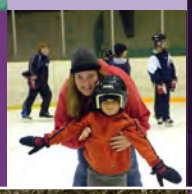


Analysis Phase

BC Recreation & Parks Association Community Recreation Facilities Assessment Study

December 2007

BCRPA

About the BCRPA

The British Columbia Recreation and Parks Association is a not for profit organization dedicated to building and sustaining active healthy lifestyles and communities in BC. Established in 1958, the Association is a central resource agency for members and stakeholders of the parks, recreation, physical activity and culture industry, providing leadership, training and support to help meet national, provincial and local priorities. Through a diverse network of partners and extensive programs and services, BCRPA actively advocates accessibility and inclusiveness to recreation and physical activity and strives to help integrate sport and recreation opportunities.

Our Vision

The recreation, parks and culture sector is an essential partner for building healthy individuals and communities, as well as fostering economic and environmental sustainability.

Our Mission

BCRPA is committed to leading the parks, recreation and culture sector in building and sustaining healthy active communities, including fostering economic and environmental sustainability. We inspire and support community leaders and practitioners through advocacy, communication, education, resources and other services.

Acknowledgements

BCRPA would like to thank the members of the Steering Committee who volunteered their time and expertise to the development of this document. The Steering Committee members were:

- Suzanne Allard Strutt, CEO, British Columbia Recreation & Parks Association
- Joyce Fordyce, Sports Centre Manager, Coquitlam Parks & Recreation
- Gary Houg, Manager, Maintenance & Engineering Services, North Vancouver Recreation Commission
- Don Hunter, Principle, Don Hunter Consulting
- Sharon Meredith, Operations Manager, British Columbia Recreation & Parks Association
- Tom Osborne, General Manager of Recreation and Parks, Regional District of Nanaimo
- Kevin Pike, Former Director of Parks & Community Services, District of West Vancouver
- Mark Vulliamy, Manager of Planning & Research, Vancouver Park Board
- Sharon White, Policy Analyst/Sport Consultant, Ministry of Healthy Living and Sport

The BCRPA would like to also acknowledge Hughes Condon Marler : Architects for their services and expertise in the creation of this Analysis Phase of the Community Recreation Facilities Assessment Study.

The compilation of this data required the cooperation of a large number of participants across the municipal recreation sector in British Columbia. BCRPA is thankful for the time and efforts provided by all participants.

Contents

Section 1

Executive Summary

This section of the report provides a summary of the key aspects of the Analysis Phase of the Community Recreation Facilities Assessment Study.

1.1 Background

The scope of this phase of the study was to produce additional analysis of the eight types of indoor and four types of outdoor recreation infrastructure that were gathered, in the form of a database, in the three earlier phases of the study. The infrastructure contained in the database consists of community recreation facilities owned and/or operated by local municipalities in British Columbia.

1.2 Facility Life Cycle Stages

One of the key aspects of the study has been to provide the framework for a more detailed understanding of general condition of the community recreation infrastructure in the Province. One component of the database that assists in this regard is the life cycle classification. This type of categorization is helpful in building an understanding of the general state of our facilities. Typically, all facilities follow a similar pattern whereby operational costs and the need for significant capital upgrades increase dramatically as the facility ages. For this purpose, five facility life cycle stages have been utilized.

- Stage 1 – Planning
- Stage 2 – 1 to 14 years old
- Stage 3 – 15 to 24 years old
- Stage 4 – 25 to 34 years old
- Stage 5 – 35 years and older

Facility life cycle stage assumptions are generalizations and the actual condition of each facility will vary. Detailed facility assessment information has not been gathered at this time, but it is intended to be conducted during subsequent phases of the BCRPA Community Recreation Facilities Assessment Study.

Project Objectives:

1 To provide assistance to communities throughout British Columbia in evaluating the lifecycle stage of their facilities

2 To provide guidance and information to these communities related to the upgrading, maintenance or replacement of existing facilities

3 To ensure that British Columbians have access to the facilities they need in order to live healthy, active lifestyles.

1.3 Key Findings

In total, 509 surveys were received over the three previous project phases. A summary of the infrastructure types included in the database is shown below:

Table 1.3a Indoor Infrastructure

Facility Type	Total Number
Community Centres	177
Community Halls	114
Curling Facilities	78
Ice Arenas	162
Indoor Pools	103
Outdoor Pools	72
Seniors Centres	73
Youth Centres	69
Total	**848**

Table 1.3b Outdoor Infrastructure

Facility Type	Total Number
Parks	4,458
Natural Areas	12,951
Off Road Trails	3,874
Playing Fields	1,767
Total	**23,050**

Using the information contained in the database, the estimate of the total floor area of all eight indoor facility types is estimate to be approximately 2,285,000 m^2. This is the equivalent of 235 Canadian Football League (CFL) playing fields.

Outdoor Infrastructure areas and lengths are summarized below.

Table 1.3c

Facility Type	Total Area (hectares)	Total Length (km)
Parks	64,576	
Natural Areas	111,968	
Off Road Trails	n/a	9,096
Playing Fields	n/a	n/a
Total	**176,544**	**9,096**

Based upon the facility life cycle stages outlined above and the reported age of each indoor facility, the breakdown of life cycle stage by facility type is summarized in the following table.

Table 1.3c

Facility Type	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
	planned	1 to 14	15 to 24	25 to 34	35 & over
Community Centres	0	32	20	52	55
Community Halls	1	13	13	12	60
Curling Facilities	1	5	6	23	43
Ice Arenas	3	28	12	47	70
Indoor Pools	1	20	21	36	26
Outdoor Pools	1	2	4	17	48
Seniors Centres	0	13	13	16	18
Youth Centres	1	36	8	4	15
Total	**8**	**149**	**97**	**207**	**335**
Percentage	1%	19%	12%	26%	42%

This table indicates that a large majority of facilities (68%) are 25 years old or older and that by 2010 most of these facilities will have reached stage 5.

In January 2008 Dollars, the approximate replacement cost of all of the indoor facilities contained in the database is **$11.5B**.

Finally, in order to keep pace with required ongoing refurbishment, replacement and population growth, we have estimated that expenditures in the range of **$5.2B will be required over the next ten years**.

Section 2

Background

This section of the report provides background on the principles established for the project, a discussion of the study process and methodology as well as the context of this report.

2.1 Context

The British Columbia Recreation and Parks Association (BCRPA) has produced an inventory, in the form of a database, of eight types of indoor community recreation facilities and four types of outdoor recreation infrastructure. Infrastructure studies is either owned and/or operated by local municipalities. This report summarizes analysis of the database and is part of a multi-phase project intended to provide accurate information on the state of community recreation facilities throughout the province. Previous phases of this work included:

- Phase 1 – Ice Arenas, Swimming Pools & Curling Rinks (January 2004)
- Phase 2 – Parks, Natural Areas, Trails & Playing Fields (June 2006)
- Phase 3 – Community Centres, Youth Centres, Seniors Centres & Community Halls (June 2006)

The BCRPA continues to play an important role in advocating for the renewal of Community Recreation Infrastructure. These efforts are made in cooperation with British Columbia stakeholders as well as with similar organizations from other Provinces. In November of 2005 the BCRPA made a submission to the BC Ministry of Tourism, Sport and the Arts titled **Investing in Healthy Communities through Recreation Infrastructure**. This document, which is attached as Appendix 8.5, provides additional information that is relevant in understanding the information contained within this report.

2.2 Project Objectives

The project objectives were as follows:

- To provide assistance to communities throughout British Columbia in evaluating the lifecycle stage of their facilities
- To provide guidance and information to these communities related to the upgrading, maintenance or replacement of existing facilities
- To ensure that British Columbians have access to the facilities they need in order to live healthy, active lifestyles.

2.3 Study Process

The process utilized to compile this report has been primarily analysis of data gathered during earlier phases. In some cases data has been updated to reflect current information, such as population and capital investment. As well, additional analysis and cross analysis between study phases has been undertaken.

2.4 Life Cycle Stages

One of the key aspects in the establishment of the inventory was to provide the framework for a more detailed assessment of general facility. One component of the database that assists in this regard is the life cycle classification. For this purpose, we have classified facilities by age. It is important to note that the ongoing viability of a particular facility is influenced by a wide variety of factors in addition to its physical condition. Examples of these factors are changing demographics, accessibility, gender equity, sport technical standards (i.e. FINA Regulations), trends in recreation, operational costs, and programming considerations. However, Life Cycle Stage categorization is helpful in building an understanding of the general state of our facilities. Typically, all facilities follow a similar pattern whereby operational costs and the need for significant capital upgrades increase dramatically as the facility ages. For this purpose, we have identified five facility life cycle stages.

- Stage 1 – Planning
- Stage 2 – 1 to 14 years old
- Stage 3 – 15 to 24 years old
- Stage 4 – 25 to 34 years old
- Stage 5 – 35 years and older

In order to facilitate the comparison of data between Provinces, the study has followed the life cycle stages contained in a similar report[1] prepared for the Alberta Recreation and Parks Association in January 2001.

[1] Swimming pools & arenas; Alberta's Community Recreation Infrastructure – A Guide to Life Cycle Planning, 1998

Following is an explanation of the five stages and the assumptions related to their operating condition.

Stage 1
During Stage 1, a facility is in the planning and /or construction phase. Once a facility has been opened to the public it is no longer in Stage 1. During this stage there are typically no maintenance or capital improvement funds required.

Stage 2
Stage 2 facilities are between one and fourteen years old. During this period, standard operating and maintenance budgets are typically adequate to operate the facility.

Stage 3
Stage 3 facilities are between fifteen and twenty-four years old. It is during this stage that standard operating and maintenance budgets may not be adequate to address the major refurbishment or replacement of building elements that have deteriorated. The ability of facility operators to fund these additional expenditures can have a significant impact on the future lifespan of the facility.

Stage 4
Stage 4 facilities are between twenty-five and thirty-four years old. During this stage, many of the facilities major components will require replacement. In addition to standard operating and maintenance budgets, significant capital improvements may be required to extend the life of the facility.

Stage 5
Stage 5 facilities are older than thirty-five years old. During this stage, facilities typically become more costly to operate and maintain. As well, large scale rehabilitation or replacement may be required in order to continue to serve the community.

2.5 Facility Inventory

The BCRPA Recreation Facilities inventory contains a wide array of data on both indoor and outdoor recreation facility infrastructure. The analysis that follows in this report is broad in nature and provides an overview of the Provincial situation. The database provides recreation professionals with access to both standard and detailed customized information that is specific to their needs. The database is accessed through the BCRPA. Information on how to access the database is contained on the BCRPA website.

BCRPA Database Access:

http://www.bcrpa.bc.ca/recreation_parks/facilities/sports_recreation/facility_assessment.htm

Section 3

Key Findings

The results of the three phases have been consolidated into a facility inventory database. Using this data, a variety of analyses are possible. This section of the report highlights some of the combined key findings of the survey.

3.1 Study Participants

In each of the three previous phases, a total of **185** surveys were distributed. Overall **509** surveys were received over the three project phases. The response rate varied by study phase. The following table provides a summary of the response rate by the various types of organizations included in the survey process.

Table 3.1

	Issued	Responses		
Organization Type	**Total Number**	**Phase One**	**Phase Two**	**Phase Three**
Municipality	145	145	132	129
Regional District	36	36	28	28
Other	4	4	2	5
Total	**185**	**185**	**162**	**162**
Response Rate		100%	88%	88%

Detailed data was gathered for facilities where the surveyed organizations own, operate or provide services to their communities through the use of some form of long term agreement.

3.2 Community Size

Previous analysis has studied variance between communities of differing sizes. A recent analysis conducted by Parks and Recreation Ontario[2] compared results using six different community sizes. In order to facilitate comparison of data from one Provincial jurisdiction to another, we have adopted the same community size categories which will be utilized subsequently in portions of the analysis.

The following table summarizes the six community size categories.

Table 3.2a

Community Size	Population
Very Small	Below 4900
Small	5,000 to 9,999
Medium	10,000 to 24,999
Midrange	25,000 to 99,999
Large	100,000 to 249,999
Largest	Over 250,000

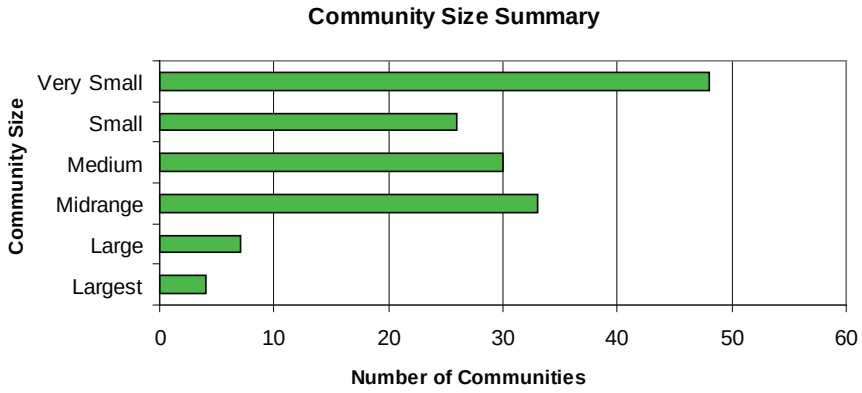
For the purposes of identifying community size, we have utilized the data from the phase one research, due to it being the result of 100% participation. During phase one 148 communities or organizations (such as regional districts) provided data on population served. Based upon this data the number of communities in each category is summarized in table 3.2b below.

Table 3.2b

Community Size	Number
Very Small	48
Small	26
Medium	30
Midrange	33
Large	7
Largest	4
Total	148

[2] Major Municipal Sport and Recreation Facility Infrastructure Inventory, Phases One and Two, Final Report, April 2006

Figure 3.2c Community Size Chart



3.3 Population

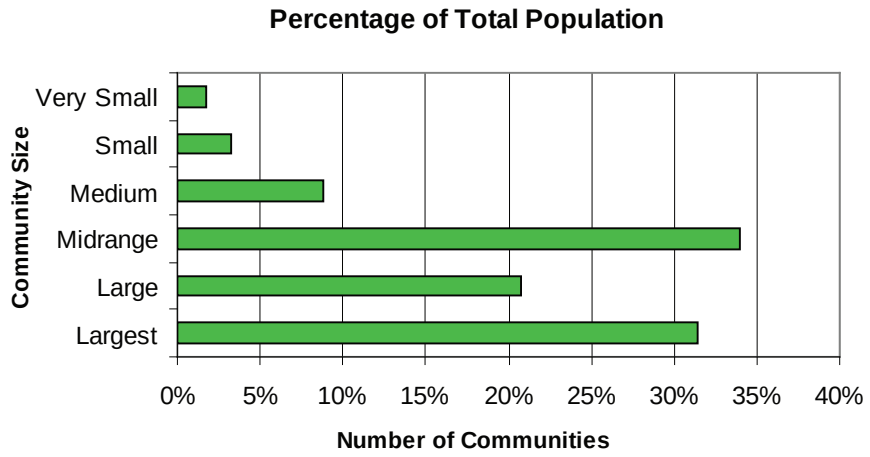
During Phase One, the survey participants where asked to identify the approximate catchment area population served by facilities in their system. On this basis, the total catchment area population served by facilities contained with the facility inventory is approximately **4,712,000** people.

The 2006 Census[3] identified a total provincial population of 4,310,452 people. The difference between these two figures can be accounted for due to the manner in which the catchment area population was identified by the various municipal recreation departments. In some cases, departments provide service to areas that exceed their own municipal boundaries and in many cases, these service areas overlap resulting in portions of the population being counted twice. As well, the study has not provided any independent verification of the population data so a certain amount of inaccuracy is expected. For the purposes of this study, the catchment area population values provided by the municipalities have been utilized, unless indicated otherwise.

The population is not evenly distributed across community sizes. As shown in the following figure, the population is predominantly located in larger communities. This is important when we are considering the implications of the need to renew recreation infrastructure.

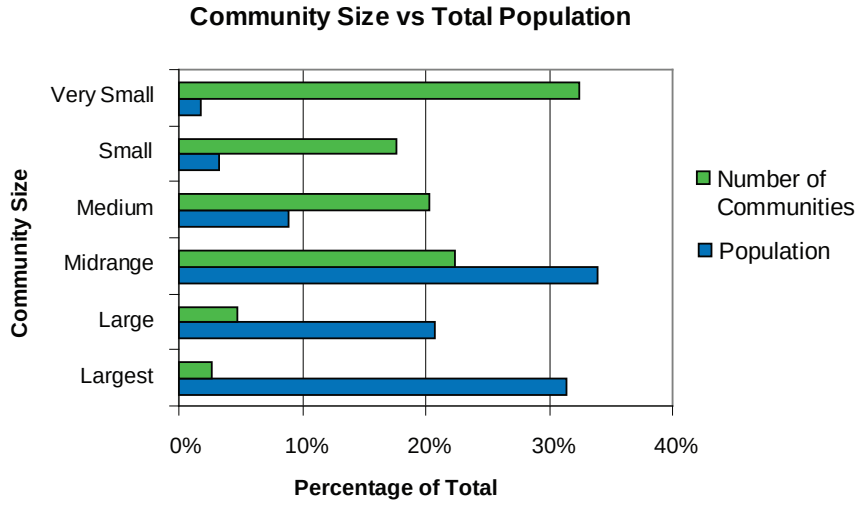
[3] Source: http://www.bcstats.gov.bc.ca/data/cen06/c2006bc.asp

Figure 3.3a Population Distribution by Community Size



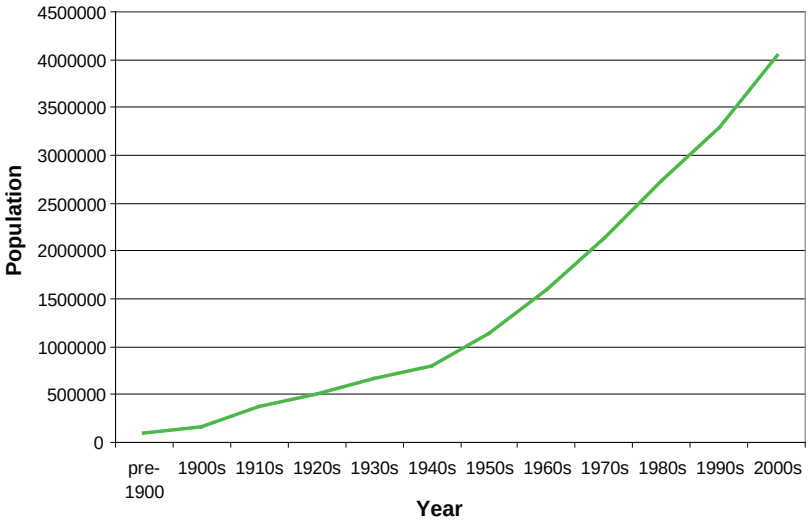
It is interesting to correlate the population distribution against the number of communities. As shown on the following figure, the distribution follows a somewhat inversely proportional relationship, with a large number of small communities with a very small proportion of the total population and a corresponding small number of large communities containing a large portion of the population. This suggests that challenges for infrastructure renewal will be particularly acute for smaller communities. This will be explored later in this report.

Figure 3.3b Population Distribution vs Number of Communities



The following figure provides a graphic representation of the population growth of the Province of British Columbia based upon Statistics Canada data.

Figure 3.3c British Columbia Population Growth



Population is an important factor for a variety of reasons. For instance, it is important in understanding the regional differences in numbers and types of facilities. Population growth over time is also an important factor as it is reasonable to assume that with an increase in population comes a corresponding increased need for access to recreation infrastructure. Although it may not be possible to infer a direct correlation between population growth and the need for a specific number of facilities, it is important to understand the rate of population change over the last several decades when reviewing the age and construction data of our recreation facilities. Recent population projections[4] for the Province of British Columbia show significant continued population growth. Between 2001 and 2031 the total provincial populations is projected to increase by over 36%. For the purposes of this report, this translates to an increase in provincial population over the next 10 years of approximately 500,000 people.

[4] Source: BC Population Projections, Planning and Data Management Branch Ministry of Advanced Education, April 2006

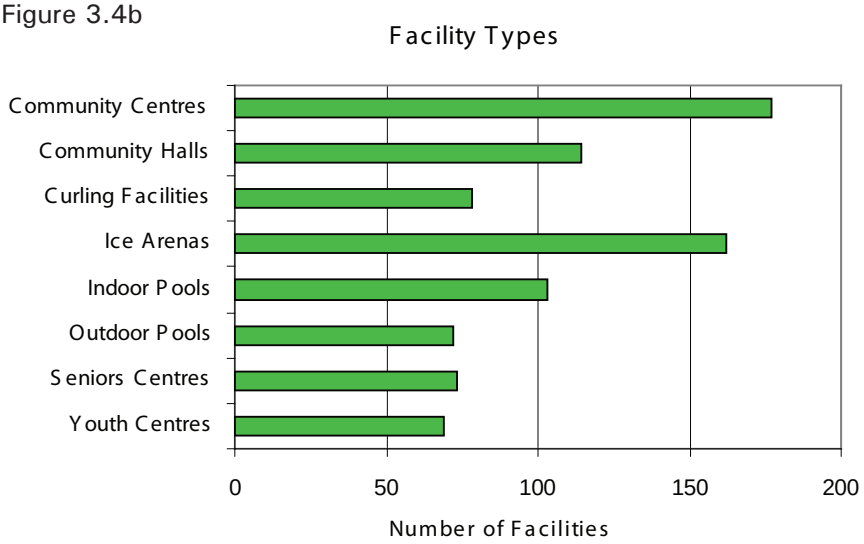
3.4 Facility Type Summary

The following table and figure summarize the total number of facilities of each of the eight indoor facility types included in the survey.

Table 3.4a

Facility Type	Total Number
Community Centres	177
Community Halls	114
Curling Facilities	78
Ice Arenas	162
Indoor Pools	103
Outdoor Pools	72
Seniors Centres	73
Youth Centres	69
Total	**848**

Figure 3.4b

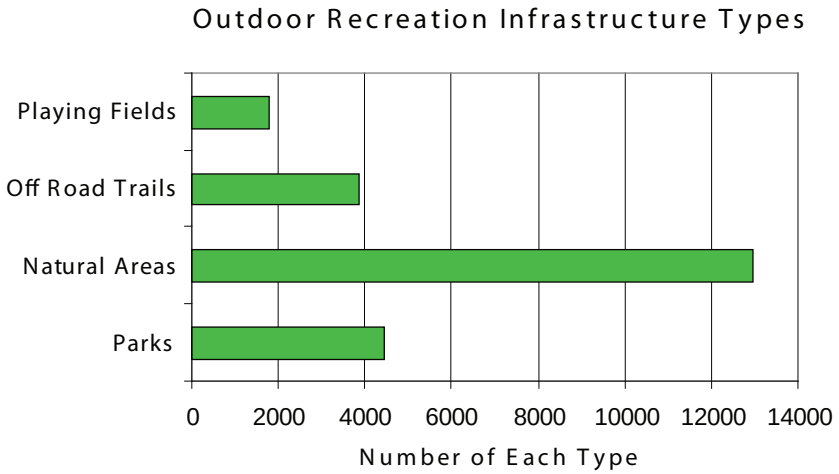


The following table and figure summarize the total number of outdoor recreation infrastructure of each of the four facility types included in the survey.

Table 3.4c

Facility Type	Total Number
Parks	4,458
Natural Areas	12,951
Off Road Trails	3,874
Playing Fields	1,767
Total	**23,050**

Figure 3.4d



These totals include all facilities and infrastructure that is either municipally owned and/or operated, as well as facilities and infrastructure that is not municipally owned where services are provided on the basis of a long term operating agreement.

A summary of privately owned and operated facilities is contained in the following section.

