

**PHYSICAL ACTIVITY
PROGRAMS, INTERVENTIONS,
AND RESOURCES IN RURAL AND
NORTHERN COMMUNITIES:
AN ENVIRONMENTAL SCAN**



**PHYSICAL ACTIVITY ALLIANCE of
NORTHERN BRITISH COLUMBIA**

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EXECUTIVE SUMMARY

Rural communities face substantial inequities in access to physical activity opportunities and effective physical activity promotion in comparison to urban centres. **To effectively support physical activity promotion in rural communities, the unique social-cultural and environmental context, including location-specific positive characteristics and limitations, must be considered.**

The **Physical Activity Alliance of Northern British Columbia (PAANBC)** is a community-university partnership that aims to address gaps in physical activity promotion for rural, remote, and northern communities by co-creating resources to support context-specific physical activity strategies and mobilizing knowledge through a formalized network.

The aims of this environmental scan were to:

1. Gain an overview of existing programs, interventions, and resources that support physical activity in rural, remote, or northern communities.
2. Determine the needs of organizations/program providers in rural, remote, and northern British Columbia (BC) to support physical activity.

Methods

The scan consisted of **two steps**: 1) academic literature and Internet search, and 2) a survey of organizations supporting physical activity in northern BC.

Findings

The findings from the searches and survey responses were combined resulting in 100 unique items that were classified into three main categories: **programs (n = 29), interventions (n = 21), and resources (n = 50)**. Survey responses included reports of **successes** in engagement and participation as well as **challenges and needs** in terms of facilities, equipment, capacity, funding, communication, engagement, and transportation.

What works to support physical activity in rural, remote, or northern communities?

1. Adapt to each community. Engaging individual communities is crucial to determine what projects are needed and will be supported. Adapted interventions have led to successful implementation while community-led or community involvement in projects and programs allowed for better ownership and in turn, greater sustainability.

2. Engage stakeholders and form partnerships. Partnerships are important for programs and funding, as well as projects that involve development of infrastructure and policy/bylaw changes. Important key stakeholders to engage include local and provincial government, city planners, transportation department, business leaders,

EXECUTIVE SUMMARY

school district, health department, university/colleges, parks and recreation department, and community-based organizations.

3. Focus on walking. The promotion of walking can be cost-effective as well as generally accessible, has high acceptability, and low injury risk for those partaking in the activity. The interventions identified provided multi-level approaches to promote walking: use of technology, newsletters, counselling, walking groups, and tracking trail use. Strategies included understanding walkability and improving built environment with cost-effective options.

4. Consider messaging. The messaging within each community may differ and can be used accordingly to support physical activity promotion and projects. Rural residents typically approach physical activity through an active living lens. There has also been some messaging focused on specific populations; of note, several items identified targeted physical activity promotion in older adults.

5. Develop multi-use spaces. The development of new multi-use spaces (e.g., recreation centres) or the use of existing infrastructure such as schools and parks for physical activity has been shown to increase opportunities for physical activity.

Where are the gaps?

- We did not find a lot of age- or gender- specific programs, but rather, many organizations offer programs to multiple ages and all genders.
- A caveat to partnership development is the need for funding and consistency in meetings for sustainability, and therefore success in projects.
- The concept of walkability has not been extensively studied in rural contexts.
- Survey respondents identified specific challenges including: lack of facilities, staff capacity, communication and engagement with community members, marketing of programs, transportation for community members, and funding.

Next steps

The findings from the scan will inform the creation of the first set of resources that support context-specific physical activity strategies in rural northern communities, the “Active Living Toolkit for the North.”

- Further resources and tools are needed to support equity-deserving groups and specific populations.
- There is a need for resources and tools that communities can use to adapt or develop programs and resources with their specific needs and challenges considered, which can help ensure appropriate mobilization, engagement, and sustainability.
 - Some areas of focus can be partnership development, messaging, and small-scale changes due to limitations of rural communities.

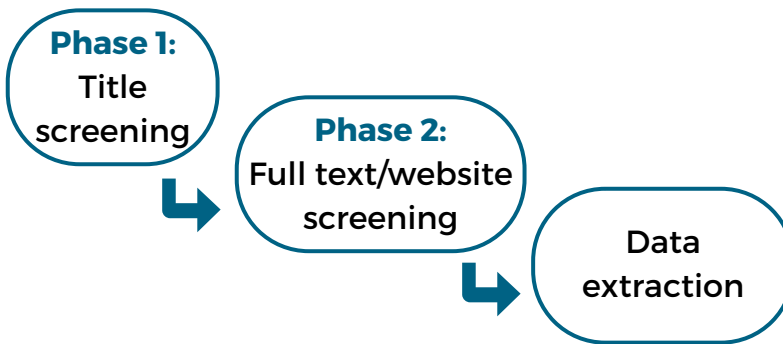
INFOGRAPHIC

Project goals

1. To gain an overview of existing programs, interventions, and resources that support physical activity in rural, remote, and northern British Columbia (BC)
2. To determine the needs of organizations/program providers in rural, remote, and northern BC to support physical activity

What did we do?

Academic Literature and Internet Searches:



Online survey



Individuals who work for or represent an organization that supports physical activity in the northern region of BC

What did we find?

Challenges and needs from survey responses included: facility access, equipment, staff capacity, transportation, and communication

A total of 100 items identified

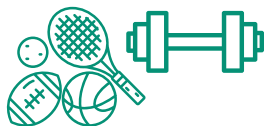
21 INTERVENTIONS

Addressing capacity issue of human resource



Walking and running

Sports and fitness



School-based
Multi-site
Community-wide

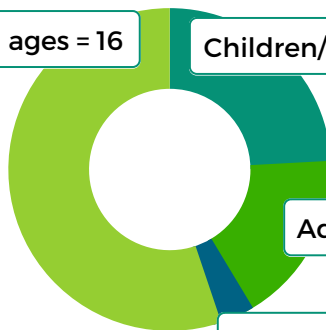
29 PROGRAM PROVIDERS

All ages = 16

Children/youth = 7

Adults = 5

Older adults = 1



50 RESOURCES



Informational websites that community members can use to be active (e.g., safety info, maps, list of locations for physical activity, and courses)



Guides, toolkits, and academic articles that provide strategies to support physical activity programming

Next steps

- We will work to develop an **“Active Living Toolkit for the North”**: the first set of resources that support context-specific physical activity strategies in rural northern communities
- Resources and tools to support equity-deserving groups and specific populations



PHYSICAL ACTIVITY ALLIANCE OF NORTHERN BRITISH COLUMBIA

The Physical Activity Alliance of Northern British Columbia (PAANBC) is a community-university partnership between community partners, community-based organizations, and researchers formed to help:

MOVE
THE NORTH

PAANBC aims to address gaps in physical activity promotion for rural, remote, and northern communities by co-creating resources to support context-specific physical activity strategies and mobilizing knowledge through a formalized network.

For more information on **PAANBC**, please visit our website: movethenorth.ca

BACKGROUND & PURPOSE



Rural communities face substantial inequities in access to physical activity opportunities and effective physical activity (PA) promotion.

Urban-focused physical activity promotion and policies (e.g., being active in a gym and competitions to encourage active transport) are ineffective in rural communities because they do not resonate with values of or opportunities available to rural residents.



Compared with people in urban areas, people living in rural communities are confronted with a seemingly insurmountable number of environmental barriers such as access to facilities, lack of trails or sidewalks, and increased risk of wildlife encounters [1-2].

