



Validation Audit

BC Recreation & Parks Association Community Recreation Facilities Assessment Study

July 2008





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.

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Section 1

Executive Summary

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In early-April 2008 the BC Recreation & Parks Association (“BCRPA”) commissioned an assessment of a sample of recreation facilities in the Lower Mainland Region (the “Validation Sample”). The primary purpose of the assessment was to validate some theoretical assumptions about the condition of the recreation facilities (the “Validation Study”), to continue to build upon the information gathered, and further the objectives of the existing Recreation Facilities Assessment Study (the “Master Study”).

1.1 Background & Context

Over the past few years, BCRPA has been engaged in a Recreation Facilities Assessment Study (hereinafter referred to as the “Master Study”), which has involved four phases of data collection and data analysis.

- Phase I, 2003** Preparation of an inventory of ice arenas, curling facilities, indoor & outdoor pools.
- Phase II, 2005** Preparation of an inventory of parks, open spaces, and playing fields.
- Phase III, 2005** Preparation of an inventory of community centres, community halls, youth centres and seniors’ centres.
- Phase IV, 2008** Analysis of the findings of the previous three phases of the Master Study.

BCRPA is currently finalizing Phase IV of the Master Study to incorporate some of the on-site condition assessments at a sample of the recreation inventory.

1.2 Terminology & Definitions

This report makes use of a variety of terms when conveying concepts and relationships. A summary of definitions is therefore included in Part 2 of this report.

1.3 Purpose of the Validation Study

The Validation Study has been identified as having the following four primary objectives.



- To gather additional technical information for the purpose of validating existing lifecycle assumptions about the general condition of the recreation facility infrastructure in British Columbia.
- To derive an order of magnitude estimate of provincial recreation infrastructure re-investment and re-capitalization costs, which will be incorporated into an advocacy platform regarding provincial funding of the infrastructure deficit.
- To derive a Condition Index to enable comparative analysis of each building in a statistically representative sample of recreation facilities.
- To extrapolate the findings of the sample of buildings across the provincial portfolio in order to derive a defensible estimate of the infrastructure deficit.

These objectives are pursued through the application of a rigorous methodology, which is outlined in Part 3 of this report.

1.4 Scope of the Validation Work

The Validation Study has been limited to the following sub-set of the larger inventory of 855 recreation facilities in British Columbia.

Recreation Region	Lower Mainland, BC (The facilities visited represent a portion of the Region between Hope and Squamish.)
Recreation Facilities	16
Recreation Buildings	34 (3.97% of the population)
Types of in-scope buildings	16 community centre buildings 5 indoor pool buildings 1 community hall building 1 curling facility building 3 ice arena buildings 2 senior centre buildings 3 youth centre buildings 0 outdoor swimming pools
Systems within each Building	Structural, enclosure, electrical, mechanical, and finishes
Data collected on each system	System summaries System concerns System recommendations System condition ranking
Organization of data	“Catch-up” costs – deferred maintenance “Keep-up” costs – projected renewals “Get-ahead” costs – functional obsolescence
Indices	FCI = ‘catch-up’ costs (physical deterioration) EFCI = ‘keep-up’ costs (physical deterioration) FNI = ‘get-ahead’ costs (functional obsolescence)

A detailed explanation of the methodology, including definitions of the different types of indices (FCI, EFCI and FNI), are included in Part 3 of this report.

1.5 Organization of the Validation Report

The Validation Study is organized into the following four sections:

A. Executive Summary	This includes an outline of the methods and assumptions in the Validation Study and spreadsheets summarizing the data.
B. Data Distributions	The section includes several reports on that compare the condition of the different buildings in the validation sample.
C. Facility Reports	This section contains the reports for each individual Facility.
D. Appendices	This section contains sample photographs of observation deficiencies and other general reference information.

1.6 Primary “Forces of Retirement”

The Validation Study is founded on the principle that recreation facilities are subject to the impact of the following two primary “forces of retirement”, which must be understood and analyzed using different means, methods and techniques.

- **Physical Deterioration.** The degradation of the buildings and their components as a result of the action of the elements, wear & tear, and other environmental factors. The Facility Condition Index (FCI) and the Extended Facility Condition Index (EFCI) quantify the physical condition of the buildings. Both these indices are grounded in empirical data and are subject to traditional engineering assessment methodologies.
- **Functional Obsolescence.** The loss in qualitative and quantitative utility of the buildings and their interior spaces as result of factors such as recreation programming changes, new sports regulations and community growth. The extent of functional obsolescence is quantified by the Facility Needs Index (FNI) and is based primarily on theoretical data. The methodology to calculate functional obsolescence and functional multipliers has been developed as a result of professional collaboration between consultants to the project.

For additional clarity, a building may be deemed to be in relatively good physical condition but is functionally obsolete since it does not meet the requirements of the space users. Similarly, a building may satisfy the functional requirements of the day but the physical components could be significantly deteriorated.



1.7 Summary of Validation Findings

Based on the sample of sixteen recreation facilities, which encompassed 34 buildings, the Validation Study has arrived at the following preliminary findings:

- On Physical Condition:** The vast majority of the in-scope facilities exhibit physical condition characteristics that are consistent with their age. Aside from a few statistical outliers (ie., data anomalies), the individual buildings in the Validation Sample exhibit the characteristics of the theoretical facility life cycle stages that are contemplated in the Master Study. The few buildings that do not conform to the theoretical model have been subject to upgrades and renovations that have extended the physical life of those facilities. Some of the younger (Stage 2) buildings in the Validation Sample suffered from some premature failure of the building enclosure and the projected rehabilitation costs are skewing the results.
- On Functional Obsolescence:** The in-scope facilities in the Validation Sample suffer from varying degrees of obsolescence, which has some statistically meaningful correlation with their position in each of the five life-cycle stages contemplated in the Master Study.



The following table summarizes the “theoretical” condition index for each life stage (as reflected in the Master Study) relative to the “empirical” findings based on the sample of sixteen recreation facilities (as recorded in the Validation Study).

Life Stage	Age Group	“Theoretical” condition of recreation facility population (855 buildings)	“Empirical” condition of recreation facility sample (34 buildings)	Variance
		Master Study	Phase IV Validation Study	
Stage 1	< 1 year old	0%	0%	N/A
Stage 2	2-14 years	5% (incl. obsolescence)	30% (excl. obsolescence)	High
Stage 3	15-24 years	30% (incl. obsolescence)	20% (excl. obsolescence)	Moderate
Stage 4	25-34 years	40% (incl. obsolescence)	30% (excl. obsolescence)	Low
Stage 5	> 35 years	70% (incl. Obsolescence)	33% (excl. obsolescence)	High



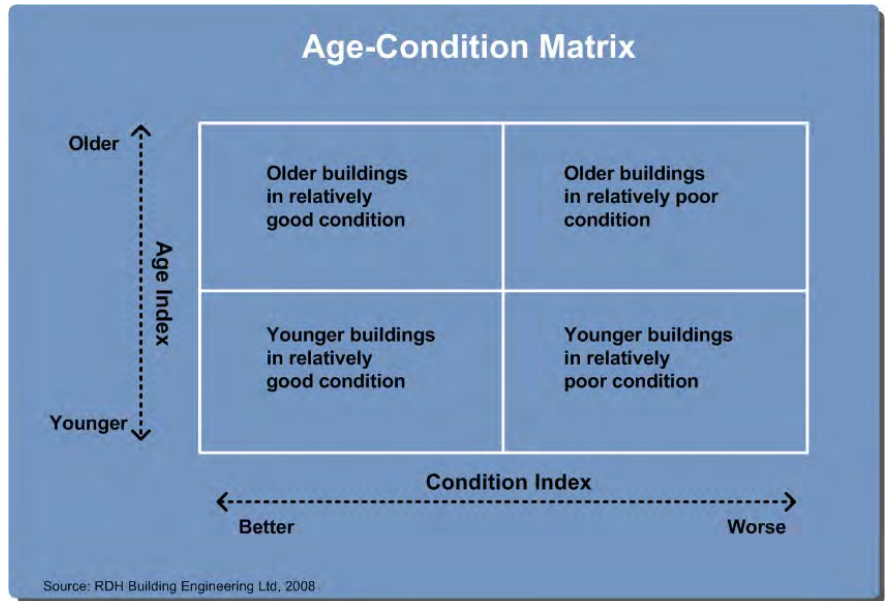
While the data for buildings in Stages 3 and 4 is generally consistent between the theoretical and empirical models, the empirical data for the Stage 2 and Stage 5 sample buildings is anomalous. This variance is accounted for by the fact that some of the Stage 2 buildings were identified as suffering from failure of the building enclosure system, which has skewed the condition rating for this group. A significant portion of the Stage 5 buildings have undergone renovations or renewals which has extend their useful life. Furthermore, the variance in the Stage 5 buildings is high due to the expected increase in functional obsolescence that may result from further refinement of the obsolescence multipliers.

The data to substantiate the findings of the Validation Study is presented in a series of reports, including financial tables, charts and matrices. These reports are attached in subsequent sections.

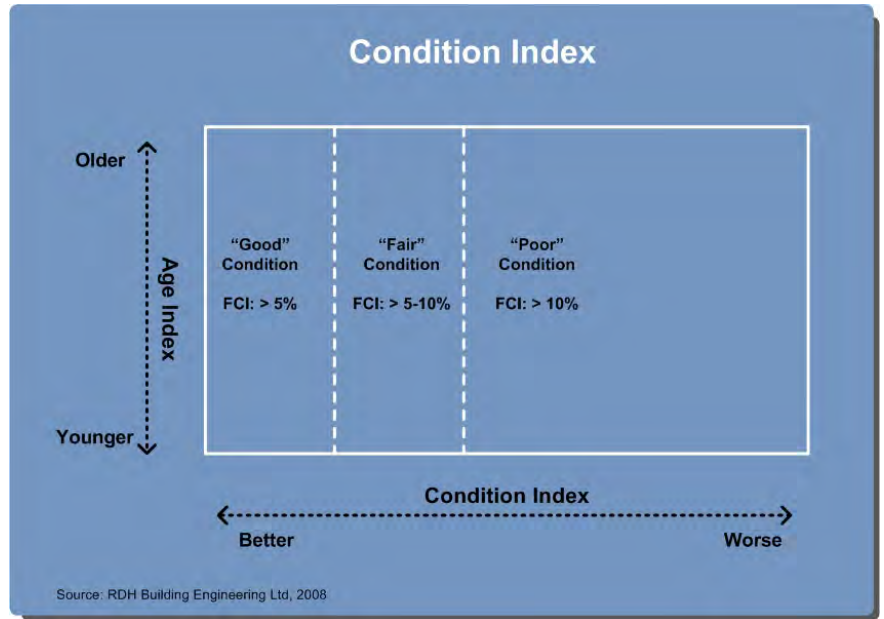
1.8 Summary of Validation Analysis

The data for each of the buildings in the sample has been organized in a manner so that each building can be classified into one of four quadrants in an “age-condition matrix”.

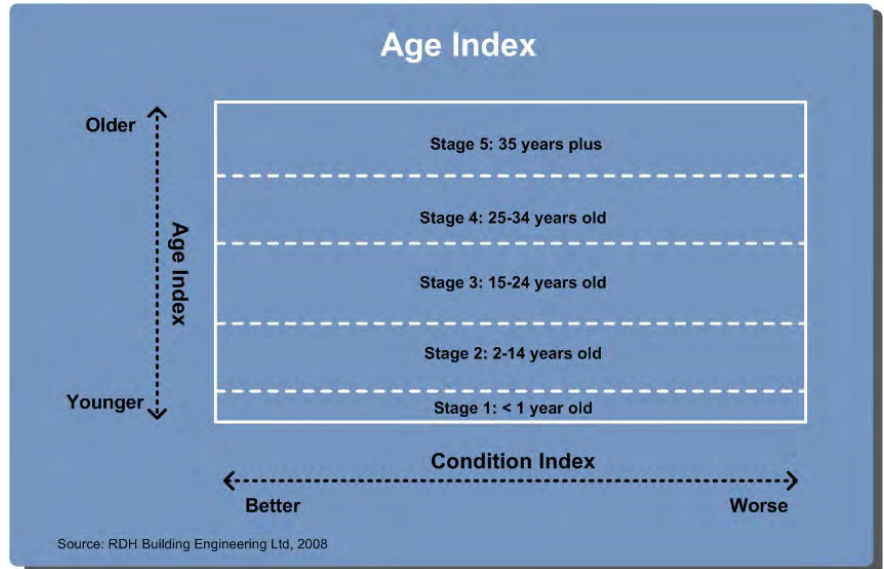
The figure below provides a conceptual illustration of the four quadrant matrix, which is a tool to enable a cross reference between the physical condition of the facilities (shown on the horizontal axis) and the age of the facilities (shown on the vertical axis).



The next figure illustrates how the relative condition of each of the facilities is represented along the horizontal axis. Buildings that exhibit a low Facility Condition Index (FCI) are considered to be in relatively good condition and these occupy the left side of the matrix.



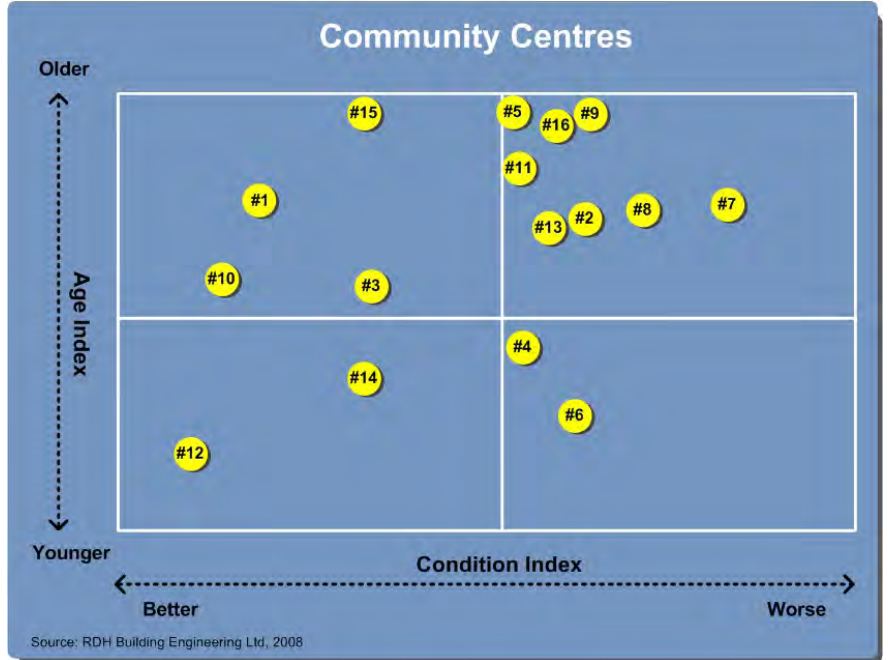
The figure below illustrates how each of the five life cycle stages, contemplated in the Master Study, is represented on the vertical (y-axis) of the condition-age matrix.



Further information on the data used to develop the matrices is included with the methodology in Part 3 of this report.

1.9 Community Centres

The distribution of the age and condition attributes of the 16 in-scope community centre buildings (shown in “yellow”) is summarized in the following scatter plot.



Analysis of the sample data associated with the community centres indicates the following general trends:

- Physical Deterioration (FCI/EFCEI):** Generally, the physical condition of the community centres was consistent with their age. Some rehabilitation and renovation work completed over the years at some the recreation facilities has resulted in a range of FCI calculations, with the average FCI being 13.4%. It should also be noted that the validation sample included community centre buildings of an average age of 36 years (ie., Stage 5), which is higher than the average age of the statistical population of community centres (ie., Stage 4). As a result, the interim results of the Validation Sample may be skewed and should be normalized when making extrapolations the statistical population of community centres.
- Functional Obsolescence (FNI):** The community centres are deemed to be moderately susceptible to obsolescence factors resulting from changes in user requirements. Many of the community centres exhibited signs of space use limitations, evident by factors such as concrete floors in gymnasiums that are “hard on the knees”, dormant rooms, overcrowding of rooms, exercise bicycles in squash courts. Based on the preliminary data, the average Facility Needs Index (FNI) for the community centres in the Validation Sample had been estimated at approximately 44.7%.



The table below summarizes some of the data associated with community centres in the Validation Sample.

Validation Sample	
Buildings in Portfolio	177
Buildings in Sample	16 (9.0%)
Age and Size Attributes	
Avg. Age in Portfolio	1978 (30 yrs) – Stage 4
Avg. Age in Sample	1972 (36 yrs) – Stage 5
Avg. Size in Sample	31,000 SF
Physical Condition Attributes of Sample	
Avg. Reproduction Cost	\$ 5,9 Million
Avg. FCI (“catch-up”)	13.4% of reproduction cost
Avg. EFCI (“keep up”)	22.0% of reproduction cost
Obsolescence Attributes of Sample	
“S” Curve points	0% obsolescence at 0 years 50% obsolescence at 30 years (point of inflection) 98% obsolescence at 60 years
Delta/Amplitude	100% of reproduction cost
Avg. FNI (“get ahead”)	44.7 % of reproduction cost

Additional data tables to demonstrate the findings regarding the sample of community centres are included in subsequent sections of the report.



1.10 Ice Arenas

The distribution of the condition and age attributes of the three in-scope ice arenas (shown in “red”) is reflected in the following summary matrix. The buildings are identified as #2, #7, and #11.



Analysis of the preliminary sample data associated with the ice arenas indicates the following general trends and comparison to the Master Study:

- **Physical Deterioration (FCI/EFCEI):** The ice arenas in the Validation Sample exhibit a clear and consistent pattern with respect to the correlation between their age and their condition. The three ice arenas in the sample were all Stage 4 facilities (as defined by the Master Study) and found to be in relatively poor condition as demonstrated by an average FCI of 38.1%.
- **Functional Obsolescence (FNI):** Based on the preliminary obsolescence multipliers, the ice arenas are deemed to be moderately susceptible to obsolescence factors, which is reflected in an average Facility Needs Index of 25.8% in the Validation Sample.

The following table summarizes some of the data associated with ice arenas in the Validation Sample.

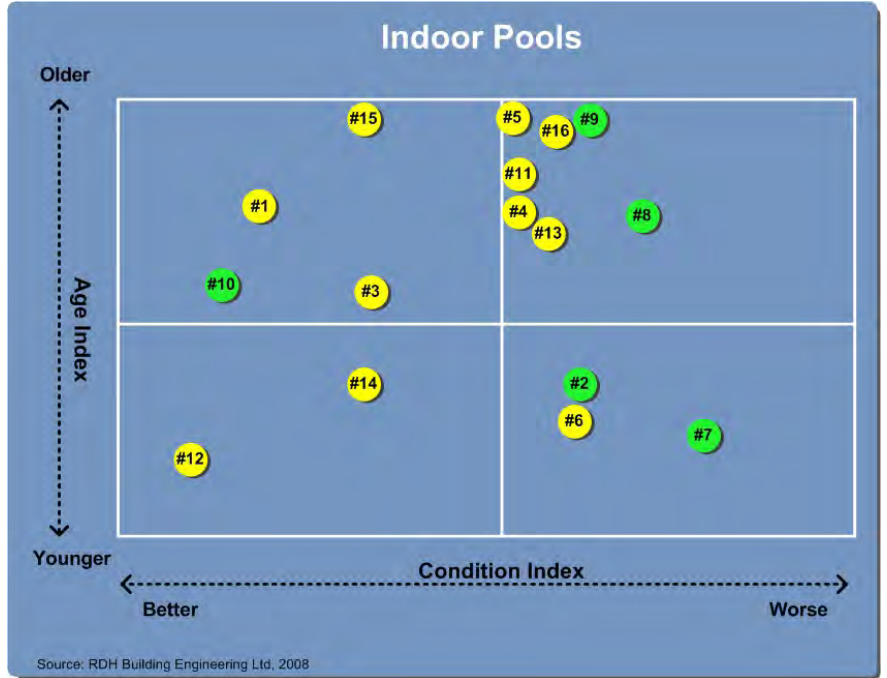
Validation Sample	
Buildings in Portfolio	162 Ice Arenas
Buildings in Sample	3 (1.9%)
Age and Size Attributes	
Avg. Age in Portfolio	1974 (34 yrs) – Stage 4
Avg. Age in Sample	1975 (33 yrs) – Stage 4
Avg. Size in Sample	30,500 SF
Physical Condition Attributes of Sample	
Avg. Reproduction Cost	\$ 3,9 Million
Avg. FCI (“catch-up”)	38.1 % of reproduction cost
Avg. EFCI (“keep up”)	87.3 % of reproduction cost
Obsolescence Attributes of Sample	
“S” Curve points	0% obsolescence at 0 years 50% obsolescence at 40 years (point of inflection) 98% obsolescence at 60 years
Delta/Amplitude	100% of reproduction cost
Avg. FNI (“get ahead”)	25.8 % of reproduction cost

Detailed data tables regarding the Validation Sample of ice arenas are included in subsequent section of the report.



1.11 Indoor Pools

The figure below illustrates the age and condition distribution of the five indoor swimming pools in the sample (shown in "green"). The buildings are identified as #2, #7, #8, #9, and #10.



Analysis of the preliminary sample data associated with the indoor swimming pools indicates the following general trends and comparison to the Master Study:

- **Physical Deterioration (FCI/EFCl):** The pool buildings in the Validation Sample cover a wide range of life cycle stages (Stage 2, 3 and 4) and the condition of the pools varies across this classification. The condition pattern is generally consistent with the theoretical model in the Master Study and the data is considered adequate for preliminary extrapolation purposes.
- **Functional Obsolescence (FNI):** Indoor swimming pools are deemed to be highly susceptible to obsolescence factors associated with recreation programming requirements. When these factors are taken into consideration, the indoor pools in the Validation Sample exhibited a Functional Needs Index (FNI) of approximately 47.5%.



The table below summarizes some of the data associated with the indoor swimming pools in the Validation Sample.

Validation Sample	
Buildings in Portfolio	103 Indoor Swimming Pools
Buildings in Sample	5 (4.85%)
Age and Size Attributes	
Avg. Age in Portfolio	1980 (26 yrs) – Stage 4
Avg. Age in Sample	1980 (26 yrs) – Stage 4
Avg. Size in Sample	19,500 SF
Physical Condition Attributes of Sample	
Avg. Reproduction Cost	\$3,3 Million
Avg. FCI (“catch-up”)	32.5 % of reproduction cost
Avg. EFCI (“keep up”)	38.3 % of reproduction cost
Obsolescence Attributes of Sample	
“S” Curve points	0% obsolescence at 0 years
	50% obsolescence at 25 years (point of inflection)
	98% obsolescence at 50 years
Delta/Amplitude	100% of reproduction cost
Avg. FNI (“get ahead”)	47.5% of reproduction cost

Detailed data tables regarding the sample of indoor swimming pools are included in another section of the report.

1.12 Outdoor Swimming Pools

The Validation Sample did not include any outdoor swimming pools and therefore there is no analysis available at this time. The BCRPA will give consideration to inclusion of a representative sample of outdoor pools in a subsequent phase of the Master Study.



1.13 Seniors Centres

The figure below indicates the age and condition distribution of the two in-scope seniors centres (shown in “orange”). The affected buildings are identified on the matrix as #6 and #9.



Analysis of the sample data associated with the seniors indicates the following general trends:

- **Physical Deterioration (FCI & EFCI):** There are an inadequate number of senior’s centres in the Validation Sample to identify any meaningful patterns in the data and make defensible extrapolations to the statistical population. Preliminary analysis of the two sample buildings suggests that the condition of the seniors centres is consistent with their age and do follow the patterns of the theoretical life cycle model contemplated in the Master Study.
- **Functional Obsolescence (FNI):** Seniors centres are deemed to exhibit low obsolescence factors associated with changes to recreation programming requirements. Preliminary analysis suggests the average FNI for the senior’s centres is approximately 24.7% of building reproduction cost.

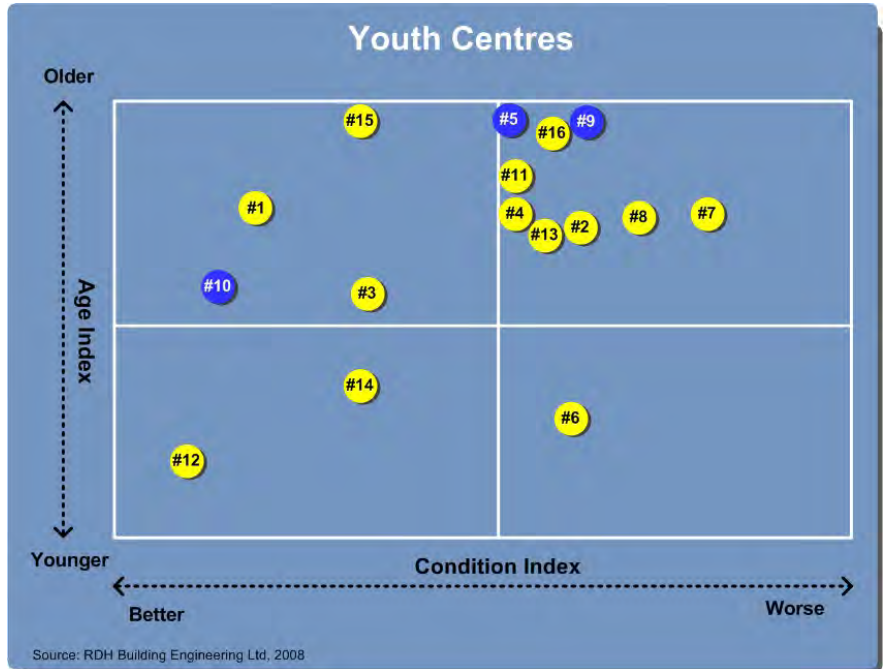
Some of the data associated with senior centres in the Validation Sample is summarized in the following table.