3.5 Private Facilities

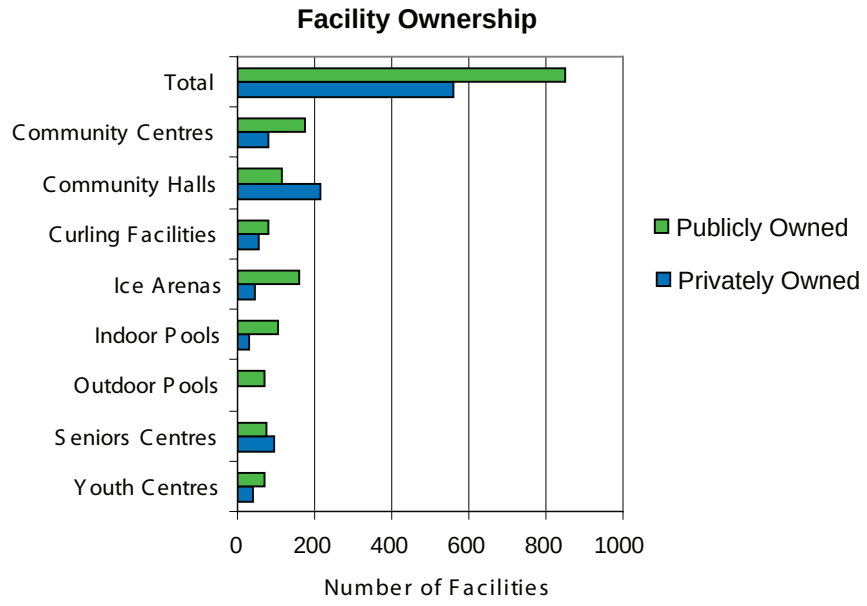
In addition to the above listed facilities, survey participants were asked to identify the number of privately owned and operated facilities that serve their communities. Examples of these types of facilities include those owned and operated by academic institutions, private operators, non-profit groups and the military. These totals may include facilities within aboriginal communities, although these facilities were not specifically included in the database. No additional information was collected regarding these facilities, nor was the information verified, therefore information related to these facilities is not included in any subsequent analysis. The following table summarizes the total number or privately owned and operated facilities identified in the survey process.

Table 3.5a

Facility Type	Total Number
Community Centres	78
Community Halls	217
Curling Facilities	54
Ice Arenas	43
Indoor Pools	29
Outdoor Pools	4
Seniors Centres	94
Youth Centres	41
Total	560

The following figure indicates the total number of public and private facilities in terms of total facilities and by facility type.

Figure 3.5b



3.6 Facility Locations

One of the important opportunities provided by the database is the ability to facilitate detailed analysis of the geographical distribution of facilities. This has significant ramifications as it could demonstrate areas of the province where community members are significantly under or over served.

Following are a series of figures that chart the location of each type of facility within the Province and BCRPA Regions.

Figure 3.6a Community Centre Facilities by Location

Figure 3.6b Community Halls by Location

Figure 3.6c Curling Facilities by Location

Figure 3.6d Ice Arena Facilities by Location

Figure 3.6e Indoor Pool Facilities by Location

Figure 3.6f Outdoor Pool Facilities by Location

Figure 3.6g Seniors Centres by Location

Figure 3.6h Youth Centres by Location

3.7 Regional Analysis

One of the important opportunities provided by the database is the ability to facilitate comparison of the regional distribution of facilities. For the purposes of this analysis, BCRPA Regions have been utilized.

Following are a series of figures that chart the location of all facilities within each BCRPA Region.