Further, rural residents tend to report that physical activity is about more than just maintaining physical health – it provides an opportunity to participate socially, connect with their community, and engage with nature [3-6].



The conceptualization of physical activity in rural communities aligns with the active living paradigm, which recognizes the value of integrating physical activity and recreation into daily routines and lifestyles [7].

To effectively support active living in rural communities, the unique social-cultural and environmental context, including location-specific positive characteristics and limitations, must be considered [8-9].

The aims of this environmental scan were to:

1. **Gain an overview** of existing programs, interventions, and resources that support physical activity in rural, remote, or northern communities.
2. **Determine the needs** of organizations/program providers in rural, remote, and northern British Columbia (BC) to support physical activity.
3. **Curate a list** of programs and organizations relevant to physical activity promotion in rural, remote, and northern BC.

DEFINITIONS

Physical activity was broadly defined to include sport, exercise, training, active living, active transportation, active forms of leisure, and active recreation related to tourism [10].

Active living was framed as the integration of physical activity and recreation into daily routines and lifestyles [7].

Rurality was defined based on a population size of less than 10,000 people, while also recognizing that it can be conceptualized based on relationships, culture, and identity of different regions and communities [11-12].

Remoteness was defined based on distance from a population centre that provides access to health services and economic activities [12].

Northern British Columbia (BC) was defined as the provincial north of BC representing the area north of Quesnel to the Yukon border and from the Alberta border West to Haida Gwaii (**Figure 1**) [13].

Figure 1. Map of Northern British Columbia

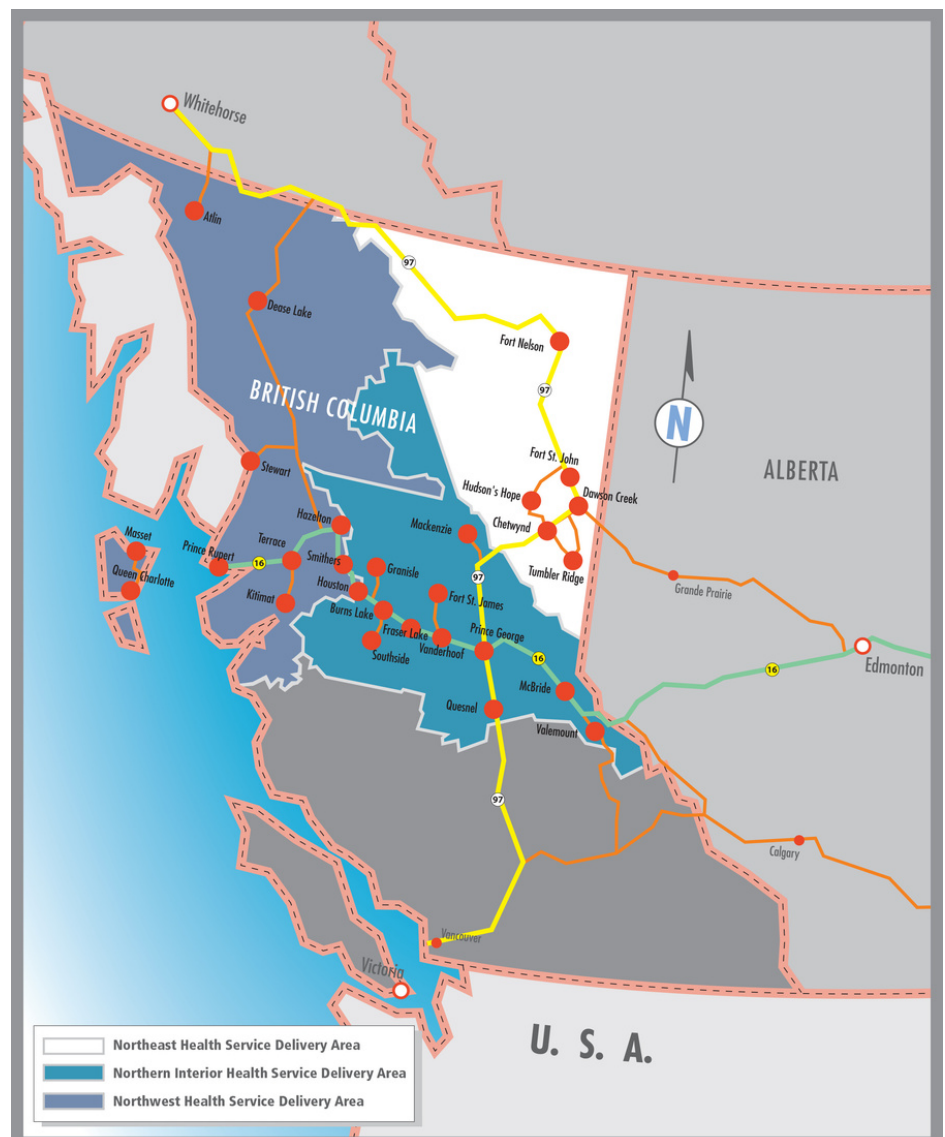


Image from: Northern Health [13]

ENVIRONMENTAL SCAN METHODS

The overall project aims and methods were informed by previous scans [14-17] and developed in collaboration with members of the PAANBC advisory group.

We deliberately designed this environmental scan to reflect an iterative approach and adopted a realist lens [18]. By adopting a realist lens, we aimed to provide appraisal of interventions and their mechanisms by focusing on the context-specific details and understanding key features of community engagement [19]. We included primary and secondary data.

We engaged with the advisory group during data collection and the evaluation process to determine the relevance of the findings and if further search cycles were warranted (**Figure 2**).

The environmental scan consisted of two steps:



1) academic literature and Internet search
(May to November 2022)