Validation Sample	
Buildings in Portfolio	73 Seniors Centres
Buildings in Sample	2 (2.7%)
Age and Size Attributes	
Avg. Age in Portfolio	1977 (31 yrs) – Stage 4
Avg. Age in Sample	1991 (17 yrs) – Stage 3
Avg. Size in Sample	7,000 SF
Physical Condition Attributes of Sample	
Avg. Reproduction Cost	\$ 1,64 Million each
Avg. FCI (“catch-up”)	28.1 % of reproduction cost
Avg. EFCI (“keep up”)	36.9 % of reproduction cost
Obsolescence Attributes of Sample	
“S” Curve points	0% obsolescence at 1 year
	50% obsolescence at 30 years (point of inflection)
	98% obsolescence at 60 years
Delta/Amplitude	100% of reproduction cost
Avg. FNI (“get ahead”)	24.7% of reproduction cost

Detailed data tables regarding the senior’s centres are included in other reports.

1.14 Youth Centres

The figure below indicates the age and condition distribution of the three in-scope youth centres (shown in “blue”). The affected buildings are #5, #9 and #10.



Analysis of the sample data associated with the youth indicates the following general trends:

- Physical Deterioration: Although the sample size for the youth centres is relatively low (approximately 3.4%), it is apparent, on the existing data, that the condition of the youth centres worsen with age.
- Functional Obsolescence: Youth centres are deemed to follow similar obsolescence patterns as those associated with community centres. It has been established that the average Facility Needs Index (FNI) for the three youth centres is approximately 21.2%. This figure is unusually high and is accounted for by the fact that the youth centres often represent a small portion of the net floor area of a community centre. Since the floor area of the youth centre determines the building reproduction cost for the youth centre, the denominator in the youth centre calculation is lower than the most of the other eight building types.



The Validation Team noted that some of the facilities in the sample contained youth centres, which were not reflected in the BCRPA database. The following table summarizes some of the data associated with youth centres in the Validation Sample.

Validation Sample	
Buildings in Portfolio	69 Youth Centres
Buildings in Sample	3 (4.3%)
Age and Size Attributes	
Avg. Age in Portfolio	1986 (22 yrs) – Stage 3
Avg. Age in Sample	1985 (23 yrs) – Stage 3
Avg. Size in Sample	4,000 SF
Physical Condition Attributes of Sample	
Avg. Reproduction Cost	\$ 730,000
Avg. FCI (“catch-up”)	7.5 % of reproduction cost
Avg. EFCI (“keep up”)	12.0 % of reproduction cost
Obsolescence Attributes of Sample	
“S” Curve points	0% obsolescence at 1 year 50% obsolescence at 30 years (point of inflection) 98% obsolescence at 60 years
Delta/Amplitude	100% of reproduction cost
Avg. FNI (“get ahead”)	21.2% of reproduction cost

Detailed data tables regarding the youth centres are included in other reports.



1.15 Community Halls

Since the Validation Sample contained only one community hall, there is inadequate data, at this juncture, to identify any meaningful patterns in the data and make defensible analysis. In the interim, it is noted that the single community hall exhibited an FCI of 13.3%, which is at the low end of the “poor” condition range.

Validation Sample	
Buildings in Portfolio	114 Community Halls
Buildings in Sample	1 (0.9%)
Age and Size Attributes	
Avg. Age in Portfolio	1966 (42 yrs) – Stage 5
Avg. Age in Sample	1974 (34 yrs) – Stage 4
Avg. Size in Sample	1,500 SF
Physical Condition Attributes of Sample	
Avg. Reproduction Cost	\$ 300,000
Avg. FCI (“catch-up”)	13.3 % of reproduction cost
Avg. EFCI (“keep up”)	26.7 % of reproduction cost
Obsolescence Attributes of Sample	
“S” Curve points	0% obsolescence at 1 year
	50% obsolescence at 30 years (point of inflection)
	98% obsolescence at 60 years
Delta/Amplitude	50% of reproduction cost
Avg. FNI (“get ahead”)	63.3% of reproduction cost

Detailed data tables on the community halls are included in the other reports.



1.16 Curling Facilities

Due to the fact that the Validation Sample was limited to one curling facility, it is not possible at this juncture to provide any analysis that could assist in making defensible extrapolations about the physical deterioration and functional obsolescence of other curling facilities in the portfolio. On an interim basis, the single curling facility exhibited an FCI of 17%, which is deemed as relatively “poor” condition.

Validation Sample	
Buildings in Portfolio	78 Curling Facilities
Buildings in Sample	1 (1.28%)
Age and Size Attributes	
Avg. Age in Portfolio	1970 (38 yrs) – Stage 5
Avg. Age in Sample	1974 (34 yrs) – Stage 4
Avg. Size in Sample	25,000 SF
Physical Condition Attributes of Sample	
Avg. Reproduction Cost	\$3 Million
Avg. FCI (“catch-up”)	17.0% of reproduction cost
Avg. EFCI (“keep up”)	21.0 % of reproduction cost
Obsolescence Attributes of Sample	
Obsolescence thresholds	Temporarily mapped to ice arena thresholds
Delta/Amplitude	100% of reproduction cost
Avg. FNI (“get ahead”)	27.3% of reproduction cost

Additional data tables regarding the curling facilities are included in other reports.

1.17 Extrapolation Recommendations

The first table below indicates which of the empirical data in the Validation Sample, for each of the eight building types, is considered ready for extrapolation to the statistical population.

Building Type	Sample size	Data quality	Readiness for extrapolation trending
Community Centres	9.00%	“Good”	Data adequate
Indoor pools	4.85%	“Fair”	Data not ready
Ice Arenas	1.00%	“Poor”	Data not ready
Youth Centres	4.30%	“Poor”	Data not ready
Seniors Centres	2.70%	“Poor”	Data not ready
Community halls	0.90%	“Poor”	Data not ready
Curling facilities	1.28%	“Poor”	Data not ready
Outdoor pools	0.00%	n/a	Data not ready



The Validation Study will require the collection of additional data to enable extrapolations of the data from the Validation Sample to each of the eight building types.

1.18 Interim Re-Investment Findings

The following table provides a summary of the estimated re-investment costs for the thirty-four buildings in the Validation Sample.

Cost Category	Average per building in Phase IV Validation Sample	Total for all buildings in Phase IV Validation Sample
“Catch-up” Cost Estimate (FCI)	\$700,000	\$26,000,000
“Keep-up” Cost Estimate (EFCI)	\$400,000	\$15,000,000
“Get-ahead” Cost Estimate (FNI)	\$1,500,000	\$57,000,000
Totals	\$2,500,000	\$98,000,000

The next table compares the interim findings of the Validation Study with the theoretical values in the Master Study.

Cost Category	“Theoretical” data in Master Study	“Empirical” data in Phase IV Validation Study
Totals	\$139 Million	\$98 Million

Based on the preliminary findings of the Validation Study, the re-capitalization estimate is in the order of \$98 Million for the 16 facilities in the Validation Sample. The preliminary data in the Master Study amounts to a re-capitalization estimate in the order of \$139 Million. The variance of approximately \$40 Million can be accounted for by the different methodologies in the two studies and the need for further refinement of the obsolescence multipliers.

Section 2

Definitions

In order to convey certain concepts and relationships, this report makes use of a variety of terms and definitions. Listed below are some of the more common terms.

Asset	Means an integrated assembly of components within one of the Systems of a Building, which fit together and interact to form a unit.
Bottom-up Assessment	Means the method of collecting Condition Data on each Asset (ie., micro level) and provides line-item lists of Concerns and Projected Concerns for each Asset.
Building	Means a structure that functions as a single unit, which may be part of a Facility.
Catch-up Costs	Means the costs associated with the accumulated backlog of deferred maintenance. The Facility Condition Index (FCI) measures catch up costs.
Concerns	Means an issue or problem with a System or Asset requiring maintenance, repair, or replacement.
Condition	Means the state of Physical Deterioration of a System or Asset associated with a Building.
Denominator	Means the bottom number of a fraction used to derive an Index. Building Reproduction Cost is the denominator of the FCI, EFCI and FNI formulas.

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EFCI	See: Extended Facility Condition Index.
Empirical Data	Means data that is based on visual observation that is quantifiable and measurable.
Extended Facility Condition Index (EFCI)	Means the measure of the physical health of a Facility, derived from the cost of the Concerns and Projected Concerns for a given Facility compared to the total reproduction value of the Facility.
Extrapolation	Means the estimation of the value of a variable outside its observed range. That is, the Physical Condition and/or Functional Obsolescence of the Statistical Population of Buildings as a result of the findings of the Phase-IV Validation Sample.
Facility	Means one or more Buildings, or any other permanent structures, on or related to a Site.
Facility Condition Index (FCI)	Means the measure of the physical health of a Facility, derived from the cost of the Concerns for a given Facility compared to the total reproduction value of the Facility.
Facility Needs Index (FNI)	Means the measure of the physical health and functional health of a Facility, derived from the cost of the Concerns, Projected Concerns and functional obsolescence multipliers compared to the total reproduction value of the Facility.
FCI	See Facility Condition Index.
FNI	See Facility Needs Index.
Functional Obsolescence	Means the loss in qualitative and quantitative utility of the Buildings and their interior Spaces as a result of factors such as recreation programming changes, new sports regulations, and community growth.



Get Ahead Costs	Means the costs associated with Adaptation and arresting all the forces of retirements associated with Functional Obsolescence.
Index	Means a numerical scale used to compare variables with one another. The Phase-IV Validation Study uses three indexes: Facility Condition Index (FCI), Extended Facility Condition Index (EFCI) and Facility Needs Index (FNI).
In-Scope	Means the Buildings and Facilities in the Phase-IV Validation Sample.
Keep-Up Costs	Means the projected Renewal costs over the next five years. Keep-up Costs are reflected in the Extended Facility Condition Index (EFCI).
Master Study	Means the Recreation Facilities Assessment Study carried out by Hughes Condon Marler Architects and BCRPA, comprising four phases during the period 2003 through 2009.
Matrix	Means a data array of two dimensions. For example, Condition of a Building represented on the horizontal axis and the age of buildings represented on the vertical axis.
Numerator	Means the top number of a fraction used to derive an Index. Concerns, Renewals and Obsolescence are used as numerators to derive the FCI, EFCI and FNI >
Obsolescence	Means the loss in the utility of an Asset, System or Building due to factors other than Physical Deterioration, such as changes in technology, changes in regulations, changes in codes and standards. See: Functional Obsolescence.



Phase-IV Validation Sample	Means the 16 in-scope recreation facilities located in the Lower Mainland Region.
Phase-IV Validation Study	Means the methodology, data, findings and analysis of the assessments carried out at the Phase IV Validation Sample.
Physical Deterioration	Means the degradation of the Building and its Assets as a result of the action of the elements, wear & tear, and other environmental factors.
Portfolio	Means the 855 recreation buildings that are referenced in the Master Study.
Projected Concerns	Means an issue or problem with a System or Asset that is expected to arise over the next five years based on the Condition or life expectancy of the Asset.
Region	Means a geographical sub-set of the Portfolio.
Renewal	Means the replacement of an Asset as it reaches the end of its Service Life.
Replacement Cost	Means the amount that is required to reproduce a building based on current codes and standards, in accordance with current market prices.
Reproduction Cost	Means the amount that is required to reproduce a Building in like kind and materials in accordance with current market prices for materials, labour and manufactured equipment, contractor's overhead, profit and fees.
Service Life	Means the period of time over which an Asset provides adequate physical performance. Functional performance is not contemplated in service life.

System	Means a group of Assets that perform a similar function. For example, the roofs, walls and windows are part of the enclosure system.
Theoretical Data	Means Data based on rational principles of logic and/or generated from statistical models that fit curves to existing Data.
Tombstone Data	Means the descriptive data contained in the Master Study database administered by BCRPA.
Top-Down Assessment	Means the method of collecting Condition Data by approaching the Building at the system-level and providing general (macro) statements about the Concerns and Projected Concerns associated with each System.
Validation	Means confirmation that an assumption is correct or erroneous.



Section 3

Methodology

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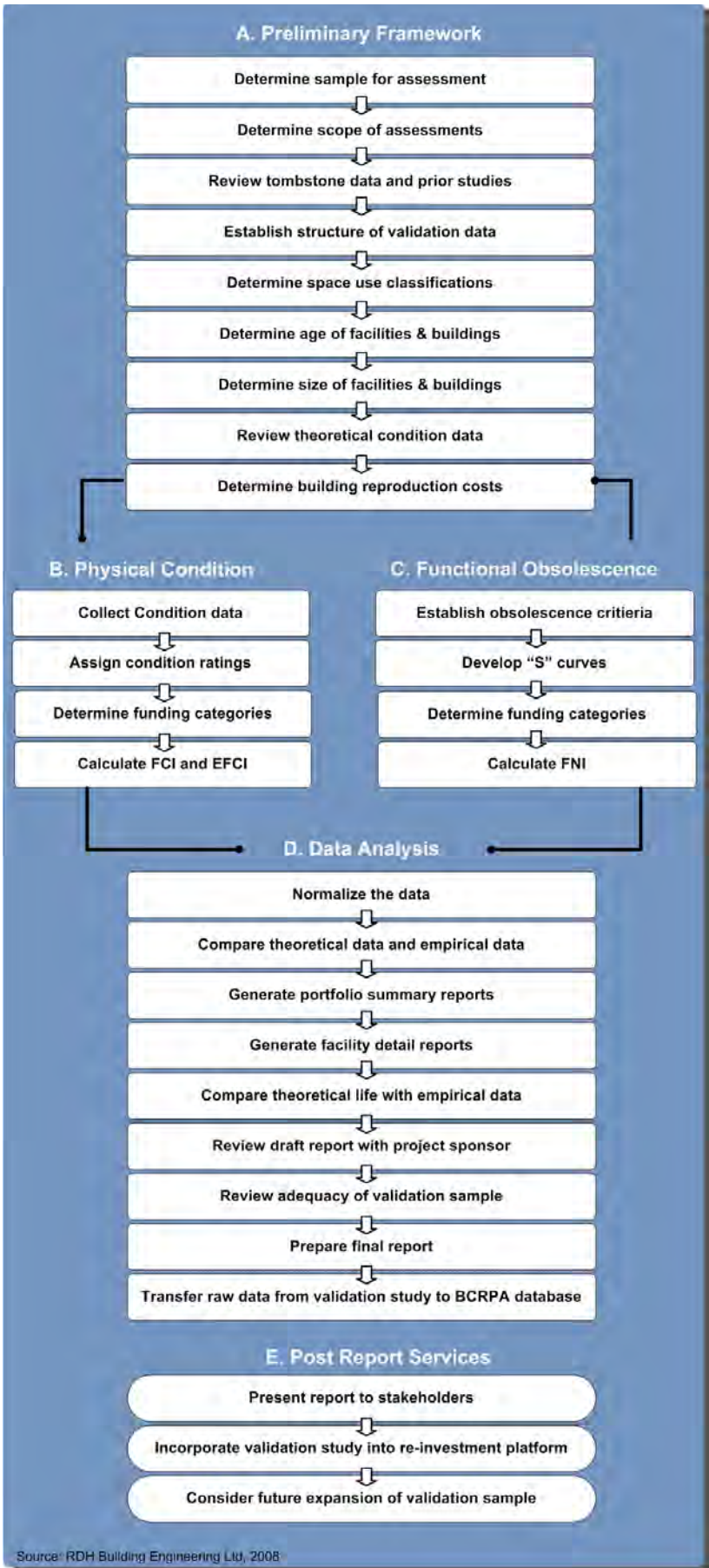
The Validation Study comprised two distinct, but closely interrelated, methodologies that were together intended to quantify the “physical deterioration” and “functional obsolescence” of the in-scope recreation facilities.

3.1 “Condition” & “Obsolescence”

The methodology to determine “physical condition” was based, in part, on a study carried out by the Alberta Parks & Recreation Association in 2006.

Several additional features were added to the methodology to enable a clearer distinction, and thereby a more refined analysis, of “physical condition” factors and “obsolescence” factors in the forces of retirement acting upon recreation facilities. This refined analysis provided for a more defensible methodology.

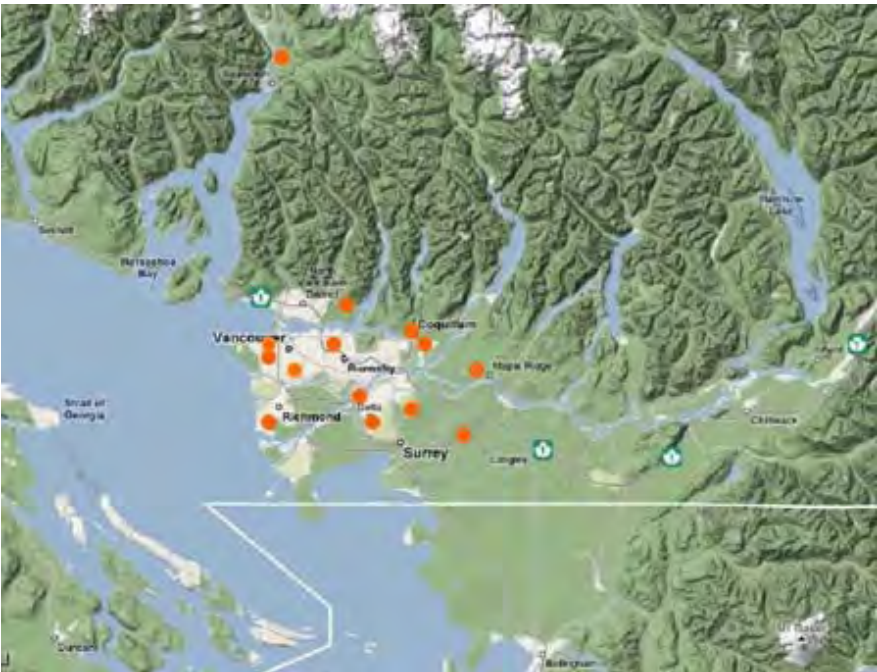
The preliminary thresholds and delta values for the functional obsolescence calculations were developed as a result of a collaborative effort between consultants to the project and the Advisory Task Group.



3.2 Determine Sample for Assessment

Of the approximate eight hundred and fifty five (855) recreation buildings contemplated in Phase I, II, III and IV of the Master Study, sixteen facilities (1.87%) were selected by the British Columbia Recreation & Parks Association (BCRPA) for data validation. The sample of sixteen facilities was structured in order to provide a representative cross-section of community centres with varying age and size attributes. It is understood that the size of the sample may be expanded in a subsequent assessment, which is outside the scope of the Validation Study.

The facilities in the current sample were geographically concentrated in the Lower mainland region, which are represented graphically in the figure below.



3.3 Determine Scope of Assessments

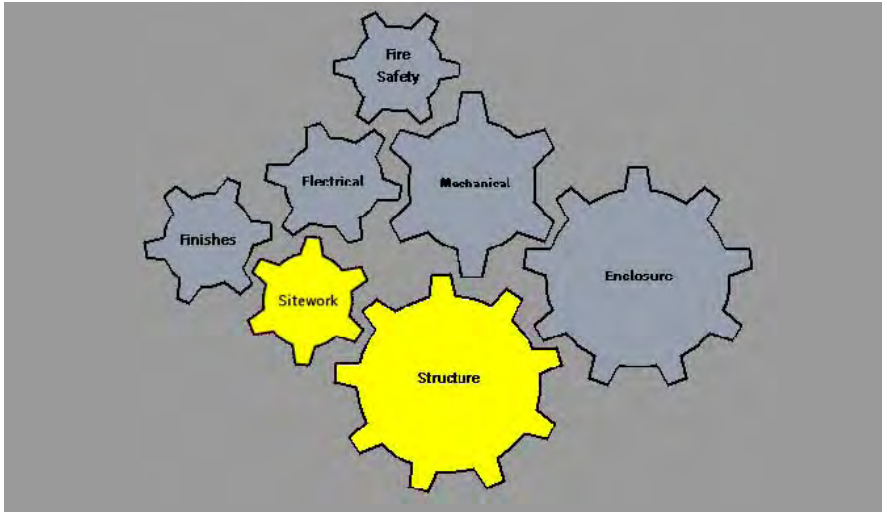
The consulting team was engaged to review the “physical condition” of the sample recreation buildings and to collaborate on the development of a method to quantify the “functional obsolescence” of the validation sample.

The sitework around the buildings, such as parks and trails, was excluded from the current scope of work. The relationships between the buildings and their sites, and the condition of the latter, are an important variable that needs to be considered for future phases of the Master Study. The figure below provides an example of the relationship between the building and the surrounding site at one of the sample facilities.





Within each of the sixteen facilities in the validation sample, the consulting team reviewed the condition of the seven primary physical systems, which are all interact with one another, as conceptually illustrates in the next figure.



The findings and recommendations for each system are provided in the facility detail reports.

3.4 Review Tombstone Data

The consulting team reviewed the results of the work done during the earlier phases of the Master Study, which included reports prepared and tombstone data captured in the BCRPA database. The tombstone data included information on the location, size and use of the facilities, which had been provided by the facility managers but not verified.

3.5 Establish Structure of Validation Data

In addition to the two “types” of data (ie., empirical and theoretical), the figure below illustrates the relationship between different “levels” of data that correspond to the hierarchy of space extending from the provincial portfolio to the individual systems within the sample buildings.



Listed below are some definitions used in the Validation Study to apply to the hierarchy of data:

- **Portfolio.** A group of buildings that are owned, operated, administered, and/or managed by a single entity, which may be located in one or more geographical regions. All the buildings in the BCRPA database comprise the “portfolio”.
- **Region.** A geographical sub-set of the portfolio. The Validation Study was focused on the Lower Mainland Region, specifically the portion of the Region between Hope (to the East) and Squamish (to the Northwest).
- **Facility.** A group of buildings, which are owned, operated and managed by a single entity. The sixteen locations in the validation sample are each facilities.
- **Building.** A structure that functions as a single unit. Some of the sixteen facilities in the Validation Sample contained multiple buildings and are classified as mixed-use sportsplex.



- **System.** A group of physical components that perform a similar function. For example, the roofs, walls and windows are each assets that separate the exterior environment from the interior of the building and are part of the enclosure system.
- **Assets.** An integrated assembly of components within one of the systems of a building, which fit together and interacts to form a unit. For example: the roof (and all its associated elements) is an asset of the enclosure system. A 'boiler' is an asset of the mechanical system.

The hierarchy of data was represented by the series of reports in the Validation Study:

- **Portfolio Reports.** These reports provide aggregate data related to all the facilities in the Validation Sample.
- **Facility Reports.** These reports pertain specifically to each facility in the Validation Sample.

Copies of the series of reports are included in subsequent sections.

3.6 Determine Space-Use Classifications

The primary sources for data on the building space use classifications for each of the buildings in the validation sample are listed below:

- The tombstone data in the BCRPA database.
- Site photographs taken by the validation team.
- Drawings provided by each facility (where available).
- Facility literature and operations.

The images below illustrate the wide range of interior space uses that were identified at the sample of facilities.



Gymnasiums



Multi-purpose rooms



Ice Rinks



Pools

The consulting team encountered some problems assigning the spaces at some of the facilities, particularly at multiplexes. These problems were compounded in cases where space uses have changed over time and in situations where spaces and amenities have been left dormant.

Some questions for consideration in the future refinement of the validation data are: What portion of change rooms should be assigned to pools and/or fitness room in multiplexes; How should administration spaces be assigned to the various occupancies in multiplexes. These questions are necessary to determine the net floor areas to be calculated for each building type within the mixed-use facilities.

3.7 Determine Age of Each Facility

The next stage in the methodology was to determine the date of construction of each building and the dates of subsequent renovations and expansions. The primary methods for collecting this type of data were:

- Drawings made available to the team.
- Age plaques mounted on the walls within some of the facilities.
- The tombstone data in the BCRPA database.
- Discussions with facility staff (where available).
- Equipment nameplates mounted onto some of the mechanical components.

Some of the problems that were encountered when trying to establish the age of facilities, buildings, and portions of buildings are summarized below:

- Poor historical records at some of the facilities.
- Staff without a long history with the facility.
- Multiple renovations at some facilities.
- Multiple integrated buildings in one facility.

A table summarizing the age of each building is included in the detail reports. The executive summary provides information on the average age of the buildings in the sample and within each building category.

3.8 Determine Size of Each Facility

The primary methods for determining the size of each building are summarized below:

- Drawings (where available).
- The tombstone data in the existing BCRPA database.
- Information provided by facility staff.
- Takeoffs from fire annunciator panel diagrams.

Some of the problems that were encountered when trying to establish the size of facilities, buildings, and portions of buildings are summarized below:

- Insufficient drawings at some facilities.
- Space allocation of common areas (such as washrooms) to different parts of the facility.

A table summarizing the size of each building is included in the detail reports, including the average size, smallest building and largest building.

3.9 Review Theoretical Data

Recognizing that the Validation Study was intended to confirm the theoretical assumptions in earlier phases of the Master Study, the team structured the validation reports so that all empirical data was recorded beside the theoretical data. The distinction between these two classes of data has been identified as follows:

- **Empirical Data.** This includes data that is based on visual observations that are quantifiable and measurable, subject to professional judgement.
- **Theoretical Data.** This includes data based on rational principles and/or generated from statistical models that fit curves to existing data.

The validation reports enabled direct comparisons to determine the level of variance between the “theoretical” data from the earlier phases of the Master Study and the “empirical” data collected on site during the Validation Study.



