for capacity building, grants and low-interest loans. The MWSB was established in 1972 under *The Manitoba Water Services Board Act* to assist local governments in providing water and sewerage infrastructure (Manitoba Water Services Board [MWSB], 2015). The board's objectives include the provision, distribution, and treatment of water; and the collection, treatment and disposal of wastewater. The MWSB provides both capital funding, project management and capacity building to local governments in Manitoba for water related infrastructure The MWSB receives revenue through water services fees, from the provincial budget, and may borrow from a bank or from the government (MWSB, 2015).

Eligible recipients for MWSB services include local governments in Manitoba, excluding the city of Winnipeg and aboriginal communities under the authority of INAC. The MWSB enters into agreements with eligible recipients for either capital funding or project management. The capital funding programs provided by the MWSB are the municipal water and sewer program and the Manitoba rural water development program. For both programs, the MWSB acts as project managers on behalf of municipal governments and registered water co-operatives to conduct engineering feasibility studies, contract administration and construction supervision (MWSB, 2010b).

Currently a two-tiered system is in place, where 30% of costs are covered for projects that are primarily local improvements, and 50% of eligible costs are covered for projects that are a priority health or environmental risk, or provide economic benefits to Manitoba (MWSB, 2015). The MWSB promotes regional water systems that can services many municipalities as cost-effective infrastructure. The MWSB may consider funding an extra 10% for projects north of 53rd parallel (MWSB, 2015).

The MWSB will prioritize municipal requests, and may work with the municipality to conduct feasibility studies or public interest surveys. Project support is dependent on the priority of the project and the availability of funding. The MWSB provides a one-year warranty and technical assistance after project completion; however, ownership, operation and maintenance is the municipality's responsibility after the warranty period. Municipalities may request MWSB to operate the system on behalf of he municipality, and in this case the MWSB sets water pricing and collects all revenue. The MWSB sets the prices and rates for water and sewage services to cover operating expenses (MWSB, 2010b).

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United States National Programs

Surface Transportation Block Grant Program

The Surface Transportation Block Grant (STBG) Program provides national unconditional grant funding for capital surface transportation projects. The STBG program allocates roughly $10 billion annually from the Highway Trust Fund to State departments of Transportation and Local Transit Authorities (Federal Highway Administration [FHWA], 2016b). The STBG superseded the surface transportation Program (STP) through the Fixing America's Surface Transportation Act (2015) (FHWA, 2016a).

STBG is the most flexible of the federal aid transportation programs. Funding is allocated to each state through a formula consisting of a base amount and additional amount based on population. States receive funding and administer the funds according to policies aligning with the overall program policy. States may reserve up to 15% of the STBG funds for use in rural areas with population of 5,000 or less. To enhance flexibility, states may transfer up to 50% of the STBG to another formula program, as long as the program aligns with STBG policy. Funds are distributed by the states to urban areas based on the relative share of the population. States have a maximum of 4 years to allocate funds from any given year (FHWA, 2016a).

Within the program, various types of multi-modal transportation projects can be funded. Eligible projects include capital construction and renovation, planning and design, development of asset management plans, and operational costs. Specific policies for funding for particular areas and particular projects apply. Federal funding generally covers up to 80% of eligible costs, except for interstate projects where the federal share can be up to 90%. Funding for rural areas, and training and development activities can be covered up to 100% (FHWA, 2016c).

The U.S. Government Accountability Office noted in 2014 that the STBG was critical for local governments to meet transportation needs. The flexibility in funding multiple project types allowed local governments to address priorities that were not funded through other programs. Local government officials used the STBG funds based on state and local priorities, according to the policies already in place. Though the STBG funding did not generally make up a large portion of the overall transportation funding, funds had a large impact (United States Government Accountability Office, 2014).

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United States Government Accountability Office. (2014). Grant Program Consolidations: Lessons Learned and Implications for Congressional Oversight. Retrieved from the Government Accountability Office website: http://www.gao.gov/assets/670/667481.pdf

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Clean Water State Revolving Fund

The Clean Water State Revolving Fund (CWSRF) is a nationally and state funded revolving loan program. The CWSRF was established in 1987 through amendments to the *Clean Water Act*. With the same structure as the Drinking Water State Revolving Fund, the program is a partnership between United States Environmental Protection Agency (EPA) and each State (United States Environmental Protection Agency [EPA], 2016). The EPA allocates funds to all States, and each State contribute an additional 20% to match federal grants. The federal government allocates around $5 billion annually to States for their CWSRFs, which are operated by each State (EPA, 2015).