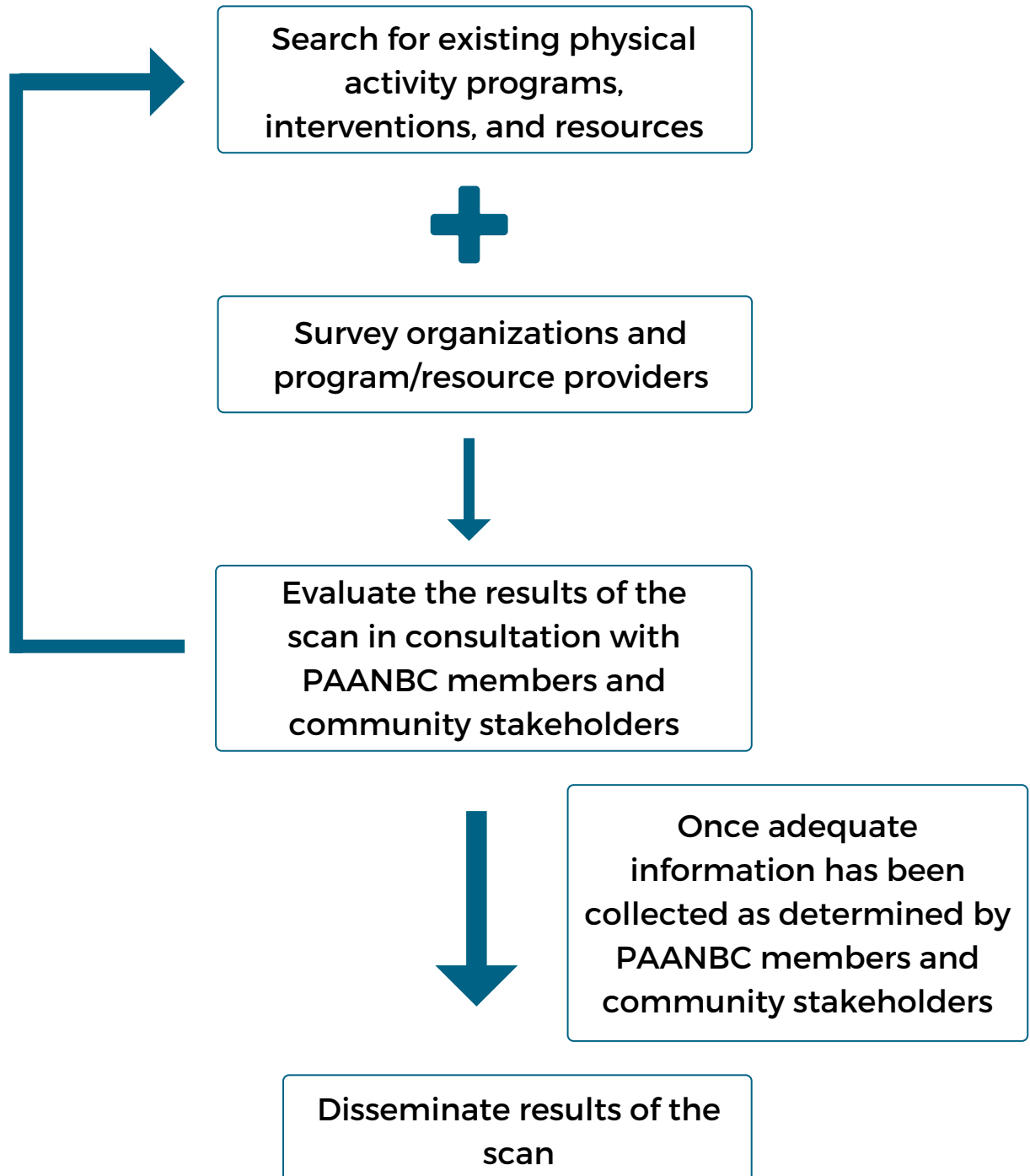


2) a survey of organizations supporting physical activity in northern BC (January to March 2023)

The environmental scan protocol was pre-registered on Open Science Framework and can be found at this link (<https://osf.io/zk48j>), along with all appendices.

ENVIRONMENTAL SCAN METHODS

Figure 2. Environmental scan process following an iterative approach.



SEARCH

Academic literature and Internet searches were conducted concurrently. The search strategy was developed based on previous scans [14-17, 20-21] and the **inclusion criteria (Table 1)** was co-created with the advisory group. The search strategy and inclusion criteria were peer reviewed by a health sciences librarian.

Table 1. Inclusion criteria for academic literature and Internet search.

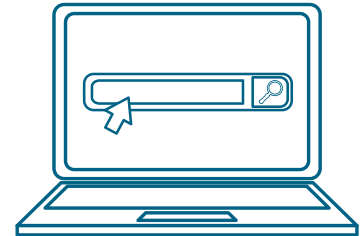
Include	Exclude
Must include resources, tools, programming, or strategies designed for the promotion of physical activity. Including supplementary files and appendices	Brief or poorly described resource, tool, program, or strategy
Designed for use, implementation, or recommended for rural, remote, and/or northern communities with similarities to the Canadian context	Designed for urban, metropolitan, or unspecified settings and communities; Outside of context parameters
English language	Not in English
Include grey literature documents; individual studies, original articles, reviews, scans	
Grey literature: Established or ongoing	Past or disbanded

SEARCH



The **academic literature search** was conducted according to the PRISMA guidelines for systematic reviews [22-23]. We searched the following databases: **Medline, Pubmed, CINAHL, Web of Science, and Sport Discus** ([Appendix A](#)). Studies were assessed in two phases, title and abstract screening and full text screening, followed by data extraction (**Figure 3**). Two reviewers conducted the screening process (AK, JD), and a third reviewer (BJ) was consulted to resolve any discrepancies.

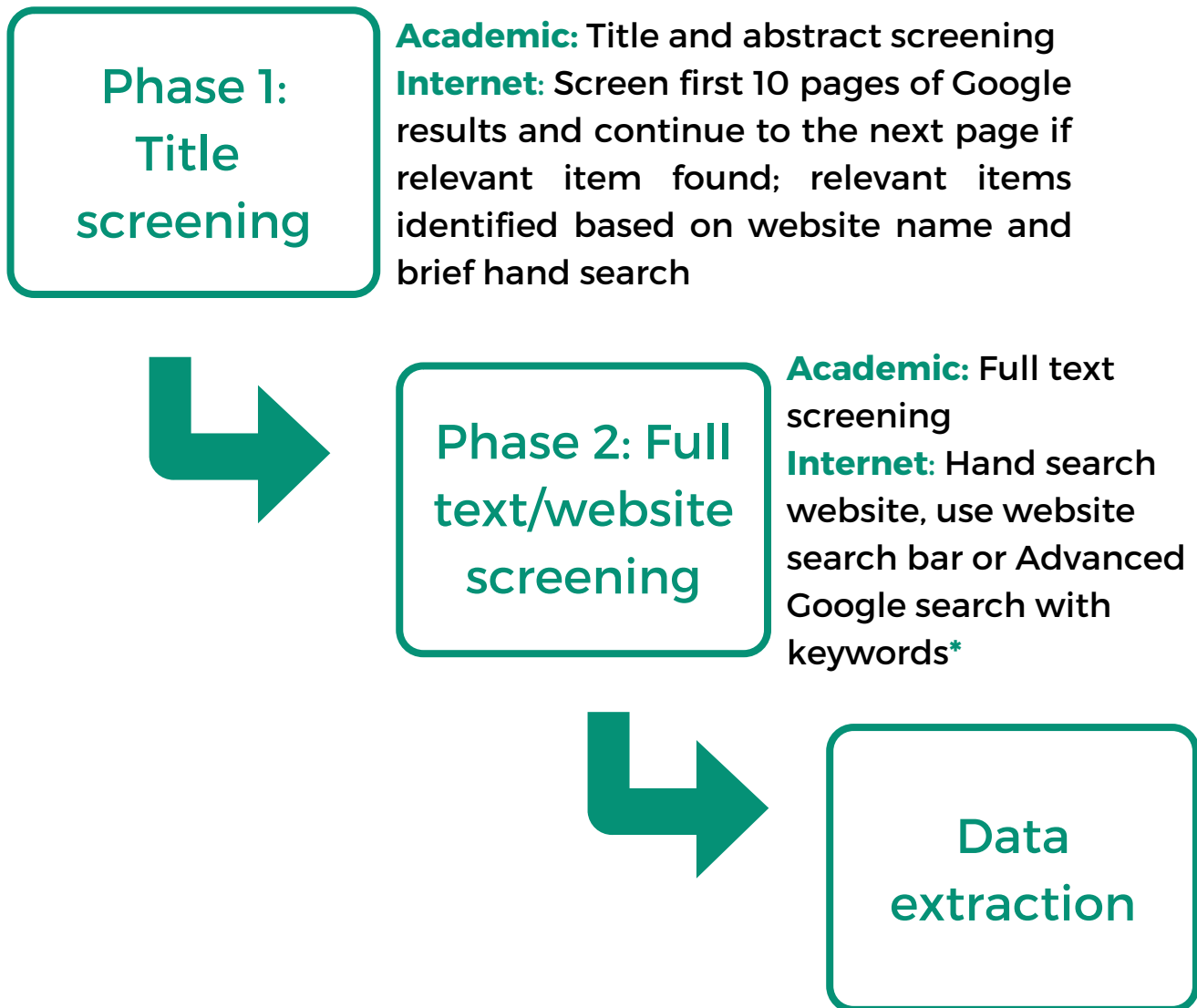
Phase 1 of the **Internet search** was conducted on **Google** using 72 search strings containing the following **keywords: physical activity, exercise, active living, recreation, resource, program, guide, tool, toolkit, strategy, remote northern BC,**



rural northern BC, and northern BC. The search strings were divided, and the searches were conducted by two reviewers (AK, JD). Phase 2 included screening all websites and documents identified in Phase 1 based on inclusion criteria (**Figure 3**). Additionally, in Phase 2, websites from a **curated list**, developed in partnership with the advisory group, were screened ([Appendix B](#)). The Internet search also included a search of **northern BC municipal active recreation or active living websites**. Websites were searched for relevant items (e.g., documents). Some websites were retained as the final item for data extraction (i.e., informational website).