3.10 Collect Site Validation Data

In order to validate the theoretical life and condition data in the Master Study, the consulting team utilized the following techniques for collecting data on each of the buildings in the Validation Sample:

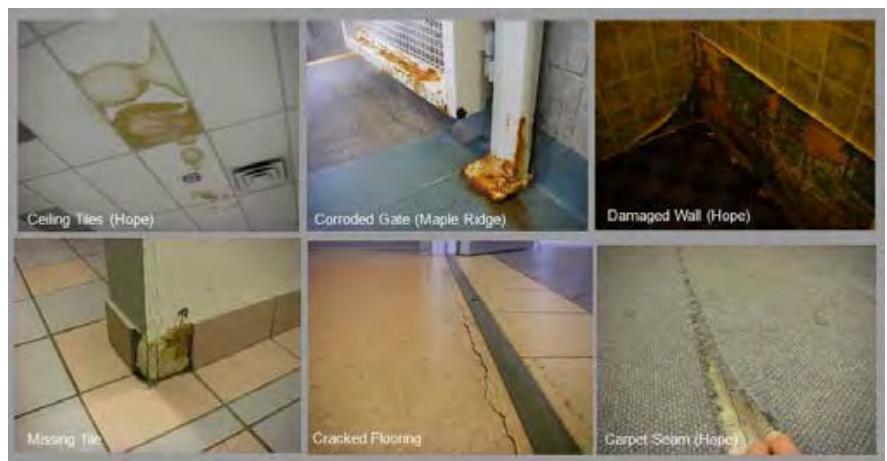
- Site visits, excluding confined spaces and areas requiring fall protection equipment.
- Facility manager interviews, where staff was available.
- Drawing reviews, where documents were available.

The following techniques were not used: survey questionnaires; service contractor interviews; calculations; re-commissioning tests, equipment dismantling and destructive testing.

Some of the problems that were encountered by the team when collecting data are summarized below:

- Restricted access to certain rooms during certain programs.
- Lack of drawings at many of the facilities.
- Lack of available knowledgeable staff with a history of the facility.
- Inaccessible roof areas in some locations.
- Un-accessed confined spaces, such as crawl spaces and other interstitial spaces.

In order to substantiate the findings and recommendations, several photographs were taken of the condition observations at each facility. The figure below includes a few samples of deficiencies in the interior finishes system.



Examples of the deficiency photographs taken at the in-scope facilities are included in one of the appendices.

3.11 Assign System Condition Rankings

Once the Validation team had collected the empirical condition data, it was necessary to assign condition rankings to each system within the in-scope buildings of the Validation Sample. The figure below illustrates the ranking system developed by the Alberta Parks and Recreation Association (APRA).

1. Critical:	Unsafe condition. High risk of injury or critical system failure.
2. Poor:	Does not meet requirements. Has significant deficiencies and may have operating / maintenance costs.
3. Marginal:	Meets minimum requirements, but has significant deficiencies.
4. Acceptable:	Meets present requirements, with minor deficiencies. Average maintenance / operating costs.
5. Good:	Meets present requirements. No significant deficiencies.
6. Excellent:	Meets present and foreseeable future requirements.
7. Pending:	Not applicable. Could be considered for future upgrading or other discretionary upgrading items.

3.12 Determine Reinvestment Categories

Once the data had been collected on the condition of each of the in-scope facilities, the validation team organized the condition data into the following three broad reinvestment categories:

- **“Catch-up” Costs.** This includes the accumulated backlog of deferred work. Catch-up costs are recorded in the Facility Condition Index (FCI). Catch-up cost estimates are based on empirical data.
- **“Keep-up” Costs.** This includes renewal projects forecast over the next five years. Keep up costs are recorded in the Extended Facility Condition Index (EFCI). Keep-up cost estimates are based on empirical data.
- **“Get-ahead” Costs.** This includes an allowance for the functional obsolescence of the facility. These costs are included in the Facility Needs Index (FNI). Get ahead cost estimates are based primarily on theoretical data.



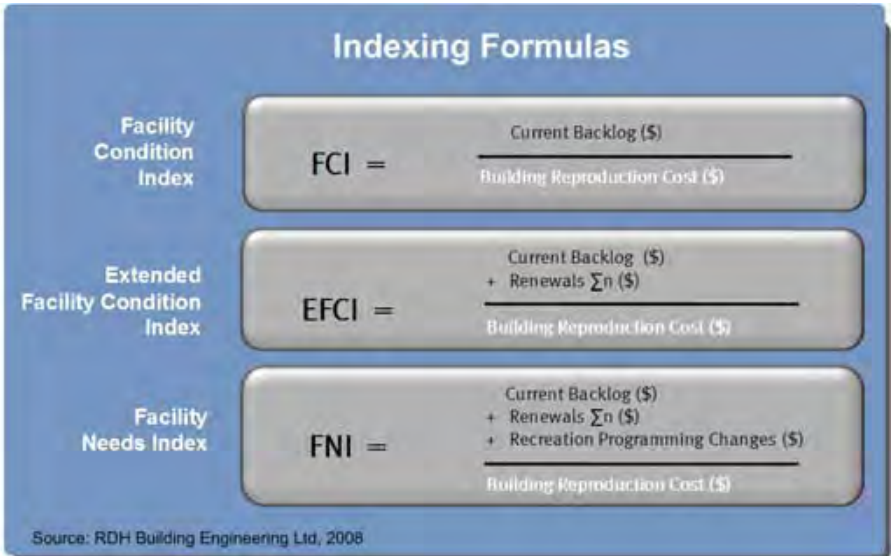
This refinement of the re-investment costs into three distinct categories helped the team pursue the following objectives.

- A strict interpretation of the Facility Condition Index (FCI) methodology does not include forecast renewal costs or functional obsolescence. Based on the thresholds that have been developed and tested on thousands of facility condition assessments conducted in North America since the early 1990s when the FCI was first introduced, an index that blends different cost categories cannot be used as a standard measure of condition.
- Based on past experience, the validation team has learned that aggregate re-investment cost estimates are more meaningful to the stakeholders when they are classified into different clearly defined categories (ie., catch-up cost, keep-up costs and get-ahead costs).
- A clearly itemized facility re-investment estimate is more defensible than a blended estimate that cannot be decomposed into its constituent parts.
- It is important to disclose that catch-up cost estimates and keep-up cost estimates are derived primarily from empirical data, whereas the get-ahead cost estimates are based in large-part on theoretical data.

The formulas for calculating each of the three reinvestment cost categories are included in the next section.

3.13 Calculate Physical Condition Indices

The figure below summarizes the formulas that correspond with each the three facility condition indices that were used in the Validation Study.



Each of the three equations is comprised of the following two essential elements:

- **Denominator.** This is the reproduction cost for each building. The common thread in all three equations is the “reproduction” value of the buildings. The “reproduction” value was determined through discussions with the facility representatives who extracted this from the certificates of all property insurance for each facility and/or buildings within the facilities.
- **Numerator.** This is the value of the “catch up”, “keep up” and/or “get ahead” cost estimates for each building. The numerators were established through a top-down method of collecting data. Further discussion on the mathematical equations is included in the appendices to this report.

The images below includes screen shots of the reports that display the FCI, EFCI and FNI.



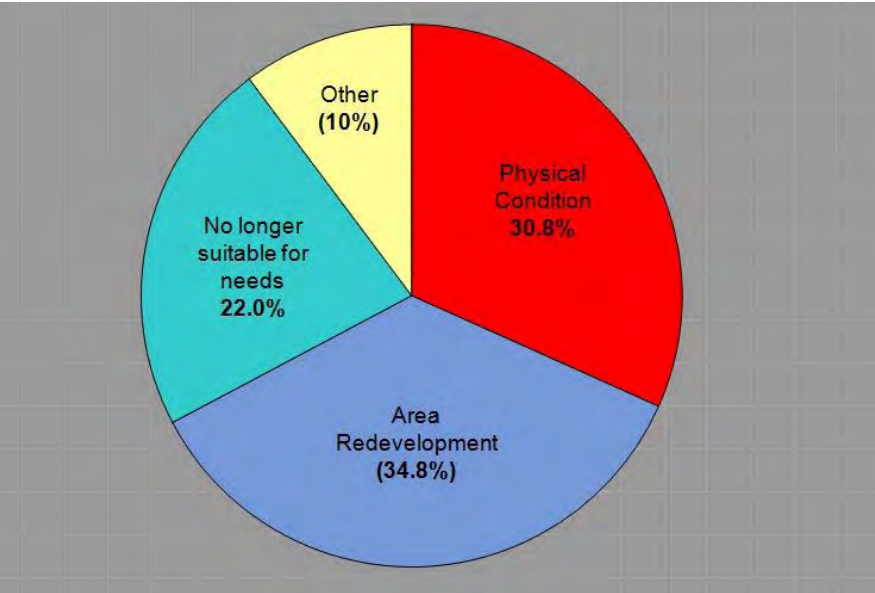
At this juncture, it is important to note that the re-capitalization estimates in the Master Study are based on building “replacement” cost estimates, whereas the estimates in the Validation Study are based on building “reproduction” cost. The figure below summarizes the differences between the “replacement” and “reproduction” cost methods.

→ Definition of "Replacement"	→ Definition of "Reproduction"
<i>The amount that is required to reproduce property based on <u>current codes and standards</u>, in accordance with current market prices for materials, labour and manufactured equipment, contractor's overhead, profit and fees.</i>	<i>The amount that is required to reproduce property in like kind and materials in accordance with current market prices for materials, labour and manufactured equipment, contractor's overhead, profit and fees.</i>
→ Source of data: cost consultants	→ Source of data: insurance appraisal
→ Unit rates for replacement cost	→ Unit rates for reproduction cost
<ul style="list-style-type: none">Ice Arenas \$425.00 /sqIndoor Pools \$565.00 /sqCommunity C \$485.00 /sqSeniors C \$385.00 /sq	<ul style="list-style-type: none">Ice Arenas \$130.00 /sqIndoor Pools \$160.00 /sqCommunity C \$230.00 /sqSeniors C \$230.00 /sq
→ Pros: true value of building	→ Pros: Consistent denominator

In order to preserve the integrity of the theoretical data, the Validation team structured all reports so that the building "reproduction" cost estimates and building "replacement" cost estimates are recorded side-by-side for comparison purposes.

3.14 Determine appropriate Role of Functional Obsolescence in Reinvestment Calculations

To underscore the importance of functional obsolescence in planning for the service life of buildings, we will take this opportunity to make reference to a pertinent study carried out in 2006 on the reasons for the demolition of non-residential buildings. Some of the results of that study are reflected the following pie chart, which graphically illustrates the distribution of reasons for demolition of the buildings in that research project.





It is useful to note that physical condition (“red” segment of pie) and obsolescence (“green” segment of pie) represent significant controllable factors in the life of non-residential buildings. Uncontrollable factors include things such as area redevelopment, fire damage, and changing land values.

Functional obsolescence contemplates the following types of changes and adaptations that need to be accommodated over the life of a recreation facility:

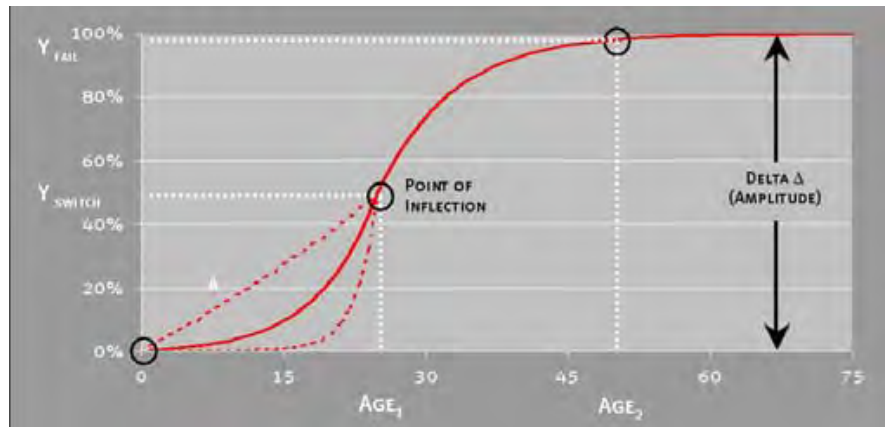
- Changes to recreational programming requirements.
- Changes in sports regulations, such as the height of gym ceilings, the width of pool decks, and types of flooring in gymnasiums.
- Changes in the demographics within the local community.
- Development (or lack of development) of other complementary facilities in the same catchment area.

Unlike the empirical condition data in the FCI and EFCI methodologies, the functional obsolescence data required for the FNI is subjective and not readily quantifiable. The challenge for the Validation Team has been the selection of a method to quantify functional obsolescence.

3.15 Quantify Functional Obsolescence

In order to quantify the impact of functional obsolescence as one of the forces of retirement acting upon the life of recreational facilities, a series of preliminary functional obsolescence curves were developed for discussion with the Advisory Task Group.

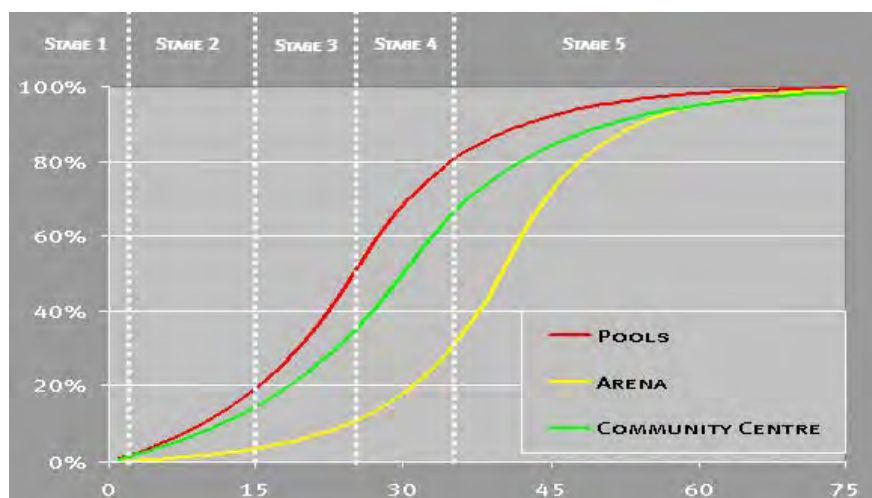
The figure below conceptually illustrates the impact of functional obsolescence over the life of a recreation building.



The “S” curve contains two components that provide an index to measure of the degree of functional obsolescence at different times over the life of a building.

- **Shape of the Curve.** The curve is comprised of two parts: a) exponential and b) inverse exponential. The transition between the two parts occurs at the “point of inflection”. In the preceding figure the point of inflection occurs at 25 years and 50% of the amplitude. The Validation team met with the Task Group to review the points of inflection for different recreation building types that have been used in the Validation Study.
- **Amplitude of the Curve.** In the preceding figure, the amplitude of the “S” curve is one-times the Reproduction Cost of the building. This amplitude was selected since it takes into consideration the original intent of the building and allows for consistent comparison with the physical condition indices. After the initial report had been developed, the Validation team met with the Task Group to refine the amplitudes.

The figure below provides a conceptual illustration of three different types of “S” curves corresponding with different types of buildings. The shape of each “S” curve is determined by the characteristics of the different types of building and the five life cycle stages contemplated in the Master Study.



Due to their unique environments, the functional requirements of pools and arenas change at a more rapid rate than other building types, such as community centres, youth centres and seniors centres.

The next figure contains an example of a functional obsolescence curve for indoor swimming pools relative to four buildings of different ages. The “red” portion of the stacked bar chart represents the FCI (catch-up money) for each building, the “yellow” portion is the EFCI (keep up money) for each building and the “green” portion of the stacked bar chart is the FNI, functional obsolescence (get-ahead money).

The following figure provides four possible scenarios as follows:

- **Scenario 1: 5 Year old Building.** The building is in poor physical condition but meets its functional needs. It is a good candidate for restoration, ongoing maintenance and planned renewals.
- **Scenario 2: 17-Year old Building.** The building is in relatively good condition with some minor functional obsolescence. It is a good candidate for ongoing maintenance and planned renewals.
- **Scenario 3: 35-Year old Building.** The building is in poor physical condition and exhibits high functional obsolescence. It may be considered a candidate for replacement insofar as a cost-benefit analysis may determine that the facility owners would receive a greater return on investment to rebuild rather than continue to allocate capital to the building.
- **Scenario 4: 42-Year Old Building.** This building is in good physical condition but exhibits high functional obsolescence. From a physical condition perspective, the building requires routine maintenance and renewals. However, since it is functionally obsolete, the facility owners are tasked with having to make a difficult decision to either: a) expand the facility; and/or b) construct another facility; and/or c) make other functional adaptations to the interior spaces and equipment.



Once the functional obsolescence values had been determined through “S” curves for each building type and life cycle stage, the Functional Needs Index (FNI) was derived for each building in the Validation Sample.

3.16 Normalize the Empirical Data

Since the Validation Sample was limited to facilities that are located in a small geographical region, normalization was not required to account for city factors across the Province.

3.17 Reconcile Theoretical & Empirical Data

When comparing the “empirical” data from the Validation Sample to the “theoretical” data in the Master Study it is important to first normalize the data so that proper comparisons can be made. Comparisons need to be made on the following variables:

- Square foot unit rates for building “replacement” and building “reproduction” cost
- Facility Needs Index (FNI) for each of the five life stages of the buildings.

The following figure includes a summary of some of the comparison values and the relative merits of the methodology in the Master Study and the methodology in the Validation Study.



<p>→ Theoretical Life FCI (TL FCI)</p> <ul style="list-style-type: none"> › A desktop study based on statistical data from other comparable buildings. 	<p>→ Top-Down FCI (TD FCI)</p> <ul style="list-style-type: none"> › An empirical study based on system data collected in the field.
<p>→ Theoretical facility lifecycle stages</p> <ul style="list-style-type: none"> › Stage 1 (<1): 0% FCI › Stage 2 (1-14): 5% FCI › Stage 3 (15-24): 30% FCI › Stage 4 (25-34): 40% FCI › Stage 5 (>35): 70% FCI 	<p>→ Facility lifecycle stages:</p> <ul style="list-style-type: none"> › Stage 1 (<1): varied FCI › Stage 2 (1-14): varied FCI › Stage 3 (15-24): varied FCI › Stage 4 (25-34): varied FCI › Stage 5 (>35): varied FCI
<p>→ Pros</p> <ul style="list-style-type: none"> › Rapid data estimates. › Relatively inexpensive process. 	<p>→ Pros</p> <ul style="list-style-type: none"> › Empirical data for extrapolation purposes. › Accounts for facility revitalization and renovation.
<p>→ Cons</p> <ul style="list-style-type: none"> › Ignores facility revitalization/renovations. › Other 	<p>→ Cons</p> <ul style="list-style-type: none"> › Slow and expensive data collection › other

The executive summary contains a number of reports that compare the data from the Master Study and the Validation Study. While it has been determined that both sets of data do follow similar patterns, the scales do not currently match – that is, the “empirical” data has resulted in reinvestment estimates that are lower than the “theoretical” data. Further discussion on the reconciliation of the two sets of data is included in the executive summary.

3.18 Generate Reports

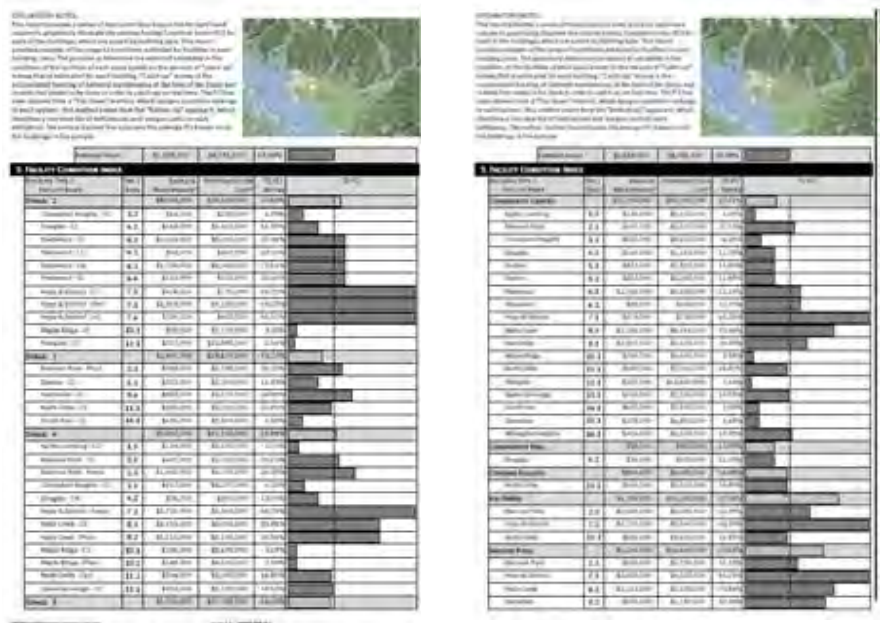
The series of reports in the Validation Study are sorted into the following three groups:

- **Sorted by Building Name.** These report sorts all the Validation data by the name of each building. To preserve the anonymity of the facilities, these reports are utilized for in-house analysis purposes and not for public distribution.
- **Sorted by Building Type.** The Master Study identified eight types of recreation buildings: indoor pools, ice arenas, seniors centres, youth centres, community centres, community halls, outdoor pools, and curling facilities. Several reports filter the data according to this classification.
- **Sorted by Building Age Classes.** The Validation Study mapped each of the eight types of facilities against the five life-cycle stages contemplated in the Master Study.

All the data from the Validation Study was captured in a master spreadsheet that recorded twenty-two columns of data for each of the in-scope facilities in the Validation Sample.

The screenshot displays a complex spreadsheet titled "Master Spreadsheet" with a header row containing 22 columns. The columns are organized into four main sections: "Building Information", "Building Description", "Operational Information", and "Comments". The "Building Information" section includes columns for Building Name, Address, City, Province, Postal Code, and Phone. The "Building Description" section includes columns for Building Type, Age Class, and various facility features. The "Operational Information" section includes columns for Opening Hours, Staffing, and other operational details. The "Comments" section is a large text area for additional notes. The spreadsheet contains multiple rows of data, with some rows highlighted in yellow. A small map is visible in the top left corner of the spreadsheet area.

The Validation Study also included a series of data distribution charts to record the data beside each facility. Inserted below is an example of one of the data distribution reports.



Copies of the portfolio reports are included in the executive summary.

3.19 Future Analysis Opportunities

Consideration should be given to possible future expansion of the validation sample so that more accurate extrapolations can be made for the benefit of the Master Study. This is particularly important for those types of buildings that were under-represented in the Validation Sample, such as outdoor pools, community halls, senior’s centres, and youth centres.

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Appendix 1

Portfolio Executive Summary



EXPLANATORY NOTES:

This report provides a table that represents an executive summary of the data collected on the buildings in the sample. The data is grouped into three broad categories as follows:

1. "Catch-Up" Money - This is the accumulated backlog of deferred maintenance and outstanding repairs at the time of the Study. It is work that needs to be done in order to catch-up on lost time. Catch up money is reflected in the Facility Condition Index (FCI).
2. "Keep-Up" Money - This is the projected work that needs to be done over the next few years in order to ensure that the facility keeps up with the capital renewal requirements. For this report, the planned renewals are projected over a 5-year period. Keep-up money is reflected in the Extended Facility Index (EFCI).
3. "Get-Ahead" Money - This is the work required to ensure that each facility meets current programming needs and represents "upgrades" to the existing infrastructure. Upgrade money is reflected in the Facility Needs Index (FNI)

The table also includes data for comparison of two alternative assessment methods that have been used to determine the condition of the buildings. The two methods are distinguished as follows:

1. Theoretical Life Cycle Method (TL) - This determines the FCI, EFCI and FNI based solely on the age of the buildings. This method is essentially a desk-top study that relies upon statistical data from other similar buildings. A set percentage of building replacement cost is applied to the buildings of each age class.
2. Top-Down Assessment Method (TD) - This determines the FCI, EFCI (and FNI) based on visual data collected in the field. This method applies condition ratings to each system in order to determine the backlog. The backlog is calculated by aggregating all the identified deficiency costs. Additional notes are included at the bottom of the report.