Figure 3.7a All Facilities – Vancouver Island / South Coast Region

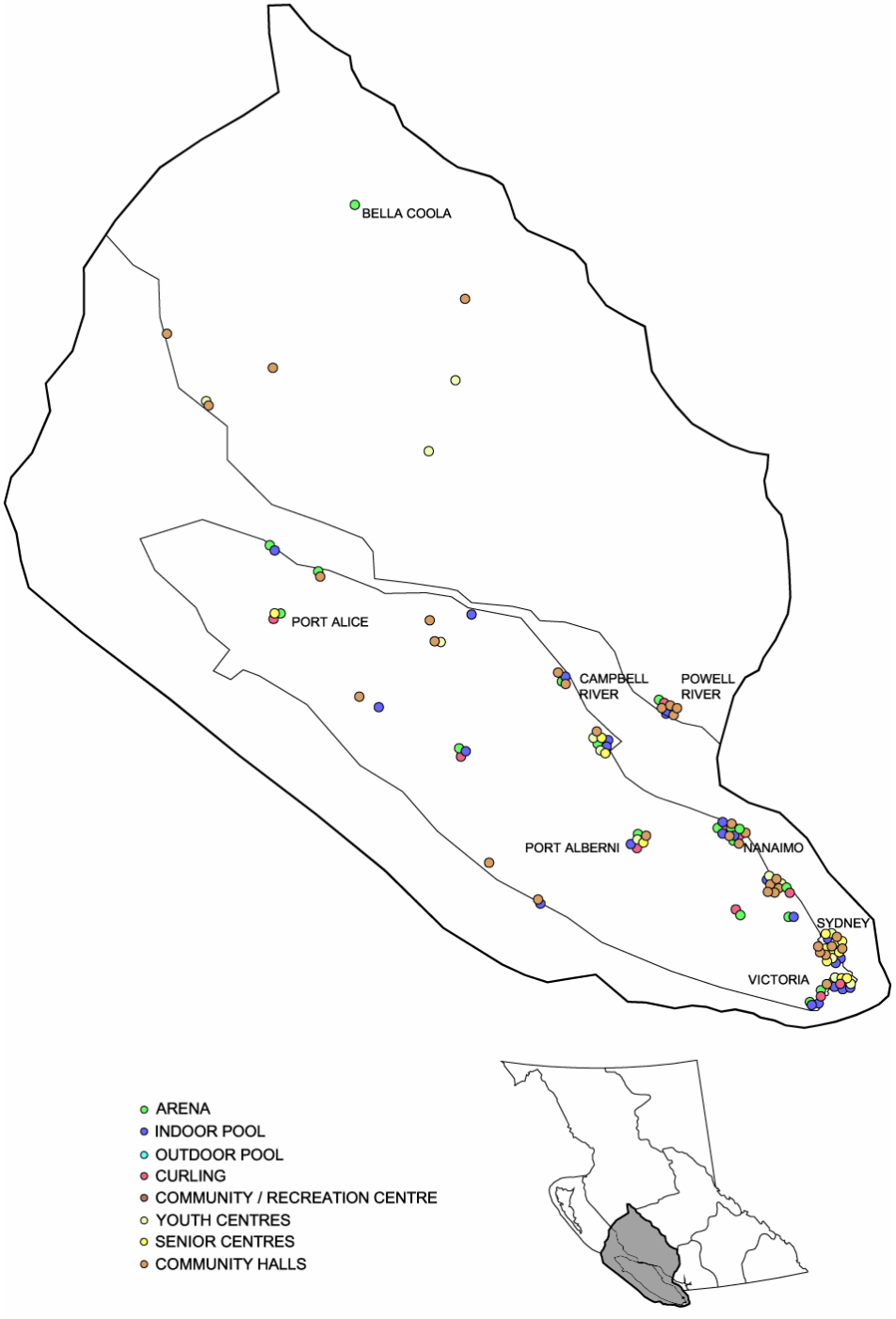


Figure 3.7b All Facilities – Lower Mainland Region

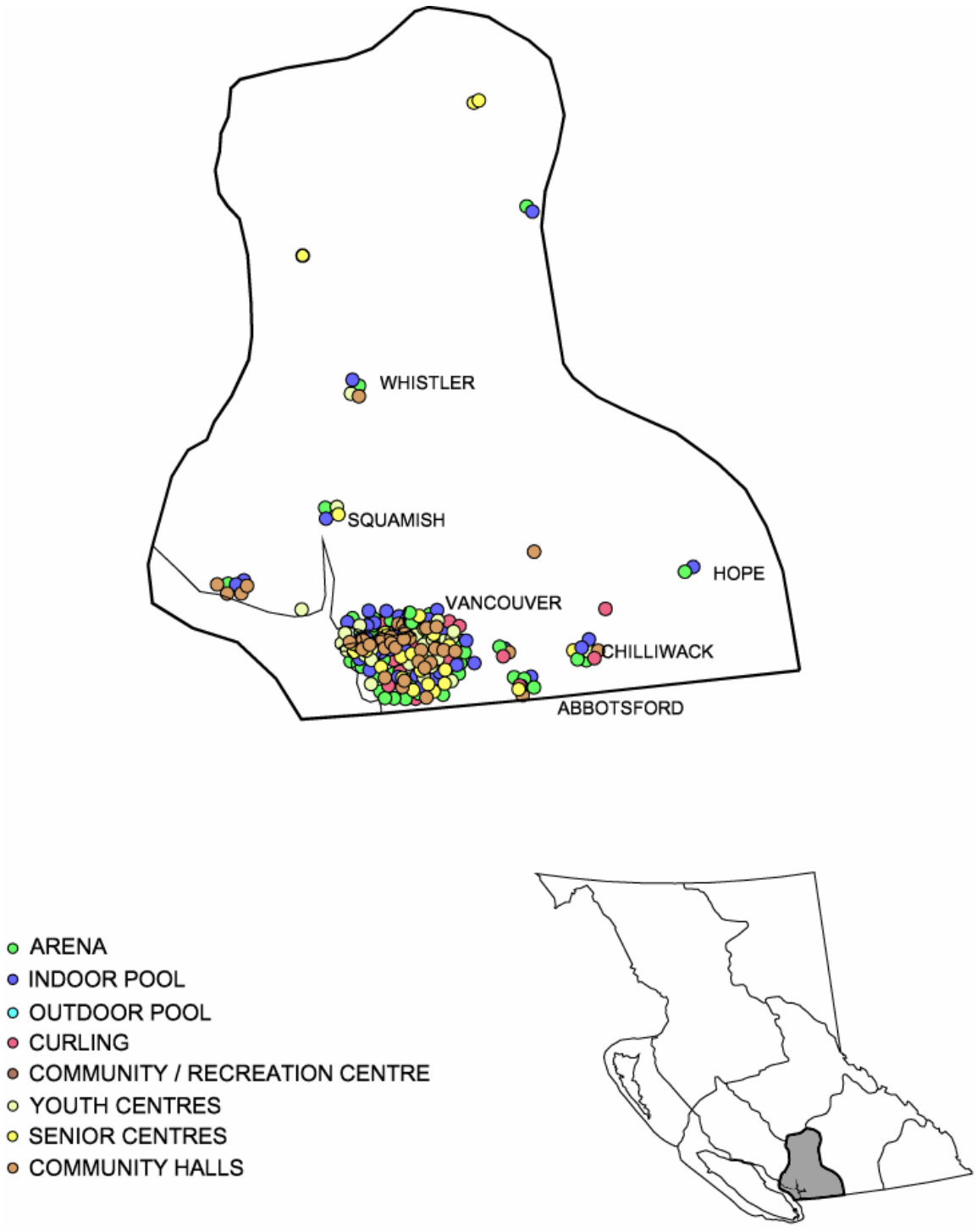


Figure 3.7c All Facilities – Okanagan Region

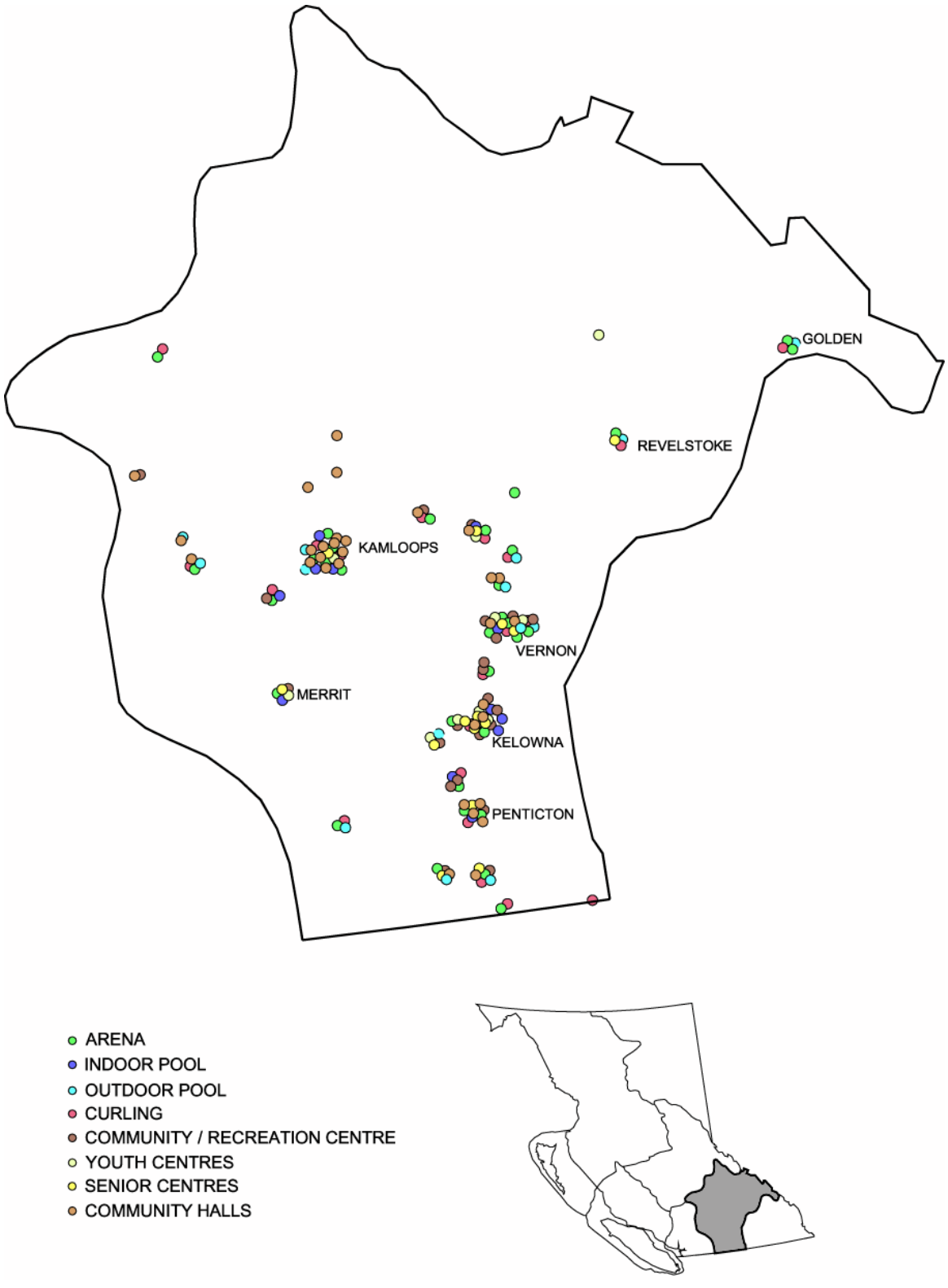


Figure 3.7d All Facilities – Kootenays Region

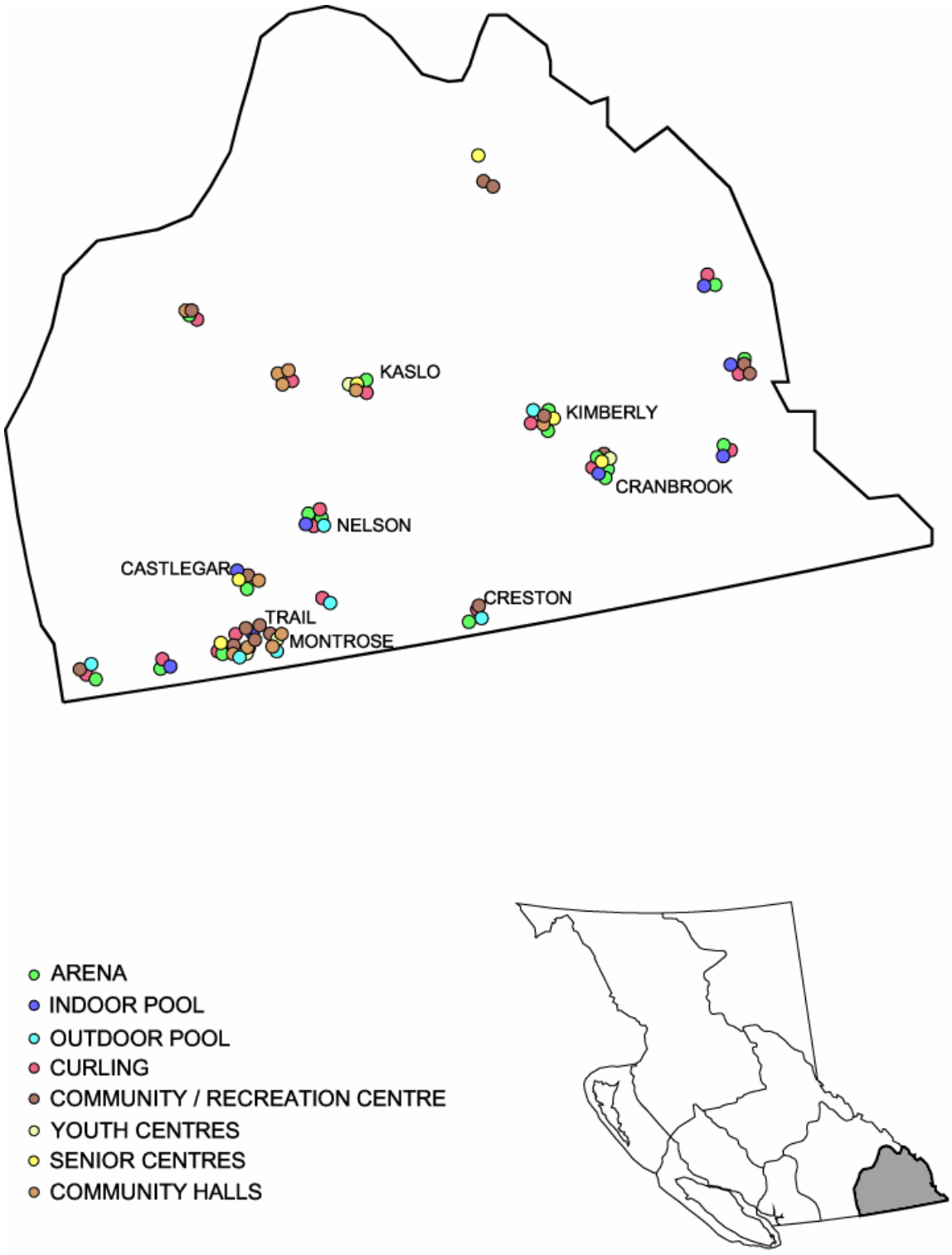


Figure 3.7e All Facilities – North Coast / Nechako Region

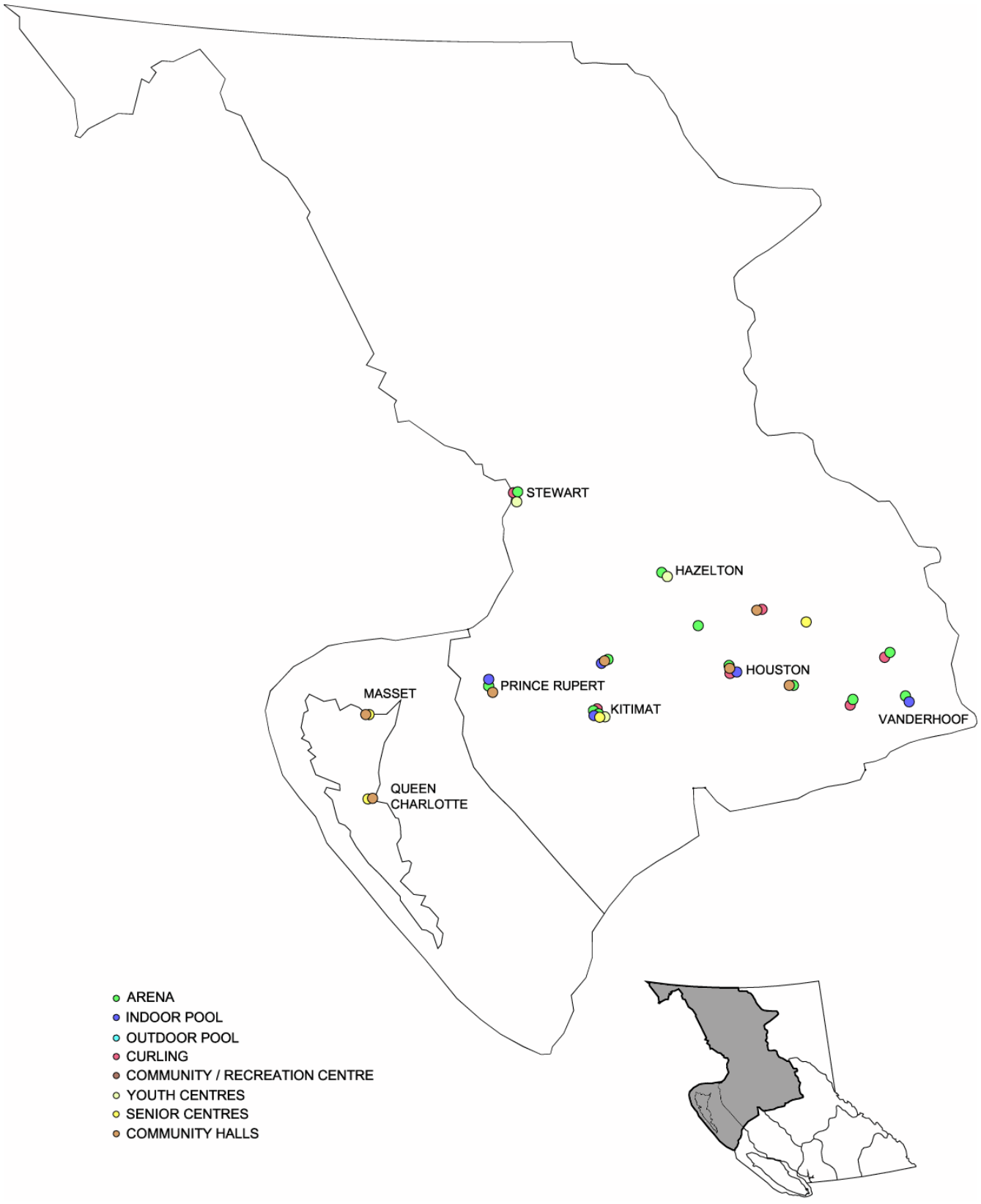


Figure 3.7f All Facilities – Cariboo Region

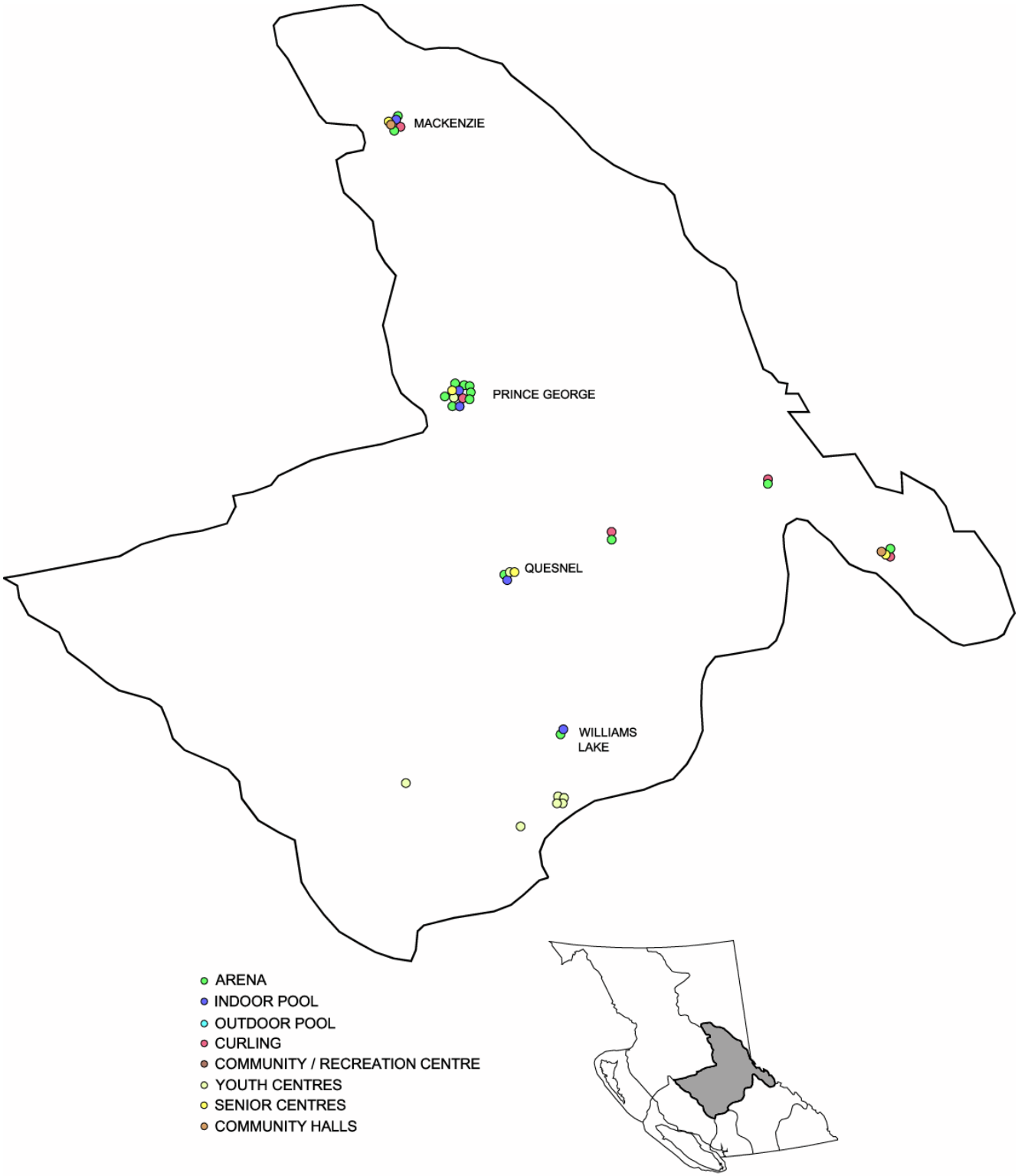
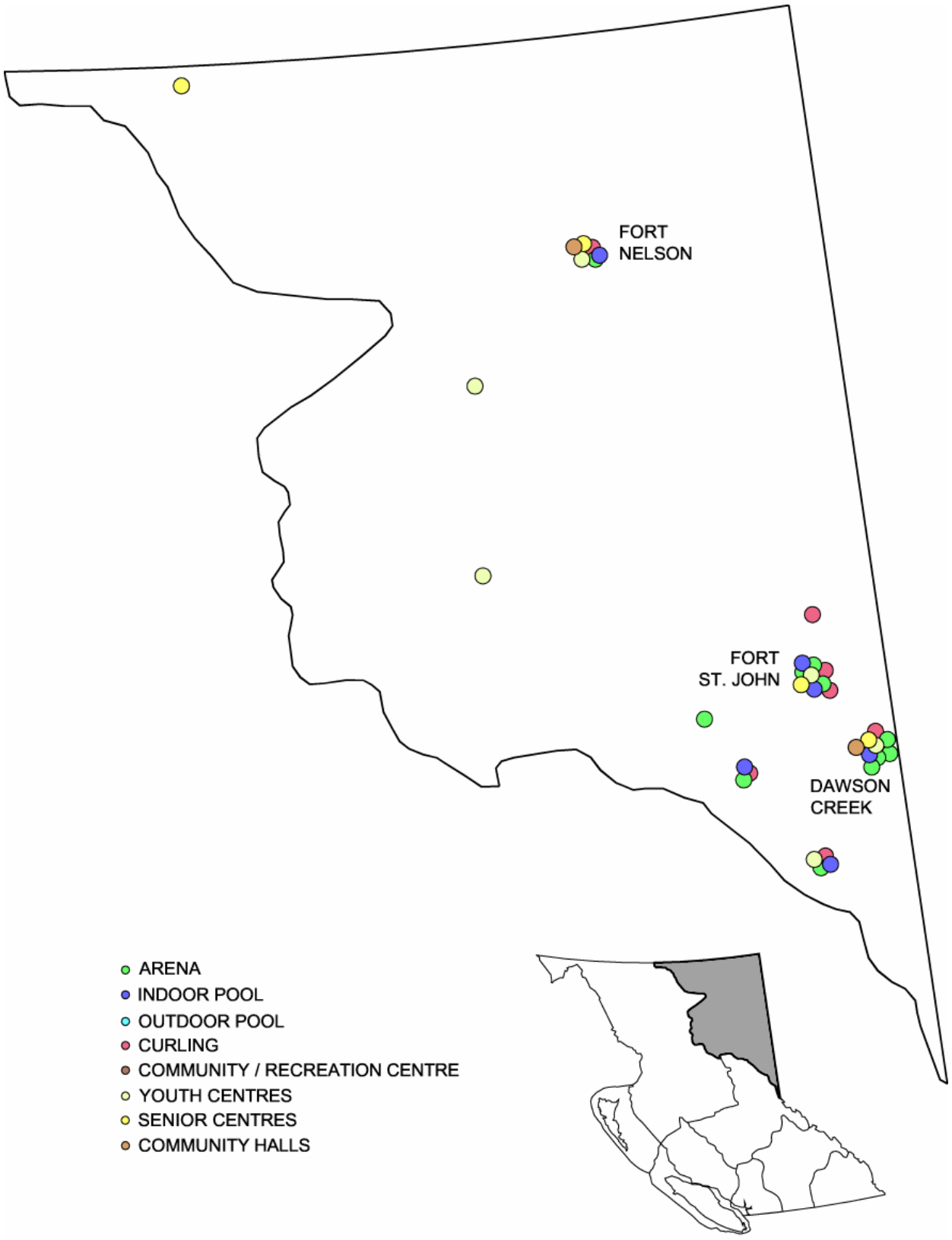


Figure 3.7g All Facilities – Peace River / Liard Region

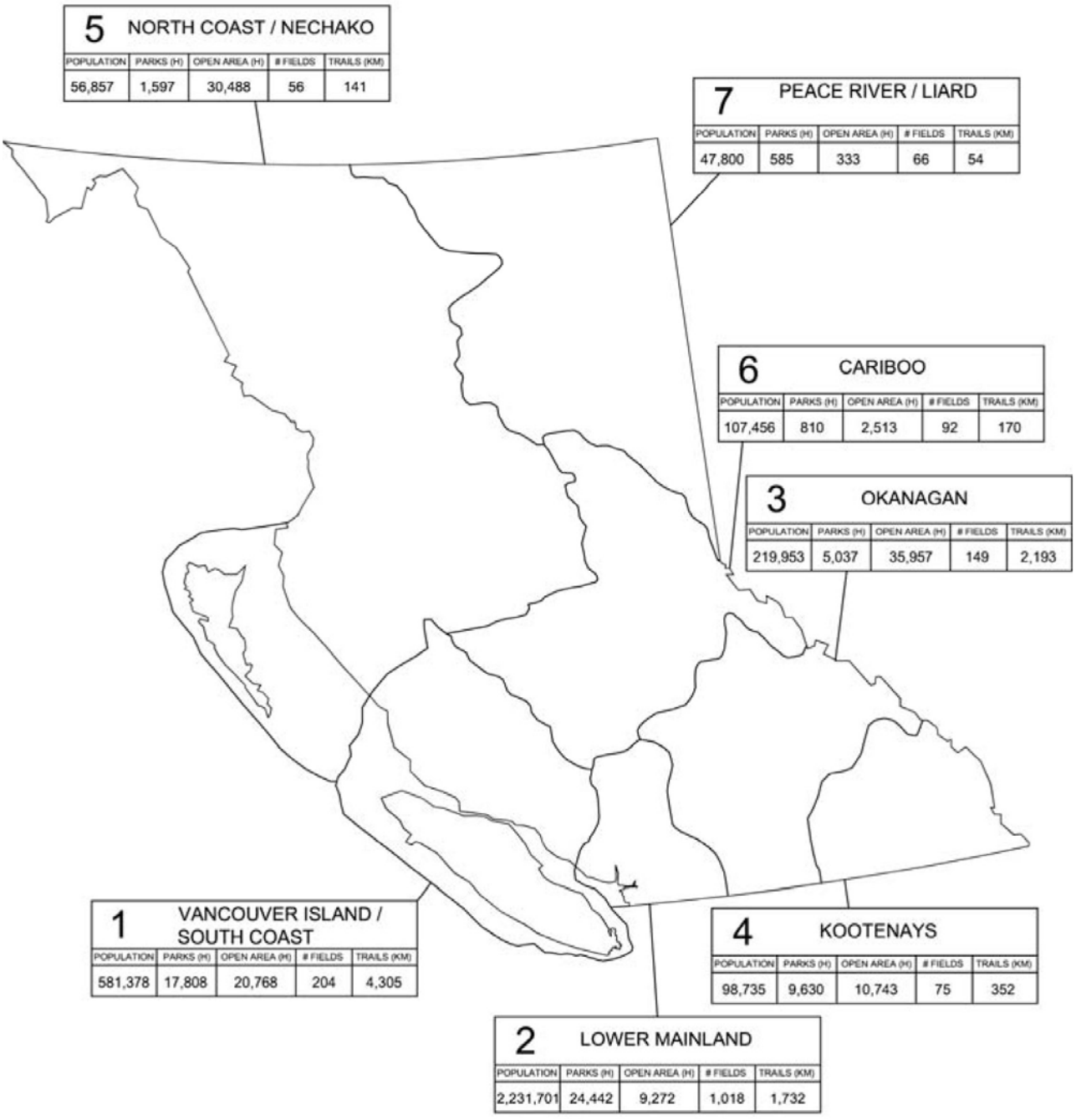


3.8 Outdoor Infrastructure

This section provides graphic representation on the data collected on outdoor infrastructure types; parks, open areas, playing fields and trails.

Following are a series of tables that provide a sample of the type of geographic analysis that is possible from the data. The tables chart relative quantities of each type of outdoor infrastructure.

Figure 3.8a Summary - All types



For reference, **2,285,000 m²** is the equivalent area of approximately **235 Canadian Football League (CFL) playing fields**

3.9 Facility Area Summary

The following table summarizes the approximate total floor area of each of the facility types included in the survey. 733 of the 847 facilities contained in the database provided this data. The remaining 114 are not included in the values shown in this table.

Table 3.9

Facility Type	Total Area (m²)	Average Area (m²)
Community Centres	596,485	4,200
Community Halls	62,733	729
Curling Facilities	167,034	2,288
Ice Arenas	671,590	4,224
Indoor Pools	367,208	3,709
Outdoor Pools	67,586	1,024
Seniors Centres	46,786	835
Youth Centres	33,182	626
Total	**2,012,664**	**2,376**

Using the assumption that non reporting facilities are proportional in size, it is possible to extrapolate the approximate total area[5] of all facilities in the province which would be in the order of **2,285,000 m²** or **24,585,000 square feet**.

3.10 Outdoor Facility Size Summary

The following table summarizes the approximate total magnitude of each of the four outdoor recreation infrastructure types included in the survey.

Table 3.10

Facility Type	Total Area (hectares)	Total Length (km)
Parks	64,576	
Natural Areas	111,968	
Off Road Trails	n/a	9,096
Playing Fields	n/a	n/a
Total	176,544	9,096

[5] Assumes average area for each of the facility types that did not report areas.

3.11 Life Cycle Stage

The following table summarizes the life cycle stages for each of four facility types included in the survey.

Table 3.11a

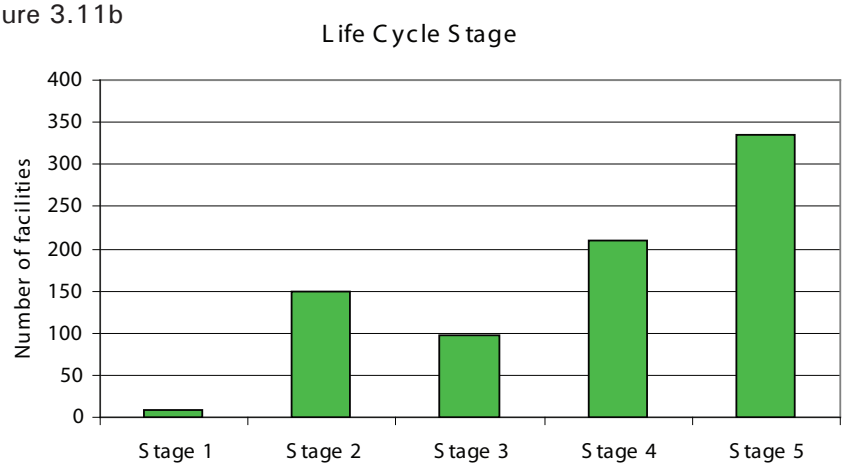
Facility Type	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
	planned	1 to 14	15 to 24	25 to 34	35 & over
Community Centres	0	32	20	52	55
Community Halls	1	13	13	12	60
Curling Facilities	1	5	6	23	43
Ice Arenas	3	28	12	47	70
Indoor Pools	1	20	21	36	26
Outdoor Pools	1	2	4	17	48
Seniors Centres	0	13	13	16	18
Youth Centres	1	36	8	4	15
Total	**8**	**149**	**97**	**207**	**335**
Percentage	1%	19%	12%	26%	42%

This table indicates that a large majority of facilities (68%) are 25 years old or older.

The data in this table has been updated since the last reporting to reflect the life cycle status as of 2007. Since last reporting **88** facilities, or **11%** of all facilities, have moved from stage 4 to stage 5. Many more will move to stage 5 over the next few years. By the year 2010 most of the stage 4 facilities will have reached stage 5.

The following figure summarizes the total number of facilities in each stage.

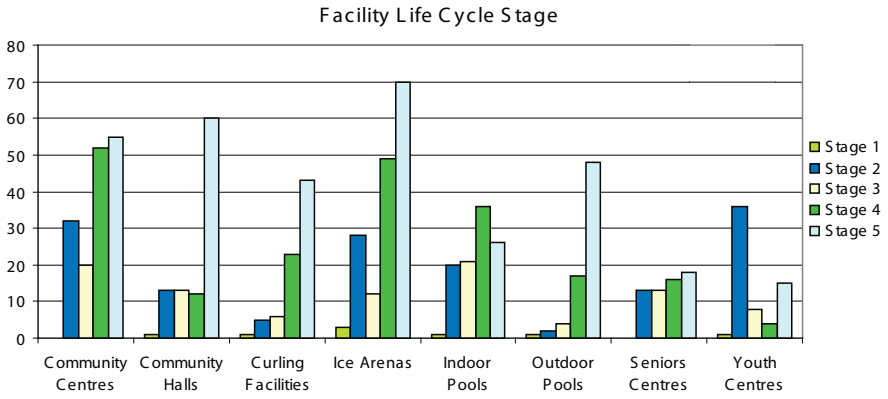
Figure 3.11b



3.12 Facility Type Stages

The following tables summarize the life cycle stages for each of four facility types included in the survey. The first table displays the data in terms of numbers of facilities of each type in each stage. Refer to section 3.0 for additional information regarding the life cycle stages.

Figure 3.12



As shown in table 3.12, the life cycle stage breakdown varies by facility type with the Indoor Pools and Community Centres typically being the youngest and the Community Halls and Outdoor Pools being the oldest.

3.13 Facility Age

The following tables summarize the decade of construction for each of the eight indoor facility types included in the survey.

Table 3.13a

Facility Type	pre-1900	1900s	1910s	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Totals
Community Centres				1	3	4	8	21	58	20	30	14	159
Community Halls	3	1	3	5	1	9	4	20	22	11	11	9	99
Curling Facilities				1	1	2	8	16	37	7	3	3	78
Ice Arenas				1	3	6	11	21	73	16	21	9	161
Indoor Pools				1	0	0	3	9	40	20	25	5	103
Outdoor Pools				1	3	3	9	32	20	1	2	1	72
Seniors Centres		2		1		1	2	6	16	16	8	8	60
Youth Centres		1				3	3	7	4	6	22	18	64
Totals	**3**	**4**	**3**	**11**	**11**	**28**	**48**	**132**	**270**	**97**	**122**	**67**	**796**