SEARCH

Figure 3. Academic literature and Internet screening process



***Keywords:** physical activity, exercise, active living, recreation, resource, program, guide, tool, toolkit, strategy, remote northern BC, rural northern BC, and northern BC

After the two-phase screening process for academic literature and Internet searches, we conducted **data extraction** of the items found and main findings for academic articles. Data extraction was completed by one reviewer and was reviewed by another reviewer for 'quality control' (BJ, JD).

SURVEY

We conducted an **online survey** (using the SurveyMonkey platform) to identify additional programs and resources that support physical activity in northern BC.



Using **open-ended questions**, we inquired about the successes experienced, challenges encountered, and support required in providing programs and resources in this area (See [Appendix C](#) for survey questions).



The **eligibility criteria** for the survey included:

- Individuals over 18 years of age who work for or represent (in a paid or volunteer position) an organization that supports physical activity in the northern region of BC
- Promoting or implementing physical activity could be the main goal of the organization or a sub-component of programming that supports social or mental well-being for the general population or a specific subgroup.

The survey was **disseminated** through

- PAANBC advisory group's network
- past PAANBC event attendees
- publicly available contacts found on the Internet search

DATA ANALYSIS AND EVALUATION

The identified items from the search and survey were categorized into programs, interventions, and resources (referred to as items).



Programs were defined as individual or group activities led or supported by organizations, groups, or fitness centres within the community (e.g., program providers) [11]. Programs were ongoing and did not have information regarding formal evaluation.



Interventions were defined as a measure or program developed and evaluated to improve or increase physical activity [24].



Resources included tools, documents, guides, toolkits, websites, and strategies that support physical activity. Identified resources were further categorized into general resources and strategies.

- **General resources** were items, mainly informational websites, that community members could use to help in becoming more active.
- **Strategies** were documents or articles designed to support programming or project development focused on promoting physical activity.

The **open-ended questions** from the survey were reviewed and summarized based on overall themes by one reviewer (AK). Categories that emerged from the data were identified, reported, and incorporated with the overall findings.

DATA ANALYSIS AND EVALUATION

For each identified item, we evaluated contextual relevance using pre-determined questions based on **socio-ecological factors relevant to physical activity promotion in rural contexts** (Appendix D) [1, 25-30].

The **context checklist** included considerations for the following:

- natural environment
- built environment
- winter climate
- safety
- social components
- community orientation
- active living approach
- cultural components
- associated fees



We evaluated items based on accessibility and equity factors using the checklist, which were factored into overall findings.

After categorizing the items identified from the search and the survey and summarizing the open-ended survey responses, findings were reviewed to answer the following questions:

In physical activity promotion in rural, remote, and northern contexts:

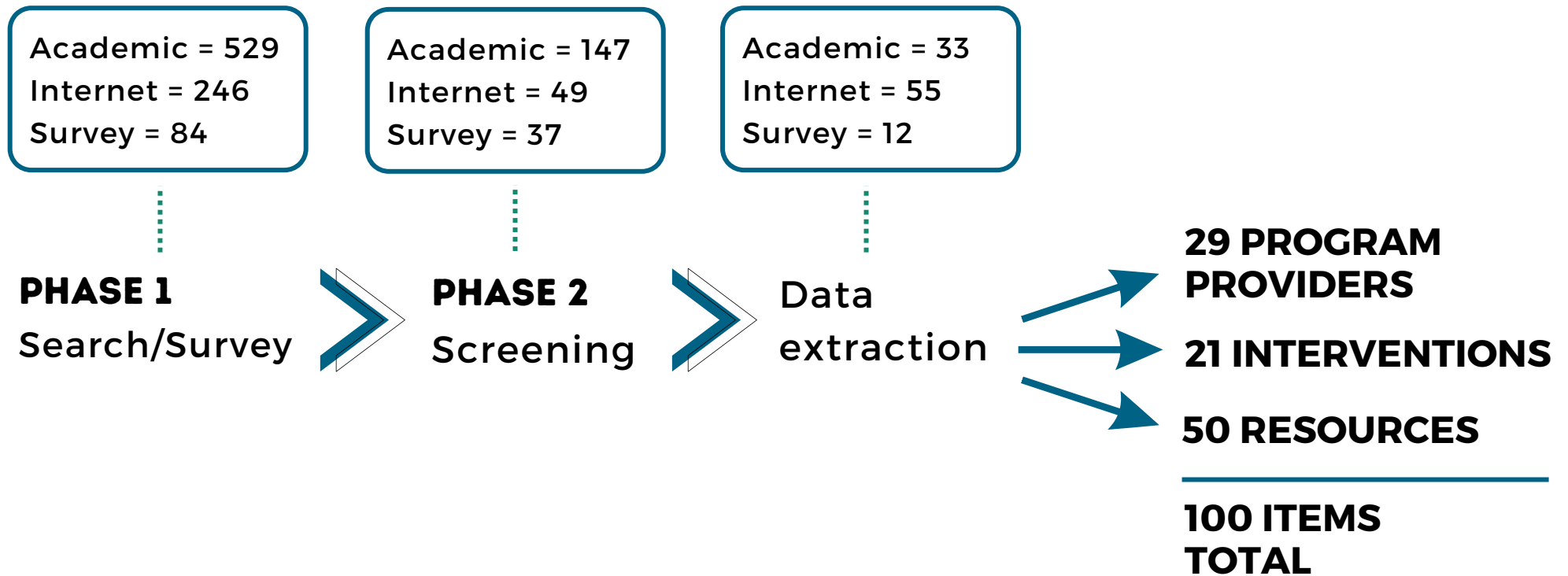
What was common among the items identified?

What has worked?

Where are the gaps?

FINDINGS

Figure 4. Number of unique items identified through the search and survey and resulting categories.



FINDINGS



Academic literature and Internet search



The number of items identified in the search are described in **Figure 4**. During phase 2 of the Internet search, eight items were added to the municipal-specific resources list while 14 additional items were found during the hand search of websites, leading to **55 items** from which data were extracted. We also searched **active living and active recreation websites for 28 northern BC municipalities**, which were compiled in a separate list ([Appendix E](#)). The municipal-specific resources were not included in any further analysis.

Survey



After screening for completeness and eligibility, **37 survey responses were included in analysis**. Participants ranged from 18 to over 75 years of age, 60% identified as women, and 31% were volunteers, 25% employees, and 44% managers/directors. The dominant organization type represented in the survey was non-profit organizations. Responses came from the following sectors: parks/recreation (n=13), sports (n=10), exercise (n=7), health (n=2), and social services (n=2). Many respondents indicated their organizations served more than one area, but most identified that they served northern (n=22) and/or rural (n=19). Most respondents reporting providing services for the northern interior (n=18), followed by northeastern BC (n=11), northwestern BC (n=5). A total of 12 additional items were identified and counted as unique items.