SORTED BY FACILITY

FACILITY NAME		BUILDING INFORMATION						BUILDING REPLACEMENT COST				DEFICIENCIES, RENEWALS AND UPGRADES						CONDITION INDEXES				
BUILDING NAME	FAC / BLDG	FAC. CONST. YEAR	BLDG CONST. YEAR	LAST RENO YEAR	GROSS FLOOR AREA	FAC / BLDG AGE	LIFE STAGE (TL)	REPRODUCTION PER SQFT COST* (TD)	REPLACEMENT PER SQFT COST* (TL)	REPRODUCTION COST* (TD)	REPLACEMENT COST* (TL)	Σ BACKLOG (TD)	Σ RENEWALS (TD) (5 YEARS)	FUNCTIONAL OBSOLESCENCE (TL)	Σ BACKLOG + Σ RENEWALS (TD)	Σ BACKLOG + Σ RENEWALS + Σ FUNC OB (TD)	FCI CALC STAGE (TL)	FCI (TD)	EFCI (TD)	FNI (TD)	FCI STAGE (TL)	FCI DECADE (TL)
NOMENCLATURE	BLDG	FCY	BCY	LYR	GFA	AGE	STAGE	BRC SQFT (TD)	BRC SQFT (TL)	BRC (TD)	BRC (TL)	A	B	C	BL+R5 (TD)	BL+R5+FO (TD)	BLSTAGE (TL)	FCI (TD)	EFCI (TD)	FNI (TD)	FCI STAGE (TL)	FCI DECADE (TL)
FURTHER DETAILS PLEASE SEE REPORT	UNITS	YEAR	YEAR	YEAR	SQFT	YEARS		\$/SQFT	\$/SQFT	\$	\$	TD20	TD30	TD30	TD30	TD30		TD20	TD30	TD30	TD30	TD30
COMMUNITY CENTRE					490,998			\$208	\$485	\$94,360,000	\$238,110,000	\$12,630,000	\$8,130,000	\$42,170,000	\$20,760,000	\$62,940,000	\$91,160,000	13.40%	22.01%	44.69%	35.28%	
Community Centre	1.1	1974	1974		39,000	34	4	\$79	\$485	\$3,100,000	\$18,910,000	\$138,000	\$160,000	\$1,960,000	\$298,000	\$2,260,000	\$7,560,000	4.45%	9.61%	72.90%	40.00%	50.00%
Community Centre	2.1	1977	1977		8,000	31	4	\$253	\$485	\$2,020,000	\$3,880,000	\$411,000	\$134,000	\$1,080,000	\$545,000	\$1,620,000	\$1,550,000	20.35%	26.98%	80.20%	40.00%	50.00%
Community Centre	3.1	1981	1981	2005	36,000	27	4	\$230	\$485	\$8,270,000	\$17,460,000	\$531,000	\$488,000	\$3,320,000	\$1,019,000	\$4,340,000	\$6,980,000	6.42%	12.32%	52.48%	40.00%	40.00%
Community Centre	4.1	1974	1996		7,000	12	2	\$201	\$485	\$1,410,000	\$3,390,000	\$181,000	\$186,000	\$150,000	\$367,000	\$520,000	\$170,000	12.84%	26.03%	36.88%	5.00%	5.00%
Community Center (Add)	5.1	1958	1985		10,000	23	3	\$230	\$485	\$2,300,000	\$4,850,000	\$275,000	\$180,000	\$680,000	\$455,000	\$1,140,000	\$1,460,000	11.96%	19.78%	49.57%	30.00%	40.00%
Community Centre	5.2	1958	1958	2005	34,000	50	5	\$230	\$485	\$7,820,000	\$16,490,000	\$934,000	\$612,000	\$6,980,000	\$1,546,000	\$8,530,000	\$11,540,000	11.94%	19.77%	109.08%	70.00%	100.00%
Community Center (Add)	6.1	1995	2001		1,000	7	2	\$257	\$485	\$260,000	\$480,000	\$58,000	\$5,000	\$10,000	\$63,000	\$70,000	\$20,000	22.31%	24.23%	26.92%	5.00%	5.00%
Community Centre	6.2	1995	1995	2005	36,111	13	2	\$257	\$485	\$9,290,000	\$17,510,000	\$2,067,000	\$191,000	\$1,090,000	\$2,258,000	\$3,350,000	\$880,000	22.25%	24.31%	36.06%	5.00%	5.00%
Community Centre	7.1	1975	1997		2,447	11	2	\$300	\$485	\$730,000	\$1,190,000	\$476,000	\$8,000	\$70,000	\$484,000	\$550,000	\$60,000	65.21%	66.30%	75.34%	5.00%	5.00%
Community Centre	8.1	1975	1975	1995	36,000	33	4	\$167	\$485	\$6,010,000	\$17,460,000	\$2,164,000	\$58,000	\$3,620,000	\$2,222,000	\$5,840,000	\$6,980,000	36.01%	36.97%	97.17%	40.00%	50.00%
Community Centre	9.1	1952	1952		33,000	56	5	\$231	\$485	\$7,630,000	\$16,000,000	\$2,237,000	\$776,000	\$7,110,000	\$3,013,000	\$10,120,000	\$11,200,000	29.32%	39.49%	132.63%	70.00%	100.00%
Community Centre	10.1	1981	1981	2001	56,000	27	4	\$172	\$485	\$9,630,000	\$27,160,000	\$315,000	\$403,000	\$3,870,000	\$718,000	\$4,590,000	\$10,860,000	3.27%	7.46%	47.66%	40.00%	40.00%
Community Centre	11.1	1972	1992		20,000	16	3	\$150	\$485	\$3,010,000	\$9,700,000	\$510,000	\$119,000	\$480,000	\$629,000	\$1,110,000	\$2,910,000	16.94%	20.90%	36.88%	30.00%	5.00%
Community Centre	12.1	1999	1999		55,000	9	2	\$234	\$485	\$12,880,000	\$26,670,000	\$342,000	\$3,113,000	\$920,000	\$3,455,000	\$4,380,000	\$1,330,000	2.66%	26.82%	34.01%	5.00%	5.00%
Community Centre	13.1	1978	1978		14,590	30	4	\$212	\$485	\$3,100,000	\$7,080,000	\$719,000	\$232,000	\$1,550,000	\$951,000	\$2,500,000	\$2,830,000	23.19%	30.68%	80.65%	40.00%	50.00%
Community Centre	14.1	1992	1992	2003	52,000	16	3	\$150	\$485	\$7,800,000	\$25,220,000	\$450,000	\$320,000	\$1,250,000	\$770,000	\$2,020,000	\$7,570,000	5.77%	9.87%	25.90%	30.00%	5.00%
Community Centre	15.1	1957	1957	1986	40,800	51	5	\$169	\$485	\$6,900,000	\$19,790,000	\$393,000	\$931,000	\$6,210,000	\$1,324,000	\$7,530,000	\$13,850,000	5.70%	19.19%	109.13%	70.00%	100.00%
Community Centre	16.1	1964	1964	1981	10,050	44	5	\$219	\$485	\$2,200,000	\$4,870,000	\$431,000	\$215,000	\$1,820,000	\$646,000	\$2,470,000	\$3,410,000	19.59%	29.36%	112.27%	70.00%	50.00%
COMMUNITY HALL					1,500			\$201	\$372	\$300,000	\$560,000	\$40,000	\$40,000	\$190,000	\$80,000	\$270,000	\$220,000	13.33%	26.67%	63.33%	40.00%	
Community Hall	4.2	1974	1974		1,500	34	4	\$201	\$372	\$300,000	\$560,000	\$39,000	\$39,000	\$190,000	\$78,000	\$270,000	\$220,000	13.00%	26.00%	90.00%	40.00%	50.00%
CURLING FACILITY					25,000			\$120	\$445	\$3,000,000	\$11,130,000	\$510,000	\$120,000	\$820,000	\$630,000	\$1,450,000	\$4,450,000	17.00%	21.00%	27.33%	40.00%	
Curling Facility	11.2	1972	1974	1991	25,000	34	4	\$120	\$445	\$3,000,000	\$11,130,000	\$509,000	\$118,000	\$820,000	\$627,000	\$1,450,000	\$4,450,000	16.97%	20.90%	48.33%	40.00%	50.00%
ICE ARENA					91,336			\$127	\$425	\$11,570,000	\$38,820,000	\$4,410,000	\$5,690,000	\$2,980,000	\$10,100,000	\$13,080,000	\$19,350,000	38.12%	87.29%	25.76%	50.00%	
Ice Arena	2.2	1977	1977		31,000	31	4	\$130	\$425	\$4,030,000	\$13,180,000	\$1,066,000	\$2,015,000	\$810,000	\$3,081,000	\$3,890,000	\$5,270,000	26.45%	76.45%	96.53%	40.00%	50.00%
Ice Arena	7.2	1975	1975	2002	30,336	33	4	\$130	\$425	\$3,940,000	\$12,890,000	\$2,730,000	\$1,497,000	\$970,000	\$4,227,000	\$5,200,000	\$5,160,000	69.29%	107.28%	131.98%	40.00%	50.00%
Ice Arena	11.3	1972	1972		30,000	36	5	\$120	\$425	\$3,600,000	\$12,750,000	\$610,000	\$2,179,000	\$1,200,000	\$2,789,000	\$3,990,000	\$8,920,000	16.94%	77.47%	110.83%	70.00%	50.00%
INDOOR POOL					97,500			\$172	\$564	\$16,640,000	\$55,030,000	\$5,410,000	\$970,000	\$7,910,000	\$6,380,000	\$14,290,000	\$19,390,000	32.45%	38.34%	47.54%	37.00%	
Indoor Pool	2.3	1977	1992		18,000	16	3	\$155	\$564	\$2,790,000	\$10,160,000	\$611,000	\$215,000	\$600,000	\$826,000	\$1,430,000	\$3,050,000	21.90%	29.61%	51.25%	30.00%	5.00%

FACILITY NAME BUILDING NAME	BUILDING INFORMATION							BUILDING REPLACEMENT COST				DEFICIENCIES, RENEWALS AND UPGRADES					CONDITION INDEXES						
	FAC / BLDG	FAC. CONST. YEAR	BLDG CONST. YEAR	LAST RENO YEAR	GROSS FLOOR AREA	FAC / BLDG AGE	LIFE STAGE (TL)	REPRODUCTION PER SQFT COST* (TD)	REPLACEMENT PER SQFT COST* (TL)	REPRODUCTION COST* (TD)	REPLACEMENT COST* (TL)	Σ BACKLOG (TD)	Σ RENEWALS (TD) (5 YEARS)	FUNCTIONAL OBSOLESCENCE (TL)	Σ BACKLOG + Σ RENEWALS (TD)	Σ BACKLOG + Σ RENEWALS + Σ FUNC Ob(TD)	FCI CALC STAGE (TL)	FCI (TD)	EFCI (TD)	FNI (TD)	FCI STAGE (TL)	FCI DECADE (TL)	
	NOMENCLATURE	BLDG	FCY	BCY	LRV	GFA	AGE	STAGE	BRC SQFT (TD)	BRC SQFT (TL)	BRC (TD)	BRC (TL)	A	B	C	FO (TL)	BL+R5 (TD)	BL+R5+FO (TD)	BLSTAGE (TL)	FCI (TD)	EFCI (TD)	FNI (TD)	FCI STAGE (TL)
UNITS FURTHER DETAILS PLEASE SEE REPORT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Indoor Pool	7.3	1975	1997		18,000	11	2	\$240	\$564	\$4,320,000	\$10,160,000	\$2,818,000	\$61,000	\$520,000	\$2,879,000	\$3,400,000	\$510,000	65.23%	66.64%	78.70%	5.00%	5.00%	
Indoor Pool	8.2	1975	1975	1994	20,000	33	4	\$155	\$564	\$3,100,000	\$11,290,000	\$1,145,000	\$117,000	\$2,360,000	\$1,262,000	\$3,620,000	\$4,520,000	36.94%	40.71%	116.77%	40.00%	50.00%	
Indoor Pool	9.2	1952	1955	1979	11,500	53	5	\$155	\$564	\$1,780,000	\$6,490,000	\$653,000	\$239,000	\$1,710,000	\$892,000	\$2,600,000	\$4,540,000	36.69%	50.11%	146.07%	70.00%	100.00%	
Indoor Pool	10.2	1981	1981	2001	30,000	27	4	\$155	\$564	\$4,650,000	\$16,930,000	\$181,000	\$340,000	\$2,720,000	\$521,000	\$3,240,000	\$6,770,000	3.89%	11.20%	69.68%	40.00%	40.00%	
SENIORS CENTRE					14,000			\$244	\$386	\$3,280,000	\$5,400,000	\$920,000	\$290,000	\$810,000	\$1,220,000	\$2,020,000	\$1,430,000	28.05%	36.89%	24.70%	17.50%		
Seniors Centre	6.4	1995	1995		2,000	13	2	\$257	\$386	\$510,000	\$770,000	\$113,000	\$11,000	\$60,000	\$124,000	\$180,000	\$40,000	22.16%	24.31%	35.29%	5.00%	5.00%	
Seniors Centre	9.4	1952	1986		12,000	22	3	\$231	\$386	\$2,770,000	\$4,630,000	\$812,000	\$282,000	\$750,000	\$1,094,000	\$1,840,000	\$1,390,000	29.31%	39.49%	66.43%	30.00%	40.00%	
YOUTH CENTRE					13,000			\$216	\$386	\$2,410,000	\$5,030,000	\$160,000	\$130,000	\$510,000	\$290,000	\$800,000	\$750,000	7.47%	12.03%	21.16%	37.50%		
Youth Centre	3.2	1981	2005		1,000	3	2	\$230	\$386	\$230,000	\$390,000	\$15,000	\$13,000	\$0	\$28,000	\$30,000	\$20,000	6.52%	12.17%	13.04%	5.00%	5.00%	
Youth Centre	5.3	1958	1958		1,000	50	5	\$230	\$386	\$230,000	\$390,000	\$27,000	\$18,000	\$210,000	\$45,000	\$250,000	\$270,000	11.74%	19.57%	108.70%	70.00%	100.00%	
Youth Centre	9.5	1952	1952		1,000	56	5	\$231	\$386	\$230,000	\$390,000	\$67,000	\$24,000	\$210,000	\$91,000	\$300,000	\$270,000	29.13%	39.57%	130.43%	70.00%	100.00%	
Youth Centre	10.3	1981	2001		10,000	7	2	\$172	\$386	\$1,720,000	\$3,860,000	\$56,000	\$72,000	\$90,000	\$128,000	\$220,000	\$190,000	3.26%	7.44%	12.79%	5.00%	5.00%	
LIBRARY					35,000			\$263	\$485	\$8,930,000	\$16,970,000	\$2,340,000	\$290,000	\$2,170,000	\$2,630,000	\$4,810,000	\$2,740,000	26.20%	29.56%	24.30%	26.67%		
Library	6.3	1995	1995		27,000	13	2	\$257	\$485	\$6,940,000	\$13,090,000	\$1,544,000	\$143,000	\$810,000	\$1,687,000	\$2,500,000	\$650,000	22.25%	24.31%	36.02%	5.00%	5.00%	
Library	7.4	1975	1997		2,000	11	2	\$300	\$485	\$600,000	\$970,000	\$391,000	\$7,000	\$60,000	\$398,000	\$460,000	\$50,000	65.17%	66.33%	76.67%	5.00%	5.00%	
Library	9.3	1952	1952		6,000	56	5	\$231	\$485	\$1,390,000	\$2,910,000	\$407,000	\$142,000	\$1,300,000	\$549,000	\$1,850,000	\$2,040,000	29.28%	39.50%	133.09%	70.00%	100.00%	
Totals					768,334					\$140,490,000	\$371,050,000	\$26,426,000	\$15,663,000	\$57,560,000	\$42,089,000	\$99,660,000	\$139,490,000						
Portfolio Average			1980	1996	20,766	28	4	\$201	\$471	\$3,797,027	\$10,028,378	\$714,21	\$423,324	\$1,555,676	\$1,137,541	\$2,693,514	\$3,770,000	18.81%	29.96%	70.94%	37.59%	15.51%	
Minimum			1952	1979	1,000	3	2	\$79	\$372	\$230,000	\$390,000	\$15,000	\$5,000	\$0	\$28,000	\$30,000	\$20,000	2.66%	7.44%	12.79%	5.00%	5.00%	
Maximum			2005	2005	56,000	56	5	\$300	\$564	\$12,880,000	\$27,160,000	\$2,818,000	\$3,113,000	\$7,110,000	\$4,227,000	\$10,120,000	\$13,850,000	69.29%	107.28%	146.07%	70.00%	70.00%	

- ** ACCURACY OF BUDGET COST ESTIMATES:
- All budget costs in this report are provided in current year dollars, without inflation or escalation factors.
 - All budget costs are preliminary estimates intended for planning purposes and not for accounting use.
 - Actual costs will vary depending on several factors. The budget estimates assume economies of scale will be achieved by bundling work items together into larger projects. Small projects done individually may exceed the budget estimates.
 - Each project should include appropriate cost line-items when developing an overall project budget.
 - Labour and material costs are subject to the vagaries of the marketplace. At the time of tender, costs may vary depending on the time of the year and/or contractor availability.
 - The budget estimates must be updated over time and confirmed by competitive tender before any contracts are awarded.
 - Detailed repair specifications are required to be prepared in order to confirm scopes of work and costs.
 - Soft costs, such as consulting services and contingency allowances are not included in the budget estimates. Depending on the sizes, scope and timing of individual projects, the magnitude of the soft costs will vary.
 - Cost savings may be realized depending on the use of in-house labour or 3rd party-contractors.
 - The estimates do not include allowances for site specific access requirements and environmental concerns, which should be addressed on a project-by-project basis.
 - Consideration may sometimes need to be given to costs arising from the impact of projects on occupancy use and facility operations.



EXPLANATORY NOTES:

This report provides a table that represents an executive summary of the data collected on the buildings in the sample. The data is grouped into three broad categories as follows:

1. "Catch-Up" Money - This is the accumulated backlog of deferred maintenance and outstanding repairs at the time of the Study. It is work that needs to be done in order to catch-up on lost time. Catch up money is reflected in the Facility Condition Index (FCI).
2. "Keep-Up" Money - This is the projected work that needs to be done over the next few years in order to ensure that the facility keeps up with the capital renewal requirements. For this report, the planned renewals are projected over a 5-year period. Keep-up money is reflected in the Extended Facility Index (EFCI).
3. "Get-Ahead" Money - This is the work required to ensure that each facility meets current programming needs and represents "upgrades" to the existing infrastructure. Upgrade money is reflected in the Facility Needs Index (FNI)

The table also includes data for comparison of two alternative assessment methods that have been used to determine the condition of the buildings. The two methods are distinguished as follows:

1. Theoretical Life Cycle Method (TL) - This determines the FCI, EFCI and FNI based solely on the age of the buildings. This method is essentially a desk-top study that relies upon statistical data from other similar buildings. A set percentage of building replacement cost is applied to the buildings of each age class.
2. Top-Down Assessment Method (TD) - This determines the FCI, EFCI (and FNI) based on visual data collected in the field. This method applies condition ratings to each system in order to determine the backlog. The backlog is calculated by aggregating all the identified deficiency costs. Additional notes are included at the bottom of the report.

SORTED BY FACILITY

FACILITY NAME BUILDING NAME	BUILDING INFORMATION							BUILDING REPLACEMENT COST				DEFICIENCIES, RENEWALS AND UPGRADES						CONDITION INDEXES							
	FAC / BLDG	FAC. CONST. YEAR	BLDG CONST. YEAR	LAST RENO YEAR	GROSS FLOOR AREA	FAC / BLDG AGE	LIFE STAGE (TL)	REPRODUCTION PER SQFT COST* (TD)	REPLACEMENT PER SQFT COST* (TL)	REPRODUCTION COST* (TD)	REPLACEMENT COST* (TL)	Σ BACKLOG (TD)	Σ RENEWALS (TD) (5 YEARS)	FUNCTIONAL OBSOLESCENCE (TL)	Σ BACKLOG + Σ RENEWALS (TD)	Σ BACKLOG + Σ RENEWALS + Σ FUNC OB (TD)	FCI CALC STAGE (TL)	FCI (TD)	EFCI (TD)	FNI (TD)	FCI STAGE (TL)	FCI DECADE (TL)			
	NOMENCLATURE	BLDG	FCY	BCY	LYR	GFA	AGE	STAGE	BRC SQFT (TD)	BRC SQFT (TL)	BRC (TD)	BRC (TL)	A	BL (TD)	B	R5 (TD)	C	FO (TL)	BL+R5 (TD)	BL+R5+FO (TD)	BLSTAGE (TL)	FCI (TD) %	EFCI (TD) %	FNI (TD) %	FCISTAGE (TL) %
STAGE: 2					161,558			\$246	\$465	\$38,890,000	\$78,480,000	\$8,060,000	\$3,810,000	\$3,780,000	\$11,870,000	\$15,660,000	\$3,920,000	20.75%	30.55%	40.27%	5.00%	5.00%			
Youth Centre	3.2		2005		1,000	3	2	\$230	\$386	\$230,000	\$390,000	\$20,000	\$10,000	\$0	\$30,000	\$30,000	\$20,000	6.52%	12.17%	13.04%	5.00%	5.00%			
Community Centre	4.1		1996		7,000	12	2	\$201	\$485	\$1,410,000	\$3,390,000	\$180,000	\$190,000	\$150,000	\$370,000	\$520,000	\$170,000	12.84%	26.03%	36.88%	5.00%	5.00%			
Community Center (Add)	6.1		2001		1,000	7	2	\$257	\$485	\$260,000	\$480,000	\$60,000	\$0	\$10,000	\$60,000	\$70,000	\$20,000	22.31%	24.23%	26.92%	5.00%	5.00%			
Community Centre	6.2		1995	2005	36,111	13	2	\$257	\$485	\$9,290,000	\$17,510,000	\$2,070,000	\$190,000	\$1,090,000	\$2,260,000	\$3,350,000	\$880,000	22.25%	24.31%	36.06%	5.00%	5.00%			
Library	6.3		1995		27,000	13	2	\$257	\$485	\$6,940,000	\$13,090,000	\$1,540,000	\$140,000	\$810,000	\$1,690,000	\$2,500,000	\$650,000	22.25%	24.31%	36.02%	5.00%	5.00%			
Seniors Centre	6.4		1995		2,000	13	2	\$257	\$386	\$510,000	\$770,000	\$110,000	\$10,000	\$60,000	\$120,000	\$180,000	\$40,000	22.16%	24.31%	35.29%	5.00%	5.00%			
Community Centre	7.1		1997		2,447	11	2	\$300	\$485	\$730,000	\$1,190,000	\$480,000	\$10,000	\$70,000	\$480,000	\$550,000	\$60,000	65.21%	66.30%	75.34%	5.00%	5.00%			
Indoor Pool	7.3		1997		18,000	11	2	\$240	\$564	\$4,320,000	\$10,160,000	\$2,820,000	\$60,000	\$520,000	\$2,880,000	\$3,400,000	\$510,000	65.23%	66.64%	78.70%	5.00%	5.00%			
Library	7.4		1997		2,000	11	2	\$300	\$485	\$600,000	\$970,000	\$390,000	\$10,000	\$60,000	\$400,000	\$460,000	\$50,000	65.17%	66.33%	76.67%	5.00%	5.00%			
Youth Centre	10.3		2001		10,000	7	2	\$172	\$386	\$1,720,000	\$3,860,000	\$60,000	\$70,000	\$90,000	\$130,000	\$220,000	\$190,000	3.26%	7.44%	12.79%	5.00%	5.00%			
Community Centre	12.1		1999		55,000	9	2	\$234	\$485	\$12,880,000	\$26,670,000	\$340,000	\$3,110,000	\$920,000	\$3,460,000	\$4,380,000	\$1,330,000	2.66%	26.82%	34.01%	5.00%	5.00%			
STAGE: 3					112,000			\$183	\$481	\$18,670,000	\$54,560,000	\$2,660,000	\$1,120,000	\$3,760,000	\$3,770,000	\$7,540,000	\$16,380,000	14.25%	20.25%	40.39%	30.00%	5.00%			
Indoor Pool	2.3		1992		18,000	16	3	\$155	\$564	\$2,790,000	\$10,160,000	\$610,000	\$220,000	\$600,000	\$830,000	\$1,430,000	\$3,050,000	21.90%	29.61%	51.25%	30.00%	5.00%			
Community Center (Add)	5.1		1985		10,000	23	3	\$230	\$485	\$2,300,000	\$4,850,000	\$280,000	\$180,000	\$680,000	\$460,000	\$1,140,000	\$1,460,000	11.96%	19.78%	49.57%	30.00%	40.00%			
Seniors Centre	9.4		1986		12,000	22	3	\$231	\$386	\$2,770,000	\$4,630,000	\$810,000	\$280,000	\$750,000	\$1,090,000	\$1,840,000	\$1,390,000	29.31%	39.49%	66.43%	30.00%	40.00%			
Community Centre	11.1		1992		20,000	16	3	\$150	\$485	\$3,010,000	\$9,700,000	\$510,000	\$120,000	\$480,000	\$630,000	\$1,110,000	\$2,910,000	16.94%	20.90%	36.88%	30.00%	5.00%			
Community Centre	14.1		1992	2003	52,000	16	3	\$150	\$485	\$7,800,000	\$25,220,000	\$450,000	\$320,000	\$1,250,000	\$770,000	\$2,020,000	\$7,570,000	5.77%	9.87%	25.90%	30.00%	5.00%			
STAGE: 4					327,426			\$167	\$475	\$51,150,000	\$157,930,000	\$9,950,000	\$5,600,000	\$23,270,000	\$15,550,000	\$38,820,000	\$63,150,000	19.45%	30.40%	75.89%	40.00%	5.00%			
Community Centre	1.1		1974		39,000	34	4	\$79	\$485	\$3,100,000	\$18,910,000	\$140,000	\$160,000	\$1,960,000	\$300,000	\$2,260,000	\$7,560,000	4.45%	9.61%	72.90%	40.00%	50.00%			
Community Centre	2.1		1977		8,000	31	4	\$253	\$485	\$2,020,000	\$3,880,000	\$410,000	\$130,000	\$1,080,000	\$540,000	\$1,620,000	\$1,550,000	20.35%	26.98%	80.20%	40.00%	50.00%			
Ice Arena	2.2		1977		31,000	31	4	\$130	\$425	\$4,030,000	\$13,180,000	\$1,070,000	\$2,020,000	\$810,000	\$3,080,000	\$3,890,000	\$5,270,000	26.45%	76.45%	96.53%	40.00%	50.00%			
Community Centre	3.1		1981	2005	36,000	27	4	\$230	\$485	\$8,270,000	\$17,460,000	\$530,000	\$490,000	\$3,320,000	\$1,020,000	\$4,340,000	\$6,980,000	6.42%	12.32%	52.48%	40.00%	40.00%			
Community Hall	4.2		1974		1,500	34	4	\$201	\$372	\$300,000	\$560,000	\$40,000	\$40,000	\$190,000	\$80,000	\$270,000	\$220,000	13.00%	26.00%	90.00%	40.00%	50.00%			
Ice Arena	7.2		1975	2002	30,336	33	4	\$130	\$425	\$3,940,000	\$12,890,000	\$2,730,000	\$1,500,000	\$970,000	\$4,230,000	\$5,200,000	\$5,160,000	69.29%	107.28%	131.98%	40.00%	50.00%			
Community Centre	8.1		1975	1995	36,000	33	4	\$167	\$485	\$6,010,000	\$17,460,000	\$2,160,000	\$60,000	\$3,620,000	\$2,220,000	\$5,840,000	\$6,980,000	36.01%	36.97%	97.17%	40.00%	50.00%			
Indoor Pool	8.2		1975	1994	20,000	33	4	\$155	\$564	\$3,100,000	\$11,290,000	\$1,140,000	\$120,000	\$2,360,000	\$1,260,000	\$3,620,000	\$4,520,000	36.94%	40.71%	116.77%	40.00%	50.00%			
Community Centre	10.1		1981	2001	56,000	27	4	\$172	\$485	\$9,630,000	\$27,160,000	\$320,000	\$400,000	\$3,870,000	\$720,000	\$4,590,000	\$10,860,000	3.27%	7.46%	47.66%	40.00%	40.00%			
Indoor Pool	10.2		1981	2001	30,000	27	4	\$155	\$564	\$4,650,000	\$16,930,000	\$180,000	\$340,000	\$2,720,000	\$520,000	\$3,240,000	\$6,770,000	3.89%	11.20%	69.68%	40.00%	40.00%			