Figure 3.13b

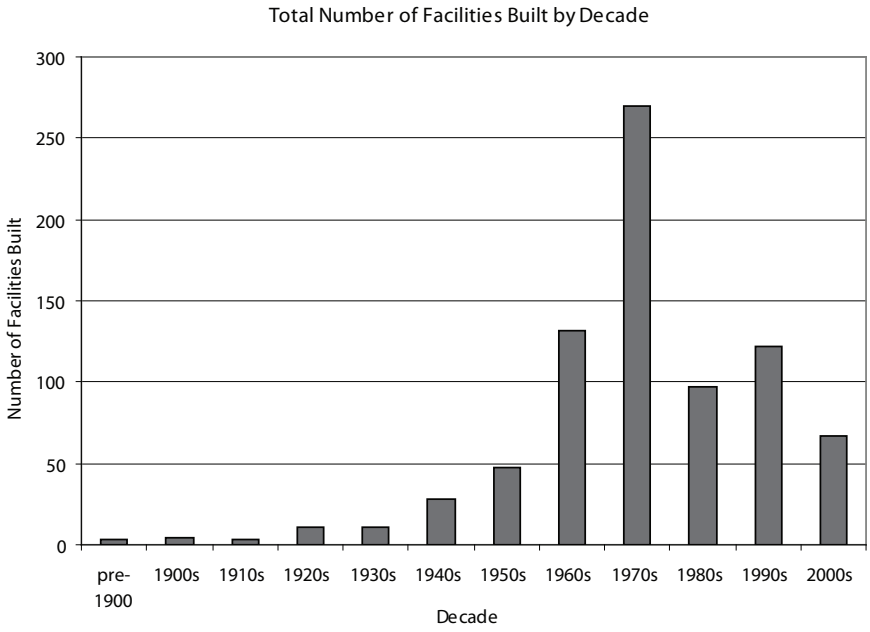


Figure 3.13c

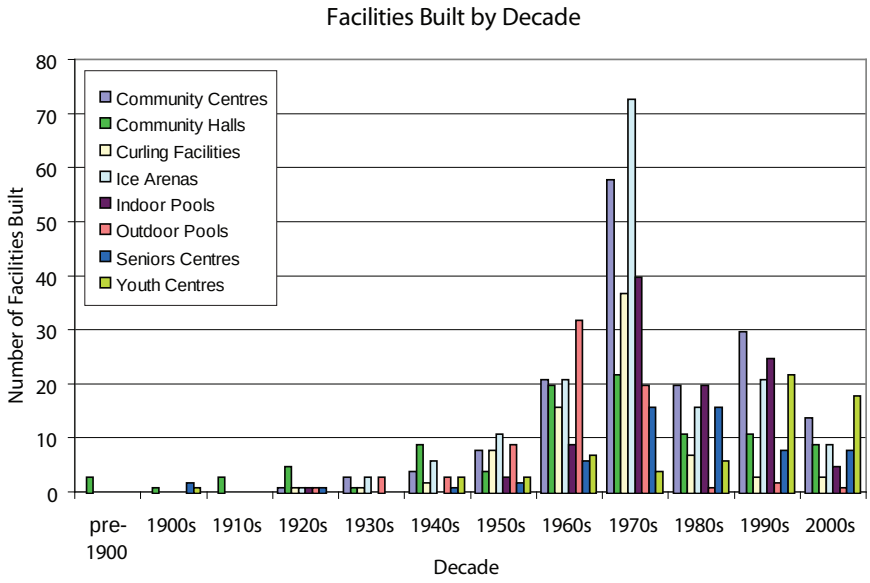


Figure 3.13d

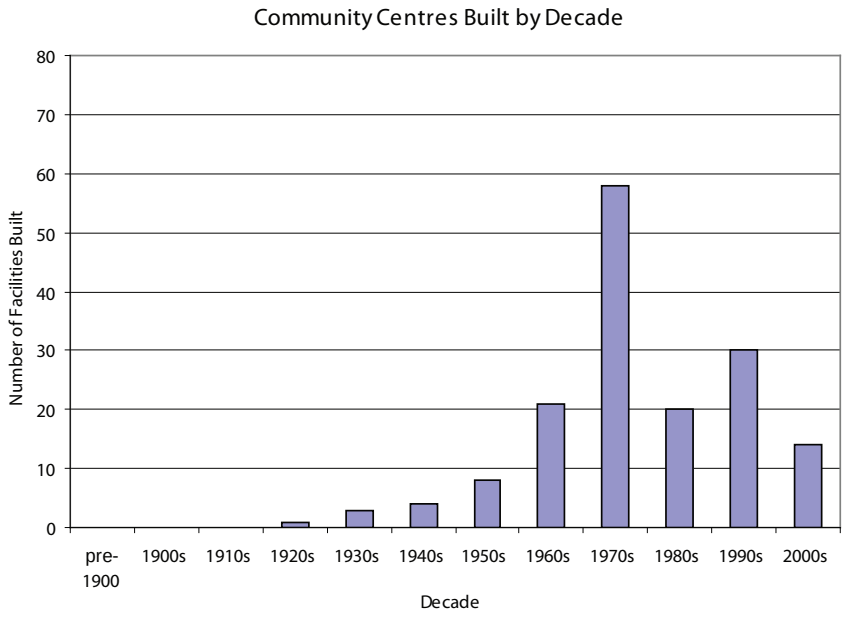


Figure 3.13e

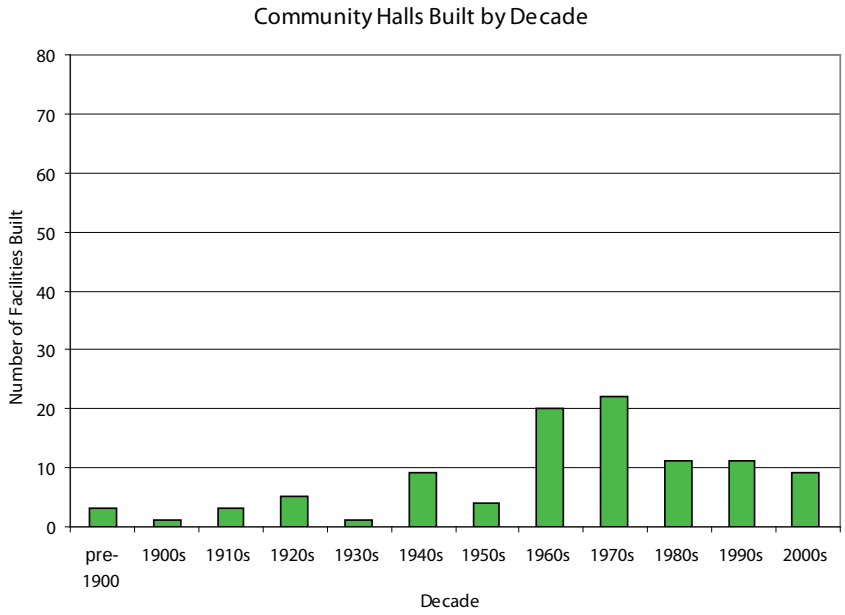


Figure 3.13f

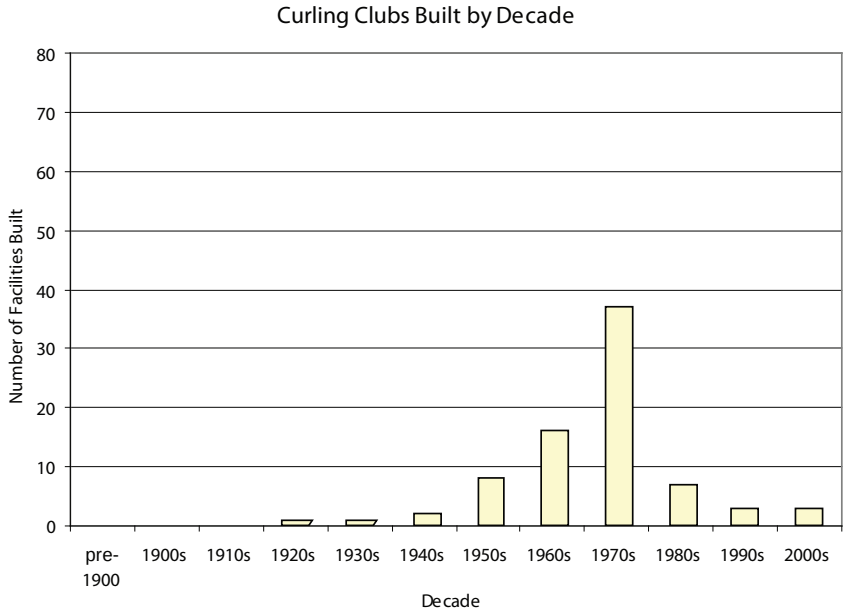


Figure 3.13g

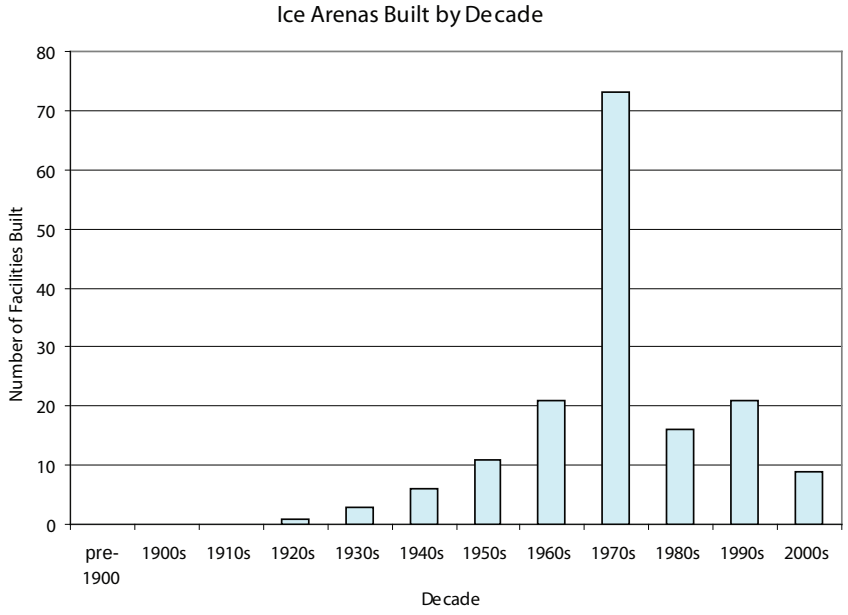


Figure 3.13h

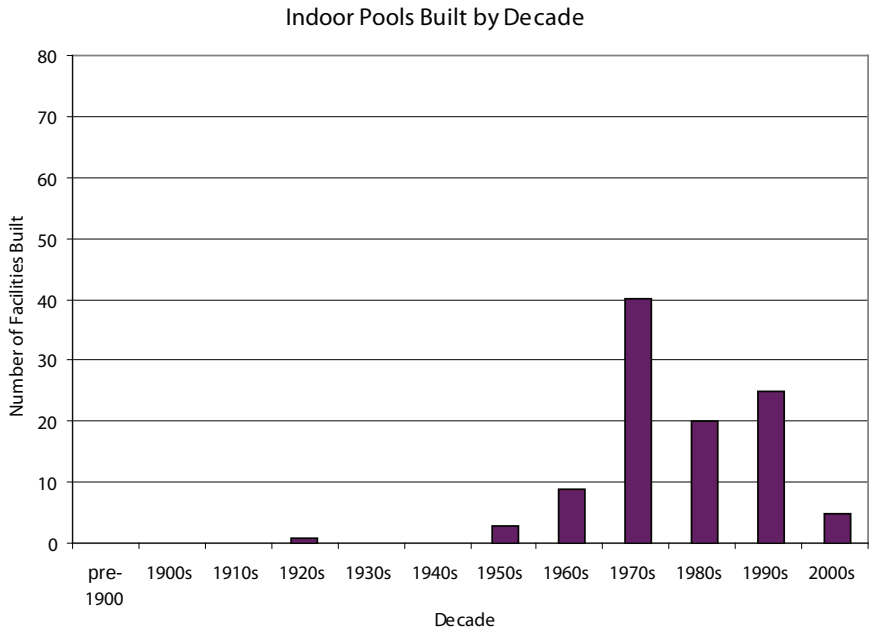


Figure 3.13i

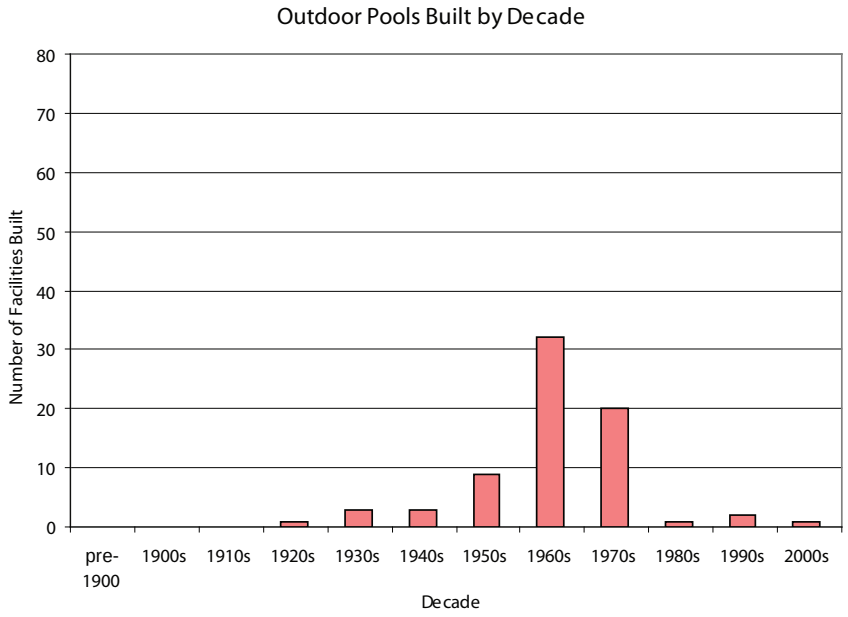


Figure 3.13j

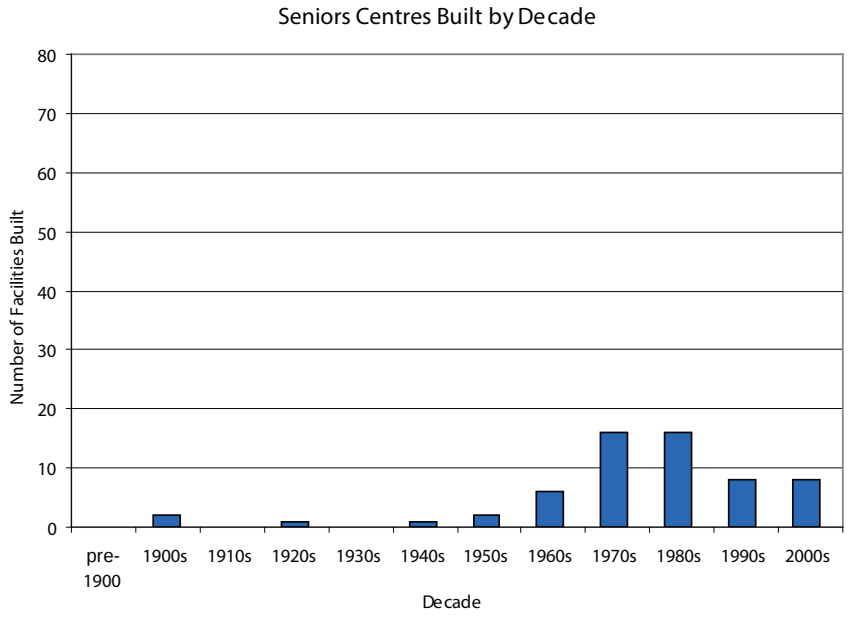
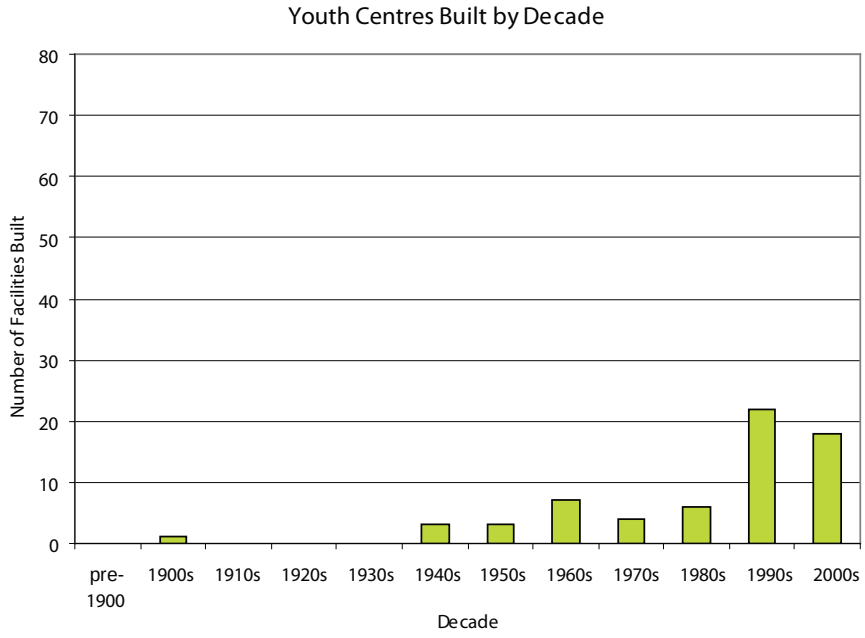


Figure 3.13k

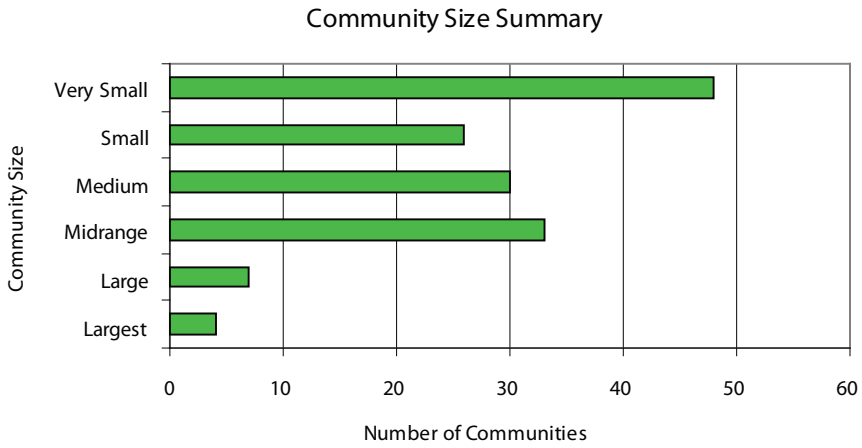


3.14 Community Size Data

Previous analysis has not taken into consideration the variance in facility life cycle stage between communities of various sizes. This section provides additional analysis of the various facility types utilizing the community size information from section 3.2.

The following figure summarizes the total number of communities in each of the six community size categories

Figure 3.14a



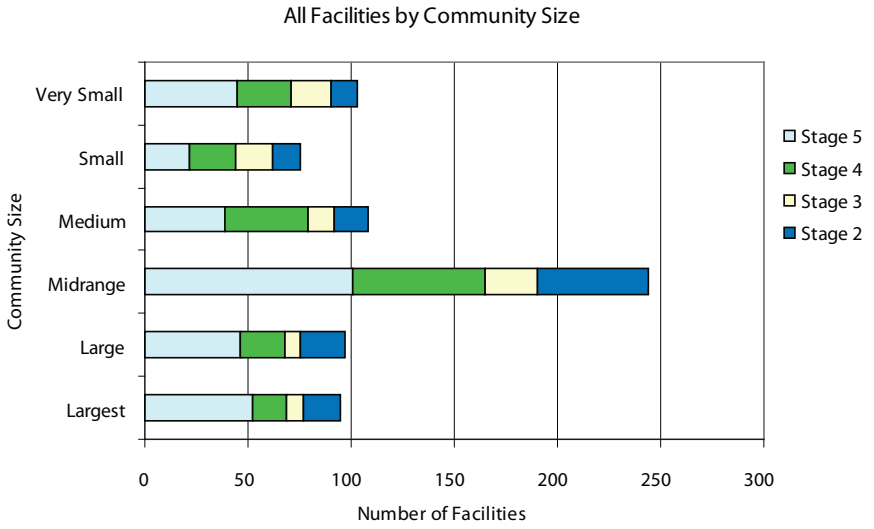
The following table summarizes the total number of facilities for each of the six community size categories. Note that this table only includes those facilities for which community size data is available.

Table 3.14b

Community Size	Number of Facilities
Very Small	103
Small	75
Medium	108
Midrange	244
Large	97
Largest	95

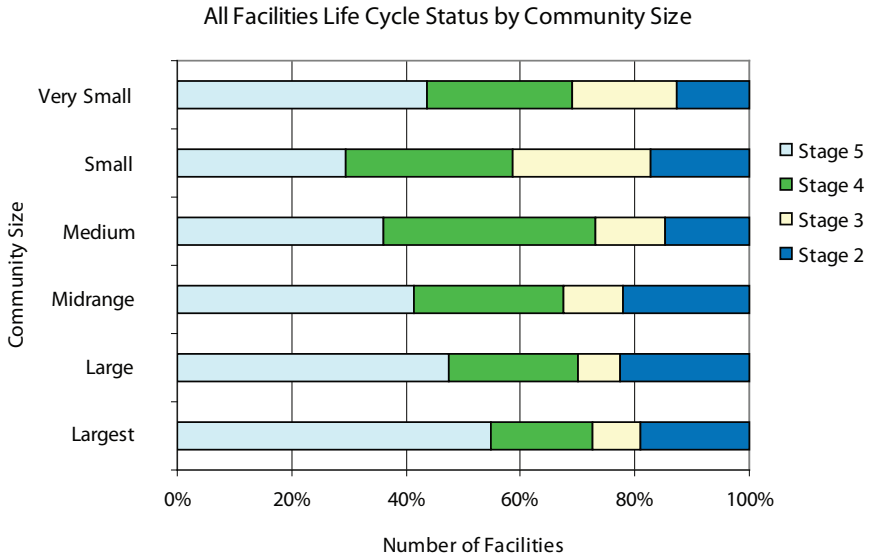
The following figure summarizes the total number of facilities for each of the six community size categories, including a summary of the life cycle stages.

Figure 3.14c



The following figure summarizes the proportion of facilities within each life cycle stage for each of the size community sizes.

Figure 3.14d



3.15 Very Small Communities

The following figure summarizes the life cycle stages for each of eight facility types for "Very Small" Communities.

Figure 3.15a

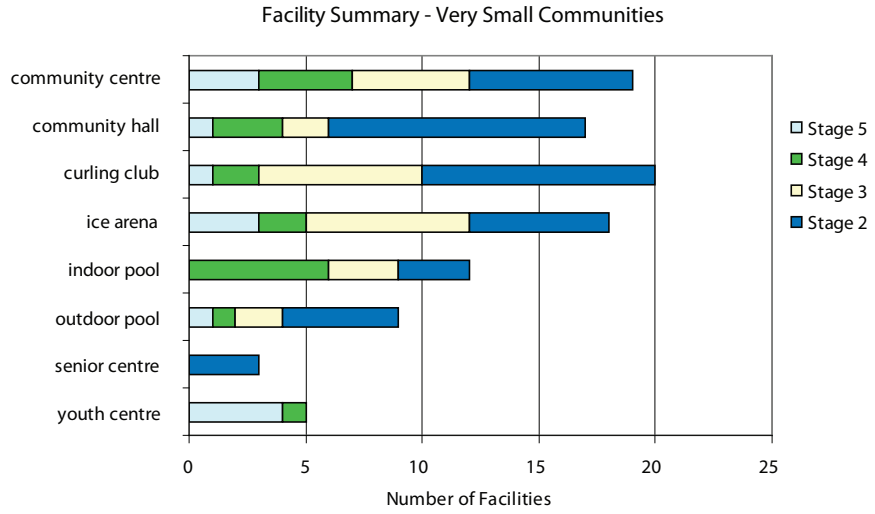
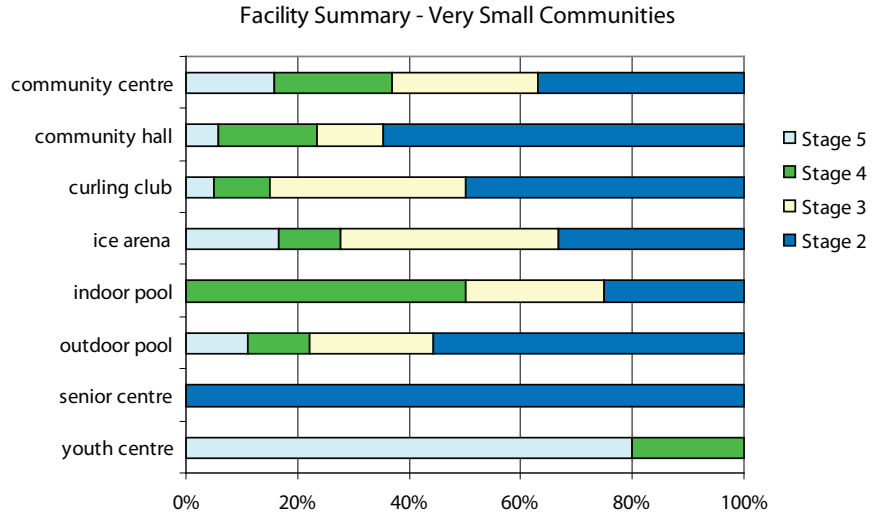


Figure 3.15b



3.16 Small Communities

The following figure summarizes the life cycle stages for each of eight facility types for "Small" Communities.

Figure 3.16a

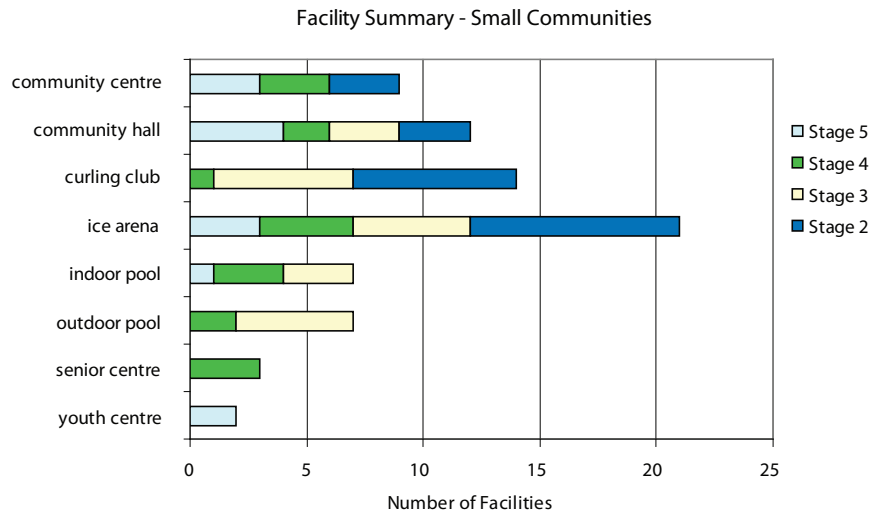
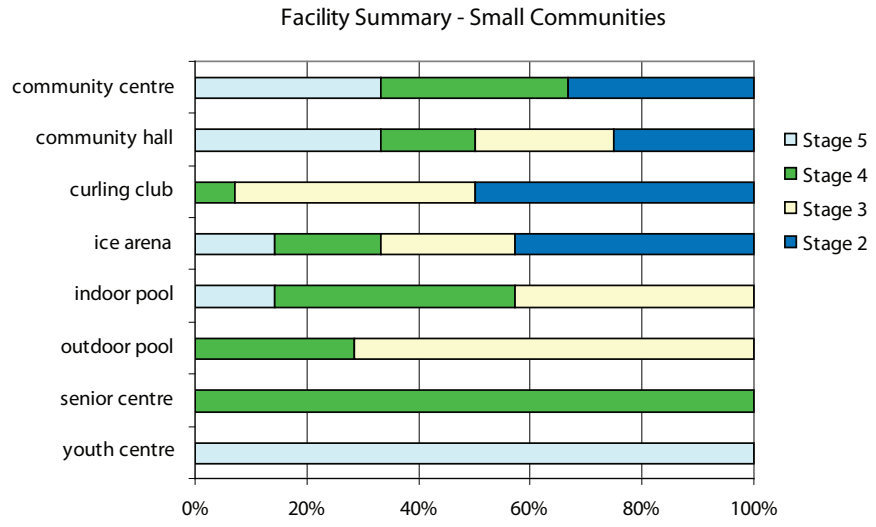


Figure 3.16b



3.17 Medium Communities

The following figure summarizes the life cycle stages for each of eight facility types for “Medium” Communities.

Figure 3.17a

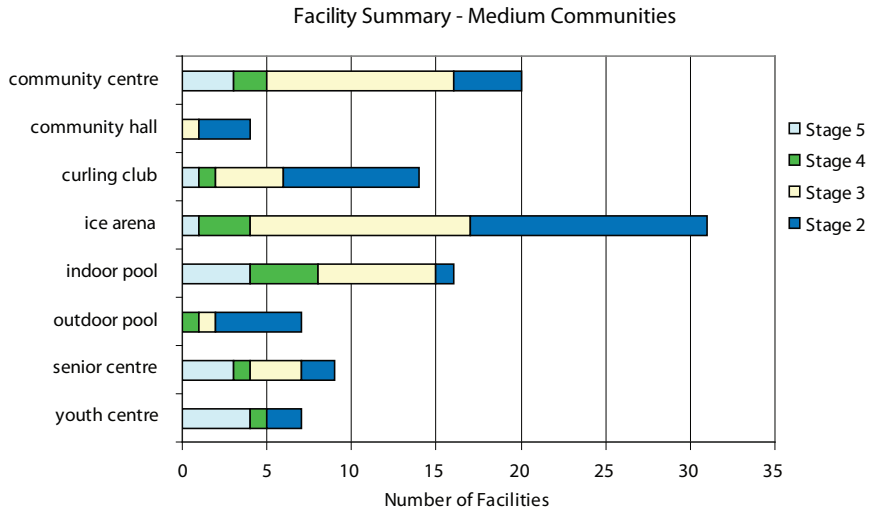
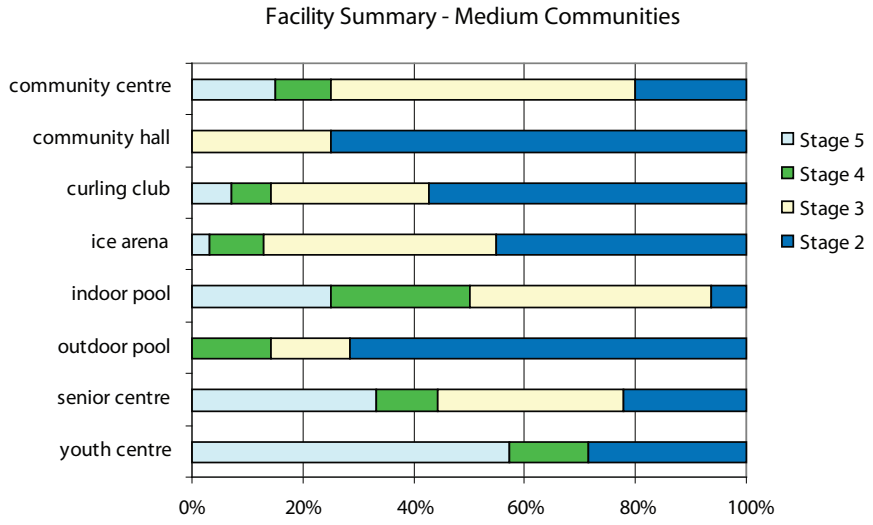


Figure 3.17b



3.18 Midrange Communities

The following figure summarizes the life cycle stages for each of eight facility types for "Midrange" Communities.