FINDINGS

Main categories: Programs, interventions, and resources

After screening and data extraction, the findings from the searches and survey responses were combined resulting in 100 unique items (Figure 4; Table 2). All the items were classified into three main categories: programs (n = 29), interventions (n = 21), and resources (n = 50). Eight items were classified in more than one category.

Table 2. Characteristics of items identified in the search and survey

	Programs	Interventions	Resources
Target population:			
All ages	15	-	3
Children/youth	7	11	2
Adults	5	6	2
Older adults	2	2	5
No target	-	2	15
Not applicable	-	-	23
Indigenous specific	7	2	4
Accessibility considerations	21	1	20
Location:			
Canada	29	3	41*
USA	-	14	9*
Australia	-	3	-
Spain	-	1	-
Literature type:			
Grey	17	-	38
Academic	-	21	12
Survey	12	-	-

*One article reviewed papers from USA and Canada

PROGRAMS/PROGRAM PROVIDERS

A total of 29 program/service providers were identified (**Table 3**). **Indoor programs** (n=8) included fitness classes and sport-specific programming, such as adapted sports, workplace wellness, and physical activity promotion, with individual and group options available. **Outdoor programs** (n=8) included guided hiking and backpacking, youth camps, winter and summer recreation, specific sports, and school-based programming. The service providers that supported **indoor and outdoor programs** (n=13) included fitness, sports, and recreation facilities and youth camps.

Table 3. List of program providers with links and brief description of programs

Population	Name of program provider (Click on name of program provider to access link)	Brief description
Multiple ages (n=16)	<u>Bear Mountain Nordic Ski Association</u>	Skiing, snowshoeing, and hiking
	<u>Caledonia Nordic Ski Club</u>	Cross-country skiing for all ages
	<u>College Heights Community Association</u>	Various sport programs
	<u>Cross Fit Northern Ice</u>	Fitness programs for children and adults

PROGRAMS/PROGRAM PROVIDERS

Population	Name of program provider (Click on name of program provider to access link)	Brief description
Multiple ages (n=16)	<u>Engage Sport North</u>	Focus on physical activity skills programming
	<u>Haida Gwaii Recreation</u>	Coach training and registered and drop-in programs
	<u>Indigenous Sport, Physical Activity and Recreation Council</u>	Supports physical activity programming for communities
	<u>Northern Adapted Sports Association</u>	Adapted sports programs (ex. basketball and hockey)
	<u>Northern Sports Centre</u>	Variety of fitness and sports programs
	<u>Prince George Canoe & Kayak Club</u>	Canoe/kayak programs for all skill level
	<u>Prince George Cycling Club</u>	Weekly bike rides for all skill level

PROGRAMS/PROGRAM PROVIDERS

Population	Name of program provider (Click on name of program provider to access link)	Brief description
Multiple ages (n=16)	<u>Prince George Pisces</u>	Learn and train to swim for fitness and competition
	<u>Saulteau First Nations</u>	Variety of recreation programs
	<u>True North Fitness</u>	Fitness centre and offers classes
	<u>Upper Skeena Recreation Centre</u>	Variety of fitness and sports programs
	<u>YMCA</u>	Variety of fitness and sports programs
Children/youth (n=7)	<u>Fort Nelson Aboriginal Friendship Society</u>	Outdoor recreation camp

PROGRAMS/PROGRAM PROVIDERS

Population	Name of program provider (Click on name of program provider to access link)	Brief description
Children/youth (n=7)	<u>Fort St John Friendship Society</u>	Summer and spring break program
	<u>Kermode Friendship Society</u>	Culture camp
	<u>Prince George Native Friendship Center</u>	Summer camp
	<u>Prince George Youth Soccer Association</u>	Soccer development and games for all skill level
	<u>Prince Rupert Friendship House</u>	Outdoor recreation camps, workshops, and day care
	<u>Spirit North</u>	Land-based programming to improve well-being

PROGRAMS/PROGRAM PROVIDERS

Population	Name of program provider (Click on name of program provider to access link)	Brief description
Adults (n=5)	<u>Active Health Solutions</u>	Fitness programs physical rehabilitation
	<u>Northern Rockies Fitness</u>	Guided hiking and backpacking
	<u>PG Gnats Rugby</u>	Athletic outreach such as Thunder Rugby
	<u>POWERPLAY</u>	Workplace wellness program
	<u>Prince George Road Runners</u>	Weekly community runs and monthly races
Older adults (n=1)	<u>Choose to Move and ActivAge</u>	Program to encourage and introduce physical activity

Please note that all links and grey literature provided in this document were accessed and available as of May 31, 2023.

INTERVENTIONS

A total of 21 interventions were identified and categorized into seven subcategories: addressing human resource problem, walking interventions, running program, organized sports/fitness, school-based interventions, multi-site interventions, and community-wide interventions (Table 4). Three studies focused on **addressing human resource gaps** to run and support programs in rural communities. Many of the interventions focused on specific activities such as **walking, running, sports, and fitness**. Certain interventions aimed to **implement programs at schools** while others were on **multiple sites** (e.g., school, community, home), and some interventions were **available to the whole community**.

Table 4. Summary of interventions by subcategory

Subcategory	Authors of articles identified	Summary of intervention	Findings summary
Addressing human resource problem (n=3)	<ul style="list-style-type: none"> - Smith 2013 [31] - Smith 2018 [32] - Washburn 2014 [33] 	Used teen mentors [31-32] and trained volunteers [33] to run programs	This solution was shown to increase PA [31-32] and expand access and continuance of program [33]

INTERVENTIONS

Subcategory	Authors of articles identified	Summary of intervention	Findings summary
<p>Walking (n=6)</p>	<ul style="list-style-type: none"> - Mitchell 2014 [34] - Beck 2019 [35] - Brownson 2004 [36] - Brownson 2005 [37] - Khare 2021 [38] - Riley-Jacome 2010 [39] 	<p>Different approaches were taken including multi-level approaches (targeting intrapersonal, interpersonal, and community factors) [35-37] using text messaging or websites [34], material incentives [39], tracking of trail use [36-37], motivational interviewing [38], counselling [35], walking groups [35], and community events [36-37]</p>	<p>Increased walking or PA [34, 36-39], but some interventions did not result in a difference with control group [34, 36-39]</p>
<p>Running (n=1)</p>	<ul style="list-style-type: none"> - Bories 2013 [40] 	<p>Noncompetitive running program during the summer, completed in small groups, volunteer-led</p>	<p>Improvement in commitment and increased love for running, and used acquired skills for other sports</p>

INTERVENTIONS

Subcategory	Authors of articles identified	Summary of intervention	Findings summary
<p>Organized sports/fitness (n=2)</p>	<ul style="list-style-type: none"> - Rich 2019 [41] - Sushames 2017 [42] 	<p>Day camp for youth with sports and general conditioning activities [41] and sports + walking intervention for adults [42]</p>	<p>Shown to improve fundamental movement skills and physical literacy in youth [41] and health outcomes in adults [42]</p>
<p>School-based (n=4)</p>	<ul style="list-style-type: none"> - Naylor 2010 [43] - Coyne 2018 [44] - Oh 2017 [45] - Hamilton 2017 [46] 	<p>One focused on adapting the intervention to Indigenous communities (Action Schools! BC) [43] while the other three focused on factors related to PA [44-46]. Only two implemented PA programming [44-46]</p>	<p>Increased PA [45-46] or assisted in meeting PA recommendations [43] and improved fundamental movement skills [44]</p>