FACILITY NAME BUILDING NAME	BUILDING INFORMATION							BUILDING REPLACEMENT COST				DEFICIENCIES, RENEWALS AND UPGRADES						CONDITION INDEXES					
	FAC / BLDG	FAC. CONST. YEAR	BLDG CONST. YEAR	LAST RENO YEAR	GROSS FLOOR AREA	FAC / BLDG AGE	LIFE STAGE (TL)	REPRODUCTION PER SQFT COST* (TD)	REPLACEMENT PER SQFT COST* (TL)	REPRODUCTION COST* (TD)	REPLACEMENT COST* (TL)	Σ BACKLOG (TD)	Σ RENEWALS (5 YEARS) (TD)	FUNCTIONAL OBSOLESCENCE (TL)	Σ BACKLOG + Σ RENEWALS (TD)	Σ BACKLOG + Σ RENEWALS + Σ FUNC OB (TD)	FCI CALC STAGE (TL)	FCI (TD)	EFCI (TD)	FNI (TD)	FCI STAGE (TL)	FCI DECADE (TL)	
	NOMENCLATURE	BLDG	FCY	BCY	LYR	GFA	AGE	STAGE	BRC SQFT (TD)	BRC SQFT (TL)	BRC (TD)	BRC (TL)	A	B	C	FO (TL)	BL+R5 (TD)	BL+R5+FO (TD)	BLSTAGE (TL)	FCI (TD)	EFCI (TD)	FNI (TD)	FCI STAGE (TL)
UNITS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
FURTHER DETAILS PLEASE SEE REPORT		YEAR	YEAR	YEAR	SQFT	YEARS		\$/SQFT	\$/SQFT	\$	\$	\$	\$	\$	\$	\$	\$	\$	%	%	%	%	%
Curling Facility	11.2		1974	1991	25,000	34	4	\$120	\$445	\$3,000,000	\$11,130,000	\$510,000	\$120,000	\$820,000	\$630,000	\$1,450,000	\$4,450,000	16.97%	20.90%	48.33%	40.00%	50.00%	
Community Centre	13.1		1978		14,590	30	4	\$212	\$485	\$3,100,000	\$7,080,000	\$720,000	\$230,000	\$1,550,000	\$950,000	\$2,500,000	\$2,830,000	23.19%	30.68%	80.65%	40.00%	50.00%	
STAGE: 5					167,350			\$202	\$465	\$31,780,000	\$80,080,000	\$5,760,000	\$5,140,000	\$26,750,000	\$10,900,000	\$37,640,000	\$56,040,000	18.12%	34.27%	118.44%	70.00%		
Community Centre	5.2		1958	2005	34,000	50	5	\$230	\$485	\$7,820,000	\$16,490,000	\$930,000	\$610,000	\$6,980,000	\$1,550,000	\$8,530,000	\$11,540,000	11.94%	19.77%	109.08%	70.00%	100.00%	
Youth Centre	5.3		1958		1,000	50	5	\$230	\$386	\$230,000	\$390,000	\$30,000	\$20,000	\$210,000	\$40,000	\$250,000	\$270,000	11.74%	19.57%	108.70%	70.00%	100.00%	
Community Centre	9.1		1952		33,000	56	5	\$231	\$485	\$7,630,000	\$16,000,000	\$2,240,000	\$780,000	\$7,110,000	\$3,010,000	\$10,120,000	\$11,200,000	29.32%	39.49%	132.63%	70.00%	100.00%	
Indoor Pool	9.2		1955	1979	11,500	53	5	\$155	\$564	\$1,780,000	\$6,490,000	\$650,000	\$240,000	\$1,710,000	\$890,000	\$2,600,000	\$4,540,000	36.69%	50.11%	146.07%	70.00%	100.00%	
Library	9.3		1952		6,000	56	5	\$231	\$485	\$1,390,000	\$2,910,000	\$410,000	\$140,000	\$1,300,000	\$550,000	\$1,850,000	\$2,040,000	29.28%	39.50%	133.09%	70.00%	100.00%	
Youth Centre	9.5		1952		1,000	56	5	\$231	\$386	\$230,000	\$390,000	\$70,000	\$20,000	\$210,000	\$90,000	\$300,000	\$270,000	29.13%	39.57%	130.43%	70.00%	100.00%	
Ice Arena	11.3		1972		30,000	36	5	\$120	\$425	\$3,600,000	\$12,750,000	\$610,000	\$2,180,000	\$1,200,000	\$2,790,000	\$3,990,000	\$8,920,000	16.94%	77.47%	110.83%	70.00%	50.00%	
Community Centre	15.1		1957	1986	40,800	51	5	\$169	\$485	\$6,900,000	\$19,790,000	\$390,000	\$930,000	\$6,210,000	\$1,320,000	\$7,530,000	\$13,850,000	5.70%	19.19%	109.13%	70.00%	100.00%	
Community Centre	16.1		1964	1981	10,050	44	5	\$219	\$485	\$2,200,000	\$4,870,000	\$430,000	\$220,000	\$1,820,000	\$650,000	\$2,470,000	\$3,410,000	19.59%	29.36%	112.27%	70.00%	50.00%	
Totals					768,334					\$140,490,000	\$371,050,000	\$26,426,000	\$15,663,000	\$57,560,000	\$42,089,000	\$99,660,000	\$139,490,000						
Portfolio Average			1980	1996	20,766	28	4	\$201	\$471	\$3,797,027	\$10,028,378	\$714,21	\$423,324	\$1,555,676	\$1,137,541	\$2,693,514	\$3,770,000	18.81%	29.96%	70.94%	37.59%	15.51%	
Minimum			1952	1979	1,000	3	2	\$79	\$372	\$230,000	\$390,000	\$15,000	\$5,000	\$0	\$28,000	\$30,000	\$20,000	2.66%	7.44%	12.79%	5.00%	5.00%	
Maximum			2005	2005	56,000	56	5	\$300	\$564	\$12,880,000	\$27,160,000	\$2,818,000	\$3,113,000	\$7,110,000	\$4,227,000	\$10,120,000	\$13,850,000	69.29%	107.28%	146.07%	70.00%	70.00%	

- ** ACCURACY OF BUDGET COST ESTIMATES:
- All budget costs in this report are provided in current year dollars, without inflation or escalation factors.
 - All budget costs are preliminary estimates intended for planning purposes and not for accounting use.
 - Actual costs will vary depending on several factors. The budget estimates assume economies of scale will be achieved by bundling work items together into larger projects. Small projects done individually may exceed the budget estimates.
 - Each project should include appropriate cost line-items when developing an overall project budget.
 - Labour and material costs are subject to the vagaries of the marketplace. At the time of tender, costs may vary depending on the time of the year and/or contractor availability.
 - The budget estimates must be updated over time and confirmed by competitive tender before any contracts are awarded.
 - Detailed repair specifications are required to be prepared in order to confirm scopes of work and costs.
 - Soft costs, such as consulting services and contingency allowances are not included in the budget estimates. Depending on the sizes, scope and timing of individual projects, the magnitude of the soft costs will vary.
 - Cost savings may be realized depending on the use of in-house labour or 3rd party-contractors.
 - The estimates do not include allowances for site specific access requirements and environmental concerns, which should be addressed on a project-by-project basis.
 - Consideration may sometimes need to be given to costs arising from the impact of projects on occupancy use and facility operations.

Appendix 2

Data Distributions



Phase IV Validation Sample: Community Centres, Lower Mainland, British Columbia

1. BUILDING AGE DISTRIBUTIONS
2. "CATCH-UP" COST ESTIMATES (FCI)
3. "KEEP-UP" COST ESTIMATES (EFCI)
4. "GET-AHEAD" COST ESTIMATES (FNI)

EXPLANATORY NOTES:

This report provides a horizontal bar chart in the far right-hand column to graphically illustrate the relative age of the buildings in the portfolio. The first bar chart, represented in a different colour, indicates the average age of all the buildings in the portfolio. Since there is a statistically meaningful correlation between the age of buildings and their relative condition, it is helpful for the facility manager to appreciate the age distribution across the portfolio of buildings. Separate reports contain graphical bar charts to indicate the Facility Condition Index (FCI) for each building. The detailed calculations to derive the FCI are also included in separate reports.



Portfolio - Building Age Distribution
 BCRPA Recreation Facilities Assessment, Lower Mainland, BC

AVERAGE VALUE						
				1980	3.51	27.8
1. BUILDING AGE						
BUILDING NAME	FAC.	PRINCIPAL OCCUPANCY	CONST YEAR	FACILITY STAGE	AGE OF BUILDING	
Facility	1.1	Community Centre	1974	4	34	
Facility	2.1	Community Centre	1977	4	31	
Facility	2.2	Ice Arena	1977	4	31	
Facility	2.3	Indoor Pool	1992	3	16	
Facility	3.1	Community Centre	1981	4	27	
Facility	3.2	Youth Centre	2005	2	3	
Facility	4.2	Community Hall	1974	4	34	
Facility	4.1	Community Centre	1996	2	12	
Facility	5.2	Community Centre	1958	5	50	
Facility	5.3	Youth Centre	1958	5	50	
Facility	5.1	Community Center (Add	1985	3	23	
Facility	6.2	Community Centre	1995	2	13	
Facility	6.3	Library	1995	2	13	
Facility	6.4	Seniors Centre	1995	2	13	
Facility	6.1	Community Center (Add	2001	2	7	
Facility	7.2	Ice Arena	1975	4	33	
Facility	7.1	Community Centre	1997	2	11	
Facility	7.3	Indoor Pool	1997	2	11	
Facility	7.4	Library	1997	2	11	
Facility	8.1	Community Centre	1975	4	33	
Facility	8.2	Indoor Pool	1975	4	33	
Facility	9.1	Community Centre	1952	5	56	
Facility	9.3	Library	1952	5	56	
Facility	9.5	Youth Centre	1952	5	56	
Facility	9.2	Indoor Pool	1955	5	53	
Facility	9.4	Seniors Centre	1986	3	22	
Facility	10.1	Community Centre	1981	4	27	
Facility	10.2	Indoor Pool	1981	4	27	
Facility	10.3	Youth Centre	2001	2	7	
Facility	11.3	Ice Arena	1972	5	36	
Facility	11.2	Curling Facility	1974	4	34	
Facility	11.1	Community Centre	1992	3	16	

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Facility	12.1	Community Centre	1999	2	9
Facility	13.1	Community Centre	1978	4	30
Facility	14.1	Community Centre	1992	3	16
Facility	15.1	Community Centre	1957	5	51
Facility	16.1	Community Centre	1964	5	44

EXPLANATORY NOTES:

This report provides a series of horizontal data bars in the far right-hand column to graphically illustrate the relative Facility Condition Index (FCI) for each of the buildings, which are sorted by building type. This report provides analysis of the range of conditions exhibited by facilities in each building class. The purpose is determine the extent of variability in the condition of the facilities of each class based on the amount of "catch up" money that is estimated for each building. "Catch-up" money is the accumulated backlog of deferred maintenance at the time of the Study and is work that needs to be done in order to catch-up on lost time. The FCI has been derived from a "Top-Down" method, which assigns condition rankings to each system - this method varies from the "Bottom-Up" approach, which identifies a line-item list of deficiencies and assigns costs to each deficiency. The vertical dashed line indicates the average FCI based on all the buildings in the sample.



Portfolio - FCI Distribution by Building Type
BCRPA Recreation Facilities Assessment, Lower Mainland, BC

TD24

AVERAGE VALUE	\$1,652,000	\$8,781,000	18.81%	
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3. FACILITY CONDITION INDEX

BUILDING TYPE / FACILITY NAME	FAC / BLDG	BACKLOG MAINTENANCE*	REPRODUCTION COST*	TD FCI RATING	TD FCI
COMMUNITY CENTRE		\$12,630,000	\$94,360,000	13.38%	
Facility	1.1	\$140,000	\$3,100,000	4.52%	
Facility	2.1	\$410,000	\$2,020,000	20.30%	
Facility	3.1	\$530,000	\$8,270,000	6.41%	
Facility	4.1	\$180,000	\$1,410,000	12.77%	
Facility	5.1	\$280,000	\$2,300,000	12.17%	
Facility	5.2	\$930,000	\$7,820,000	11.89%	
Facility	6.1	\$60,000	\$260,000	23.08%	
Facility	6.2	\$2,070,000	\$9,290,000	22.28%	
Facility	7.1	\$480,000	\$730,000	65.75%	
Facility	8.1	\$2,160,000	\$6,010,000	35.94%	
Facility	9.1	\$2,240,000	\$7,630,000	29.36%	
Facility	10.1	\$320,000	\$9,630,000	3.32%	
Facility	11.1	\$510,000	\$3,010,000	16.94%	
Facility	12.1	\$340,000	\$12,880,000	2.64%	
Facility	13.1	\$720,000	\$3,100,000	23.23%	
Facility	14.1	\$450,000	\$7,800,000	5.77%	
Facility	15.1	\$390,000	\$6,900,000	5.65%	
Facility	16.1	\$430,000	\$2,200,000	19.55%	
COMMUNITY HALL		\$40,000	\$300,000	13.33%	
Facility	4.2	\$40,000	\$300,000	13.33%	
CURLING FACILITY		\$510,000	\$3,000,000	17.00%	
Facility	11.2	\$510,000	\$3,000,000	17.00%	
ICE ARENA		\$4,410,000	\$11,570,000	38.12%	
Facility	2.2	\$1,070,000	\$4,030,000	26.55%	
Facility	7.2	\$2,730,000	\$3,940,000	69.29%	
Facility	11.3	\$610,000	\$3,600,000	16.94%	
INDOOR POOL		\$5,410,000	\$16,640,000	32.51%	
Facility	2.3	\$610,000	\$2,790,000	21.86%	
Facility	7.3	\$2,820,000	\$4,320,000	65.28%	
Facility	8.2	\$1,140,000	\$3,100,000	36.77%	
Facility	9.2	\$650,000	\$1,780,000	36.52%	

BUILDING TYPE / FACILITY NAME	FAC / BLDG	BACKLOG MAINTENANCE*	REPRODUCTION COST*	TD FCI RATING	TD FCI
Facility	10.2	\$180,000	\$4,650,000	3.87%	
SENIORS CENTRE		\$920,000	\$3,280,000	28.05%	
Facility	6.4	\$110,000	\$510,000	21.57%	
Facility	9.4	\$810,000	\$2,770,000	29.24%	
YOUTH CENTRE		\$160,000	\$2,410,000	6.64%	
Facility	3.2	\$20,000	\$230,000	8.70%	
Facility	5.3	\$30,000	\$230,000	13.04%	
Facility	9.5	\$70,000	\$230,000	30.43%	
Facility	10.3	\$60,000	\$1,720,000	3.49%	
LIBRARY		\$2,340,000	\$8,930,000	26.20%	
Facility	6.3	\$1,540,000	\$6,940,000	22.19%	
Facility	7.4	\$390,000	\$600,000	65.00%	
Facility	9.3	\$410,000	\$1,390,000	29.50%	

EXPLANATORY NOTES:

This report provides a series of horizontal data bars in the far right-hand column to graphically illustrate the relative Facility Condition Index (FCI) for each of the buildings, which are sorted by building type. This report provides analysis of the range of conditions exhibited by facilities in each building class. The purpose is determine the extent of variability in the condition of the facilities of each class based on the amount of "catch up" money that is estimated for each building. "Catch-up" money is the accumulated backlog of deferred maintenance at the time of the Study and is work that needs to be done in order to catch-up on lost time. The FCI has been derived from a "Top-Down" method, which assigns condition rankings to each system - this method varies from the "Bottom-Up" approach, which identifies a line-item list of deficiencies and assigns costs to each deficiency. The vertical dashed line indicates the average FCI based on all the buildings in the sample.



Portfolio - FCI Distribution by Life Cycle Stage
 BCRPA Recreation Facilities Assessment, Lower Mainland, BC

					AVERAGE VALUE	\$1,652,000	\$8,781,000	18.81%	
3. FACILITY CONDITION INDEX									
BUILDING TYPE / FACILITY NAME	FAC / BLDG	BACKLOG MAINTENANCE*	REPRODUCTION COST*	TD FCI RATING	TD FCI				
STAGE: 2		\$8,060,000	\$38,890,000	20.73%					
Youth Centre	3.2	\$20,000	\$230,000	8.70%					
Community Centre	4.1	\$180,000	\$1,410,000	12.77%					
Community Center (Add)	6.1	\$60,000	\$260,000	23.08%					
Community Centre	6.2	\$2,070,000	\$9,290,000	22.28%					
Library	6.3	\$1,540,000	\$6,940,000	22.19%					
Seniors Centre	6.4	\$110,000	\$510,000	21.57%					
Community Centre	7.1	\$480,000	\$730,000	65.75%					
Indoor Pool	7.3	\$2,820,000	\$4,320,000	65.28%					
Library	7.4	\$390,000	\$600,000	65.00%					
Youth Centre	10.3	\$60,000	\$1,720,000	3.49%					
Community Centre	12.1	\$340,000	\$12,880,000	2.64%					
STAGE: 3		\$2,660,000	\$18,670,000	14.25%					
Indoor Pool	2.3	\$610,000	\$2,790,000	21.86%					
Community Center (Add)	5.1	\$280,000	\$2,300,000	12.17%					
Seniors Centre	9.4	\$810,000	\$2,770,000	29.24%					
Community Centre	11.1	\$510,000	\$3,010,000	16.94%					
Community Centre	14.1	\$450,000	\$7,800,000	5.77%					
STAGE: 4		\$9,950,000	\$51,150,000	19.45%					
Community Centre	1.1	\$140,000	\$3,100,000	4.52%					
Community Centre	2.1	\$410,000	\$2,020,000	20.30%					
Ice Arena	2.2	\$1,070,000	\$4,030,000	26.55%					
Community Centre	3.1	\$530,000	\$8,270,000	6.41%					
Community Hall	4.2	\$40,000	\$300,000	13.33%					
Ice Arena	7.2	\$2,730,000	\$3,940,000	69.29%					
Community Centre	8.1	\$2,160,000	\$6,010,000	35.94%					
Indoor Pool	8.2	\$1,140,000	\$3,100,000	36.77%					
Community Centre	10.1	\$320,000	\$9,630,000	3.32%					
Indoor Pool	10.2	\$180,000	\$4,650,000	3.87%					
Curling Facility	11.2	\$510,000	\$3,000,000	17.00%					
Community Centre	13.1	\$720,000	\$3,100,000	23.23%					
STAGE: 5		\$5,760,000	\$31,780,000	18.12%					

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BUILDING TYPE / FACILITY NAME	FAC / BLDG	BACKLOG MAINTENANCE*	REPRODUCTION COST*	TD FCI RATING	TD FCI
Community Centre	5.2	\$930,000	\$7,820,000	11.89%	
Youth Centre	5.3	\$30,000	\$230,000	13.04%	
Community Centre	9.1	\$2,240,000	\$7,630,000	29.36%	
Indoor Pool	9.2	\$650,000	\$1,780,000	36.52%	
Library	9.3	\$410,000	\$1,390,000	29.50%	
Youth Centre	9.5	\$70,000	\$230,000	30.43%	
Ice Arena	11.3	\$610,000	\$3,600,000	16.94%	
Community Centre	15.1	\$390,000	\$6,900,000	5.65%	
Community Centre	16.1	\$430,000	\$2,200,000	19.55%	

EXPLANATORY NOTES:

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BCRPA Recreation Facilities Assessment, Lower Mainland, BC
Portfolio - EFCI Distribution by Building Type

TD34

AVERAGE VALUE	\$2,631,000	\$8,781,000	29.96%	
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3. FACILITY CONDITION INDEX					
FACILITY NAME BUILDING NAME	FAC / BLDG	BACKLOG MAINT & 5 Yr RENEWAL	REPRODUCTION COST*	TD EFCI RATING	TD EFCI
COMMUNITY CENTRE		\$12,630,000	\$94,360,000	13.38%	
Facility	1.1	\$300,000	\$3,100,000	9.68%	
Facility	2.1	\$540,000	\$2,020,000	26.73%	
Facility	3.1	\$1,020,000	\$8,270,000	12.33%	
Facility	4.1	\$370,000	\$1,410,000	26.24%	
Facility	5.1	\$460,000	\$2,300,000	20.00%	
Facility	5.2	\$1,550,000	\$7,820,000	19.82%	
Facility	6.1	\$60,000	\$260,000	23.08%	
Facility	6.2	\$2,260,000	\$9,290,000	24.33%	
Facility	7.1	\$480,000	\$730,000	65.75%	
Facility	8.1	\$2,220,000	\$6,010,000	36.94%	
Facility	9.1	\$3,010,000	\$7,630,000	39.45%	
Facility	10.1	\$720,000	\$9,630,000	7.48%	
Facility	11.1	\$630,000	\$3,010,000	20.93%	
Facility	12.1	\$3,460,000	\$12,880,000	26.86%	
Facility	13.1	\$950,000	\$3,100,000	30.65%	
Facility	14.1	\$770,000	\$7,800,000	9.87%	
Facility	15.1	\$1,320,000	\$6,900,000	19.13%	
Facility	16.1	\$650,000	\$2,200,000	29.55%	
COMMUNITY HALL		\$40,000	\$300,000	13.33%	
Facility	4.2	\$80,000	\$300,000	26.67%	
CURLING FACILITY		\$510,000	\$3,000,000	17.00%	
Facility	11.2	\$630,000	\$3,000,000	21.00%	
ICE ARENA		\$4,410,000	\$11,570,000	38.12%	
Facility	2.2	\$3,080,000	\$4,030,000	76.43%	
Facility	7.2	\$4,230,000	\$3,940,000	107.36%	
Facility	11.3	\$2,790,000	\$3,600,000	77.50%	
INDOOR POOL		\$5,410,000	\$16,640,000	32.51%	
Facility	2.3	\$830,000	\$2,790,000	29.75%	

FACILITY NAME BUILDING NAME	FAC / BLDG	BACKLOG MAINT & 5 YR RENEWAL	REPRODUCTION COST*	TD EFCI RATING	TD EFCI
Facility	7.3	\$2,880,000	\$4,320,000	66.67%	
Facility	8.2	\$1,260,000	\$3,100,000	40.65%	
Facility	9.2	\$890,000	\$1,780,000	50.00%	
Facility	10.2	\$520,000	\$4,650,000	11.18%	
SENIORS CENTRE		\$920,000	\$3,280,000	28.05%	
Facility	6.4	\$120,000	\$510,000	23.53%	
Facility	9.4	\$1,090,000	\$2,770,000	39.35%	
YOUTH CENTRE		\$160,000	\$2,410,000	6.64%	
Facility	3.2	\$30,000	\$230,000	13.04%	
Facility	5.3	\$40,000	\$230,000	17.39%	
Facility	9.5	\$90,000	\$230,000	39.13%	
Facility	10.3	\$130,000	\$1,720,000	7.56%	
LIBRARY		\$2,340,000	\$8,930,000	26.20%	
Facility	6.3	\$1,690,000	\$6,940,000	24.35%	
Facility	7.4	\$400,000	\$600,000	66.67%	
Facility	9.3	\$550,000	\$1,390,000	39.57%	

EXPLANATORY NOTES:

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Portfolio - EFCI Distribution by Life Cycle Stage
 BCRPA Recreation Facilities Assessment, Lower Mainland, BC

TD35

AVERAGE VALUE	\$2,631,000	\$8,781,000	29.96%	
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3. FACILITY CONDITION INDEX					
FACILITY NAME BUILDING NAME	FAC / BLDG	BACKLOG MAINT & 5 Yr RENEWAL	REPRODUCTION Cost*	TD EFCI RATING	TD EFCI
STAGE: 2		\$8,060,000	\$38,890,000	20.73%	
Youth Centre	3.2	\$30,000	\$230,000	13.04%	
Community Centre	4.1	\$370,000	\$1,410,000	26.24%	
Community Center (Add)	6.1	\$60,000	\$260,000	23.08%	
Community Centre	6.2	\$2,260,000	\$9,290,000	24.33%	
Library	6.3	\$1,690,000	\$6,940,000	24.35%	
Seniors Centre	6.4	\$120,000	\$510,000	23.53%	
Community Centre	7.1	\$480,000	\$730,000	65.75%	
Indoor Pool	7.3	\$2,880,000	\$4,320,000	66.67%	
Library	7.4	\$400,000	\$600,000	66.67%	
Youth Centre	10.3	\$130,000	\$1,720,000	7.56%	
Community Centre	12.1	\$3,460,000	\$12,880,000	26.86%	
STAGE: 3		\$2,660,000	\$18,670,000	14.25%	
Indoor Pool	2.3	\$830,000	\$2,790,000	29.75%	
Community Center (Add)	5.1	\$460,000	\$2,300,000	20.00%	
Seniors Centre	9.4	\$1,090,000	\$2,770,000	39.35%	
Community Centre	11.1	\$630,000	\$3,010,000	20.93%	
Community Centre	14.1	\$770,000	\$7,800,000	9.87%	
STAGE: 4		\$9,950,000	\$51,150,000	19.45%	
Community Centre	1.1	\$300,000	\$3,100,000	9.68%	
Community Centre	2.1	\$540,000	\$2,020,000	26.73%	
Ice Arena	2.2	\$3,080,000	\$4,030,000	76.43%	
Community Centre	3.1	\$1,020,000	\$8,270,000	12.33%	
Community Hall	4.2	\$80,000	\$300,000	26.67%	
Ice Arena	7.2	\$4,230,000	\$3,940,000	107.36%	
Community Centre	8.1	\$2,220,000	\$6,010,000	36.94%	
Indoor Pool	8.2	\$1,260,000	\$3,100,000	40.65%	
Community Centre	10.1	\$720,000	\$9,630,000	7.48%	
Indoor Pool	10.2	\$520,000	\$4,650,000	11.18%	