Figure 3.18a

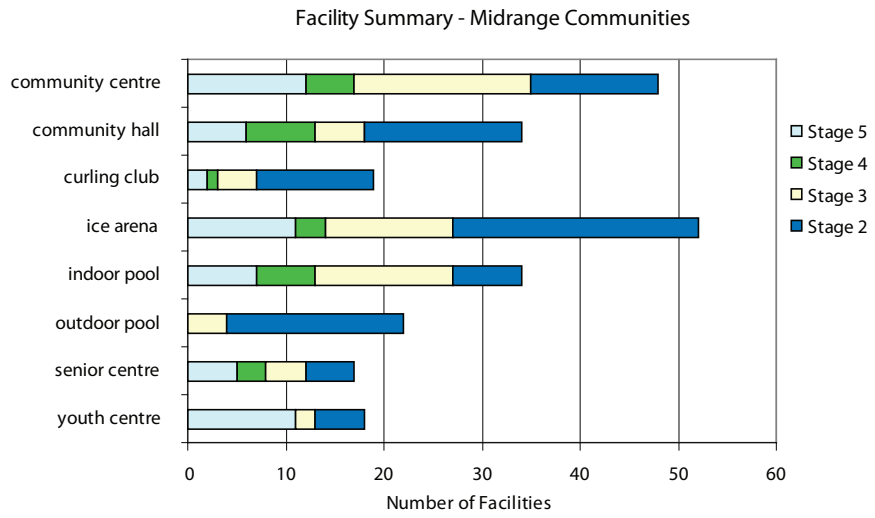
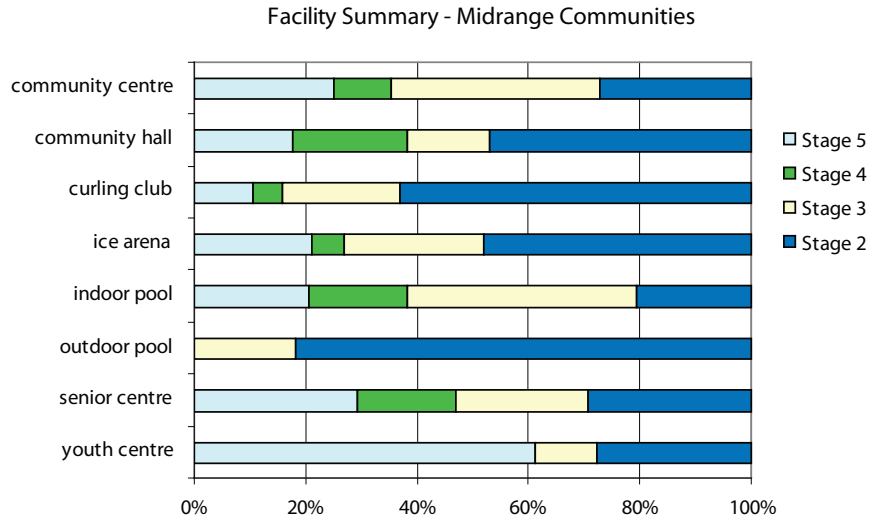


Figure 3.18b



3.19 Large Communities

The following figure summarizes the life cycle stages for each of eight facility types for "Large" Communities.

Figure 3.19a

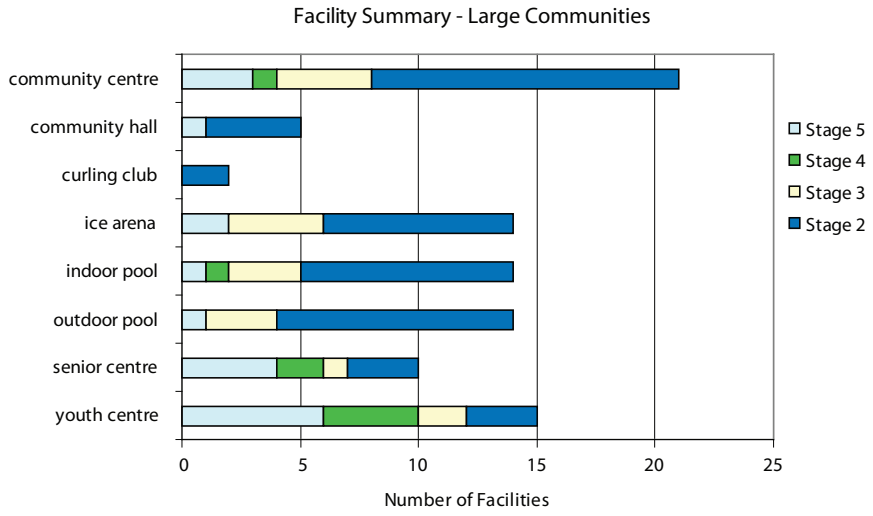
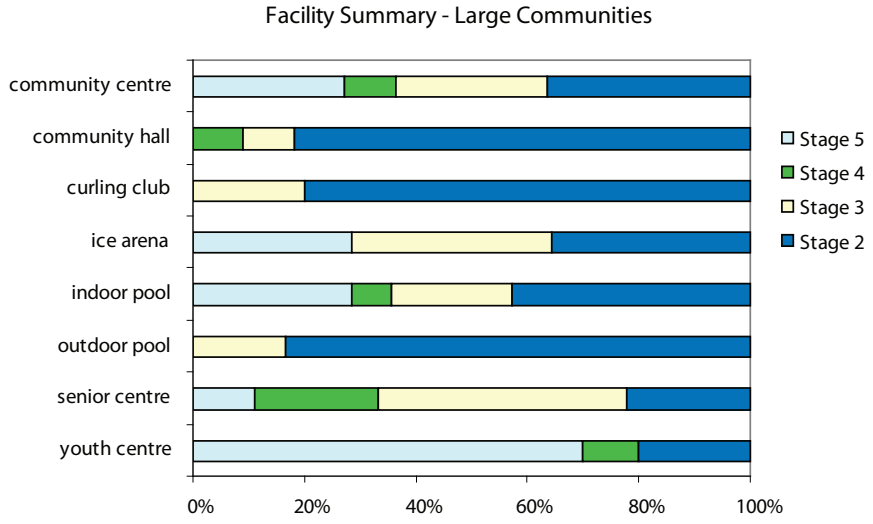


Figure 3.19b



3.20 Largest Communities

The following figure summarizes the life cycle stages for each of eight facility types for "Largest" Communities.

Figure 3.20a

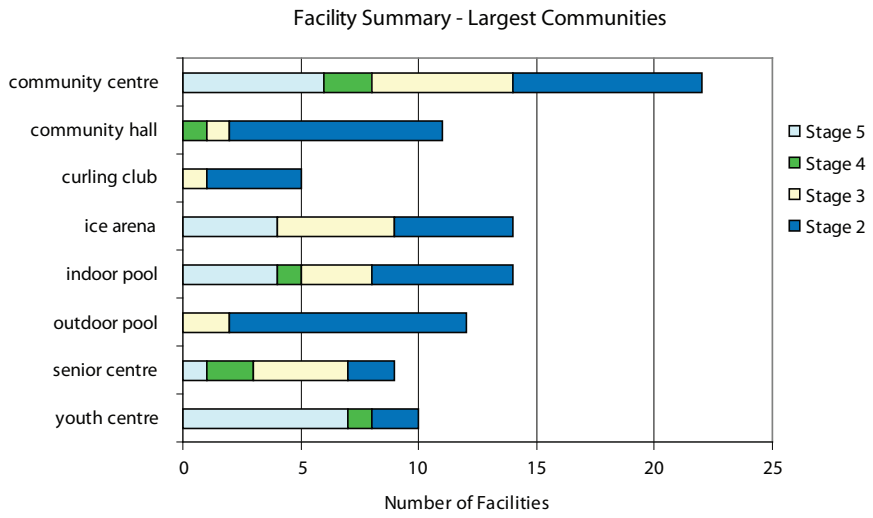
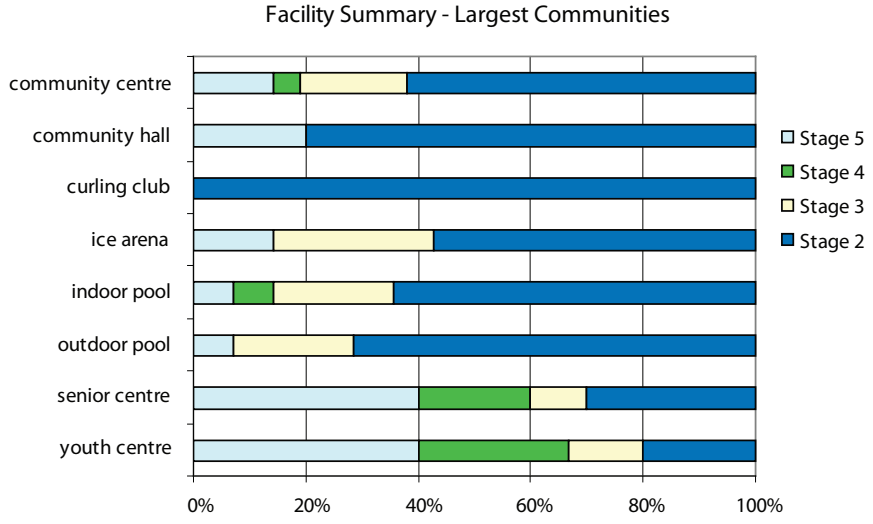


Figure 3.20b



3.21 Community Centres and Community Size

The following figure summarizes the life cycle stages for Community Centres in each of the six community sizes.

Figure 3.21a

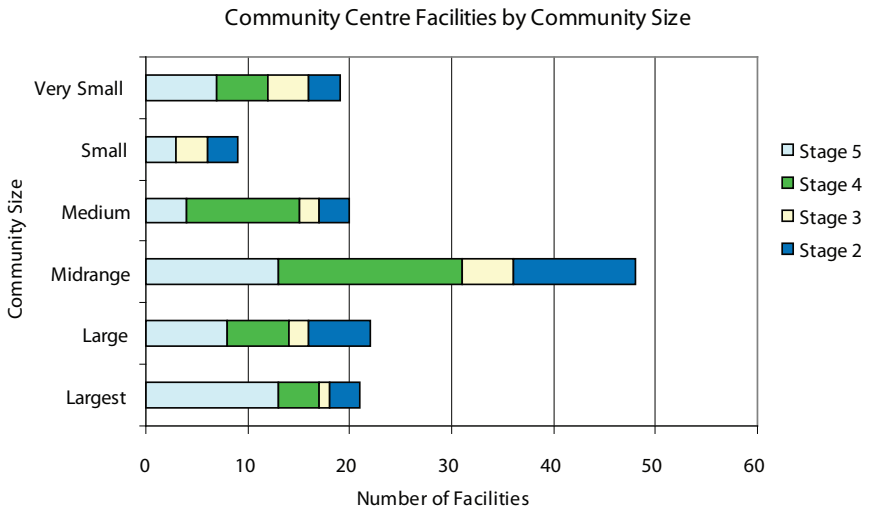
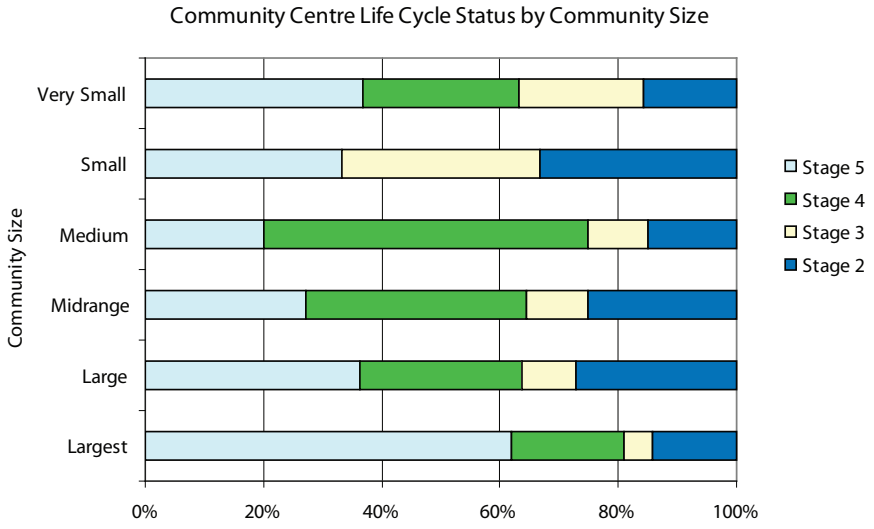


Figure 3.21b



3.22 Community Halls and Community Size

The following figure summarizes the life cycle stages for Community Halls in each of the six community sizes.

Figure 3.22a

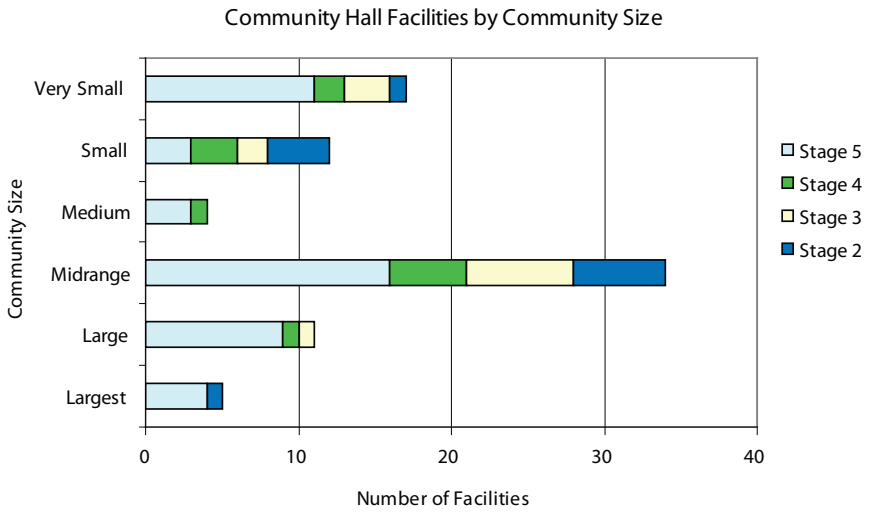
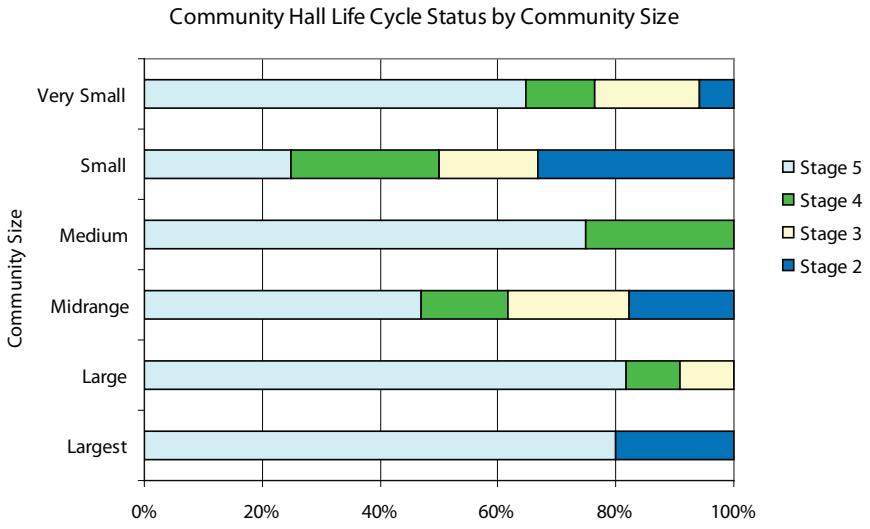


Figure 3.22b



3.23 Curling Rinks and Community Size

The following figure summarizes the life cycle stages for Curling Rinks in each of the six community sizes.

Figure 3.23a

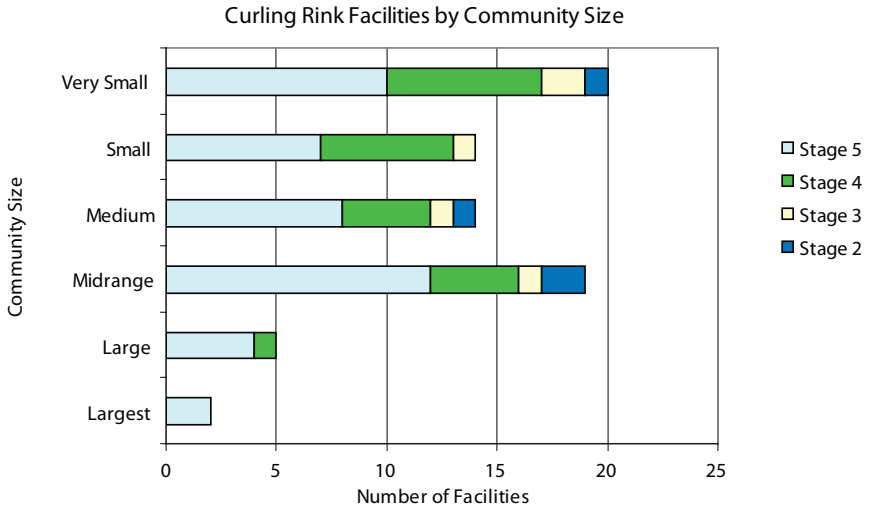
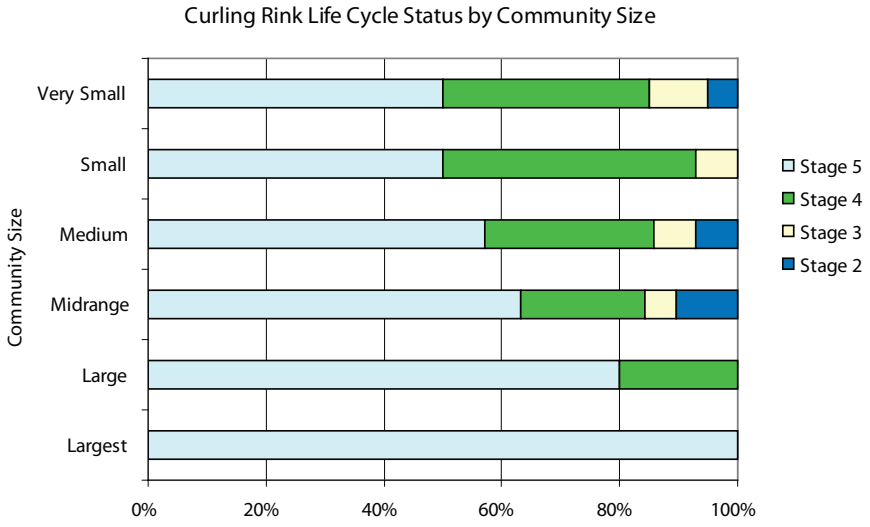


Figure 3.23b



3.24 Ice Arenas and Community Size

The following figure summarizes the life cycle stages for Ice Arenas in each of the six community sizes.

Figure 3.24a

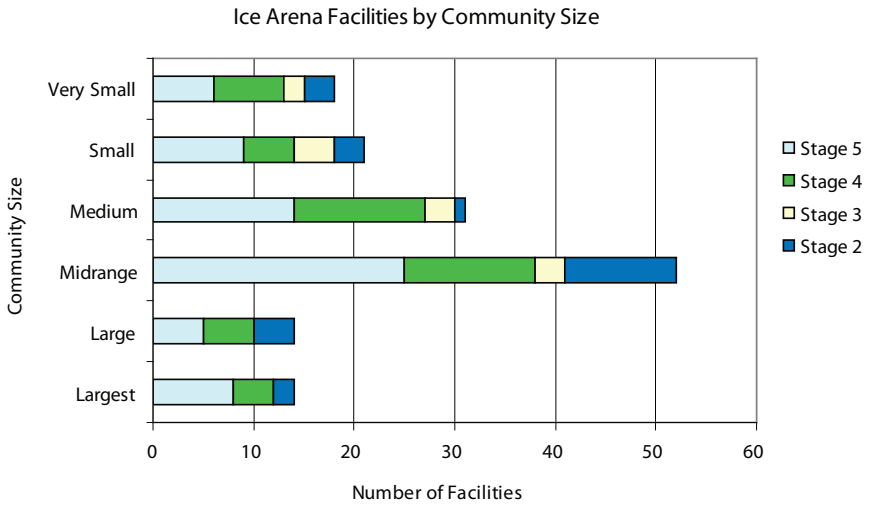
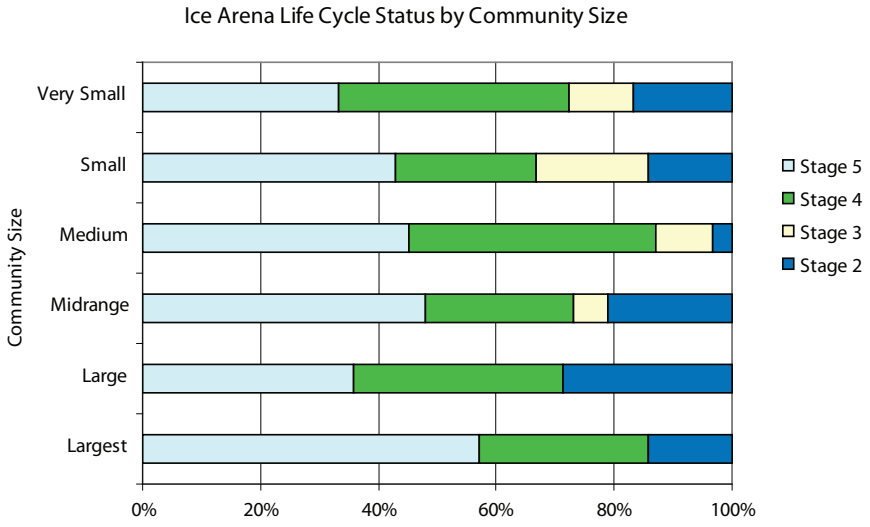


Figure 3.24b



3.25 Indoor Pools and Community Size

The following figure summarizes the life cycle stages for Indoor Pools in each of the six community sizes.