INTERVENTIONS

Subcategory	Authors of articles identified	Summary of intervention	Findings summary
Multi-site (n=2)	<ul style="list-style-type: none"> - Pate 2003 [47] - Casey 2014 [48] 	PA programming at home, school, after school, and in the community [47-48]	No resulting changes in PA [47-48]
Community-wide (n=3)	<ul style="list-style-type: none"> - Colquitt 2013 [49] - Ko 2021 [50] - Marcen 2022 [51] 	A scorecard program to encourage PA [49], Open Street initiative [50], and outdoor activities (e.g., mountain biking, and Nordic walking) [51]	Received good participation/attendance from community [49-51] and increased PA [49]

RESOURCES

GENERAL RESOURCES

General resources are listed in **Table 5**. We found websites providing **safety information** regarding sport-specific injuries and for navigating natural environment (e.g., outdoor recreation and avalanche information). We identified **maps and lists of fitness centres, adapted physical activity programming, and sites** (e.g., parks, attractions, and trails). There were bicycle riding **courses** and **activity-based guides** related to outdoor recreation, mountain biking, and walking. Finally, we identified **funding providers** with a variety of target populations (e.g., individuals, community organizations, and local governments) and eligible expenses such as infrastructure (e.g., recreation, playground, and active transportation).

We received survey responses from organizations that provide **program support** (e.g., tips to be active, benefits of being active, learning opportunities, and strategies to overcome barriers).



Survey respondents indicated their resources were developed for their communities specifically (n=12), but others were adopted from a variety of sources such as the Internet (n=8) and similar organizations (n=10). Some of the most popular resources as identified by survey respondents included trail guides; maps; community active living, recreation, and leisure guides; guides on how to integrate activities to serve all populations; and website and social media information

RESOURCES

Table 5. List of general resources

Subcategory	Name of resource (Click on resource name to access link)
<p>Safety information (n=4)</p>	<ul style="list-style-type: none"> - Active & Safe - AdventureSmart - Avalanche Canada - BC Parks Backcountry guide
<p>Maps (n=2)</p>	<ul style="list-style-type: none"> - Sites and Trails BC - Trail Forks
<p>Activity-based guides (n=5)</p>	<ul style="list-style-type: none"> - BCRPA WalkBC - British Columbia's Travel Guide Outdoor Recreation Northern BC - British Columbia Northern BC & Haida Gwaii - Hello BC Outdoor Adventure Along Route 16 - Mountain Biking BC
<p>List of sites (n=3)</p>	<ul style="list-style-type: none"> - Recreation Sites and Trails BC - Stewart-Cassiar Highway Attractions - Seniors' Community Parks
<p>List of fitness centers (n=2)</p>	<ul style="list-style-type: none"> - British Columbia Climbing Gyms - British Columbia Local Fitness Centres & Programs

RESOURCES

Subcategory	Name of resource (Click on resource name to access link)
<p>List of adapted physical activity programs (n=2)</p>	<ul style="list-style-type: none"> - <u>Inclusive Physical Activity Resources for People with Disabilities in British Columbia Northern</u> - <u>MS Society 2017 Adapted and Accessible Recreation and Leisure Guide Northern Regional Chapter</u>
<p>Courses (n=2)</p>	<ul style="list-style-type: none"> - <u>GoByBikeBC Cycling Education Courses</u> - <u>BikeHub Learn2Ride Online</u>
<p>Resources that support programming (n=6)</p>	<ul style="list-style-type: none"> - <u>Salteau First Nations</u> - <u>College Heights Community Association</u> - <u>PG Gnats Rugby</u> - <u>Haida Gwaii Recreation</u> - <u>Upper Skeena Recreation Centre</u> - <u>Prince George Youth Soccer Association</u>
<p>Funding providers (n=7)</p>	<ul style="list-style-type: none"> - <u>Northern Development</u> - <u>Northern BC Community Sport Development</u> - <u>Play Quest</u> - <u>Union of BC Municipalities</u> - <u>PlanH</u> - <u>Indigenous Sport, Physical Activity and Recreation Council</u> - <u>Northern Health</u>

Please note that all links and grey literature provided in this document were accessed and available as of May 31, 2023.

RESOURCES

STRATEGIES

The strategies identified from the active living guides and academic articles are summarized in **Table 6**. From the Internet search, we identified three types of active living guides/toolkits, including those focused on **active communities** (n=4), **active transportation** (n=6), and **promoting active living** (n=3). We identified academic articles that focused on four areas: **community-based evaluation** of strategies for improving physical activity opportunities; strategies for improving and implementing **environmental and policy interventions**; **strategies to promote walking**; and **strategies to increase physical activity** (specifically in older adults in rural areas).

Table 6. Strategies from active living guides and academic articles

Subcategory	Name of guide / Authors of academic article	Common Strategies	Examples
Active communities (n=4)	<ul style="list-style-type: none"> - Active Coastal Communities [52] - Active Communities Action Guide [53] - Healthy Rural Communities Toolkit: A Guide for Rural Municipalities [54] 	<ul style="list-style-type: none"> - Partnership building - Community leadership - Plan and improve infrastructure - Program development 	<ul style="list-style-type: none"> - Active Coastal Communities [52] describes PA opportunities and barriers in small BC coastal communities, promising practices for PA, a list of tools/resources and funding opportunities

RESOURCES

Subcategory	Name of guide / Authors of academic article	Common Strategies	Examples
<p>Active communities (n=4)</p>	<ul style="list-style-type: none"> - Kitimat and Northern Health Kick It Up with Award-winning Collaboration [55] 		<ul style="list-style-type: none"> - Healthy Rural Communities Toolkit [54] includes discussion on rural planning, rural land use, and the environment
<p>Active transportation (n=6)</p>	<ul style="list-style-type: none"> - Improving Travel Options in Small & Rural Communities [56] - Transportation Demand Management for Small and Mid-Size Communities [57] - BCAHL Why Don't People in Small Towns Walk or Bike Anymore? Article [58] - BCHAL Small Towns Big Steps in Active Transport Report [59] 	<ul style="list-style-type: none"> - Partnership building - Public engagement - Plan, maintain, and improve infrastructure - Bylaws and policies that support active transportation - Connect destinations - Improve wayfinding 	<ul style="list-style-type: none"> - Improving Travel Options in Small & Rural Communities [56] discusses tips for PA through walking and cycling and includes information like active transportation plans

RESOURCES

Subcategory	Name of guide / Authors of academic article	Common Strategies	Examples
<p>Active transportation (n=6)</p>	<ul style="list-style-type: none"> - Small Town and Rural Multimodal Networks [60] - Active Transportation Planning in BC [61] 	<ul style="list-style-type: none"> - Considerations for accessibility - Considerations for safety and winter 	<ul style="list-style-type: none"> - Small Towns, Big Steps in Active Transport [59] provides active transportation resources for small communities in BC
<p>Active Living (n=3)</p>	<ul style="list-style-type: none"> - <u>Physical Activity Strategy</u> website [62] - <u>Active for Life</u> website [63] - The Rural Route to Active Aging: A Guide for People Who Want to Stay Active as They Age [64] 	<ul style="list-style-type: none"> - Building on existing opportunities - Addressing life circumstances - Creating environments that support PA 	<ul style="list-style-type: none"> - Physical Activity Strategy website [62] has resources that focus on planning, benefits, and assessment tools for promoting active transportation and information that address barriers to PA