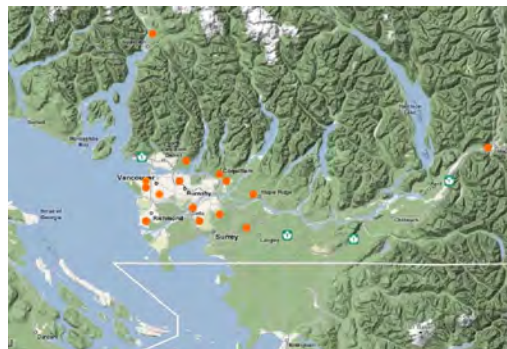
FACILITY NAME BUILDING NAME	FAC / BLDG	BACKLOG MAINT & 5 Yr RENEWAL	REPRODUCTION COST*	TD EFCI RATING	TD EFCI
Curling Facility	11.2	\$630,000	\$3,000,000	21.00%	
Community Centre	13.1	\$950,000	\$3,100,000	30.65%	
STAGE: 5		\$5,760,000	\$31,780,000	18.12%	
Community Centre	5.2	\$1,550,000	\$7,820,000	19.82%	
Youth Centre	5.3	\$40,000	\$230,000	17.39%	
Community Centre	9.1	\$3,010,000	\$7,630,000	39.45%	
Indoor Pool	9.2	\$890,000	\$1,780,000	50.00%	
Library	9.3	\$550,000	\$1,390,000	39.57%	
Youth Centre	9.5	\$90,000	\$230,000	39.13%	
Ice Arena	11.3	\$2,790,000	\$3,600,000	77.50%	
Community Centre	15.1	\$1,320,000	\$6,900,000	19.13%	
Community Centre	16.1	\$650,000	\$2,200,000	29.55%	

EXPLANATORY NOTES:

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BCRPA Recreation Facilities Assessment, Lower Mainland, BC

Portfolio - FNI Distribution by Building Type

AVERAGE VALUE	\$6,229,000	\$8,781,000	70.94%	
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3. FACILITY CONDITION INDEX

FACILITY NAME BUILDING NAME	FAC / BLDG	BACKLOG MAINT, 5 YR RENEWAL & FUNCT OB *	REPRODUCTION COST*	TD FNI RATING	TD FNI
COMMUNITY CENTRE		\$62,940,000	\$94,360,000	66.70%	
Facility	1.1	\$2,260,000	\$3,100,000	72.90%	
Facility	2.1	\$1,620,000	\$2,020,000	80.20%	
Facility	3.1	\$4,340,000	\$8,270,000	52.48%	
Facility	4.1	\$520,000	\$1,410,000	36.88%	
Facility	5.1	\$1,140,000	\$2,300,000	49.57%	
Facility	5.2	\$8,530,000	\$7,820,000	109.08%	
Facility	6.1	\$70,000	\$260,000	26.92%	
Facility	6.2	\$3,350,000	\$9,290,000	36.06%	
Facility	7.1	\$550,000	\$730,000	75.34%	
Facility	8.1	\$5,840,000	\$6,010,000	97.17%	
Facility	9.1	\$10,120,000	\$7,630,000	132.63%	
Facility	10.1	\$4,590,000	\$9,630,000	47.66%	
Facility	11.1	\$1,110,000	\$3,010,000	36.88%	
Facility	12.1	\$4,380,000	\$12,880,000	34.01%	
Facility	13.1	\$2,500,000	\$3,100,000	80.65%	
Facility	14.1	\$2,020,000	\$7,800,000	25.90%	
Facility	15.1	\$7,530,000	\$6,900,000	109.13%	
Facility	16.1	\$2,470,000	\$2,200,000	112.27%	
COMMUNITY HALL		\$270,000	\$300,000	90.00%	
Facility	4.2	\$270,000	\$300,000	90.00%	
CURLING FACILITY		\$1,450,000	\$3,000,000	48.33%	
Facility	11.2	\$1,450,000	\$3,000,000	48.33%	
ICE ARENA		\$13,080,000	\$11,570,000	113.05%	
Facility	2.2	\$3,890,000	\$4,030,000	96.53%	
Facility	7.2	\$5,200,000	\$3,940,000	131.98%	
Facility	11.3	\$3,990,000	\$3,600,000	110.83%	
INDOOR POOL		\$14,290,000	\$16,640,000	85.88%	

TD44

FACILITY NAME BUILDING NAME	FAC / BLDG	BACKLOG MAINT, 5 YR RENEWAL & FUNCT OB *	REPRODUCTION COST*	TD FNI RATING	TD FNI
Facility	2.3	\$1,430,000	\$2,790,000	51.25%	
Facility	7.3	\$3,400,000	\$4,320,000	78.70%	
Facility	8.2	\$3,620,000	\$3,100,000	116.77%	
Facility	9.2	\$2,600,000	\$1,780,000	146.07%	
Facility	10.2	\$3,240,000	\$4,650,000	69.68%	
SENIORS CENTRE		\$2,020,000	\$3,280,000	61.59%	
Facility	6.4	\$180,000	\$510,000	35.29%	
Facility	9.4	\$1,840,000	\$2,770,000	66.43%	
YOUTH CENTRE		\$800,000	\$2,410,000	33.20%	
Facility	3.2	\$30,000	\$230,000	13.04%	
Facility	5.3	\$250,000	\$230,000	108.70%	
Facility	9.5	\$300,000	\$230,000	130.43%	
Facility	10.3	\$220,000	\$1,720,000	12.79%	
LIBRARY		\$4,810,000	\$8,930,000	53.86%	
Facility	6.3	\$2,500,000	\$6,940,000	36.02%	
Facility	7.4	\$460,000	\$600,000	76.67%	
Facility	9.3	\$1,850,000	\$1,390,000	133.09%	

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BCRPA Recreation Facilities Assessment, Lower Mainland, BC

Portfolio - FNI Distribution by Life Cycle Stage

AVERAGE VALUE	\$6,229,000	\$8,781,000	70.94%	
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3. FACILITY CONDITION INDEX

FACILITY NAME BUILDING NAME	FAC / BLDG	BACKLOG MAINT, 5 YR RENEWAL & FUNCT OB *	REPRODUCTION COST*	TD FNI RATING	TD FNI
STAGE: 2					
Youth Centre	3.2	\$30,000	\$230,000	13.04%	
Community Centre	4.1	\$520,000	\$1,410,000	36.88%	
Community Center (Add)	6.1	\$70,000	\$260,000	26.92%	
Community Centre	6.2	\$3,350,000	\$9,290,000	36.06%	
Library	6.3	\$2,500,000	\$6,940,000	36.02%	
Seniors Centre	6.4	\$180,000	\$510,000	35.29%	
Community Centre	7.1	\$550,000	\$730,000	75.34%	
Indoor Pool	7.3	\$3,400,000	\$4,320,000	78.70%	
Library	7.4	\$460,000	\$600,000	76.67%	
Youth Centre	10.3	\$220,000	\$1,720,000	12.79%	
Community Centre	12.1	\$4,380,000	\$12,880,000	34.01%	
STAGE: 3					
Indoor Pool	2.3	\$1,430,000	\$2,790,000	51.25%	
Community Center (Add)	5.1	\$1,140,000	\$2,300,000	49.57%	
Seniors Centre	9.4	\$1,840,000	\$2,770,000	66.43%	
Community Centre	11.1	\$1,110,000	\$3,010,000	36.88%	
Community Centre	14.1	\$2,020,000	\$7,800,000	25.90%	
STAGE: 4					
Community Centre	1.1	\$2,260,000	\$3,100,000	72.90%	
Community Centre	2.1	\$1,620,000	\$2,020,000	80.20%	
Ice Arena	2.2	\$3,890,000	\$4,030,000	96.53%	
Community Centre	3.1	\$4,340,000	\$8,270,000	52.48%	
Community Hall	4.2	\$270,000	\$300,000	90.00%	
Ice Arena	7.2	\$5,200,000	\$3,940,000	131.98%	
Community Centre	8.1	\$5,840,000	\$6,010,000	97.17%	
Indoor Pool	8.2	\$3,620,000	\$3,100,000	116.77%	
Community Centre	10.1	\$4,590,000	\$9,630,000	47.66%	

TD45

FACILITY NAME BUILDING NAME	FAC / BLDG	BACKLOG MAINT, 5 YR RENEWAL & FUNCT OB *	REPRODUCTION COST*	TD FNI RATING	TD FNI
Indoor Pool	10.2	\$3,240,000	\$4,650,000	69.68%	
Curling Facility	11.2	\$1,450,000	\$3,000,000	48.33%	
Community Centre	13.1	\$2,500,000	\$3,100,000	80.65%	
STAGE: 5		\$37,640,000	\$31,780,000	118.44%	
Community Centre	5.2	\$8,530,000	\$7,820,000	109.08%	
Youth Centre	5.3	\$250,000	\$230,000	108.70%	
Community Centre	9.1	\$10,120,000	\$7,630,000	132.63%	
Indoor Pool	9.2	\$2,600,000	\$1,780,000	146.07%	
Library	9.3	\$1,850,000	\$1,390,000	133.09%	
Youth Centre	9.5	\$300,000	\$230,000	130.43%	
Ice Arena	11.3	\$3,990,000	\$3,600,000	110.83%	
Community Centre	15.1	\$7,530,000	\$6,900,000	109.13%	
Community Centre	16.1	\$2,470,000	\$2,200,000	112.27%	

Appendix 3

Facility Reports



Phase IV Validation Sample: Community Centres, Lower Mainland, British Columbia

1. LOWER MAINLAND FACILITIES #1 - #16

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 1

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION:	1974	BACKLOG MAINTENANCE ("CATCH-UP")	
LIFE CYCLE STAGE (TL-STAGE):	4	COST OF DEFICIENCIES (BACKLOG)	\$95,000
GROSS FLOOR AREA:	39,000	OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$43,000
NUMBER OF BUILDINGS:	1	SUM OF BACKLOG (BL)	\$140,000 A
ESTIMATED REPRODUCTION COST (CRV):	\$3,100,000		



FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI)	4.5% A	COST OF 5 YEAR RENEWALS (RENEWALS)	\$110,000
EXTENDED FACILITY CONDITION INDEX (TD-EFCI)	9.7% A + B	OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$50,000
FACILITY NEEDS INDEX (TD-FNI)	72.8% A + B + C	SUM OF RENEWALS (R5)	\$160,000 B
		OBsolescence ESTIMATE ("GET-AHEAD")	\$1,960,000 C
		FUNCTIONAL OBsolescence (FO)	

SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	4	Foundation system is footings and concrete slab-on-grade. Structural frame consists of packaged steel arch frame, concrete block infill walls and steel girt infill walls above block. Roof structure is steel roof girts. Mezzanine storage is parallel chord wood trusses. There are also steel frame exit stairs.	There is some corrosion on exterior structural steel arch frame. Paint is peeling on steel stairs. Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no other significant concerns noted at this time.	Prepare and repaint exterior steel arch frame. Remove peeling paint and repaint steel exit stairs. Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any other significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$50,000 A \$0 B
Building Enclosure	4	Roof is sloped prefinished sheet steel. Walls are concrete block and vertical steel siding. Doors are double out-swing exit doors, steel overhead roll-up doors and aluminum storefront assemblies. Canopies are steel arch frame and prefinished sheet steel and metal frame with fabric.	Cracks through concrete block walls, construction joints are cracked and efflorescence staining is visible. Birds nesting and soiling on vertical steel siding. Double out-swing doors are in poor condition. There is corrosion at the sill of the overhead roll-up doors.	Route out mortar and install sealant to concrete block walls. Clean, seal and recoat concrete block where efflorescence is present. Control bird nesting and clean soiling. Replace double out-swing doors and overhead roll-up doors.	\$0 A \$100,000 B
Electrical	5	The building receives 200 Amp, 208 Volt, 3 phase power from BC Hydro pole mounted transformers. There are distribution panels in the main electrical room and in service rooms around the building. Lighting is predominantly T8 and T12 fluorescent. There are high bay metal halide fixtures and HPS wall pack exterior lights. There is a security system with motion sensors and door sensors. There is a small gas fired electrical generator, which provides emergency power for some of the lights. There is a public address system.	Lack of photo sensors and occupancy sensors and controls on the lighting systems to reduce power consumption.	Budget for photo sensors, timers and occupancy sensors to improve the efficiency of the lighting systems. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$10,000 A \$10,000 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 1

Mechanical	5	There are two warm air furnaces (both of which are original). The upper level warm air furnace is to be replaced this year with a packaged air conditioning system for a cost of approximately \$25,000. There are some forced flow electric heaters and gas fired radiant heaters. Domestic hot water is provided by 100 gallon electric hot water heater. There is a hydraulic elevator for handicap access to the mezzanine level.	The main level warm air furnace is original and, as such, is nearing the end of its useful service life. The domestic water heater is also approaching the end of its service life. The elevator is rarely used and the inspection reports by the elevator service contractors were up to date.	Replace the warm air furnace serving the lower level. Replace the domestic hot water heater. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$30,000 A \$0 B
Fire Safety	5	There is an Edwards multi-zone fire alarm control panel. Smoke detectors, heat detectors, pull stations and bells are located throughout.	Based on a visual review, no significant capital expenditures are expected over the next five years.	Provided the fire detection and suppression systems are maintained according to the NFPA and BC Building Code requirements, the systems should continue to operate reliably for the next five years.	\$0 A \$0 B
Interior Finishes	5	Flooring is painted concrete, resilient tile and carpet. Walls are painted drywall, painted block, vinyl wallpaper, and ceramic tile. Appliances include domestic fridge and stove. Regular furnishings include chairs, tables, millwork, washroom partitions and public signage. Interior doors are regular swing doors and unmechanized overhead rolling service doors. Recreation furnishings include mobile screen, tennis court facilities and sound system. Interior spaces include multi-purpose room, tennis courts, lobby, storage and a workshop.	Worn paintwork on tennis court surface. Stains on acoustic ceiling tiles at mezzanine level. Holes in drywall at mezzanine storage room. Interior space has recently been renovated.	Replace water damaged acoustic ceiling tiles on mezzanine level. Repair holes in drywall at storage room. Repaint sports markings on tennis court.	\$5,000 A \$0 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 2

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION:	1977
LIFE CYCLE STAGE (TL-STAGE):	4
GROSS FLOOR AREA:	57,000
NUMBER OF BUILDINGS:	3
ESTIMATED REPRODUCTION COST (CRV):	\$8,840,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG)	\$1,435,000
OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$653,000
SUM OF BACKLOG (BL)	\$2,090,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS)	\$1,625,000
OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$739,000
SUM OF RENEWALS (R5)	\$2,360,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI)	23.6% ^A
EXTENDED FACILITY CONDITION INDEX (TD-EFCI)	50.3% ^{A + B}
FACILITY NEEDS INDEX (TD-FNI)	75.5% ^{A + B + C}

OBsolescence ESTIMATE ("GET-AHEAD")

FUNCTIONAL OBsolescence (FO)	\$2,220,000 ^C
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SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	4	Foundation system is concrete footings, slab-on-grade and foundation walls on strip footings. Structural frame consists of concrete columns and beams, deep steel roof beam over pool, HSS steel columns, wide-span steel frames over arena, cast-in place concrete bleachers, pre-cast concrete floor slabs and concrete block infill walls. Roof structure is steel OWS) and steel deck. Walls are pre-cast concrete waffle panels. Exit stair and landings are steel frame.	Steel frame exit stairs and landings are exposed, resulting in corrosion. Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no other significant concerns noted at this time.	Repaint steel exit stairs. Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying protected structural components are not expected to require any other significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$25,000 ^A \$0 ^B
Building Enclosure	3	Roofs are prefinished sheet steel, 2-ply SBS. BUR and inverted with EPDM membrane. Skylights are barrel vault. Walls are deep-rib pre-finished sheet steel cladding, pre-cast concrete waffle panels, concrete masonry units, horizontal wood siding and stucco infill panels. Windows are aluminum curtain-wall. Doors are double out-swing steel exit doors, storefront, glazed steel exit doors and steel overhead roll-up doors. At-grade includes landscape soils and plantings.	2-ply SBS roof has ridges and blisters. BUR roof is aged and in poor condition. Inverted roof is aged and in fair condition. Concrete panel walls have unsealed cracks in reveals. Concrete masonry walls exhibit signs of water penetration and exterior algae growth. Stucco panels are cracked. Windows have some failed sealed units and failed or missing sealant. Double out-swing doors are exposed, dented and dirty with temporary exit stairs. Storefront doors are unprotected and paint is chipping on glazed steel doors. Roll-up doors are dented due to puck damage. Plants are encroaching on cladding.	Repair 2-ply SBS roof, replace BUR roof over arena and maintain inverted roof. Apply sealant to concrete panel walls. Locally recoat and clean concrete masonry walls and replace sealant. Route, seal and recoat stucco walls. Replace sealed units and sealant in windows. Clean double out-swing doors, construct stairs with landing and add head flashing. Construct canopy and head flashing for unprotected storefront doors. Repaint glazed steel doors and replace roll-up doors. Reduce soil level and prune plantings away from walls.	\$1,000,000 ^A \$150,000 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 2

Electrical	<p>4 There are two service entrances into the building from pole mounted transformers north of the building. There are two 400 Amp, 600 Volt disconnects. There are two dry type transformers (112.5 kVA & 75 kVA) that provide power to the low voltage loads and receptacles. There is a 45 kVA propane powered generator that provides power for the lights and emergency systems. There is a sound system for the amenity rooms. Several antennas are mounted on the roof. Some doors have restricted access control through keypad entry. Ballast mounted microwave antennas on roof.</p>	<p>Some of the wiring and the distribution panels are nearing the end of their service lives. With older breakers and safety devices there is a concern that the mechanisms will not work properly when needed, especially when the equipment has operated beyond its typical service life. The dry type transformers are also nearing the end of their useful service lives. Leakage from main pole mounted oil filled transformers. Overheating problem with halogen lights in pool (underwater).</p>	<p>Upgrade portions of the electrical distribution, including panels, safety switches, wiring and the low voltage step down transformers. Replace three oil filled transformers with pad-mounted transformer. Review GFI protection of receptacles on pool deck. Replace pool halogen lights with LED fixtures. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.</p>	<p>\$80,000 A \$45,000 B</p>
Mechanical	<p>3 Four hot water boilers provide heat for the pool and some parts of the domestic hot water system. Warm air furnace for change room area in the rink and direct gas fired water heater. Five gas fired roof mounted air handling units. Three roof mounted air conditioning units (with gas heat). Gas fired unit heaters in some service rooms. The control system in the building was recently upgraded to DDC and majority of actuators were changed to electronic.</p>	<p>Virtually all the roof top units are original and show signs of environmental degradation. Two of the hot water boilers appear to be nearing the end of their service lives. Ductwork requires cleaning. Peeling paint on rooftop ductwork and above pool deck. Plumbing fixtures lack automatic shutoffs.</p>	<p>Clean ductwork, repaint ductwork where paint has deteriorated and is flaking off. Replace insulation on piping in steam generator room. Replace steam generator. Replace 5 roof mounted gas fired air handling units and 2 air conditioning units. Replace 2 x 400,000 BTUH input hot water boilers. Consider installation of automatic valves on plumbing fixtures. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.</p>	<p>\$30,000 A \$180,000 B</p>
Fire Safety	<p>5 There is a multi-zone fire alarm control panel mounted in service room. Fire suppression system includes hand held fire extinguishers and sprinklers. The building is fully sprinklered. There are fire hydrants in proximity to the building. Emergency egress equipment includes exit signs.</p>	<p>Based on a visual review, and in the absence of any documentation, there were no significant capital expenditures anticipated for this system.</p>	<p>Provided the fire detection and suppression systems are maintained according to the NFPA and BC Building Code requirements, the systems should continue to operate reliably for the next five years.</p>	<p>\$0 A \$0 B</p>
Interior Finishes	<p>3 Flooring is ceramic tile of various types, resilient sheet/tile, painted concrete, rubber and carpet. Walls are painted drywall. Window coverings are blinds. Ceilings are flat painted finish, acoustic tile, and metal linear sheet. Appliances include domestic fridge, domestic stove, and laundry washer/dryer. Regular furnishings include chairs, tables, millwork, washroom partitions and public signage. Recreation furnishings include fitness equipment, sound system, metal storage lockers, bleachers, dasher boards and sports clock. Interior spaces include pool, ice rink, fitness equipment, steam room, pre-school, multi-purpose rooms, meeting room and gymnasium.</p>	<p>Cracks and delamination of resilient tile flooring. Urine stains on rubber flooring beneath urinals. Faded stair tread safety edge markings. Holes and other impact damage to wood panels. Peeling paint in some locations on pool deck. Water damaged ceiling tiles. Water stains on pool ceiling. Damaged door frames. Corrosion on some metal hardware in pool area. Puck damage to walls adjoining rink.</p>	<p>Replace cracked and delaminated resilient tile flooring in gymnasium. Repaint faded stair tread safety edge markings. Consider installation of alternative flooring beneath urinals to mitigate urine staining. Patch gouges and holes in walls and doors. Repaint damaged portions of walls and doors. Prime and repaint portions of walls in pool area. Trace source of leakage and replace water damaged ceiling tile. Clean and repaint structural supports on pool decks. Grind off corrosion and repaint metal components on pool deck. Install protective netting to limit puck damage to adjoining wall at rink.</p>	<p>\$100,000 A \$30,000 B</p>

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 2

Pool	<p>4 The pool facility consists of the main pool, a teaching pool and a spa. There are dedicated gas fired atmospheric boilers that heat the two pools and the spa, including a 1.2 million BTU heater for the main pool. Filtration system is diatomaceous earth (DE). There are several pumps including, a two 5 HP booster pumps, a 2 HP pump, a 7 HP pump, a 10 HP ozone supply pump, and liquid chlorine injectors. Steam generator for the steam room. Pool has 22,000 CFM indoor mounted air handling unit with a hot water coil. DDC control for pool equipment.</p>	<p>Corrosion of stair rungs. Aging steam generator. 3 phase 5HP Jacuzzi booster pump is currently not running and should be replaced as it is difficult to find parts for a pump of this vintage. The heaters for the teaching pool and the spa are both aged and reaching the end of their service lives.</p>	<p>Replace corroded stair rungs in concrete DE tanks. Replace steam generator. Replace 3 phase 5 HP booster pump. Replace the Laars NEPC 400 heaters for both the teaching pool and the spa.</p>	<p>\$30,000 A</p>
Refrigeration	<p>3 The refrigeration equipment consists of two Mycom N4B Compressors (1976), two 7.5 HP motors (1976), a 20" x 16" chiller (1987), one IMECO XLP-165 condenser (1992), a 20 HP brine pump (2002) and a 7.5 HP brine pony pump (2003). The capacity is 94 tons of refrigeration at 10°F SST and 90°F SDT. Desiccant dehumidifier for the rink. Gas monitoring equipment for taking sample measurements. Dedicated exhaust fan in the compressor room with remote control capabilities. Eye wash station.</p>	<p>The existing chiller has extended its typical service life. The evaporative condenser is approaching the end of its service life. The arena floor is approaching the end of its service life. As the plastic pipe becomes brittle with age, the floor may develop leaks. Facility staff report that the gas monitoring system is well below acceptable thresholds. Desiccant dehumidifier was recently installed and the enclosure was observed to be in good condition.</p>	<p>Replace the chiller. Plan for replacement of condenser in the next two years. Replace the arena floor within the next five years, possibly sooner if the electric heating cable fails. Replace seals on desiccant wheel.</p>	<p>\$170,000 A \$1,200,000 B</p>

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 3

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION:	1981
LIFE CYCLE STAGE (TL-STAGE):	4
GROSS FLOOR AREA:	37,000
NUMBER OF BUILDINGS:	2
ESTIMATED REPRODUCTION COST (CRV):	\$8,500,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG)	\$375,000
OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$171,000
SUM OF BACKLOG (BL)	\$550,000 A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS)	\$345,000
OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$157,000
SUM OF RENEWALS (R5)	\$500,000 B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI)	6.5% A
EXTENDED FACILITY CONDITION INDEX (TD-EFCI)	12.4% A + B
FACILITY NEEDS INDEX (TD-FNI)	44.8% A + B + C