Figure 3.25a

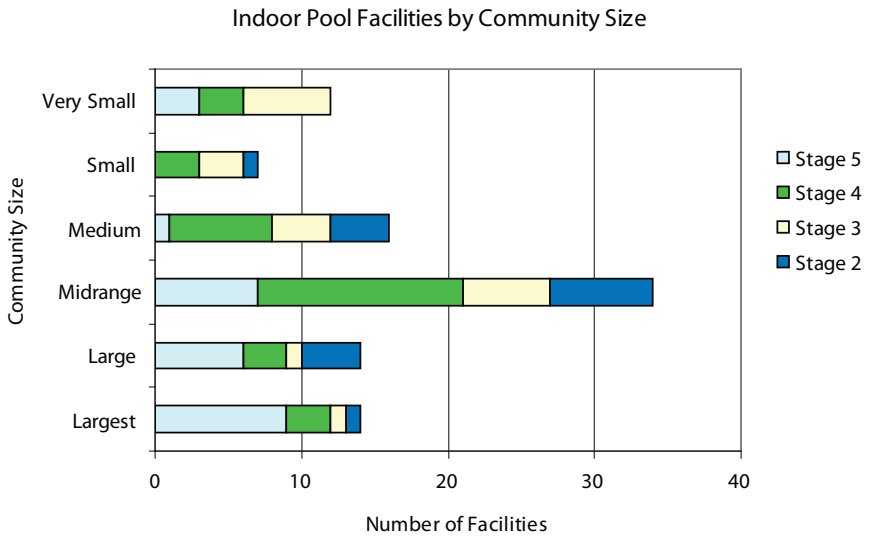
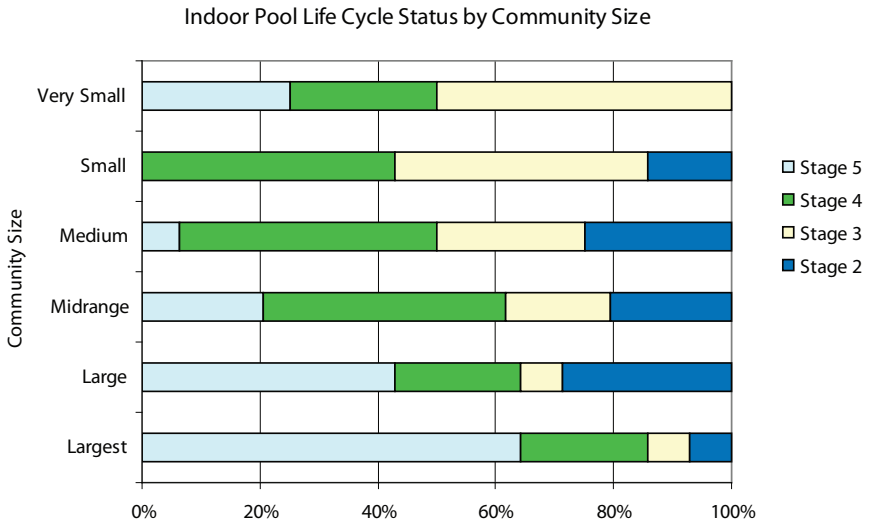


Figure 3.25b



3.26 Outdoor Pools and Community Size

The following figure summarizes the life cycle stages for Outdoor Pools in each of the six community sizes.

Figure 3.26a

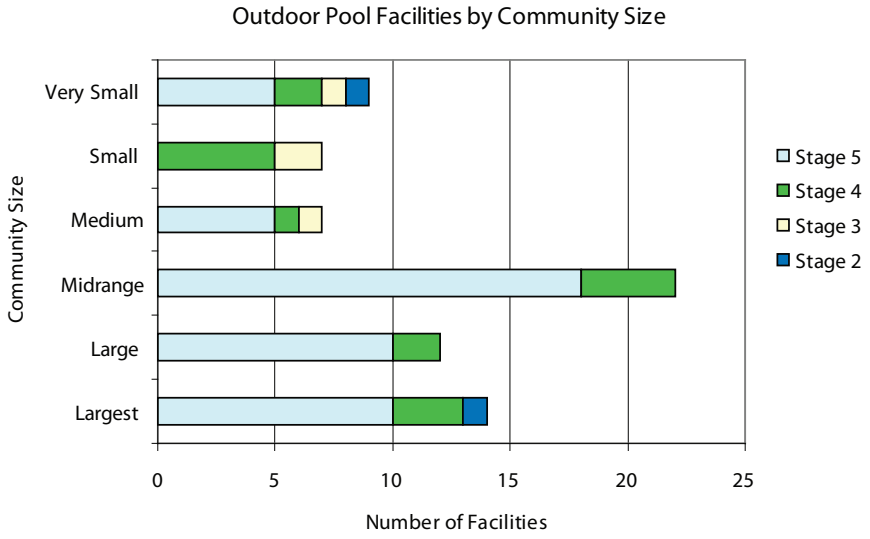
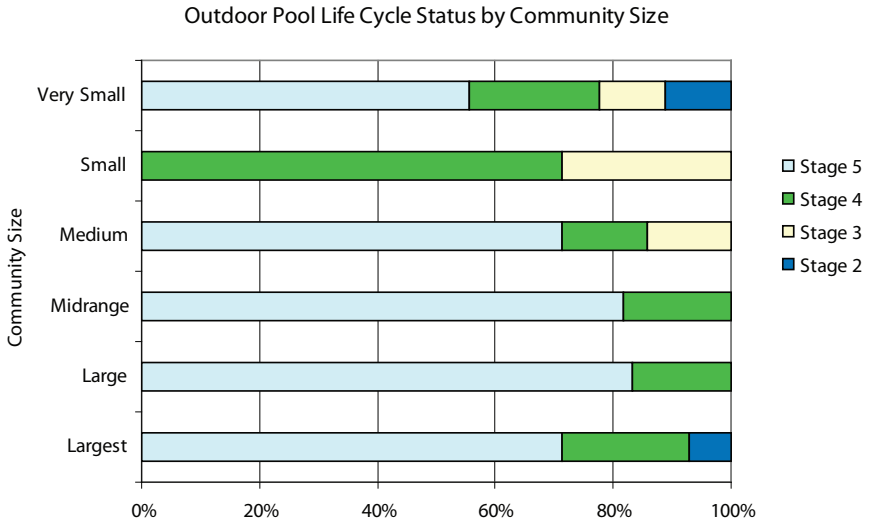


Figure 3.26b



3.27 Seniors Centres and Community Size

The following figure summarizes the life cycle stages for Seniors Centres in each of the six community sizes.

Figure 3.27a

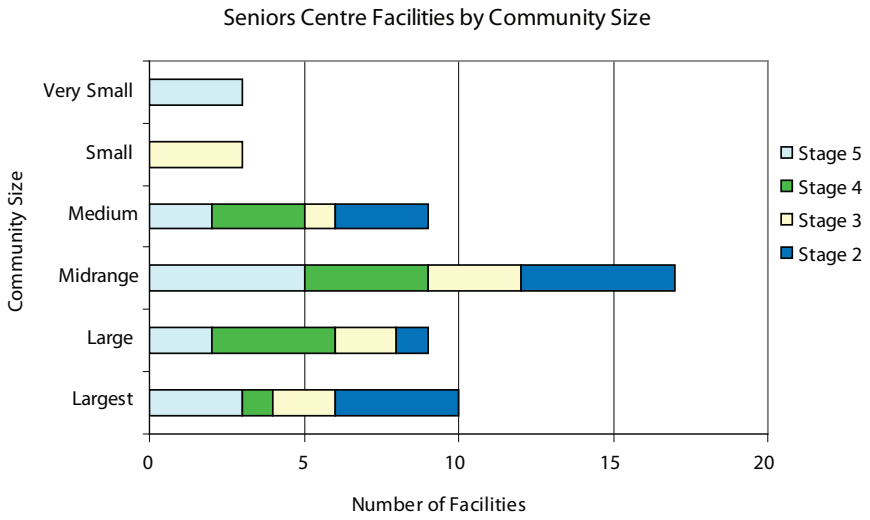
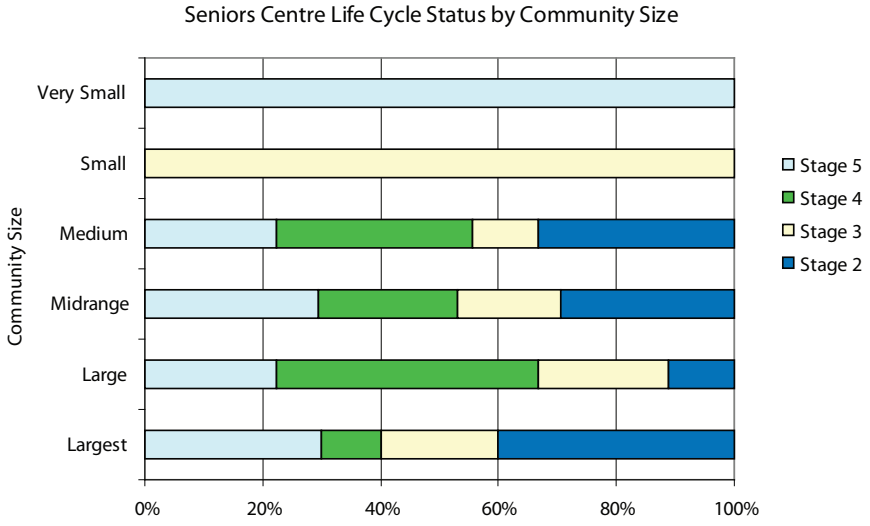


Figure 3.27b



3.28 Youth Centres and Community Size

The following figure summarizes the life cycle stages for Youth Centres in each of the six community sizes.

Figure 3.28a

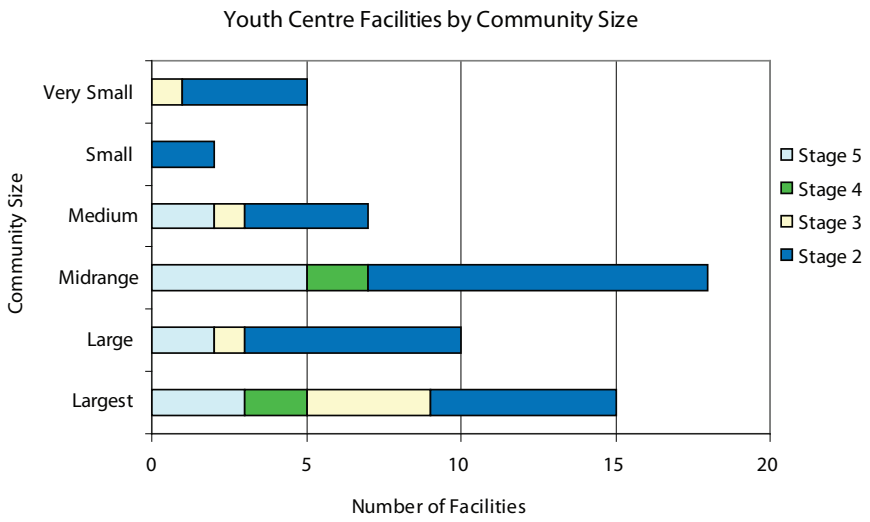
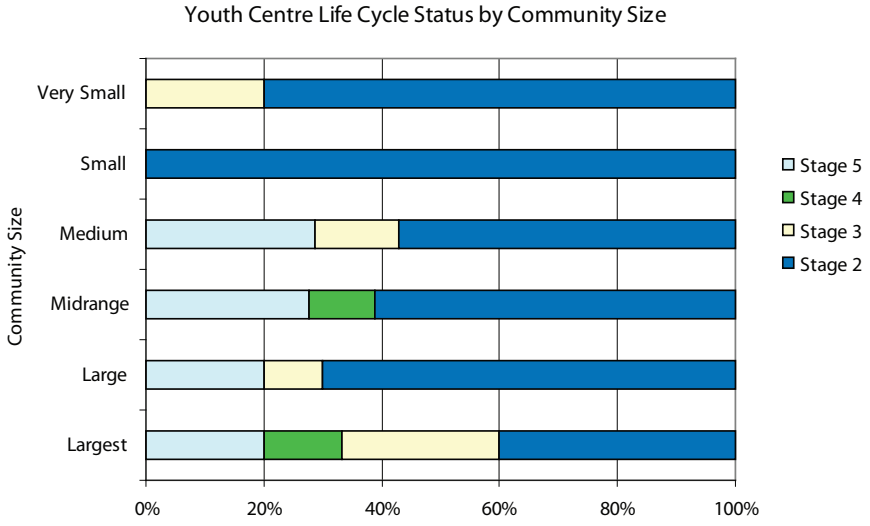


Figure 3.28b



3.29 Capital Investment

From the data collected, it is possible to extrapolate, in present dollar values, an order of magnitude replacement cost for all the public facilities contained in the database. This value is based upon an assumed blended average replacement cost of $5,010/m2 in **January 2008** dollars. (Refer to Appendix 8.1 for detailed calculations)

Table 3.29a

Facility Type	Gross Area (m^2)	Unit Rate ($/$m^2$)	Investment ($ 000,000)
Community Centres	596,485	5,220	3,114
Community Halls	62,733	4,000	251
Curling Facilities	167,034	4,790	800
Ice Arenas	671,590	4,575	3,073
Indoor Pools	367,208	6,075	2,231
Outdoor Pools	67,586	4,150	280
Seniors Centres	46,786	4,150	194
Youth Centres	33,182	4,290	142
Total	**2,012,664**		**10,085**

Based upon this analysis, the total capital investment for those facilities that reported facility area is approximately **$10,085,000,000**. Using the assumption that non reporting facilities are proportional in size[5], it is possible to extrapolate the approximate total capital investment for all facilities in the province which would be in the order of **$11,446,000,000**.

This analysis represents an approximate replacement value only and does not take into consideration factors such as the appropriateness or effectiveness of the current facilities. The intent of these figures is to determine an order of magnitude replacement value of the community assets these facilities represent. It is important to note that only the public facilities identified in the inventory are included in this analysis and thus the private facilities identified in Section 3.5 are not included.

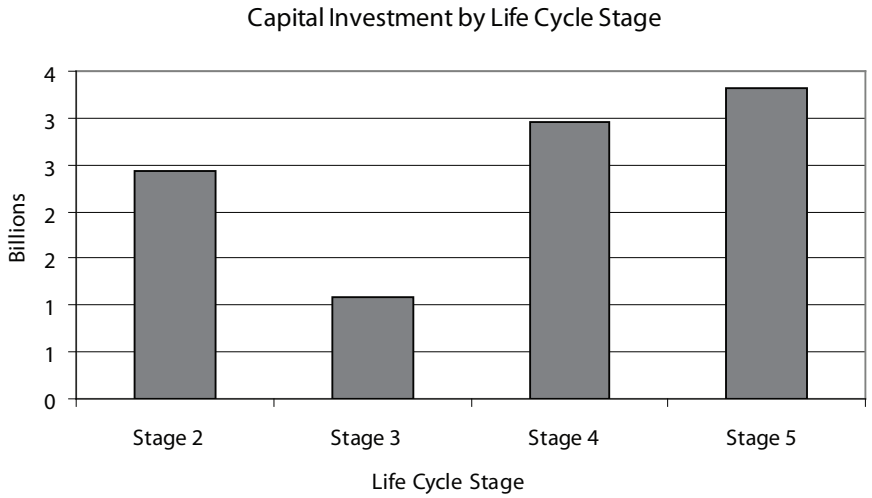
[6] Assumes average area for each of the facility types that did not report areas.

By **Life Cycle Stage**, the values breakdown as follows. Note that all values represent replacement cost in January 2008 dollars.

Table 3.29b

Life Cycle Stage	Area (m^2)	Replacement Value
Incomplete Data	52,600	$ 270,000,000
Stage 1 - Planned	n/a	n/a
Stage 2 – 1 to 14 years	474,850	$2,438,000,000
Stage 3 – 15 to 24 years	206,700	1,094,000,000
Stage 4 – 25 to 34 years	589,050	2,963,000,000
Stage 5 – 35 years and over	689,410	3,320,000,000
Total Approximate Replacement Value		**$10,085,000,000**

Figure 3.29c



This life cycle stage distribution of the total capital investment is significant in that a large portion of the total is with facilities that are in Stages 4 and 5, where significant rehabilitation or complete replacement may be required.

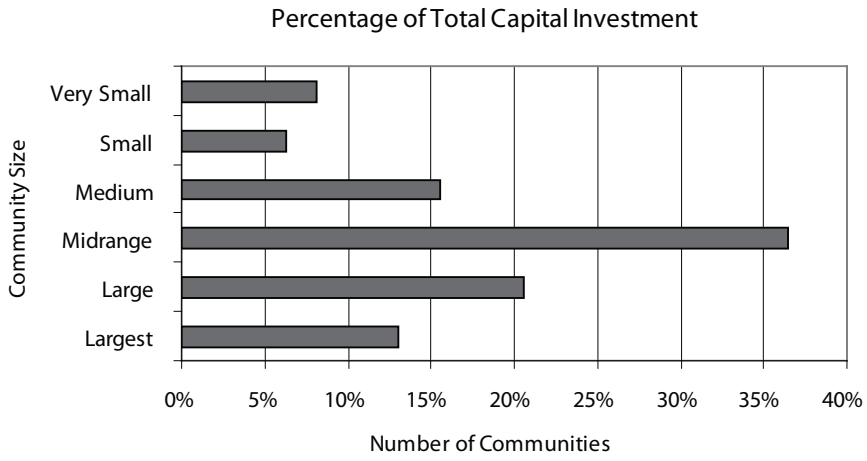
By **Community Size**, the values breakdown as follows. Note that all values represent replacement cost in January 2008 dollars.

Table 3.29d

Community Size	
Incomplete Data	1,227,000,000
Very Small	720,000,000
Small	555,000,000
Medium	1,377,000,000
Midrange	3,226,000,000
Large	1,825,000,000
Largest	1,155,000,000
Total Approximate Replacement Value	**$10,085,000,000**

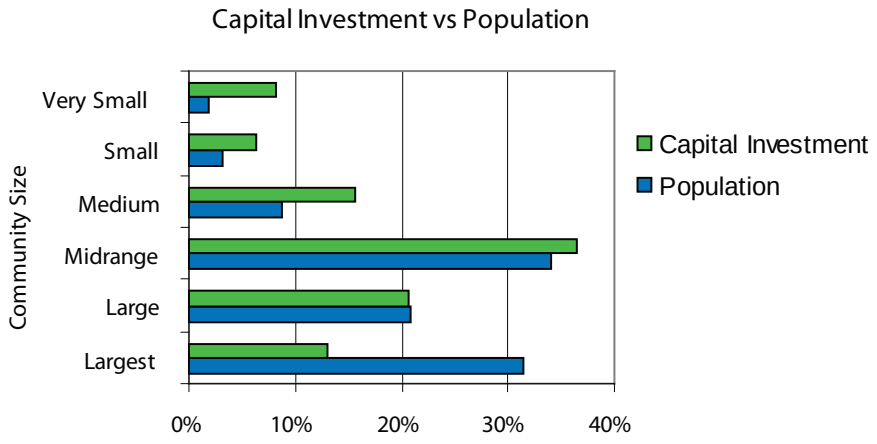
Represented as a percentage of the total Capital Investment, this data is broken down as per the following table.

Figure 3.29e



The following figure compares total capital Investment with total population by Community Size.

Figure 3.29f



This table clearly indicates that smaller communities are required to make a larger per capita investment in order to provide recreation facility infrastructure. The primary reason for this is likely due to the economies of scale that result in larger facilities. However, it could also indicate that the larger communities have failed to keep up with recent population growth. Either way, it confirms that smaller communities will have a greater challenge in dealing with recreation facility renewal issues.

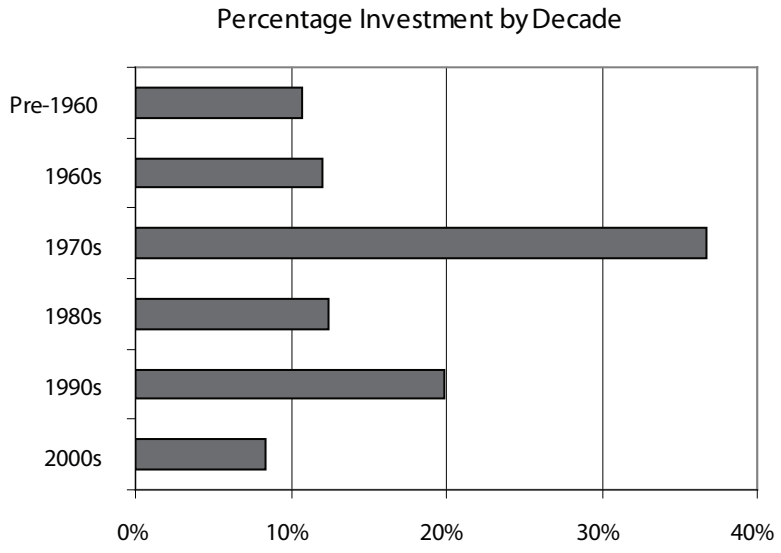
It is also relevant to review the Capital Investment over time. The following two tables breakdown the values according to the decade at which the facility was originally built. Note that all values represent replacement cost in January 2008 Dollars.

Table 3.29g

Decade	
Incomplete Data	270,000,000
Pre-1960	1,050,000,000
1960s	1,175000,000
1970s	3,605,000,000
1980s	1,215,000,000
1990s	1,955,000,000
2000s	815,000,000
Total Approximate Replacement Value	**$10,085,000,000**

Represented as a percentage of the total Capital Investment, this data is broken down as per the following figure.

Figure 3.29h



This table is significant in that it indicates a large component of the community investment in recreation infrastructure is nearing or at the point where significant rehabilitation or complete replacement is required. This issue will be explored in greater detail in the following section.

3.30 Funding Required

One of the objectives of the Community Recreation Facilities Assessment Study is to develop an understanding on the amount of funding that will be required to ensure that our current stock of community recreation facilities remain able to serve our communities. Although detailed facility assessments have not been completed at this time (refer to Section 4.0 of this report), it is possible to develop an approximation or "order of magnitude" estimate.

For the purposes of this analysis, the BCRPA followed a similar methodology utilized in a recent Parks and Recreation Ontario study[7]. Based upon that methodology and in conjunction with typical building assessment findings, we have made this assessment based upon the following assumptions:

- The objective is to determine an order of magnitude value for funding that will be required over the next decade.
- Newer facilities require less upgrading than older facilities.
- Facilities built prior to 1960 will be over fifty years old in 2010. It is reasonable to assume that the majority of these facilities will require replacement. Some may not, but those that do will likely require an increase in size and amenity type.
- Facilities built during the 1960s and 1970s will be between thirty and fifty years old by 2010. A typical facility of this age requires significant upgrading of major building systems such as mechanical systems, roofing, flooring ice slabs, pool systems, etc. For the purposes of this analysis, we have assumed a value of 50% of the replacement cost of the facility.
- Facilities built during the 1980s will be between twenty and thirty years of age in 2010. As in the previous category, a typical facility of this age requires significant upgrading of major building systems such as mechanical systems, roofing, flooring ice slabs, pool systems, etc. For the purposes of this analysis, we have assumed a value of 40% of the replacement cost of the facility.
- Newer facilities, built during the 1990s and 2000s will typically require less rehabilitation. For the purposes of this analysis, we have assumed a value of 5% of the replacement cost of the facility.
- The Cost Factors should be confirmed during the detailed facility assessment stage discussed in Section 4 of this report.
- This value is based upon an assumed blended average replacement cost of $5,010/m2 in **January 2008** dollars. (Refer to Appendix 8.1 for detailed calculations)

[7] Major Municipal Sport and Recreation Facility Infrastructure Inventory, Phases One and Two, Final Report, April 2006

On the basis of the previous assumptions, the order of magnitude funding required to rehabilitate the existing stock of facilities over the next decade is as outlined in the following table.

Table 3.30a Rehabilitation Funding Requirements

Facility Type	% of Total	Approximate Value ($)	Cost Factor	Funding Requirement ($)
Pre-1960	11%	1,050,000,000	100%	1,050,000,000
1960s	12%	1,175,000,000	50%	588,000,000
1970s	37%	3,605,000,000	50%	1,800,000,000
1980s	12%	1,215,000,000	40%	486,500,000
1990s	20%	1,955,000,000	5%	97,500,000
2000s	8%	815,000,000	5%	40,825,000
Total	**100%**	**10,085,000,000**		**4,065,000,000**

The totals outlined above account for only the eight existing indoor facilities types studied and does not account for outdoor infrastructure requirements.