RESOURCES

Subcategory	Name of guide / Authors of academic article	Common Strategies	Examples
<p>Community evaluation (n=4)</p>	<ul style="list-style-type: none"> - Hill 2016 [65] - Schasberger 2016 [66] - Seguin-Fowler 2015 [67] - Yousefian [68] 	<ul style="list-style-type: none"> - Evaluating the needs of the community (i.e., built environment and programming) using various tools such as the Rural Active Living Assessment tool [68] - Understanding messaging of PA in the community - Improving and maintaining infrastructure to support PA - Community engagement and understanding needs of residents - Stepwise plan for developing projects 	<p>Hill et al. [65] aimed to determine the difference in amenities, features, and quality of PA resources between urban and rural localities and to explore whether certain factors predicted weekly minutes of PA.</p> <p>4 strategies they recommend from their research findings are:</p> <ol style="list-style-type: none"> 1) Shared-use agreements 2) Reduce incivilities 3) Address traffic safety issues 4) Improve the number of PA resources

RESOURCES

Subcategory	Name of guide / Authors of academic article	Common Strategies	Examples
<p>Environmental & policy interventions (n=3)</p>	<ul style="list-style-type: none"> - Umstattd Meyer 2016 [69] - Barnidge 2013 [70] - Barnidge 2015 [71] 	<ul style="list-style-type: none"> - Increase opportunities for extracurricular PA - Enhance infrastructure that support walking - Develop broad-based partnership and use as a resource including intangible resources (e.g., social support) - Build on what currently exists 	<p>Barnidge 2015 [71] aimed to developed a regional partnership and implement environmental and policy interventions. Their recommendations include:</p> <ol style="list-style-type: none"> 1) Switching to community-based participatory research to allow partners to engage in design, implementation, and evaluation of intervention 2) Sharing intangible resources 3) Invite funders to partnership to help

RESOURCES

Subcategory	Name of guide / Authors of academic article	Common Strategies	Examples
<p>Environmental & policy interventions (n=3)</p>			<p>develop regional capacity 4) Recognizing that relationship building is a key capacity in rural communities For interventions (e.g., community garden), use the data as a marketing tool and develop guide books</p>
<p>Strategies to promote walking (n=3)</p>	<ul style="list-style-type: none"> - Klann 2019 [72] - Nykiforuk 2018 [73] - Wiggs 2008 [74] 	<ul style="list-style-type: none"> - Focus on low cost built environmental approaches (e.g., microscale or pop-up infrastructure) - Define walkability in the community 	<p>Klann et al. [72] aimed to translate urban walkability initiatives that can be implemented in rural, resource-limited communities.</p>

RESOURCES

Subcategory	Name of guide / Authors of academic article	Common Strategies	Examples
Strategies to promote walking (n=3)		<ul style="list-style-type: none"> - Develop multi-use spaces - Trail development 	They compiled studies where urban strategies worked in rural settings.
Strategies to increase physical activity (n=2)	<ul style="list-style-type: none"> - Cousins 2006 [75] - Witcher 2017 [76] 	<p>Specific to older adults</p> <ul style="list-style-type: none"> - Promote productive work as PA as opposed to PA for the sake of being active - Active living approach - Include rural older adults in PA promotion material - Education to eliminate stereotypes and to promote the role of PA in remaining productive in later life 	Witcher [76] found that older adults may participate in activity they see as relevant and purposeful or productive.

Note: PA = physical activity

SUCCESSSES, CHALLENGES, AND NEEDS FROM SURVEY RESPONSES



Through the survey, we inquired about the **successes, challenges, and needs of program and resources providers in providing physical activity-related services in this region.**

Q: What are the **successes you have experienced in supporting physical activity in the North (i.e., what things have worked or are working well)?**

Many of the reported successes were related to **engagement and participation**. Specifically, participants reported offering a **variety** of programming and providing opportunities for **multi-generational social engagements** were effective.

Another useful strategy was developing **partnerships and engagement with other organizations**.



Q: What are the **challenges you have experienced in delivering these programs/resources (i.e., what has made it harder to deliver programs or develop tools)?**

The reported challenges were related to **facilities, equipment, capacity, transportation, communication, and engagement**.

Facility-related challenges included scheduling, booking, and/or access to appropriate spaces for activities especially during the winter season.

Equipment challenges included the expense related to equipment and program participants not having access to needed equipment.

Issues of **capacity** included not having enough volunteers, staffing shortages, training and retention of staff, and funding.

SUCCESSSES, CHALLENGES, AND NEEDS FROM SURVEY RESPONSES

Transportation to programs and cost reduction were also highlighted as issues.

In addition, some survey respondents highlighted difficulties with **communication and engagement** (i.e., keeping the website up to date, lack of community interest, and marketing).



Q: What resources or tools would be helpful for physical activity promotion in your community? What do you think is needed in your community to increase physical activity participation?

A need consistently reported by program and resource providers were increased **capacity** including funding, training, and volunteers.

There were **facility** needs such as indoor spaces during the winter and the need for larger spaces at an affordable price. Specifically, adapted facilities and equipment are needed.

More **partnerships** and **support from the government** are required to support capacity.






Resources/tools that survey respondents indicated would be **helpful for physical activity promotion** included:



- a list of low or no cost activity options in their community (n=19)
- a list of online resources that could be shared (n=18)
- knowledge/information on physical activity in northern BC (n=17)
- knowledge/information on physical activity in general (n=14)

CONTEXT-SPECIFIC & ACCESSIBILITY CONSIDERATIONS

Each item identified in the search and survey was **assessed based on a checklist that inquired about important considerations when promoting physical activity in rural areas.**

-  Most of the items identified adopted an **active living approach** (e.g., incorporating physical activity as part of everyday life).
-  Many of the programs, interventions, and resources were **community-oriented or engaged directly with communities.** For example, some programs and interventions supported community events, while others suggested strategies encouraging engagement to determine needs and community-led initiatives.
-  Many of the programs were **low cost** and **required minimal resources** (e.g., equipment is provided as part of the program or can be rented).
-  Most of the programs and interventions offered options for **group sessions and/or activities,** while some were also **family friendly,** i.e., designed so that all members of a family can partake in the activity.
-  The majority of the resources had **considerations for the natural and built environment of rural communities.** Many general resources were focused on providing safety information, guides or maps for various sport and recreational activities. The strategies that were extracted had **considerations for concerns specific to rural areas** (e.g., weather, wildlife encounters, and lack of infrastructure) in their recommendations to further promote physical activity. Of note, a few interventions focused on **addressing the issue of capacity,** specifically human resource, in rural areas.

CONTEXT-SPECIFIC & ACCESSIBILITY CONSIDERATIONS



Accessibility considerations

Many program providers noted via their websites or survey responses that their **programs** were accessible to a range of abilities (n=21).

Only one **intervention** mentioned accessibility, specifically wheeling, but it was not extensively discussed as no participants in the sample were using a wheelchair [45].

Three of the **resources** noted accessible trails and two listed adapted physical activity programming and activities.

Almost half of the **guides** discussed accessibility considerations in design strategies for infrastructure and community programs [56-57, 59-61, 63]. Three of the articles outlining **strategies** considered accessibility [72-74]. Of note, there was a particular inclusion of accessibility in the definition of walkability developed in one community [73].