SYSTEM RATING SUMMARY OF SYSTEM SUMMARY OF CONCERNS SUMMARY OF RECOMMENDATIONS EST. COST

SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	5	Foundation system is footings and slab-on-grade. Structural frame is timber post and beam with glue-laminated roof beams. Roof structure is wood decking. Walls are reinforced concrete block masonry.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$0 A
Building Enclosure	4	Roofs are 2-ply SBS, BUR, and treated cedar shakes over sloped roof. Deck is BUR membrane with insulation and pavers. Sloped skylights are sealed double glazed units in T-bar aluminum frame. Walls are vertical and horizontal wood siding. Windows are aluminum and wood frame with double glazed units. Doors are aluminum frame and wood with wood frame. Sloped canopy with glazing in T-bar aluminum frame.	BUR roof is in poor condition. Vegetation growth on main roof. Deck has poor drainage, active leaks and broken pavers. Skylights are prone to water penetration. Walls and windows are subject to weather exposure. Doors have a lack of weather resistance. Canopy lite is broken. Differential settlement of exterior concrete slabs.	Remove vegetation growth on main roof. Replace BUR roof assembly. Clean and service sloped roof. Replace skylight with improved units. Recoat horizontal and vertical wood siding. Reseal and recoat wood frame windows. Service aluminum windows and all doors. Replace glazing in canopy.	\$300,000 A \$300,000 B
Electrical	4	There is a 400 Amp, 3 phase, 600 Volt main disconnect that supplies power to a 400 Amp splitter and the various distribution panels. Lighting is predominantly T8 units which are controlled by motion sensors in some of the rooms. There is also a security system that employs motion sensors. There is a data server for facility administration records. There is a sound system for the amenity spaces.	The is one dry type secondary transformer which appears to be original and is nearing the end of its service. Although the Square D motor control centre has been problem free, replacement parts will become increasingly hard to source in the next few years and there is only one spare bucket. Disconnected light fixture on exterior wall. Graffiti on pad mount transformer. Improper storage in electrical room. Exterior lights on during daylight hours. Inadequate climate control in server room.	Replace 30 kVA dry type transformer. Replace the 12 bucket 600 V MCC. Refasten light fixtures on exterior walls. Remove graffiti from exterior pad mount transformer. Remove improper storage from electrical room. Adjust timers and photocells to ensure that exterior light fixtures are not on during daylight hours. Consider improvements to climate control in server room. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$30,000 A \$10,000 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 3

Mechanical	5	<p>The building is heated with gas fired atmospheric hot water boilers (150,000 BTUH) that deliver hot water to the perimeter baseboard heaters and to hot water coils in six air handling units throughout the building. There are two 611,000 BTUH input direct fired gas water heaters with a 1000 litre storage tank. There is a two stop hydraulic elevator that was installed when the building was constructed.</p>	<p>The boilers are over 30 years old and have recently been refurbished. Due to the age of the equipment, budget for the replacement of two boilers within the next 5 years. The air handling units have had the control valves upgraded to electronic. The water heaters and storage tank are in good condition. 2nd floor boiler room drain floods into reception lobby. Hydraulic elevator is approaching the end of its service life.</p>	<p>Replace two 150,000 BTUH input hot water atmospheric boilers. Upgrade the coils and control dampers on two of the air handling units. Repair drain in 2nd floor mechanical room to alleviate flooding into lobby. Consider upgrades to lower elevator controls and include brail. Refurbish elevator drive system, controls and finishes. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.</p>	<p>\$25,000 A</p> <p>\$15,000 B</p>
Fire Safety	5	<p>Edwards EST multizone fire alarm control panel in the main electrical room with an annunciator panel in the main foyer. There are smoke detectors, pull stations, bells and heat detectors throughout the building. The building is fully sprinklered and dry system is used to protect overhangs and canopies. Handheld fire extinguishers are mounted to the walls in various strategic locations throughout. Emergency egress equipment includes exit signs and emergency lighting.</p>	<p>Chair storage blocking one of the fire egress routes. The fire safety equipment was in good working order with up to date inspection tags.</p>	<p>Remove items being stored in emergency egress routes and arrange alternative storage. Provided the fire detection and suppression systems are maintained according to the NFPA and BC Building Code requirements, the systems should continue to operate reliably for the next several years.</p>	<p>\$0 A</p> <p>\$0 B</p>
Interior Finishes	4	<p>Flooring finishes are ceramic tile, resilient sheet, wood, rubber flooring, sprung wood flooring, carpet and unpainted/painted concrete. Walls are painted finishes. Ceilings are acoustic tile and wood paneling. Window coverings are blinds and drapes. Appliances are domestic and include refrigerators and stove. Regular furnishings are chairs, tables, washroom partitions, public signage and millwork. Recreation furnishings include fitness equipment, sports equipment, sound system, metal storage lockers. Interior spaces include youth games room, fitness room, gymnasium, sauna, domestic kitchen, multi-purpose, administration offices, squash courts, washrooms, staff lunch room and storage rooms.</p>	<p>Space user complaints of inappropriate rubber flooring in gymnasium. Damaged resilient tile flooring. Stains on acoustic ceiling tiles in various locations. Significant shortage of storage space, resulting in furnishings being stored in fire lanes and in one of the squash courts. Scuff marks and gouges on some doors and walls. Staff report problems with carpenter ants. Damaged upholstery on some furnishings. Worn wooden benches in change room. Graffiti on pad mount transformer.</p>	<p>Replace water damaged acoustic ceiling tiles. Repair damaged resilient tile flooring. Repair damaged upholstery seating. Remove graffiti from pad mount transformer. Locally repaint interior doors and walls. Consider installation of bumper guards to mitigate further damage to walls and doors in high traffic locations. Arrange for pest treatment to address carpenter ants. Refinish worn wooden benches in change room.</p>	<p>\$20,000 A</p> <p>\$20,000 B</p>

Level 1 - Facility Assessment

Recreation Facility - Facility: 4

TD02

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1974
 LIFE CYCLE STAGE (TL-STAGE): 4
 GROSS FLOOR AREA: 8,500
 NUMBER OF BUILDINGS: 2
 ESTIMATED REPRODUCTION COST (CRV): \$1,710,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$151,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$69,000
SUM OF BACKLOG (BL) \$220,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$155,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$70,000
SUM OF RENEWALS (R5) \$220,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) 12.9% ^A
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) 25.7% ^{A + B}
 FACILITY NEEDS INDEX (TD-FNI) 40.1% ^{A + B + C}

OBSOLESCENCE ESTIMATE ("GET-AHEAD")

FUNCTIONAL OBSOLESCENCE (FO) \$240,000 ^C



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	5	Foundation system is concrete slab-on-grade and foundation walls on strip footings. Structural frame consists of timber post and beam, wood frame and CMU pilaster and infill walls. Roof structure is OWSJ and steel deck and wood frame roof trusses.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$0 ^A \$0 ^B
Building Enclosure	3	Roofs are BUR, sloped metal and EPDM membrane. Skylights are acrylic domed. Walls are face-sealed stucco, concrete masonry, giant brick, vertical asphalt shingles, vertical metal siding, tile infill and cedar siding. Windows are single-glazed aluminum, aluminum frame store-front and glazed block. Doors are double out-swing exit doors, pressed steel frame and aluminum slider. Balcony is sheet PVC membrane with top-mounted guardrails. Canopies are metal frame and metal frame with fabric. Landscape soils and plantings are found at-grade.	BUR roof has scuppers for drainage and is leaking. Face-sealed stucco is exposed on chimney. Efflorescence staining on concrete masonry units. Vertical asphalt shingles are inappropriate for application. Single-glazed aluminum windows have poor thermal performance. Evidence of water penetration at metal frame canopy.	Install roof drains to replace scuppers on BUR roof. Replace areas of exposed face-sealed stucco. Install sealant at joints of protected stucco. Clean and seal or coat with elastomeric, areas of concrete masonry and giant bricks. Replace vertical shingles with drained cavity cladding. Remove and over-clad tile infill walls. Replace single glazed windows. Re-detail glazed block with head flashing. Repair roof of canopy and clean up soffit. Replace balcony membrane and install side mounted guardrails.	\$110,000 ^A \$120,000 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 4

Electrical	5	The main disconnect is a Federal Pioneer 400 Amp, 3 phase, 4 wire 120/208 Volt switch fed underground from BC Hydro dip. There are two electrical rooms--one from the original building which houses a distribution panel and sub panels for the water park. The main electrical room houses the main disconnect and sub panels as well as the fibre optic service entrance. The lighting consists of CFL pot lights, high bay metal halide, T8s and some incandescent fixtures.	The original electrical panels may be hard to maintain due to the availability of parts.	Replace the sub distribution panels in the secondary electrical room and remove any un-used wiring. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$10,000 \$10,000
Mechanical	5	There are 3 roof mounted packaged air handling units (gas heat and electric cool--2x 7.5 ton and 1 x 6 ton). The roof top units were installed in 1996. There is also a 90,000 BTUH input gas fired warm air furnace which is over 20 years old. There is a 150 litre direct fired gas water heater (input 72,000 BTUH).	There is water damage around a duct penetration for one of the air handling units which is indicative of problems with either the unit or the building envelope and should be investigated further. The warm air furnace and the roof top units are nearing the end of their service lives as such failures with components should be expected.	Replace 3 compressors and the warm air furnace within the next five years. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$0 \$20,000
Fire Safety	5	There is an Miromm multi-zone fire alarm control panel. The smoke detectors, heat detectors, pull stations and speakers throughout. The building is fully sprinklered with a wet and dry sprinkler system. The sprinklers were added in 1996.	Missing fire extinguisher. No significant capital expenditures are expected over the next five years.	Replace missing fire extinguisher. Provided the fire detection and suppression systems are maintained according to the NFPA and BC Building Code requirements, the systems should continue to operate reliably for the next five years.	\$1,000 \$0
Interior Finishes	4	Flooring is resilient tile, ceramic tile, carpet and unpainted concrete. Walls are vinyl wallpaper and painted gypsum. Ceilings are acoustic ceiling tiles and painted finish. Window coverings are horizontal blinds. Regular furnishings are chairs, tables, washroom privacy partitions, moveable partition and millwork. Appliances are limited to domestic fridges and domestic stoves. Interior spaces include an auditorium, pre-school, multi-purpose room, administration offices, domestic kitchen, storage rooms, and defunct caretaker suite.	Damaged resilient tile flooring beside auditorium doorway. Missing tile base in 1st floor corridor. Cracked resilient flooring on stairs. Water stained wall panels in auditorium from leakage at mechanical penetration at roof level. Faded traffic markings on asphalt roadway. Scuff marks and scratches on some doors and walls in high traffic locations.	Replace cracked resilient tile flooring in auditorium. Replace resilient flooring on stair treads and risers to 2nd floor caretaker suite. Replace missing baseboard tiles. Correct leakage at mechanical penetration (return air intake) and clean water stained wall panels in auditorium. Locally repaint interior doors and walls. Repaint faded traffic markings on asphalt roadway at main entrance. Repaint corroded bollard.	\$30,000 \$5,000

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 5

Electrical	5	The building receives 800 Amp, 208 Volt, 3 phase power from a BC Hydro pad mounted transformer . There are distribution panels in the main electrical room and in service rooms around the building. Lighting is predominantly T8 and T12 fluorescent. There are HPS wall pack and fluorescent exterior lights.	Photo sensors and controls can be added to some of the lighting systems to reduce power consumption.	Consider adding lighting controls to reduce power consumption. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$10,000 A \$2,000 B
Mechanical	5	There are three indirect gas fired warm air furnaces mounted on the roof (one with heat recovery) and two hot water boilers in the basement - the smaller of which serves the spa facility. Domestic hot water is provided by an electric hot water heater. There is a spa which includes an independent heat recovery ventilator, boiler and filtration system. There is a hydraulic elevator to the second level	The roof mounted warm air furnaces are all approaching the end of their useful service lives. The boilers are also original however the main heating boiler is a high mass boiler and is very robust. The elevator is rarely used and the in-specion reports by the service contractors were up to date.	Replace the warm air furnaces and domestic hot water heater within the next few years. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$0 A \$70,000 B
Fire Safety	5	There is an Edwards multi-zone fire alarm control panel. There are smoke detectors, heat detectors, pull stations and bells throughout.	The fire alarm control panel is aged and finding spare parts will become increasingly difficult.	Replace fire alarm control panel.	\$0 A \$60,000 B
Interior Finishes	3	Flooring types are resilient sheet, carpet, wood, rubber, tile and concrete. Walls are painted drywall, painted stucco, wall paper, painted concrete block and tile walls. Ceiling finishes are T-bar suspended acoustic tiles and glue-adhered tiles. Window coverings are blinds. Appliances include domestic refrigerators and domestic stoves. General furnishings include chairs, tables, millwork, moveable partitions, metal storage lockers, washroom partitions, and public signage. Recreation and other furnishings include, pianos, pottery kiln, computers, lapidary equipment, fitness equipment and sports equipment. Amenities include gym, fitness room, squash courts, sauna, hot tub, several multipurpose rooms, music room, dance studio, computer lab, pottery room and administration offices.	Carpet is stained and not suitable for this environment. Wood floor in gym is worn. Impact damage, and scratches to various walls. Crack in wall at entrance to former caretakers suite. Various doors are scratched. Several ceiling tiles on the 2nd floor have water damage. Electrical room is being used for storage.	Spot clean carpet floors. Consider future replacement of carpet flooring in public areas with resilient flooring. Refinish worn wood flooring. Prime and paint interior walls and doors in various locations. Repair crack in wall at former caretaker's suite. Replace damaged ceiling tiles once roof leaks have been corrected. Remove storage from electrical room.	\$15,000 A \$25,000 B

Level 1 - Facility Assessment

Recreation Facility - Facility: 6

TD02

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1995
 LIFE CYCLE STAGE (TL-STAGE): 2
 GROSS FLOOR AREA: 66,111
 NUMBER OF BUILDINGS: 4
 ESTIMATED REPRODUCTION COST (CRV): \$17,000,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$2,600,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%)
 X CONSULTANT FEES (15%) (SOFT COSTS) \$1,182,000
 SUM OF BACKLOG (BL) **\$3,780,000 A**

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$240,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%)
 X CONSULTANT FEES (15%) (SOFT COSTS) \$109,000
 SUM OF RENEWALS (R5) **\$350,000 B**

OBSOLESCENCE ESTIMATE ("GET-AHEAD")

FUNCTIONAL OBSOLESCENCE (FO) **\$750,000 C**

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) **22.2% A**
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) **24.3% A + B**
 FACILITY NEEDS INDEX (TD-FNI) **28.7% A + B + C**



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	5	Foundation system is assumed to be concrete footings under columns, slab-on-grade and suspended floor slab over basement levels. Structural frame is post and beam reinforced concrete and steel, timber truss over library, glue-laminated timber roof beams and structural steel column and beam at new addition. Roof structure is OWSJ and steel deck, as well as structural steel and steel deck.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$0 A \$0 B
Building Enclosure	3	Roofs are single ply PVC sheet, standing-seam sloped metal and 2-ply SBS. Skylights are aluminum frame curtain wall type. Walls are face-sealed stucco, granite tile, metal siding and exposed architectural concrete. Windows are sloped curtain wall and store-front. Doors are powered solid glass sliders and store-front exit doors. Canopies are structural steel frame and glazing, steel and timber frame and trellis and metal clad steel frame. Plantings and landscaping are found at grade.	There is debris on PVC sheet roof and in the gutters. Sealant at skylights is beginning to fail. Face-sealed stucco is cracked, stained and in distress. Architectural concrete has inadequate water resistance. Sloped curtain wall is dirty and has drainage issues. Storefront doors are exposed, resulting in leakage. Steel frame canopy is covered in debris and algae. Plantings are encroaching on cladding.	Clean the PVC roof and gutters. Remove and replace sealant at skylights. Rehabilitate areas of exposed stucco. Rehabilitate areas of exposed tile. Detail cracks and apply elastomeric coating to architectural concrete. Clean and service sloped curtain-wall. Provide canopies for exposed doors. Clean steel canopy. Prune plantings away from cladding.	\$2,530,000 A \$50,000 B
Electrical	5	The main disconnect is rated at 25KV and 600 Amps, 3 phase fed underground from BC Hydro. There is a 1 000 kVA transformer that steps the voltage down to 600 Volts and there are two secondary transformers used to provide 120/208 Volt power. The lighting consists of CFL pot lights, high bay metal halide, T8s and some incandescent fixtures.	There are no daylighting or photo sensors on any of the lights. The outdoor lighting mounted in the concrete walkway has failed due to water ingress.	Replace exterior light fixtures mounted in the concrete walk. Add controls to improve the lighting system. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$30,000 A \$20,000 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 6

Mechanical	5	There are two 2 stage boilers, one 160 Ton chiller, five main air handling units and about 20 exhaust fans. The is also a cooling tower for the chiller. All of the air handling units have hot water and cold water coils supplied by duplex pump packages. The controls are all pneumatic. There is a handicap lift at the auditorium stage.	There was a significant amount of water damaged caused by a failed flex connector in one of the hot water lines. The dampers and pneumatic controls are approaching the end of their useful service life.	Review the application of the flex connectors to ensure that the operating temperatures and pressures fall well within the ratings for this kind of equipment. Replace the dampers and pneumatic controls for the five main air handling units. Refurbish chiller. Clean dust from ventilation grilles in library. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$20,000 A \$150,000 B
Fire Safety	5	There is an Edwards multi-zone fire alarm control panel. The smoke detectors, heat detectors, pull stations and speakers throughout. The building is fully sprinklered with a wet and a pre-action system in the library.	We do not any significant capital expenditures over next five years.	Provided the fire detection and suppression systems are maintained according to the NFPA and BC Building Code requirements the systems should continue to operate reliably for the next several years.	\$0 A \$0 B
Interior Finishes	4	Flooring types are concrete, resilient sheet, wood, carpet, and rubber tile. Walls are painted drywall. Doors are solid core wood with pressed steel frames. Ceilings are flat painted finish. Window coverings are blinds. Appliances are limited to domestic fridges, stoves, dishwashers. General furnishings includes chairs, tables, millwork, washroom partitions, and public signage. Recreation furnishings include fitness equipment and sports equipment. Amenities include fitness room, multi-purpose rooms, meeting room, seniors centre, daycare centre, administration offices, public library and former RCMP offices.	Worn flooring in high traffic locations. Damaged resilient floor in crafts room. Staff reports musty smell from carpet in seniors room. Worn and damaged interior paintwork and drywall in several locations, particularly in the fitness room and high traffic locations. Peeling paintwork on some interior doors due to poor substrate preparation. The former police space is currently not utilized and needs to be redesignated for usable public space. Corrosion stains on hydronic baseboard heater. Worn paintwork on exterior metal and wood benches.	Prime and paint interior doors and walls in various locations. Consider installation of bumper guards on walls in fitness room. Replace various damaged ceiling tiles in auditorium. Trace source of leakage and replace water damaged ceiling tiles in fitness room. Remove graffiti from cooling tower enclosure. Repaint exterior metal and wood benches.	\$20,000 A \$20,000 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 7

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1975
 LIFE CYCLE STAGE (TL-STAGE): 4
 GROSS FLOOR AREA: 53,000
 NUMBER OF BUILDINGS: 4
 ESTIMATED REPRODUCTION COST (CRV): \$9,600,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$4,415,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%)
 X CONSULTANT FEES (15%) (SOFT COSTS) \$2,008,000
SUM OF BACKLOG (BL) \$6,420,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$1,080,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%)
 X CONSULTANT FEES (15%) (SOFT COSTS) \$491,000
SUM OF RENEWALS (R5) \$1,570,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) **66.9% ^A**
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) **83.2% ^A + ^B**
 FACILITY NEEDS INDEX (TD-FNI) **95.9% ^A + ^B + ^C**

OBsolescence ESTIMATE ("GET-AHEAD")

FUNCTIONAL OBsolescence (FO) \$1,210,000 ^C



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	4	Foundation system is concrete slab on grade and footings. Structural frame consists of post and beam structural steel, steel stud infill walls and concrete block infill walls. Roof structure is OWSJ and steel deck.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no other significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$0 ^A \$0 ^B
Building Enclosure	2	Roofs are 2-ply SBS and sloped metal. Canopies are 2-ply SBS. Skylights are acrylic dome. Walls are EIFS cladding, face-sealed stucco, vertical steel siding, stone veneer, brick veneer and concrete block. Windows are aluminum store-front and aluminum single-glazed sliders. Doors are aluminum store-front assemblies, double out-swing exit doors and steel roll-up overhead doors. Landscaping and plantings are found at-grade.	Debris and ponding water on 2-ply SBS roof and canopy. Sloped metal roof is badly corroded, leaking and rain water leaders are mangled at grade level. EIFS walls are damaged and cracked in exposed locations. Stucco walls have significant cracking and show signs of distress in exposed locations. Steel siding is aged, dented and corroded. Store-front windows have failed sealed units. Aluminum sliders are single glazed and show signs of water penetration. Weather seals on store-front doors are worn. Paint is peeling on double out-swing doors. Roll-up overhead doors are aged. Plantings are encroaching on cladding.	Repair 2-ply SBS roof and canopy. Replace sloped metal roof, insulation and rain water leaders. Replace exposed EIFS. Replace exposed stucco. Replace steel siding and insulation. Repaint interior of windows and replace failed sealed units. Replace aluminum single-glazed windows. Replace weather seals on store-front doors. Repaint double out-swing doors and add canopy. Replace overhead roll-up doors.	\$4,200,000 ^A \$0 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 7

Electrical	5	<p>The main disconnect is rated at 600 Volts and 400 Amps, 3 phase fed underground from BC Hydro and fused at 400 Amps for the rink area. There are three secondary transformers used to provide 120/208 Volt power. The lighting consists of CFL pot lights, high bay metal halide, T8s and some incandescent fixtures. There are also two 600 Volt MCCs: one is used for the rink and the other for the pool equipment. There is also a public address/sound system.</p>	<p>Photo sensors and controls can be added to some of the lighting systems to reduce power consumption. Loose electric baseboard heaters at ice rink mezzanine level. Some exterior lights on during the daytime. Unsealed electrical penetrations.</p>	<p>\$13,000</p>
Mechanical	5	<p>There are two packaged air handling units mounted in a roof level mechanical room that serve the newer part of the building. The air handling units have DX coils, heat recovery (using refrigerant based heat pumps) and indirect gas fired heat exchangers. The condensing unit is mounted on the roof level. There is a solar hot water system used to heat the domestic water. There are also some electrical baseboard heaters and hydronic heaters. The rink area mezzanine has a roof mounted heat pump with an economizer for heating and cooling. There is a hydraulic elevator for in the rink area extending to the mezzanine level. Ceiling fans in mezzanine multi-purpose room. Split system A/C in pool office.</p>	<p>Investigate control issues for the air handling system. Replace compressors in the cooling system over the next five years. Replace two solar panels and re-pipe the solar system. Consider automatic control valves for plumbing fixtures in public washrooms. Refasten loose cartridge filters in air handling unit. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.</p>	<p>\$10,000</p>
Fire Safety	5	<p>There are two Edwards multi-zone fire alarm control panels: one serves the rink area and one serves the pool area. There are smoke detectors, heat detectors, pull stations and speakers throughout. Only the newer portion of the building is sprinklered. There is also a commercial kitchen with NFPA 96 fire suppression system.</p>	<p>Outdated inspection tags on some hand held fire extinguishers. It should be noted that the service contractors for the fire system are not doing a complete survey of the building when they do their annual inspections. No significant capital expenditures are expected over the next five years.</p>	<p>\$2,000</p>
				<p>\$0</p>

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 7

Interior Finishes	<p>4 Flooring is ceramic tile of various types, epoxy/terrazzo, resilient sheet/tile, painted concrete, rubber, and carpet. Walls are painted drywall, painted murals. Window coverings are blinds. Ceilings are flat painted finish and acoustic tile. Appliances include domestic fridge, domestic stove, and laundry washer/dryer. Regular furnishings include chairs, tables, millwork, and public signage. Recreation furnishings include fitness equipment, sound system, metal storage lockers, bleachers, dasher boards and sports clock, AV equipment. Interior spaces include pool, ice rink, fitness equipment, steam room, sauna, multi-purpose rooms, and library.</p>	<p>Missing and damaged ceramic tile baseboards. Cracks and delamination of resilient tile flooring. Urine stains on rubber flooring beneath urinals. Holes, stains, delaminated seams and rippling of carpet flooring. Missing and damaged waterproofing in ice rink showers. Holes and other mechanical impact damage to wood paneling. Paint peeling on steel deck due to moisture. Water damaged ceiling tiles. Damaged door frames. Gouges and scratches in wooden benches. Dasher boards are 5 years old.</p>	<p>Replace missing and cracked ceramic tile baseboards. Replace cracked and delaminated resilient tile flooring in fitness room. Replace damaged carpet in library. Replace carpet at ice rink mezzanine boxes. Clean stained carpet at reception area. Replace waterproofing in ice rink shower stalls. Consider installation of alternative flooring beneath urinals to mitigate urine staining. Patch gouges and holes in walls and doors. Locally repaint damaged portions of walls and doors. Prime and repaint portions of walls and steel deck. Trace source of leakage and replace several water damaged ceiling tile. Repaint wood benches.</p>	<p>\$80,000 A</p>
Pool	<p>4 The pool facility consists of a large pool, a children's pool with a fountain and a spa. There are gas-fired atmospheric boilers that heat the pool area. Heat recovery from pool being used to reduce energy consumption for ventilation air system. Pool equipment consists of 11 pumps; a 20 HP pump, a 7.5 HP pump and several other 4 and 5 HP pumps. There is also a chlorination tank with two whisper flow 0.5 HP pumps. The main pool is filtered by 4 cigar style filters. The spa has a heater, a 5 HP circulation pump and a 5 HP pump.</p>	<p>Pump 2, 7.5 HP, requires bearings. Both 36 inch spa filters are aged and it is very difficult to find spare parts. Heater 3, 325 Laars electronic heater, is aged and approaching the end of its service life. Main pool filter is leaking and requires a seal replacement.</p>	<p>Replace bearings at the 7.5 HP pump. Replace both 36 inch spa filters. Replace the electronic heater. Replace seal on main pool filter.</p>	<p>\$0 A \$10,000 B</p>
Refrigeration	<p>3 The refrigeration equipment consists of a Mycom N8A compressor (1974), a Mycom N4B compressor (2007), two 75 HP motors, a 20" x 16" chiller (2007), one condenser (1992), a 25 HP brine pump (2007) and a 7.5 HP brine pony pump (2007). The capacity is 94 tons of refrigeration at 10°F SST and 90°F SDT. The rink area is heated with gas fired infrared heaters (4 in total) with gas fired unit heaters in the service rooms. Desiccant dehumidifier for the rink. Gas monitoring equipment for taking sample measurements. Dedicated exhaust fan in the compressor room with remote control capabilities.</p>	<p>The Mycom N8A compressor is aged and very worn. The evaporative condenser is approaching the end of its service life. The arena floor slab is approaching the end of its service life.</p>	<p>Replace the compressor. Replace the condenser. Replace the arena floor within the next five years. Replace seals on desiccant wheel.</p>	<p>\$110,000 A \$1,000,000 B</p>