To receive funds, each State must provide intended use plans that describe the programs plans and goals for each fiscal year (Oregon State Department of Environmental Quality, 2015). The funds are placed into a dedicated revolving loan fund for eligible infrastructure projects. The loans provide assistance, and as the infrastructure makes money back the funds flow back into the dedicated fund. The CWSRFs have the flexibility to issue bonds for additional funding (EPA, 2015). CWSRF assistance is provided through various financial instruments, and the repayment terms are flexible. In 2009, congress authorized the CWSRF to provide further financial assistance through additional subsidization to small and disadvantaged communities (EPA, 2015).

Eligible recipients include any public entities such as municipal governments, federally recognized tribes, and any quasi-municipal corporations; nonprofit organizations are also eligible for certain projects (Washington State Department of Ecology, 2016). Eligible projects include construction of municipal wastewater facilities, green infrastructure and control of nonpoint source of pollution and other water quality projects. Part of the funds are set aside in a green project reserve targeting green infrastructure, energy and water efficiency improvements, and other environmentally innovative activities (EPA, 2016). Projects are selected based on priorities and ranking criteria. Applicants with projects on the priority list must complete environmental reviews, land-use compatibility statements, financial reports (Oregon State Department of Environmental Quality, 2015).

The U.S. Government Accountability Office evaluates the entire EPA program periodically, and the EPA itself conducts annual reviews of the state run programs to ensure fiscal integrity (United States Government Accountability Office [GAO], 2009). The EPA collects electronic data through expected benefits reporting system which all states use, and various states also report environmental monitoring data through the same system (GAO, 2009). In 2016, the Office of Inspector General of the EPA recommended that the EPA require post-project environmental monitoring and reporting for all funded projects, and that the data be made publicly available (EPA, 2016).

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United States Environmental Protection Agency. (2015). CWSRF 101: An Introduction to EPA's Clean Water State Revolving Fund. Retrieved from the United States Environmental Protection Agency website: https://www.epa.gov/sites/production/files/2015-06/documents/cwsrf_101-033115.pdf

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Rural Infrastructure Opportunity Fund

The Rural Infrastructure Opportunity Fund is a national public-private partnership between CoBank, Capitol Peak Asset Management and the USDA. The fund was announced in July 2014, and invests in rural community facilities including health care and educations facilities, as well as water and wastewater systems, rural energy projects, rural broadband, and agribusiness. The program was created to complement existing government loan and grant programs (CoBank, 2016).

The fund serves as a co-lender for borrowers, and private lending for financing all types of rural infrastructure projects. CoBank committed $10 billion in lending capacity, and Capitol Peak Asset Management (CPAM) manages the fund as an independent asset management firm (CoBank, 2016). Capitol Peak Asset Management also assists in recruiting additional private investment, and provides consulting and communication services (Capitol Peak, 2014). The USDA rural development advises CoBank and CPAM, but ultimately does not make any allocation decisions (USDA, n.d.).

Eligible applicants include both private and public entities, with the requirement that entities be US based and doing business in the US. Funds are available through loans, and the loan terms are project-specific, depending on the level of risk. Funds are primarily provided through senior debt financing, with CoBank the senior lender. Some projects may be funded entirely through private-sector dollars, in others the loans may leverage government loan and grant programs (Capitol Peak, 2014).

Project funding applications may be submitted at any time. Projects are required to benefit rural areas. The USDA defines rural areas as located within a city with a population no greater than 20,000 or outside an urban area with a population no greater than 50,000. However, projects located in urban centers may be considered if it's demonstrated that the project will benefit primarily rural areas. Loan requests range from $10 million to $50 million, however, some larger projects may receive loans up to $800 million (Capitol Peak, 2014).

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Water and Environmental Programs

The Water and Environmental Programs (WEP) are a set of programs that administer grants and loans for capital projects and capacity building. The WEP are run under the USDA Rural Development (USDA, 2015b). Within the WEP, sub-programs allocate resources to rural communities across the United States for water and solid waste infrastructure (USDA, 2015b). The WEP is the only federal program focused on water and waste infrastructure for populations of 10,000 or less (USDA, 2015b). The program is administered jointly through the EPA national office, and trained staff in based in each State.