As described in Section 3.3, the population of the province is expected to increase by approximately 500,000 people over the next ten years. This is an approximate 12% increase in Province wide population. If we assume that a proportional increase in indoor community recreation requirements, this would total an additional **$1.2B** in funding requirements. This assumes that the existing population is adequately served by the existing stock of facilities. By combining the two values, the funding requirement for new and rehabilitated recreation facilities is in the order of **$5.2B** over the next ten years (in January 2008 dollars).

For reference, the total value of indoor facility infrastructure (in January 2008 dollars) built during the decade of the 1990s was 1.9B and the total built from 1980 to the present is approximately $3.9B. Therefore, **the funding required is over 2 ½ times that which was spent by local governments in the 1990s** and a third more than what has been spent over the past 25 years. Given the fiscal challenges facing municipal governments across the Province, this is a very significant challenge.

3.31 Outdoor Infrastructure

This section provides additional analysis of the four outdoor infrastructure types:

- Parks
- Natural Areas
- Off Road Trails
- Playing Fields

The data for outdoor infrastructure was collected differently from indoor infrastructure in that the information was collected for systems of infrastructure rather than for specific parks, natural areas, trails or playing fields. For example, the database contains information on the total area of parks, not the area of each individual park in a community.

The analysis contained in this section provides a summary "snapshot" of relative amounts of outdoor infrastructure. Detailed summaries of the data that relates to these tables is contained in the appendix.

Table 3.31a Park Area Per Person

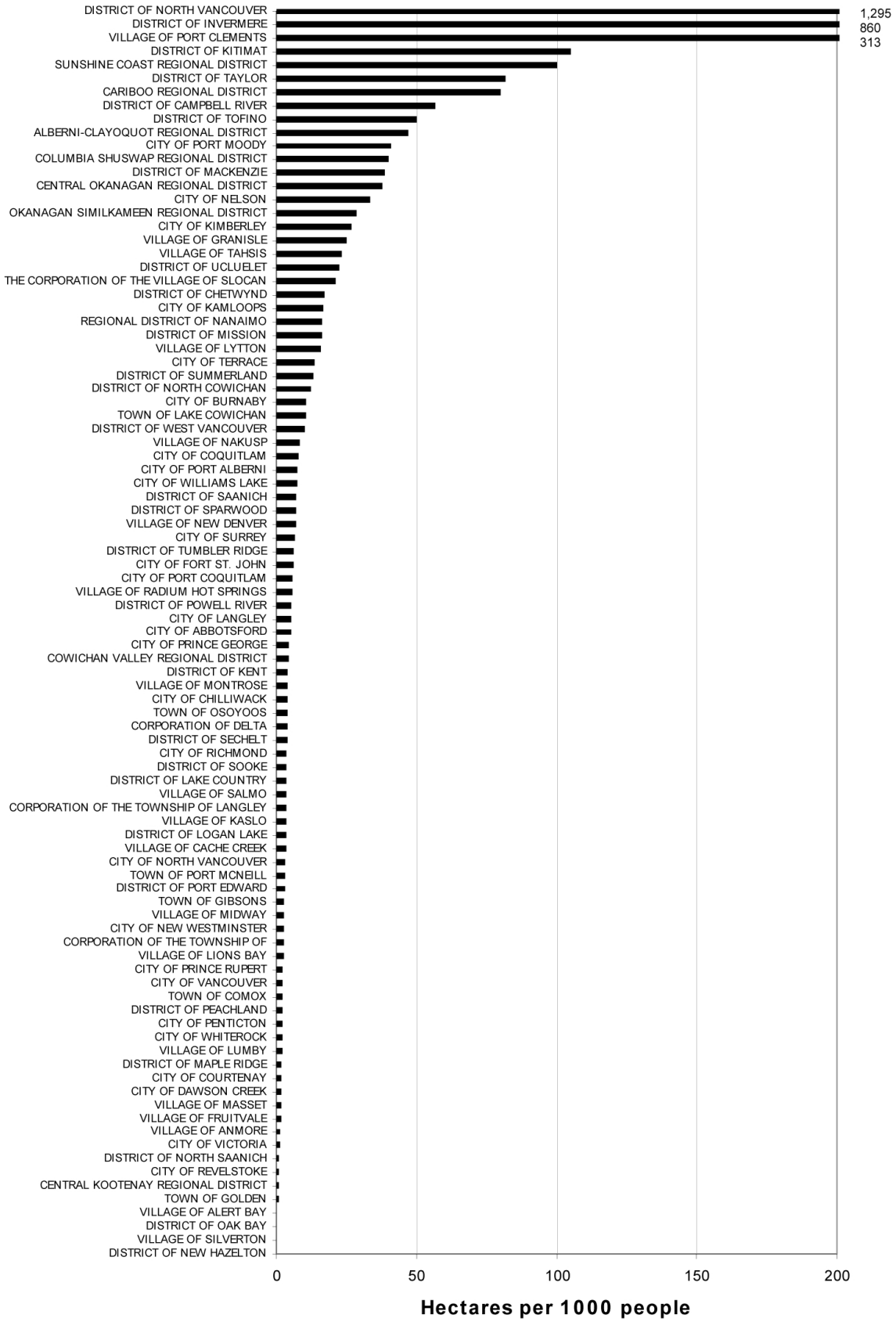


Table 3.31b Open Space Area Per Person

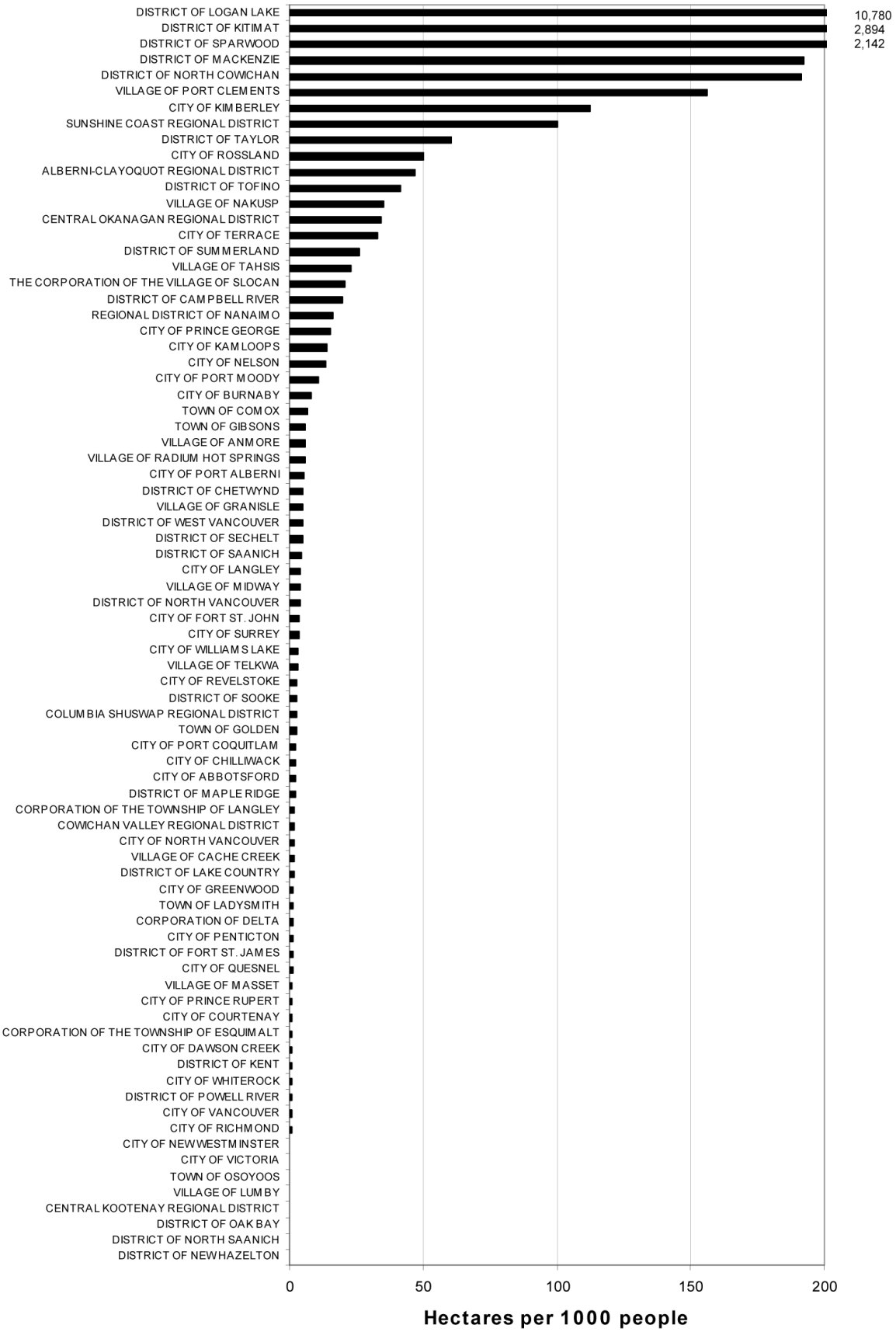
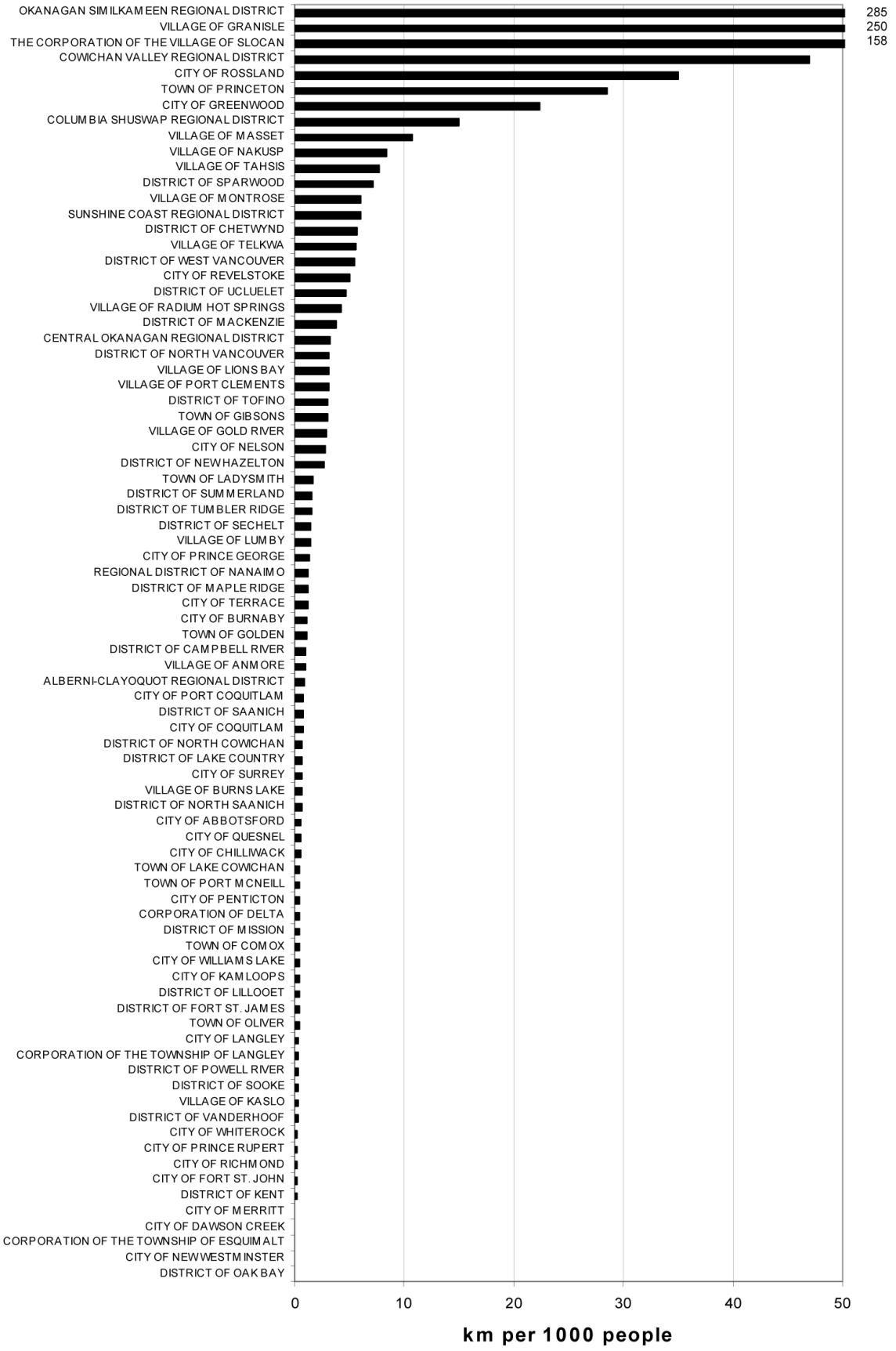


Table 3.31c Off Road Trail Length Per Person



Section 4

Facility Assessments

This component of the study is intended to provide additional evidence pertaining to the condition of indoor facilities in the Province. The intention is to assess the following eight indoor facility types at this time:

- Ice Arenas
- Indoor Pools
- Outdoor Pools
- Curling Facilities
- Community Centres
- Youth Centres
- Seniors Centres
- Community Halls

Outdoor facilities will be assessed at a later date. On-site facility reviews will be conducted by a multi-disciplinary consultant team consisting of an Architect, Structural Engineer, Mechanical Engineer and an Electrical Engineer. It is intended that a cross-section of typical facilities will be utilized that will then be extrapolated to make province wide projections.

The results of this component will provide further evidence in support of the need for facility infrastructure renewal and to provide a context for considering age as an indicator of facility condition. One of the desired data outcomes is an extrapolation of province-wide facility upgrade needs.

For context, it is important to note that this process follows quite closely the methodology utilized in Alberta by the Alberta Recreation and Parks Association. As of May 2006, they had visited and assessed over 130 facilities over 4 separate assessment phases. Through this process Alberta has gained tremendous insight into the condition and threats associated with their stock of municipal recreation facilities.

Section 5

Operating Cost Analysis

A future phase of the study will collect data on operating costs for municipal recreation facilities with the intent to provide a better understanding of the contribution municipalities make towards the typical day to day operations of facilities throughout the province.

Section 6

Research Methodologies For Determining Facility Access Standards

6.1 Introduction

One of the challenges identified by earlier phases of this work is determining what is needed in terms of equitable access to recreation facilities. It is generally perceived that not all areas of the province are equally or adequately served. As well, it has become clear that determining what an equitable model looks like is not a simple task. Therefore, this component of the study is focused on providing recommendations on future studies designed to explore questions related to equitable province-wide access to facility infrastructure. This component will involve a review of existing research, seeking input from recreation consultants to identify common processes they use to identify community facility needs as well as recommendations regarding future study options. The report titled **Investing in Healthy Communities through Recreation Infrastructure** (attached as Appendix 8.5) provides additional context for this section of the report.

6.2 Study Process

The study process included a review of the literature that studied the relationship of the physical environment of communities and physical activity and/or perceived health, telephone and in person interviews with specific recreation industry experts as well as a review of recent Parks and Recreation planning documents.

6.3 Methodology

Forty-three articles reviewed by Acadia University, Centre of Lifestyles Studies researchers in 2005 were reviewed and articles cited within this body of research that were relevant to this project were retrieved. In addition to these articles, a search by keyword, subject and researcher using the electronic databases PubMed and ScienceDirect was conducted to obtain articles published since 2005.

Recreational professionals were asked questions regarding facility planning research, the processes they use to identify community recreation facility needs and research topics for future studies to ensure equitable province-wide access to facility infrastructure so that British Columbians have the opportunity to live healthy, active lifestyles.

Planning documents that were representative of consultant's work regarding facility development for communities were reviewed. Documents included Greater Vernon Services Commission (Master Plan), North Vancouver Recreation Commission (2007 Recreation Facility Recommendations - draft), City of Richmond, Parks, Recreation and Cultural Services (Master Plan), Township of Langley, Parks and Recreation (Master Plan), City of Abbotsford, Parks, Recreation and Cultural Services (Master Plan), City of Yellowknife (Recreation Facilities Needs Assessment) and the City of Vancouver (Aquatic Services Review) were reviewed and processes used for facility planning were summarized.

6.4 Literature Search

General Comments

There is very little literature specific to methodologies for determining facility access standards. "Guidelines for Developing Public Recreation Facility Standards", developed by the Ministry of Culture and Recreation, Sports and Fitness Division of Ontario is perhaps the most frequently cited Canadian document regarding planning and developing public recreation facilities. The initial work for this reference material was done in 1959, distributed in 1965, updated in 1973 and again in the '80's. This comprehensive document was used as a blueprint for facility planning and development throughout Canada for many years.

Specific Research

Research specific to facility planning and trends in facilities is generally limited to U.S. colleges and universities. Over the past several decades, colleges and universities have invested hundreds of millions of dollars constructing recreation facilities on their campuses which have a significant impact on student involvement in recreational sports, but were generally built to maintain their competitiveness in the higher education marketplace. The National Intramural-Recreational Sports Association has established six planning principles to serve as a guide in the physical planning process for livable campuses. These planning principles have relevance to communities at large.

Canadian Research

Much of the Canadian research is published by the Canadian Fitness and Lifestyle Research Institute and the Institute's most recent studies have focused on the opportunities for physical activity of school aged children. None of the capacity studies explore the relationship of availability of public recreation facilities to being physically active.

Acadia University completed a literature review in 2005 for the Nova Scotia Provincial Department of Health Promotion & Protection. This document summarizes the existing research about the relationship between levels of physical activity and the proximity/accessibility of facilities that promote health through physical activity, namely sport and recreation facilities and makes recommendations for future

research specifically in Nova Scotia. The researchers reviewed 43 articles and found that the research focused overwhelmingly on environmental factors that influence walking rather than on forms of more vigorous exercise, including sport. Their recommendations for further research included using GIS to improve the quality of research specifically the degree of association between levels of physical activity and various attributes of the physical environment, including access to facilities. They noted that none of the 43 studies were done in Canada and that there was a need for more studies that use appropriate objective methods to examine the accessibility of sport and recreation facilities and their relationship to all levels of physical activity and health.

Provincial studies on facility inventories and physical assessment of the existing infrastructure has been completed by recreation organizations in most provinces and territories. The data contained in these studies highlight the age of community recreation infrastructure and the need for significant capital investment. A briefing note issued by the CPRA in 2005 highlighted the need for a comprehensive national infrastructure strategy and in 2006, at the Conference of Ministers responsible for Sport, Physical Activity and Recreation, Ministers noted that not since the 1967 Centennial Infrastructure Program has there been a comprehensive program dedicated to the design and construction of sport, physical activity and recreation facilities in Canada

Summary of Research

The majority of the most recent research focuses on the relationships of perceived health, perceived safety or friendliness of a community and/or to proximity to recreation facilities and physical activity. Most research indicates that design characteristics of neighbourhoods (well lit streets, bicycle and walking paths, access to physical activity facilities, and proximity and mix of destinations) have the greatest impact on physical activity.

6.5 Discussion with Professions

As part of this research, discussions were held with a wide range of individuals who brought a useful perspective to the issue.

General Comments

The discussion with professionals included the processes they use in developing master plans, recreation needs assessments, and strategic plans for communities. Comments included:

- they use a comprehensive, consultative process rather than standards when developing facility recommendations for a community,
- lack of recent, relevant and practical research in the area of facility planning,

- impact of regional facilities on local government's capital and operating budgets,
- duplication of competing facilities in neighbouring communities and,
- economic sustainability should be one of the determining factors in recreation facility development.

Facility Planning Process

The common elements of facility planning process included a review of the:

- current official community plans and strategic planning documents,
- strategic plans of local health organizations, school districts and other relevant organizations,
- census data and analysis of local demographics, projections and noting the implications of the data,
- inventory of recreation facilities (quantity and condition) as well as the capacity, use and subsidization rates. The inventory generally includes neighbouring communities and private facilities, and
- partnership agreements with other service providers.

In addition to:

- analyzing trends in recreation and noting implications relevant to the community,
- identifying best practices of refitting existing facilities and of new facilities in areas relevant to the study,
- conducting workshops involving members of the community at large that are representative of community as well as community and staff groups to identify the wants and needs of the community,
- economic analysis of the impact of maintaining existing facilities and/or building new facilities,
- conducting public surveys that gives a statistically reliable profile of activities, demand for services and facilities and willingness to financially support public amenities,
- facilitating user group, stakeholder and focus group meetings, and
- hosting public meetings that provide draft recommendations with an opportunity for feedback on the recommendations.

This community planning process for facility development is generally accepted by recreation professionals and municipal councils.

6.6 Next Steps

Based upon the analysis to date, it is evident that more collaborative research initiatives need to be undertaken.

There are significant gaps in the knowledge related to the investment made in facility infrastructure and healthy outcomes. More research that involves collaboration with public health, social and transportation planners in regards to province-wide equitable access to recreation facilities, facility planning and the impact on healthy outcomes is needed. The research needs to be practical and relevant to B.C. communities of all sizes with differing levels of resources.

In addition, more consultation is needed with planners and recreation staff in order to identify the planning tools for facility development needed by practitioners and to determine the type of research needed regarding the role of built environments and its impact on health outcomes, and who is best suited to conduct the research.

It should be noted that in the forward of the **Guidelines for Developing Public Recreation Facility Standards** it states that; "The planning, building, developing and operating of public recreation facilities are now the concern of all levels of government: municipal, regional, provincial and federal. This subject must become the concern of every citizen and is particularly urgent because of increased demand and costs for these facilities, especially at the operation level." Yet twenty plus years later, with the exception of intermittent federal and provincial grant programs for capital projects, providing recreation facilities continues to be the responsibility of local governments.

6.7 Literature Review

Following is a summary of the literature review undertaken for this component of the study.

Addy, C., Wilson, D., et al.: Associations of Perceived Social and Physical Environment Supports With Physical Activity and Walking Behavior. American Journal of Public Health 2004;94:3.
"We evaluated perceived social and environmental supports for physical activity and walking.....Respondents who had good street lighting; trusted their neighbors; and used private recreational facilities, parks, playgrounds, and sports fields were more likely to be regularly active."

Brennan Ramirez, L., et al.: Indicators of Activity Friendly Communities – An Evidence-Based Consensus Process. American Journal of Preventive Medicine 2006;31:6.
"Regular physical activity, even at modest intensities, is associated with many health benefits.....efforts are being targeted at the community level. Yet, advocates, community leaders, and researchers lack the tools needed to assess local barriers to and opportunities for more active, healthy lifestyles. Ten promising indicators of activity-friendly communities were identified: land use environment, access to exercise facilities, transportation environment, aesthetics, travel patterns, social environment, land use economics, institutional and organizational policies, and promotion. Collaborative, multidisciplinary approaches are underway to test, refine, and expand this initial list of indicators and to develop measures that communities, community leaders, and policymakers can use to design more activity-friendly community environments."

Craig, C., et al.: Exploring the Effect of the Environment on Physical Activity – A Study Examining Walking to Work. American Journal of Preventive Medicine 2002;23:2. (Canadian data)
"This paper provides a conceptual approach to understanding how the physical design of neighborhoods may influence behavior....on the relationship between walking to work and neighborhood design characteristics. With the exception of visual interest and aesthetics, each neighborhood characteristic contributed significantly to the environment score. The environment score was positively associated with walking to work, both with and without adjustment for degree of urbanization. Controlling for university education, income, and poverty did not influence these relationships. Given the need for research to guide environmental interventions, collaboration among public health practitioners, urban planners, and transportation researchers is essential to integrate knowledge across sectors."