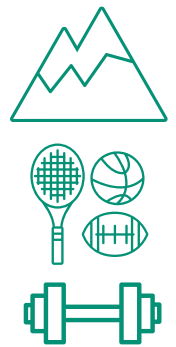


We encountered some difficulties in finding information for **cultural safety** for programs during the Internet search, but more information was received from survey responses, with a considerable number of program and resource providers supporting cultural safety training for their employees.

DISCUSSION

The purpose of this environmental scan was to identify existing programs, interventions, and resources in rural, remote, and northern communities, with a particular focus on northern BC and similar contexts.

We identified 29 **program providers** that service northern BC with a variety of physical activity programming including sports, fitness, indoor and outdoor recreation, adapted sports, and youth camps.



Twenty-one physical activity **interventions** implemented in rural communities of similar context to northern BC were identified including those of specific sports or activities, different locations, addressing a specific need in rural communities, and solutions for the whole community.

Resources identified include **general resources** to assist individuals to partake in physical activity as well as in the promotion of physical activity (e.g., a list of locations to conduct physical activity and information or opportunities for funding to support physical activity initiatives). **Strategies** promoting healthy communities, active transportation, and targeting specific populations in rural communities were also identified.



WHAT WORKS TO SUPPORT PHYSICAL ACTIVITY IN RURAL, REMOTE, OR NORTHERN COMMUNITIES?

1. Adapt to each community



A theme identified throughout the search and survey responses is the **uniqueness of each community and the importance of acknowledging and considering this in promoting physical activity.**

Although rural communities have different barriers from urban centres in general, **each community also has different strengths and concerns from one another** [1-2, 61]. Therefore, engaging individual communities is crucial to determine what projects are needed and will be supported [51-61, 65, 74].

Adapting existing interventions and projects to the specific community has been shown to lead to success [31, 51, 67, 73].

Community-led or community involvement in projects and programs allows for better ownership and in turn, greater sustainability [71, 74].

2. Engage stakeholders and form partnerships



Another theme identified in the search and survey is the **development of partnerships** to support projects and programs that promote physical activity [66, 70-71, 74].

Important **key stakeholders** to engage include [52-61, 70, 74]:

- local and provincial government
- city planners
- transportation department
- parks and recreation department
- health department
- health professionals
- business leaders
- school district
- university/colleges
- health promotion groups
- community-based organizations

WHAT WORKS TO SUPPORT PHYSICAL ACTIVITY IN RURAL, REMOTE, OR NORTHERN COMMUNITIES?

These partnerships are important for individual programs [49-51, 69] and funding [56-61]. Even more, these partnerships are crucial for strategies and projects that involve development of infrastructure as well as policy and bylaw changes [70, 74, 56-61].

Some **examples** of successful outcomes supported by partnerships include [66, 74]

- a central resource for information about local parks, trails, and outdoor recreational activities
- increased awareness and use of active recreation
- development of walking and biking trail
- increased capacity in organization

3. Focus on walking



Another common strategy is **the promotion of walking**, which can be cost-effective to promote as well as affordable, generally accessible, has high acceptability, and low injury risk for those partaking in the activity [36-38, 69, 73].

However, rural communities still face barriers to promoting walking, such as safety concerns and lack of infrastructure [56-61].

The **interventions** identified provided **multi-level approaches** to promote walking, which were found to be effective.

- **Individual** level interventions include the use of technology or newsletters [34-38].
- **Inter-individual** level was also addressed through counselling, motivational interviewing, and walking groups [34-35, 37].
- Larger **community-wide** approaches were implemented such as walkathons and tracking trail use [35-37].

Strategies included better understanding of walkability [72-73] and improving built environment [54-61, 65-66, 69, 74].

WHAT WORKS TO SUPPORT PHYSICAL ACTIVITY IN RURAL, REMOTE, OR NORTHERN COMMUNITIES?

Some **cost-effective solutions** include

- micro-scale changes or pop-up infrastructure to support walking [72-73]
- map design or other supports for wayfinding [39, 61, 66, 73-74].

4. Consider messaging



The **messaging regarding engaging in physical activity** is an important factor for promoting physical activity in a rural context.

As previously mentioned, rural residents typically approach physical activity through an active living lens [7].

The messaging within each community may differ and can be used accordingly to support physical activity promotion and projects [66].

There have been some messaging approaches focused on specific populations such as adults [62] and children/youth [63]. Of note, several items identified targeted physical activity promotion in **older adults** [64, 72, 75-76]. For this population, messaging must move towards an active living approach or highlight accessibility and productive activities [75-76].

5. Develop multi-use spaces



A common issue in rural communities is the lack of facilities to support various activities.

In turn, the development of new **multi-use spaces** (e.g., recreation centres) or the **use of existing infrastructure** such as schools and parks for physical activity is highly encouraged and has been shown to increase opportunities for physical activity [39, 65, 69-70, 72].

WHERE ARE THE GAPS?



From our Internet search, we did not find many **age- or gender-specific programs**, but rather, many offer programs to multiple ages and all genders.

There were some considerations of social barriers including cost and efforts for further engagement, but **environmental barriers** were not as highly considered in programs.



Additionally, **survey respondents who represent program and/or resource providers** shared the **challenges and needs** of their organizations and communities.

- There is a lack of **facilities**, and a proposed solution is facility sharing.
- Greater access to **equipment** is needed.
- There are concerns with staff **capacity** to support sustainability and with **communication** and **engagement** of community members. Marketing programs and resources has also been a challenge.
- There are demands with regards to community members for **transportation** to programs.
- Unsurprisingly, a common concern is **funding**, which can be linked back to all the previous challenges.



In terms of **strategies**, a **caveat to partnership development** is the need for funding as well as consistency in meetings for sustainability, and therefore success in projects [71].

The promotion of walking was also found to be a reoccurring theme in the scan, so **walkability** is an important concept to consider. However, this concept has not been extensively studied in rural context [72-73]. Further investigation and evaluation of short- and long-term solutions for walkability in rural areas must be sought [72].

LIMITATIONS & NEXT STEPS

Limitations

Our scan focused on programs, interventions, and resources that support physical activity in rural, northern contexts. Although we considered cultural safety, we did not include or search for items that were exclusively for Indigenous populations. However, the National Collaborating Centre for Indigenous Health recently published [an environmental scan and literature review](#) that focused on Indigenous sports and recreation programs and partnerships across Canada [77].

We compiled a list of municipal-specific resources ([Appendix E](#)), but we did not screen each website on this list. Our search used broader physical activity terms rather than sport-specific terms (i.e., volleyball, hockey) and therefore, our search was not able to capture sports leagues for each individual community (i.e., volleyball clubs, minor hockey leagues). Therefore, the scan contains a non-exhaustive list of existing programs, interventions, and resources that support physical activity in rural, northern communities

Next Steps



The scan has provided a non-exhaustive list of existing programs, interventions, and resources which can be used as a beginning of a database for rural and northern BC. The findings will inform the creation of the first set of resources to support context-specific physical activity strategies in rural northern communities, the **“Active Living Toolkit for the North,”** which will be mobilized through the formalized network of PAANBC.

- Further **resources and tools** are needed to support **equity-seeking groups and specific populations** (e.g., children and youth, remote populations, those with minimal resources).
- There is a need for resources and tools that **communities can use to adapt or develop programs and resources with their specific needs and challenges considered**, which can help ensure appropriate mobilization, engagement, and sustainability.
 - **Some areas of focus** can be partnership development, messaging (e.g., active living, accessibility of physical activity opportunities), and small-scale changes due to limitations of rural communities.

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