Within the sub-programs under the WEP, eligible recipients include rural public entities, native American tribal bodies, colonias, and private or nonprofit organizations. Public bodies make up the largest portion of borrowers and grantees. A portion of funding is reserved for very financially disadvantaged communities and communities qualifying for emergency assistance (USDA, 2015a). Eligible capital projects including drinking water, sanitary water, storm-water, and solid waste projects, with the majority of funding allocated towards water and sewer infrastructure projects (USDA, 2015a).

The majority of WEP funds are allocated to capital hard infrastructure projects through direct loan and grant programs, with loans accounting for around three-quarters of all approved projects. The cost-sharing, grant and loan amount is determined on a case-by-case basis according to location and project need. In addition to funding capital projects, the WEP provides funding to nonprofit and private organizations to assist communities with technical details such as feasibility studies, plans, and applications. The USDA office also provides assistance for rural community applications. Detailed financial reporting is required by all recipients (USDA, 2015a; Technical Assistance Grants Regulation, 2013).

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United States Department of Agriculture, Rural Development. (2015). Water and Environmental Programs. Retrieved from the United States Department of Agriculture website: http://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs)

7 C.F.R. Ch. XCII (1-1-13 Edition) § 1774 – Technical Assistance Grants Regulation 2013. Retrieved from the United States Government Publishing Office website: https://www.gpo.gov/fdsys/pkg/CFR-2014-title7-vol12/pdf/CFR-2014-title7-vol12-part1775.pdf

Local and Tribal Technical Assistance Program

The Local Technical Assistance Program (LTAP) and the Tribal Technical Assistance Program (TTAP) are a network of 58 centers providing rural technical assistance and local capacity building (Local Technical Assistance Program [LTAP], n.d.). The program was initiated in 1982 through the Department of Transportation and Related Agencies Appropriate Act, and allocated $5 million from the Highway Trust Fund for rural technical assistance. The Federal Highway Administration along with state highway agencies and universities established a system of Technology Transfer centers across United States (Office of Technical Services, 2014). Annual funding is allocated from the Highway Trust Fund, and covers 50% of LTAP transfer center costs, and 100% of TTAP transfer center costs (Office of Technical Services, 2014).

The transfer centers provide essential capacity building to counties, small cities, and towns for building and maintaining surface transportation infrastructure. The centers operate under agreements with respective state highway agencies, which in turn have federal-aid agreements with the FHWA. Training courses, new and existing technology updates, and personalized technical l assistance is offered. The centers follow the strategic plans laid out at the state level (LTAP, n.d.). The centers are also served by the National LTAP Association, which builds awareness about LTAP, assists the Federal Highway Administration with developing strategies, and builds capacity of each center to meet the needs of customers (LTAP, n.d.). The FHWA continuously evaluates the national LTAP/TTAP through quantitative and qualitative performance measures in the areas of safety, infrastructure management, workforce development, and organizational excellence (Office of Technical Services, 2014).

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European Union Programs

European Agricultural Fund for Rural Development: European Union unconditional funding

The European Agricultural Fund for Rural Development (EAFRD) provides regionally allocated funding to member EU states, which is funneled down to rural areas. The program was created in 2005 to fund economic development projects in rural areas (European Commission [EC], 2005). The EAFRD is part of the European Structural and Investment Funds, and as of 2013 the program operates under the Common Provisions Regulation (EC, 2014).

To obtain funding, EU member states prepare partnership agreements (PA), which act as an overall strategic document of how the funds will be used. The objectives of the PAs must align with the overall Europe 2020 strategy (EC, 2015). The PAs are implemented through rural development programmes (RDPs). Every member state must set out an RDP, which specifies what funding will be spent on which measures (EC, 2016). The RDP's must be based on at least four of the six common EU priorities. At least 30% of each programme's budget is dedicated to specific environmental and climate-related measures, and at least 5% for administration of the LEADER approach (EC, 2015).