Department of Health Promotion and Protection: Using GIS to Study Physical Environments That Promote Health Through Sport and Physical Activity. 2005.
"A comprehensive literature review that summarizes existing research and makes recommendations for future research."

Evenson, K., et al.: Girls' Perception of Neighborhood Factors on Physical Activity, Sedentary Behavior and BMI. Obesity 2007;15:2.
"The purpose of this study was to examine the association of perceived physical neighborhood factors with physical activity, sedentary behavior, and BMI among adolescent girls. The following neighborhood factors were associated with lower BMI: seeing walkers and bikers on neighborhood streets, not having a lot of crime in the neighborhood, and access to physical activity facilities...absolute contribution for the average girl for each of these factors was relatively small. The following neighborhood factors were associated with higher non-school moderate to vigorous physical activity: having

well-lit streets , having a lot of traffic in the neighborhood, having bicycle or walking trails in the neighborhood, and access to physical activity facilities....reporting more physically active destinations contributed the largest absolute amount to the average girl's moderate to vigorous physical activity."

Gordon-Larsen, P., Inequality in the Built Environment Underlies Key Health Disparities in Physical Activity and Obesity. Pediatrics 2006;117:2.
"Environmental factors are suggested to play a major role in physical activity and other obesity-related behaviors, yet there is no national research on the relationship between disparity in access to recreational facilities and additional impact on physical activity and overweight patterns in US adolescents. Reduced access to facilities is associated with decreased physical activity and increased overweight."

Hoehner, C., Perceived and Objective Environmental Measures and Physical Activity Among Urban Adults. American Journal of Preventive Medicine 2005;28:2.
"Enhancing community environments to support walking and bicycling serves as a promising approach to increase population levels of physical activity....Recreational activity was positively associated with perceived access to recreational facilities and objective measures of attractive features....These findings indicate that physical activities for transportation or recreational are associated with different perceived and objective environmental characteristics. Modifications to these features may change the physical activity behavior of residents exposed to them."

Kelly-Schwartz, A., et al.: Is Sprawl Unhealthy? A Multilevel Analysis of the Relationship of Metropolitan Sprawl to the Health of Individuals. Journal of Planning Education and Research, 2004;24:2.
"This article addressed the contention that urban sprawl influences general health through physical activity, obesity, and the presence of chronic disease....Using hierarchical modeling, the results indicate that even with strong controls for individual variables, residents of areas with more highly accessible and gridded street networks have higher health ratings....Measures of sprawl have no significant relationship to frequency of walking, body mass index, or diagnosis of various chronic diseases. However, those who live in areas with more highly connected street networks have higher rated health."

King, W. et al.: The Relationship Between Convenience of Destinations and Walking Levels in Older Women. American Journal of Health Promotion, 2003;18:1.
"The study examined the relationship between physical activity and convenience of destinations (park, trail, businesses, and services) within walking distance of the home and participants' perception of the quality of their neighborhood surroundings for walking, captured

with a global neighborhood 'walkability" rating....findings suggest that the ability to make utilitarian walking trips from home and the perception of having favorable neighborhood surroundings and walking are associated with increased physical activity levels for older women."

Klingerman, M., et al.: Association of Neighborhood Design and Recreation Environment Variables with Physical Activity and Body Mass Index in Adolescents. American Journal of Health Promotion, 2007;21:4.

"Purpose of the study was to examine associations of neighborhood walkability and recreation environment variables with physical activity in adolescents....walkability of a neighborhood, not proximity to public and private recreation facilities related to adolescents' physical activity, similar to findings for adults."

Kruger, J., Fitness Facilities for Adults Differences in Perceived Access and Usage. American Journal of Preventive Medicine, 2007;32:6.

"Perceived access to places for physical activity may play an important role in influencing physical activity behavior. Cross sectional analysis of 27,894 adults from 2002 National Health Interview Survey was performed to describe the characteristics of those who perceived that they have access to fitness facilities, and determine the prevalence of perceived access, reported use of fitness facilities, and reported barriers to the use of fitness facilities. Concluded that fitness facilities provide one option and having access to fitness facilities is significantly associated with physical activity levels among U.S. adults.

McCormack, G., Correlates of using Neighborhood Recreational Destinations in Physically Active Respondents. Journal of Physical Activity and Health, 2007;4:1.

"This study examines the relationships between the availability and use of recreational destinations and physical activity....associations between the density of free and pay-for-use recreational destinations, demographics, and use of free and pay-for-use recreational destinations within the neighborhood were examined, followed by associations with sufficient moderate and vigorous physical activity using generalized estimating equations. Increasing the density of neighborhood recreational destinations is associated wit the use of facilities and participation in sufficient levels of physical activities."

McCormack, G., The Relationship Between Destination Proximity, Destination Mix and Physical Activity Behaviors. Preventive Medicine, 2007; February 8.

"The presence and mix of destinations is an important aspect of the built environment that may encourage or discourage physical activity. Access to post boxes, bus stops, convenience stores, shopping malls and transit stations within 400 m and schools, transit stations, convenience stores and shopping malls within 1500 m was associated with participation in regular transportation related walking. Proximity

and mix of destinations appears strongly associated with walking for transport, but not walking for recreation or vigorous activity. Increasing the diversity of destinations may contribute to adults doing more transport related walking and achieving recommended levels of physical activity."

Ministry of Culture and Recreation, Sports and Fitness Division, Province of Ontario. Guidelines for Developing Public Recreation Facility Standards.
"A manual for those who plan, build or develop public recreational facilities in Ontario....Standards are, at best guides for planning. No one plan or one standard can be applied to every community. They must be adapted to locally expressed needs, to local values and interests and to local financial capabilities....planning, building, developing and operating of public recreation facilities are now the concern of all levels of government."

Nelson, M., et al.: Adolescent Physical Activity and Sedentary Behavior - Patterning and Long Term Maintenance. American Journal of Preventive Medicine 2005;28:3.
"Little is known about physical activity and sedentary behavior patterning or its impact on long-term physical activity sustainability, particularly during the critical transition from adolescence to adulthood.....decline in physical activity was most dramatic with those involved in video gaming....providing insights into where to target effective intervention strategies that promote sustainable physical activity behaviors."

Nelson, M., et al.: Built and Social Environments – Associations with Adolescent Overweight and Activity. American Journal of Preventive Medicine 2006;31:2.
"...findings demonstrate disadvantageous associations between specific rural and urban environments and behavior, illustrating important effects of the neighborhood on health and the inherent complexity of assessing residential landscapes across the United States. Adolescents living in older suburban areas were more likely to be physically active than residents of new suburbs....those living in low socio-economic status, inner city neighborhoods were more likely to be active, though not significantly so, compared to mixed-race urban residents."

Roemmich, J., et al.: Association of Access to Parks and Recreational Facilities with Physical Activity of Young Children. Preventive Medicine 2006;43:6.
"To determine associations of the neighborhood and home television environments with young children's physical activity. Neighborhoods with increased proximity between homes and a greater proportion of park area are associated with greater physical activity in young children."

Sallis, J., Hovell, M., et al.: Distance Between Homes and Exercise Facilities Related To Frequency of Exercise Among San Diego Residents. Public Health Reports 1990;105:2
"Although personal determinants of exercise behavior have been studied extensively, few investigators have examined the influence of the physical environment on exercise habits.....Subjects who reported engaging in three or more exercise sessions per week reported a statistically greater density of pay facilities near their homes than did those who reported no exercise, after controlling for age, education, and income. The finding suggests an association between proximity of exercise facilities and frequency of exercise."

Scott, M. et al.: Comparing Perceived and Objectively Measured Access to Recreation Facilities as Predictors of Physical Activity in Adolescent Girls. Journal of Urban Health 2007;84:3
"This study examined the relationship between the number and proximity of objectively measured neighborhood physical activity facilities and respondents' perceptions and compared objective and self-report measures as predictors of physical activity....6th grade girls reported whether or not basketball courts, golf courses, marital arts studios, playing fields, tracks, skating rinks, swimming pools, tennis courts and dance/gymnastic clubs were easily accessible. The number of facilities within a half mile of girls' homes strongly predicted the perception of easy access to 7 of the 9 facility types. Both individual facility perceptions and the total number of facilities perceived were associated with increased physical activity....results suggest that raising the profile of existing facilities may help increase physical activity among adolescent girls."

Turman, J., Morrison, T., Gonsoulin, S., Planning Principles for College and University Recreation Facilities. NIRSA 2004"
"The research indicates that student involvement in recreational sports programs, facilities, and services plays a significant role in recruiting new students, supporting the learning environment, integrating students into the social community of campus, affiliating them with the institution, and enhancing a number of student educational and developmental outcomes....The NIRSA has established six planning principles to assist with, and serve as, a guide in the physical planning process for a livable campus."

Van Lenthe, F., et al.: Neighbourhood Inequalities in Physical Inactivity: The role of Neighbourhood Attractiveness, Proximity to Local Facilities and Safety in the Netherlands. Social Science & Medicine 2005;60:4.
"We investigated the association between the neighbourhood socioeconomic environment and physical inactivity, and explored the contribution of neighbourhood characteristics to this association.... compared to those living in the most advantaged neighbourhoods, residents living in the quartile of socio-economically most disadvantaged neighbourhoods were more likely to walk or cycle to shops or work, but less likely to walk, cycle or garden in leisure time and less likely to participate in sports activities.

Weir, L., et al.: Parents' Perceptions of Neighborhood Safety and Children's Physical Activity. Preventive Medicine 2006;43:3.
"The obesity epidemic disproportionately affects minority and poor children. In the inner city population, children's physical activity levels were negatively correlated with parental anxiety about neighborhood safety. While these concerns may not entirely explain the discrepancy in activity levels between inner city and suburban children, a safe environment is crucial to increasing opportunities for physical activity."

Section 7

Summary

This report presents additional analysis related to the Community Recreation Facilities Assessment Study. It provides cross comparison between the various study phases and more detailed analysis than presented earlier.

7.1 Observations

Based upon the analysis contained in this report, we can make the following observations about the state of municipal recreation infrastructure in the Province of British Columbia.

- The Municipal and Regional District level Governments hold a significant stock of recreation infrastructure and this infrastructure plays a vital role in building and maintaining healthy communities
- Much of this infrastructure is aging and will require significant rehabilitation or replacement. As well, ongoing population growth will place even greater demand for these facilities as well as for new facilities.
- The level of spending requirements anticipated by this work suggests that a significant policy shift is required to dramatically increase funding levels.
- It is likely that municipalities will require funding assistance in order to adequately respond to this challenge.
- Smaller communities face a greater per capita challenge than larger communities.
- Detailed Assessment and further analysis is warranted into the actual physical condition of municipal recreation facilities.
- Ongoing efforts at the Provincial and Federal level aimed at developing infrastructure renewal strategies should be stressed as being of vital importance to the ongoing health of our communities.

Appendices

Appendix 1

Capital Investment

Following is a detailed summary of the calculation utilized in Section 3.29.

Table 8.1a Unit Rate Assumptions

	A	B	C	D
Facility Type	**Building Unit Rate ($/m²)**	**Site Development Costs (10%)**	**Soft Costs (30% of total of A + B)**	**Total ($/m²)**
Community Centres	3650	365	1,205	5,220
Community Halls	2800	280	924	4,004
Curling Facilities	3350	335	1,106	4,791
Ice Arenas	3200	320	1,056	4,576
Indoor Pools	4250	425	1,403	6,078
Outdoor Pools	2900	290	957	4,147
Seniors Centres	2900	290	957	4,147
Youth Centres	3000	300	990	4,290
Total	**2,012,664**		**10,085**	**10,085**

For simplicity, the values of Column D where rounded as shown in the table below.

Table 8.1b

Facility Type	Gross Area (m2)	Unit Rate ($/m2)	Investment ($ 000,000)
Community Centres	596,485	5,220	3,114
Community Halls	62,733	4,000	251
Curling Facilities	167,034	4,790	800
Ice Arenas	671,590	4,575	3,073
Indoor Pools	367,208	6,075	2,231
Outdoor Pools	67,586	4,150	280
Seniors Centres	46,786	4,150	194
Youth Centres	33,182	4,290	142
Total	**2,012,664**		**10,085**

The extrapolation from reporting facilities to total facilities utilizes the same ratio as Section 3.10. On this basis, the total replacement cost, in January 2008 dollars is **$11,446,000,000**.

Appendix 2

Park Area

Following is a summary of the park area in those communities for which data is complete in the inventory.

Community	Population reported	Hectares/ 1000 people
Alberni-Clayoquot Regional District	32000	46.88
Cariboo Regional District	10000	80.00
Central Kootenay Regional District	15000	0.80
Central Okanagan Regional District	30000	38.00
City Of Abbotsford	120000	5.10
City Of Burnaby	205955	10.69
City Of Chilliwack	75000	3.89
City Of Coquitlam	112000	8.04
City Of Courtenay	60000	1.88
City Of Dawson Creek	60000	1.80
City Of Fort St. John	35000	5.97
City Of Kamloops	80000	16.88
City Of Kimberley	10000	26.60
City Of Langley	24500	5.10
City Of Nelson	15000	33.33
City Of New Westminster	53000	2.67
City Of North Vancouver	45000	2.96
City Of Penticton	33000	2.09
City Of Port Alberni	30000	7.50
City Of Port Coquitlam	45000	5.92
City Of Port Moody	25000	41.07
City Of Prince George	80000	4.40
City Of Prince Rupert	14000	2.39
City Of Revelstoke	8000	0.88
City Of Richmond	160000	3.65
City Of Surrey	370000	6.49
City Of Terrace	16000	13.63
City Of Vancouver	550000	2.35

City Of Victoria	200000	1.21
City Of Whiterock	18000	2.00
City Of Williams Lake	30000	7.33
Columbia Shuswap Regional District	20000	40.00
Corporation Of Delta	101000	3.81
Corporation Of The Township Of Esquimalt	16000	2.53
Corporation Of The Township Of Langley	82000	3.41
Cowichan Valley Regional District	75000	4.39
District Of Campbell River	30000	56.67
District Of Chetwynd	6000	17.00
District Of Invermere	10000	860.30
District Of Kent	5000	4.00
District Of Kitimat	10300	105.24
District Of Lake Country	10000	3.60
District Of Logan Lake	3000	3.33
District Of Mackenzie	5200	38.46
District Of Maple Ridge	80000	1.94
District Of Mission	45000	16.11
District Of New Hazelton	750	0.03
District Of North Cowichan	28000	12.21
District Of North Saanich	40000	1.08
District Of North Vancouver	850	1294.59
District Of Oak Bay	250000	0.24
District Of Peachland	5000	2.23
District Of Port Edward	700	2.86
District Of Powell River	20000	5.32
District Of Saanich	105000	7.14
District Of Sechelt	21000	3.81
District Of Sooke	12000	3.60
District Of Sparwood	4200	7.14
District Of Summerland	12500	13.04
District Of Taylor	2000	81.95
District Of Tofino	3000	50.00
District Of Tumbler Ridge	320	6.25
District Of Ucluelet	1800	22.22
District Of West Vancouver	43660	10.26
Okanagan Similkameen Regional District	5000	28.38
Regional District Of Nanaimo	40000	16.38
Sunshine Coast Regional District	5000	100.00

The Corporation Of The Village Of Slocan	335	20.90
Town Of Comox	12000	2.33
Town Of Gibsons	4000	2.83
Town Of Golden	8000	0.68
Town Of Lake Cowichan	6000	10.33
Town Of Osoyoos	6000	3.83
Town Of Port Mcneill	4000	2.90
Village Of Alert Bay	1460	0.29
Village Of Anmore	1500	1.35
Village Of Cache Creek	1200	3.33
Village Of Fruitvale	5000	1.62
Village Of Granisle	400	25.00
Village Of Kaslo	3000	3.33
Village Of Lions Bay	1600	2.50
Village Of Lumby	5000	2.00
Village Of Lytton	320	15.63
Village Of Masset	927	1.62
Village Of Midway	2500	2.80
Village Of Montrose	1000	4.00
Village Of Nakusp	3000	8.33
Village Of New Denver	579	6.91
Village Of Port Clements	800	312.50
Village Of Radium Hot Springs	705	5.67
Village Of Salmo	1162	3.44
Village Of Silverton	2000	0.20
Village Of Tahsis	650	23.08

Appendix 3

Natural Areas

Following is a summary of the natural area in those communities for which data is complete in the inventory.

Community	Population reported	Hectares/ 1000 people
Alberni-Clayoquot Regional District	32000	46.88
Central Kootenay Regional District	15000	0.27
Central Okanagan Regional District	30000	34.40
City Of Abbotsford	120000	2.24
City Of Burnaby	205955	8.22
City Of Chilliwack	75000	2.31
City Of Courtenay	60000	1.01
City Of Dawson Creek	60000	0.81
City Of Fort St. John	35000	3.80
City Of Greenwood	670	1.49
City Of Kamloops	80000	14.01
City Of Kimberley	10000	112.50
City Of Langley	24500	4.08
City Of Nelson	15000	13.33
City Of New Westminster	53000	0.37
City Of North Vancouver	45000	1.73
City Of Penticton	33000	1.21
City Of Port Alberni	30000	5.30
City Of Port Coquitlam	45000	2.41
City Of Port Moody	25000	10.98
City Of Prince George	80000	15.28
City Of Prince Rupert	14000	1.06
City Of Quesnel	25000	1.20
City Of Revelstoke	8000	2.75
City Of Richmond	160000	0.68
City Of Rossland	4000	50.00
City Of Surrey	370000	3.75
City Of Terrace	16000	33.06

City Of Vancouver	550000	0.68
City Of Victoria	200000	0.35
City Of Whiterock	18000	0.72
City Of Williams Lake	30000	3.33
Columbia Shuswap Regional District	20000	2.50
Corporation Of Delta	101000	1.30
Corporation Of The Township Of Esquimalt	16000	0.88
Corporation Of The Township Of Langley	82000	1.98
Cowichan Valley Regional District	75000	1.80
District Of Campbell River	30000	19.67
District Of Chetwynd	6000	5.00
District Of Fort St. James	5000	1.20
District Of Kent	5000	0.80
District Of Kitimat	10300	2893.88
District Of Lake Country	10000	1.60
District Of Logan Lake	3000	10780.67
District Of Mackenzie	5200	192.31
District Of Maple Ridge	80000	2.21
District Of New Hazelton	750	0.03
District Of North Cowichan	28000	191.21
District Of North Saanich	40000	0.13
District Of North Vancouver	85000	3.96
District Of Oak Bay	250000	0.15
District Of Powell River	20000	0.71
District Of Saanich	105000	4.67
District Of Sechelt	21000	4.76
District Of Sooke	12000	2.58
District Of Sparwood	4200	2142.86
District Of Summerland	12500	26.40
District Of Taylor	2000	60.71
District Of Tofino	3000	41.67
District Of West Vancouver	43660	4.99
Regional District Of Nanaimo	40000	16.25
Sunshine Coast Regional District	5000	100.00
The Corporation Of The Village Of Slocan	335	20.90
Town Of Comox	12000	6.67
Town Of Gibsons	4000	6.07
Town Of Golden	8000	2.50
Town Of Ladysmith	14600	1.37

Town Of Osoyoos	6000	0.33
Village Of Anmore	1500	5.93
Village Of Cache Creek	1200	1.67
Village Of Granisle	400	5.00
Village Of Lumby	5000	0.30
Village Of Masset	927	1.08
Village Of Midway	2500	4.00
Village Of Nakusp	3000	35.00
Village Of Port Clements	800	156.25
Village Of Radium Hot Springs	705	5.67
Village Of Tahsis	650	23.08
Village Of Telkwa	1300	3.08

Appendix 4

Off Road Trails

Following is a summary of the Off Road Trails in those communities for which data is complete in the inventory.

Community	Population reported	km / 1000 people
Alberni-Clayoquot Regional District	32000	0.94
Central Okanagan Regional District	30000	3.28
City Of Abbotsford	120000	0.60
City Of Burnaby	205955	1.13
City Of Chilliwack	75000	0.51
City Of Coquitlam	112000	0.76
City Of Dawson Creek	60000	0.11
City Of Fort St. John	35000	0.24
City Of Greenwood	670	22.39
City Of Kamloops	80000	0.40
City Of Langley	24500	0.37
City Of Merritt	12000	0.17
City Of Nelson	15000	2.80
City Of New Westminster	53000	0.06
City Of Penticton	33000	0.48
City Of Port Coquitlam	45000	0.82
City Of Prince George	80000	1.34
City Of Prince Rupert	14000	0.26
City Of Quesnel	25000	0.60
City Of Revelstoke	8000	5.00
City Of Richmond	160000	0.26
City Of Rossland	4000	35.00
City Of Surrey	370000	0.63
City Of Terrace	16000	1.19
City Of Whiterock	18000	0.28
City Of Williams Lake	30000	0.42
Columbia Shuswap Regional District	20000	15.00
Corporation Of Delta	101000	0.47

Corporation Of The Township Of Esquimalt	16000	0.06
Corporation Of The Township Of Langley	82000	0.37
Cowichan Valley Regional District	75000	47.00
District Of Campbell River	30000	1.04
District Of Chetwynd	6000	5.67
District Of Fort St. James	5000	0.40
District Of Kent	5000	0.20
District Of Lake Country	10000	0.70
District Of Lillooet	5000	0.40
District Of Mackenzie	5200	3.85
District Of Maple Ridge	80000	1.25
District Of Mission	45000	0.46
District Of New Hazelton	750	2.67
District Of North Cowichan	28000	0.71
District Of North Saanich	40000	0.63
District Of North Vancouver	85000	3.17
District Of Oak Bay	250000	0.03
District Of Powell River	20000	0.35
District Of Saanich	105000	0.76
District Of Sechelt	21000	1.43
District Of Sooke	12000	0.33
District Of Sparwood	4200	7.14
District Of Summerland	12500	1.60
District Of Tofino	3000	3.00
District Of Tumbler Ridge	3200	1.56
District Of Ucluelet	1800	4.72
District Of Vanderhoof	10000	0.30
District Of West Vancouver	43660	5.52
Okanagan Similkameen Regional District	5000	284.84
Regional District Of Nanaimo	40000	1.25
Sunshine Coast Regional District	5000	6.00
The Corporation Of The Village Of Slocan	335	158.21
Town Of Comox	12000	0.42
Town Of Gibsons	4000	3.00
Town Of Golden	8000	1.13

Town Of Ladysmith	14600	1.71
Town Of Lake Cowichan	6000	0.50
Town Of Oliver	45000	0.40
Town Of Port Mcneill	4000	0.50
Town Of Princeton	7000	28.57
Village Of Anmore	1500	1.00
Village Of Burns Lake	8000	0.63
Village Of Gold River	1350	2.96
Village Of Granisle	400	250.00
Village Of Kaslo	3000	0.33
Village Of Lions Bay	1600	3.13
Village Of Lumby	5000	1.40
Village Of Masset	927	10.79
Village Of Montrose	1000	6.00
Village Of Nakusp	3000	8.33
Village Of Port Clements	800	3.13
Village Of Radium Hot Springs	705	4.26
Village Of Tahsis	650	7.69
Village Of Telkwa	1300	5.54

Appendix 5

Reference Document

November 2005 report titled **Investing in Healthy Communities through Recreation Infrastructure**, which was a submission made to the BC Ministry of Tourism, Sport and the Arts.

A Time for Renewal

Just as healthy living and environmental consideration require a new focus and on-going commitment, recreation infrastructure urgently needs on-going investment. With sustainable maintenance and funding for renewal, recreation facilities are one of the most cost-effective prescriptions for good health and engaged citizens.

For More Information

Access the complete Facilities Assessment Study at:

www.bcrpa.bc.ca

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