The LEADER approach stands for 'Liaison Entre Action de Developpement de l'Economie Rurale' – Links between the rural economy and development actions. The approach is a bottom-up method of delivering support to communities for rural development (EC, 2015). LEADER was launched in 1991, introduced as a community initiative implemented only in rural areas. In 2007, the program was funded under the EAFRD, and has now become part of the EAFRD regulation. Local public-private partnerships are created under LEADER, known as Local Action Groups (LAGs). LAGs are composed of local citizens, public sector employees, and business and not-for-profit professionals. LAGs have the authority to identify and implement the development strategy and make decisions regarding the allocation of resources. Each RDP must have a LEADER component for implementation. LEADER encourages networking and communication between rural and regional areas. This enables LAGs to cooperate and learn from other groups that have face similar issues (EC, 2006).

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European Commission. (2016). Agriculture and Rural Development. Rural Development 2014-2020. Retrieved from the European Commission website: http://ec.europa.eu/agriculture/rural-development-2014-2020/index_en.htm

Horizon 2020: European Union conditional funding

Horizon 2020 is the European Union's largest conditional funding program for research and innovation (EC n.d.). For the period 2014-2020 the EU has allocated 77 billion euros towards Horizon 2020 (EC, 2015). Infrastructure projects must fall under the category of (1) secure, clean and efficient energy, (2) smart, green, and integrated transport, and (3) climate action, environment, and resource efficiency (EC, 2014a).

The Horizon 2020 program is open to any legal entity, including public bodies, universities, and businesses. Standard research projects should be a partnership between at least three legal entities, but other programs may only require one legal entity. Unlike the programs under the European Structural and Investment Funds, Horizon 2020 is centrally managed through the European Commission (EC, 2014a). Funding opportunities are set out twice a year in work programmes, prepared in consultation with stakeholder's representatives from industry, research, and civil society. Trans-national partnership projects are highly encouraged with with impacts on a minimum of three countries (EC, 2014b).

As of 2014, all applications are made through the online participant portal, during the calls for proposals. (EC, 2014b). Applicants can receive additional guidance and assistance from the network of national contact points. The portal also helps applicants connect to potential partners with particular competences, facilities, or experience useful for the project (EC, 2014b). Funding covers research and innovation actions, and coordinating support actions. Up to 100% of eligible costs for research and innovation actions, but only a flat rate of 25% for supporting actions. Funding schemes are flexible, and use training and mobility grants, co-funding grants, debt financing and equity investments.

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European Commission. (2015). Beginners Guide to EU Funding. Retrieved from the European Commission website: http://ec.europa.eu/budget/funding/sites/funds/files/beginners_guide_en_0.pdf

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European Fund for Strategic Investment: Europe-wide revolving loan

The European Fund for Strategic Investments (EFSI) is a joint initiative between the European Investment Bank (EIB) and the European commission (EC). EFSI comprises of a 16 billion guarantee from the EU budget, complemented by another 5 billion allocated from the EIB's own capital. With these funds, the EFSI aims to mobilize further private investment (Council Regulation Bo. 1017/2015; EIB, 2016b). The funds will focus on projects which could not be carried out under existing financial instruments without EFSI support (Council Regulation Bo. 1017/2015; EIB, 2015).

EFSI aims to fund economically viable projects which may have a higher risk profile than ordinary EIB activities. Projects should have high societal added value contributing to achieving EU policy objectives set out in the Europe 2020 strategy (Council Regulation Bo. 1017/2015). Project areas include strategic infrastructure; education, research, development and innovation; expansion of renewable energy and resource efficiency; and supporting smaller businesses and midcap companies (Council Regulation Bo. 1017/2015). The funds should complement ongoing regional, national and union wide programmes, as well as existing EIB operations and activities.

EFSI supports a wide range of financial products, including equity, debt, and guarantees. EFSI support should not substitute private market finance, but instead be a catalyst for private finance (Council Regulation Bo. 1017/2015). Eligible recipients include public sector entities, utilities, enterprises, banks, collective investment vehicles, and investment platforms (EIB, 2016a). Projects should be submitted following EIB regular loan application procedures (EIB, 2015). The funds are allocated and managed by and within existing EIB group structures (EIB, 2015). Projects are considered on individual merits, there are no geographic or sector quotas (EIB, 2015).

The European Investment Advisory Hub (EIAH) was created under the EFSI to provide support for project development. The hub provides technical assistance for investments and expertise free of charge for public project promoters. Information about the application process is also provided through the EIAH (Council Regulation Bo. 1017/2015).

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