Level 1 - Facility Assessment

Recreation Facility - Facility: 8

TD02

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1975
 LIFE CYCLE STAGE (TL-STAGE): 4
 GROSS FLOOR AREA: 56,000
 NUMBER OF BUILDINGS: 2
 ESTIMATED REPRODUCTION COST (CRV): \$9,110,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$2,275,000
 OVERHEAD AND PROFIT (1.5%) X CONTINGENCY (10%)
 X CONSULTANT FEES (1.5%) (SOFT COSTS) \$1,035,000
SUM OF BACKLOG (BL) \$3,310,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$120,000
 OVERHEAD AND PROFIT (1.5%) X CONTINGENCY (10%)
 X CONSULTANT FEES (1.5%) (SOFT COSTS) \$55,000
SUM OF RENEWALS (R5) \$180,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) **36.3% ^A**
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) **38.3% ^A + ^B**
 FACILITY NEEDS INDEX (TD-FNI) **103.9% ^A + ^B + ^C**

OBSCOLESCENCE ESTIMATE ("GET-AHEAD")

FUNCTIONAL OBSOLESCENCE (FO) \$5,980,000 ^C



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	4	Foundation system is concrete footings and slab-on-grade. Structural frame is steel post and beam, steel stud infill walls and concrete block infill walls. Roof structure is OWSJ and steel deck.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$0 ^A \$0 ^B
Building Enclosure	2	Roofs are 2-ply SBS sheet and sloped metal. Skylights are aluminum frame curtain wall type. Walls are face-seal stucco, face-seal EIFS, brick masonry veneer and concrete block masonry veneer. Windows are aluminum framed. Doors are double out-swing exit doors and aluminum storefront assemblies. Canopy is aluminum frame pressure plate.	Significant blisters on 2-ply SBS roof. Significant cracking and signs of distress on face-sealed stucco and EIFS. Efflorescence on concrete block masonry veneer at sauna and filter room. Corrosion on double out swing doors. Glazing stops and weather seals require service on aluminum windows.	Repair 2-ply SBS roof. Replace exposed areas of stucco and exposed areas of EIFS. Replace masonry to repair steel studs. Replace aluminum windows. Replace corroded double out-swing doors.	\$2,100,000 ^A \$0 ^B
Electrical	4	The main electrical breaker is rated at 800 Amps, 600 Volts. There are three dry type transformers (150 kVA, 75 kVA & 30 kVA) that are used to provide power to low voltage loads and receptacles. There are two MCCs - one for the pool equipment and one for the mechanical equipment. Lighting consists of T8 fluorescents and high bay metal halide fixtures. Data antennas mounted on main roof. Emergency generator. Security system includes intrusion alarm and surveillance cameras. Solar panels on roof.	The motor control centre (MCC) serving the mechanical equipment is original and as such finding replacement parts will become increasingly difficult. Inappropriate storage in electrical room.	Replace the motor control centre (MCC) for the mechanical equipment. Remove inappropriate storage from electrical room. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$35,000 ^A \$0 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 8

Mechanical	4	The building and pool are heated with two hot water boilers (a 2.0 MBTUH input Cleaver-Brooks and 2.0 MBTUH input Laars). The boilers also contribute to the service hot water loads. There are solar panels for the service hot water system. There are three packaged roof top units, a gas fired make up air unit for the kitchen and two roof mounted heat pumps. There are two main air handling units: one serving the pool and one serving the occupied areas of the building. The building controls have been upgraded to electronic. Hydronic baseboards. Hot water unit heater in service rooms. Steam generator for steam room. There is a two stop hydraulic elevator.	One roof mounted heat pump is aged and approaching the end of its service life. The dampers on the air handling units need replacement. The smaller package roof top units and make up air unit appear to original and as such may have to be replaced within the next five years. Electrolysis on copper piping evident in pool mechanical room. The elevator receives very little use, the maintenance records are up to date and there no signs of oil leaks.	Replace one roof mounted heat pump. Upgrade the dampers on air handling units. Replace smaller packaged roof top unit and the make-up air unit for the kitchen. Trace source leakage at roof above pool mechanical room. Replace thermostat controls damaged by vandalism in youth centre. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$80,000 A \$0 B
Fire Safety	4	The main fire alarm control panel is an Edwards 6500. The building is sprinklered with a wet sprinkler system. There is a small capacity gas fired generator that provides power for lights the fire alarm panel. The concession has a fume hood suppression system. There is a fire hydrant in proximity to the building. Emergency egress includes exit signs.	The fire alarm control panel is no longer made. Replacement parts are currently still available but this may become increasingly difficult over time.	Replace fire alarm control panel within the next five year.	\$0 A \$60,000 B
Interior Finishes	2	Flooring is resilient sheet, sprung wood, carpet, rubber tile, and ceramic tile. Walls are painted drywall, painted masonry block, painted murals. Window coverings are venetian blinds. Ceilings are acoustic tile. Regular furnishings include chairs, tables, milwork, washroom partitions and public signage. Appliances include domestic fridges and domestic stove. Recreation furnishings include fitness equipment, sports equipment, metal storage lockers, sound system, audiovisual equipment, and vending machines. Amenity spaces include pool, sauna, fitness room, concession, multi-purpose rooms, youth centre, judo room, facility administration offices, commercial kitchen, and gymnasium.	Worn paintwork on concrete floors in service rooms. Missing tile baseboard. Cracked ceramic mosaic tile on pool deck. Walls are damaged in several locations as a result of vandalism. Scuff marks and scratches on doors and frames in high traffic locations. Corrosion on door frames, door hinges, and other hardware at pool deck. Some service room doors on pool deck are not properly aligned and may permit public access into unsafe areas. Failed caulking at sink-countertops. Worn paintwork on service room floors and guardrails.	Repaint concrete floors in service rooms. Replace missing baseboard tiles. Replace cracked mosaic ceramic tile on pool deck. Repair vandalized gypsum board and repaint rooms in several locations. Replace corroded door hinges, closers, and jambs on pool deck. Grind off corrosion, repaint doors/frames, adjust door hardware on pool deck to ensure proper alignment and secure latching. Replace cracked tiles on pool deck. Repair guardrails in pool mechanical room and at exterior entrance to facility. Replace failed caulking at sinks and countertops. Replace damaged horizontal blinds. Correct source of leakage and replace numerous water damaged acoustic ceiling tiles. Repaint stair railings at main entrance.	\$40,000 A \$0 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 8

Pool			
4	<p>The pool (and building) are heated with two hot water boilers (a 2.0 MBTUH input Cleaver Brooks and 2.0 MBTUH input Laars). The swirl pool equipment includes one large sand filter and a 5 HP pump. The leisure pool has 2 large sand filters, a 5 HP pump, a 10HP pump and a 1/2 HP pump. The lap pool has a large sand filter and a 15 HP pump. The waterslide has one large 25 HP pump. There is a pressurization filtration system and one air handling unit for pool with DX based heat recovery system. An eye wash station is located in the pool mechanical room.</p>	<p>The sand filter at the swirl pool may require new gaskets. Various pumps and filters are approaching the end of their service lives. Standard up keeping includes filter repacking and seal replacement.</p>	<p>Replace filters. Replace small valve. Replace 2 motors. Replace 6" strainer within the next few years. Replace Jacuzzi pump. Consider upgrading existing shell and tube heat exchangers to plate type exchangers to improve effectiveness.</p>
			<p>\$20,000 A</p> <p>\$60,000 B</p>

Level 1 - Facility Assessment

Recreation Facility - Facility: 9

TD02

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1952
 LIFE CYCLE STAGE (TL-STAGE): 5
 GROSS FLOOR AREA: 63,500
 NUMBER OF BUILDINGS: 5
 ESTIMATED REPRODUCTION COST (CRV): \$13,800,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$2,871,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$1,306,000
SUM OF BACKLOG (BL) \$4,180,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$1,005,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$457,000
SUM OF RENEWALS (R5) \$1,460,000 ^B

OBSOLESCENCE ESTIMATE ("GET-AHEAD")

FUNCTIONAL OBSOLESCENCE (FO) \$10,800,000 ^C

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) **30.3% ^A**
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) **40.9% ^{A + B}**
 FACILITY NEEDS INDEX (TD-FNI) **119.1% ^{A + B + C}**



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	2	Foundation system consists of concrete foundation walls on strip footings. Structural frame is post and beam, glue-lam roof beams, concrete columns and beams. Roof structure is steel (OWS), steel deck, and wood decking.	Facility staff report that seismic upgrade is being considered for gymnasium. Deterioration of exposed concrete beams and columns.	Review findings and recommendations of seismic study. Route and seal cracks in concrete. Waterproof horizontal elements and recoat exposed vertical elements. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$400,000 ^A \$0 ^B
Building Enclosure	2	Roof is inverted assembly with EPDM membrane, single-ply sheet vinyl and fabric roof over pool. Skylights are sheet fiberglass glazing, barrel vault and aluminum frame T-bar. Walls are face-seal stucco, parge concrete and concrete masonry units. Windows are wood frame single glazed units, aluminum frame and pressed steel frame. Doors are double out-swing, pressed steel frame and wood doors with wood casing. Canopy is sheet fiberglass glazing. At-grade consists of landscape soils, plantings and exposed waterproof membrane.	Inverted EPDM roof assembly is aged and in poor condition. Fabric roof over pool is inappropriate for the application and has very poor thermal performance. Aluminum frame skylights exhibit signs or water penetration. Barrel vault skylights are single glazed and prone to failure. Aluminum frame T-bar skylights are aged and prone to failure. Exposed face-sealed stucco is in distress. Concrete walls are cracked, parging and the coating is deteriorated. Wood frame windows have poor thermal performance. Aluminum frame windows have failed sealed units and glazing gaskets. Pressed steel frame windows are corroded and show signs of water penetration. Pressed steel frame doors are corroded with deteriorated coating. Doors with wood casing are in poor condition. Canopy glazing is deteriorated. At-grade membrane is aged and prone to failure, plantings are encroaching on cladding.	Replace inverted EPDM roof assembly. Replace fabric roof over pool. Service single-ply sheet vinyl roof. Replace barrel vault and aluminum frame T-bar skylights. Service aluminum frame skylights. Replace stucco cladding. Recoat parge concrete and concrete masonry units. Replace wood frame windows and pressed steel frame windows. Service aluminum windows. Replace wood doors and casing. Recoat and reseal pressed steel frame exit doors. Replace canopy glazing. Reduce soil levels, prune plantings and replace at-grade waterproofing.	\$2,300,000 ^A \$800,000 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 9

Electrical	<p>4 There is a 1,600 Amp, 120/208 Volt Federal Pioneer main breaker that feeds a 1600 Central Distribution Panel. There are various panels throughout the building in various service rooms. There is a small gas fired generator that provides power for various lighting loads.</p>	<p>The electrical room is being used for storage. The electrical equipment was clean, properly labeled and appeared to be in good condition. Some of the panels were older and had older style breakers. What was visible of the wiring appeared to in good condition. At the time of our review, most of the interior fixtures had been upgraded to T8s.</p>	<p>\$26,000 A</p> <p>\$0 B</p>
Mechanical	<p>3 There are gas fired atmospheric boilers that heat building and the pool. Two gas fired make-up air units and 6 air conditioning units. Four hot water forced flow heaters in gym. Fireplaces being installed to provide supplemental heating at seniors centre. There is a hydraulic with three stops and a wheelchair lift in fitness room.</p>	<p>The boilers are in good condition and relatively new. The roof top units are of concern however. Generally this kind of equipment has a 15 to 20 year service life. Staff reports problems with toilet flush valves. South facing air intake on make-up air unit causes overheating in summer months. The exhaust fan above the pool has not worked for several years and should be replaced. The elevator controls, finishings, door mechanism and hydraulics are approaching the end of their service life.</p>	<p>\$45,000 A</p> <p>\$90,000 B</p>
Fire Safety	<p>4 Fire alarm system has an enunciator panel in the main foyer and multizone fire alarm panel in a service room. There are smoke detectors, heat detectors, pulls stations and bells throughout. The fire suppression system includes sprinklers in the seniors center, an NFPA 96 exhaust hood in the concession kitchen and hand held fire extinguisher mounted to walls throughout.</p>	<p>The fire suppression system only covers a portion of the building. This should be reviewed. The fire alarm control panel is approaching the end of its service life.</p>	<p>\$0 A</p> <p>\$40,000 B</p>
Interior Finishes	<p>5 Flooring types are resilient sheet & tile, sprung wood, carpet, rubber tile. Walls are painted drywall. Window coverings are blinds. Ceilings are flat painted finish and linear metal. Millwork includes countertops, cabinets and some mouldings. Appliances are limited to domestic fridges and stove. Furnishings include chairs, tables, fitness equipment, sports equipment and washroom partitions.</p>	<p>Water stained acoustic ceiling tiles from roof leakage. Gouges in walls from furniture storage. Corroded door hardware at pool deck.</p> <p>Replace water damaged acoustic ceiling tiles. Review storage procedures and consider installation of bumper guards to mitigate damage to walls from equipment storage. Replace corroded door hardware at pool deck.</p>	<p>\$10,000 A</p> <p>\$35,000 B</p>

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 9

Pool				
3	<p>Shell and tube heat exchanger. There are gas fired atmospheric boilers that heat building and the pool. Chlorinator tanks. 67" astragal filters. 15 HP pumps. 6" PVC piping. Four heavy duty pool ladders. Painted finish in pool tank. Radiant panel heating on ceiling in pool change rooms. Exhaust fan mounted on Teflon roof.</p>	<p>The shell and tube heat exchanger used for the pool is a poor choice for this application and should be replaced by a more effective plate type heat exchanger. Repainting of pool shell was deferred due to civic strike. 1st chlorinator tank was recently replaced but 2nd chlorinator tank has exceeded its useful service life. Strainer pot has exceeded its useful life. 67" astragal filters are old and leaking - facility staff report that these are planned for replacement. The heating system is not keeping up with demand in the winter months.</p>	<p>Review results of pool study. Replace pool heat exchanger with plate type exchanger. Consider installation of Heatsavr system to reduce evaporation and heat loss by up to 40% and extend the life of the existing heat exchanger. Replace strainer pot. Replace 67" astragal filters and sand. Repaint pool shell. Replace 2nd chlorinator tank. Replace exhaust fan above the pool.</p>	<p>A \$90,000</p> <p>B \$40,000</p>

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 10

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1981
 LIFE CYCLE STAGE (TL-STAGE): 4
 GROSS FLOOR AREA: 96,000
 NUMBER OF BUILDINGS: 3
 ESTIMATED REPRODUCTION COST (CRV): \$16,000,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$380,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$173,000
SUM OF BACKLOG (BL) \$550,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$560,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$255,000
SUM OF RENEWALS (R5) \$820,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) 3.4% ^A
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) 8.6% ^{A + B}
 FACILITY NEEDS INDEX (TD-FNI) 45.9% ^{A + B + C}

OBSOLESCENCE ESTIMATE ("GET-AHEAD")

FUNCTIONAL OBSOLESCENCE (FO) \$5,970,000 ^C



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	4	In the absence of drawings, foundation system is assumed to be concrete footings under columns. Structural frame is post and beam reinforced concrete and steel post and beam. Roof structure is OWSJ and steel deck. Single level parking garage below grade beneath part of the facility.	Corrosion at base of columns at pool deck.	Review the corrosion at the base of the interior columns at pool deck. Determine whether there is a risk of structural failure and if remedial action is required. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$10,000 ^A \$0 ^B
Building Enclosure	4	Roofs are original BUR, sloped metal, EPDM membrane and TPO membrane. Walls are concrete masonry block, metal siding and exposed architectural concrete. Windows are curtain wall assembly at pool expansion, store front, aluminum frame windows and pressed steel frame assembly. Doors are pressed steel frame, storefront exits and overhead roll-up doors. Canopy is structural steel frame and glazing.	Roof is in fair condition but aged with some leakage during certain rain conditions. Concrete block masonry is cracked and spalled, coating is in distress and sealant is failing. Metal siding saddle conditions are suspect. Exposed architectural concrete has inadequate water resistance. Curtain-wall assembly has inappropriate sealant work. Store-front window assembly is lacking maintenance. Pressed steel frame assembly is vulnerable to water penetration. Aluminum frame windows have failed units and failed sealant. Coating on pressed steel frame exit doors is in distress. Weather-seal on overhead roll-up doors is damaged.	Replace original BUR roof and service other roofs. Repair and recoat concrete block masonry, including sealant replacement. Repair saddle interfaces on metal siding. Apply elastomeric coating to exposed architectural concrete. Reapply sealant to curtain-wall assembly. Service store-front windows, aluminum frame windows and pressed steel frame exit doors. Repair weather-seal on overhead doors.	\$300,000 ^A \$300,000 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 10

Electrical	5	The main disconnect is rated at 800 Amps and 600 Volts. There are several small (150 kVA) dry type transformers used to provide power for receptacles and low voltage loads. There are two MCC's--one serves the pool equipment and second serves the mechanical room. The lighting is a mixture of T8 fluorescent, metal halide high bay fixtures and compact fluorescent. Emergency power is provided by generator shared with City Hall.	Some of the electrical distribution panels are in poor condition and it may be hard to find replacement parts due to their age. There are dry type transformers that may have to be replaced within the next five years (150 kVA, and 45 kVA) due to their age. Improper storage in electrical room.	Replace some of the electrical distribution panels as well as 2 dry type transformers. Remove stored items from the electrical room. Junction box covers in pool area are corroding and should be replaced with suitable alternative for pool environment. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$40,000 A \$0 B
Mechanical	4	The primary heat source is a 3.2 MBTUH input Cleaver Brooks boiler. There are five packaged roof top units (gas heat/electric cool) and six roof mounted condensing units for DX coils in the occupied areas. There are two main air handling units with hot water coils--one serves the pool and the second serves the office. The office air handling unit has DX coil. There are pneumatic and electronic control valves used in the facility.	The Cleaver Brooks boiler has reached end of its service life. The older style pneumatic control valves should be upgraded to electronic. There is steam generator serving a steam room which appears to be about 10 years old as does the electric hot water heater. Surface corrosion on city water piping.	Replace the main heating boiler, including upgrading the control valves to electronic. Replace two roof mounted condensing units within the next 5 years. Replace the electric hot water heater and the steam generator. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$0 A \$160,000 B
Fire Safety	4	There is an Edwards multizone panel in the main electrical room with an annunciator panel at the main entrance. The building is fully sprinklered and there are hand held fire extinguishers throughout the facility.	Outdated inspection tags on some fire extinguishers, particularly in service rooms. Graffiti on fire hydrant.	Arrange for inspection of missed devices in service rooms. Remove graffiti from fire hydrant.	\$0 A \$0 B
Interior Finishes	5	Flooring types are primarily resilient sheet and includes also sprung wood, carpet, rubber tile, and ceramic tile. Walls are painted drywall and masonry block, washroom partitions are phenolic. Window coverings are venetian blinds. Ceilings are flat painted finish. Millwork includes countertops, cabinets and some mouldings. Appliances are limited to domestic fridges and stove. Furnishings include chairs, tables, fitness equipment, sports equipment. Amenities include: pool; steam room; sauna; games room; gymnasium; fitness room.	Floor finishes are in good condition. Interior paintwork is in good condition, except for some localized corrosion in the pool area. Interior doors are in good condition. Acoustic ceiling tiles are stained in a few locations as a result of roof leaks. Furnishings appeared to be in good condition.	Correct source of roof leakage and replace water damaged acoustic ceiling tiles in t-bar. Grind off corrosion and repaint metal gate and fence at pool deck. Repaint concrete floors in service rooms. Locally repaint walls and doors to remove impact abrasions. Repair walls above doors in squash courts. Locally repaint affected areas in pool. Replace failed and missing caulking at public sinks. Replace cracked sink.	\$10,000 A \$0 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 10

Pool			
5	<p>There are gas fired atmospheric boilers that heat the pool. The pool air handling unit has a heat recovery section. Chlorinator tanks and ozonation system for water quality. A large sand filter, two 10HP jet pumps and a 7.5 HP circulating pump at the whirl pool. Leisure pool and competition pool each have two large sand filters. One sand filter, one 7.5HP pump, controller, B-line exchanger and a liquid chlorine feeder system at the teaching pool. A sand filter, a 1HP pump, a gas heater and a chemical controller at the wading pool. Painted finish in pool tanks.</p>	<p>Standard up keeping includes filter repacking and seal replacement. Boiler is scheduled for replacement.</p>	<p>Replace chlorine booster pumps within the next 5 years. Replace whirl pool heater. Replace shell and tube heat exchangers. Replace gas system. Further investigate pool boiler for scheduling of replacement.</p>
			<p>\$20,000 A</p> <p>\$100,000 B</p>

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 11

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION:	1972	BACKLOG MAINTENANCE ("CATCH-UP")	
LIFE CYCLE STAGE (TL-STAGE):	5	COST OF DEFICIENCIES (BACKLOG)	\$1,120,000
GROSS FLOOR AREA:	75,000	OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$509,000
NUMBER OF BUILDINGS:	3	SUM OF BACKLOG (BL)	\$1,630,000 ^A
ESTIMATED REPRODUCTION COST (CRV):	\$9,610,000	5 YEAR RENEWALS ("KEEP-UP")	



FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI)	17.0% ^A	COST OF 5 YEAR RENEWALS (RENEWALS)	\$1,660,000
EXTENDED FACILITY CONDITION INDEX (TD-EFCI)	42.1% ^{A + B}	OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$755,000
FACILITY NEEDS INDEX (TD-FNI)	65.3% ^{A + B + C}	SUM OF RENEWALS (R5)	\$2,420,000 ^B
		OBsolescence ESTIMATE ("GET-AHEAD")	
		FUNCTIONAL OBsolescence (FO)	\$2,230,000 ^C

SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	5	Foundation system is concrete slab-on-grade and footings. Structural frame consists of post and beam structural steel, steel stud infill wall and concrete block infill walls. Roof structure is OWSJ and steel deck.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$0 ^A
Building Enclosure	3	Roofs are 2-ply SBS, sloped metal and BUR. Skylights are sloped steel frame at south entry and aluminum curtain wall at main entrance and above offices. There is a steel canopy and a concrete canopy. Walls are horizontal sheet steel siding, concrete block, vertical steel siding and steel struts. Windows are wood frame, aluminum store-front, atrium glazing store-front, aluminum frame sliders and steel frame. Doors are aluminum store-front assemblies, double out-swing exit doors and steel roll-up overhead doors. There are plantings at-grade.	Sloped metal roof is badly corroded and leaking. Steel frame skylight is single glazed and cracked. Canopy is cracking at interface and has efflorescence stains. Exposed concrete block shows signs of distress and significant cracking. Steel siding is aged, dented and corroded. Steel struts are corroded. Wood frame windows are single glazed and pose a security issue. Atrium store-front windows have failed sealant and are leaking. Aluminum sliders are single glazed and show signs of water penetration. Steel frame windows are single glazed. Double out-swing doors do not have a paint coating. Plantings are encroaching on cladding.	Replace sloped metal roof over arena. Replace steel frame skylight. Locally repair canopy. Route and seal cracks and joints in concrete block wall. Repaint vertical steel siding and steel struts. Service atrium store-front windows. Replace wood frame windows, aluminum frame sliders, and steel frame window. Paint double out-swing doors and add canopy.	\$1,100,000 ^A \$100,000 ^B

Level 1 - Facility Assessment

Recreation Facility - Facility: 11

TD02

Electrical	5	The building receives 1,200 Amp, 480 Volt, 3 phase power from a BC Hydro pole mounted transformers. There are distribution panels in the main electrical room and in service rooms around the building. Lighting is predominantly T8 and T12 fluorescent. The rink has high bay metal halide fixtures. There are HPS wall pack and fluorescent exterior lights. There are three MCCs for the ice rink and for the mechanical equipment. There is also a 60 kW back up generator.	Photo sensors and controls can be added to some of the lighting systems to reduce power consumption.	Consider adding controls to improve the lighting systems. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$10,000 A \$10,000 B
Mechanical	5	There are 8 packaged roof top units ranging in size from 3 tons to 15 tons (all with gas heat). Domestic hot water is provided by two 399,000 BTUH input gas fired water heaters. There are two 1000 Litre storage tanks (this equipment is used to make ice). There are also two 1,000,000 BTUH input hot water boilers that provide heat to perimeter baseboard heaters. There is a hydraulic elevator to the second level.	The roof mounted warm air furnaces are all nearing the end of their useful service lives. Although the boilers are original, this equipment should remain in service for another 10 years. The domestic hot water heaters have a 10 year service life in this application. The elevator is rarely used and the inspection reports by the elevator service contractors were up to date.	Replace 3 packaged roof top units within the next five years. Replace the domestic hot water heaters. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$0 A \$70,000 B
Fire Safety	5	There is an Edwards multi-zone fire alarm control panel. There are smoke detectors, heat detectors, pull stations and bells throughout. The building is fully sprinklered with both wet and dry systems.	The fire alarm control panel is nearing the end of its useful service life. Due to the age of the fire alarm panel, it will become increasingly difficult to procure replacement parts and renewal will likely be driven by technological obsolescence.	Replace the fire alarm control panel within the next five years.	\$0 A \$60,000 B
Interior Finishes	4	Flooring types are ceramic tile, resilient sheet, rubber, parquet wood, rubber and concrete. Walls are ceramic tile, wood panel, painted drywall, painted and unpainted concrete block. Ceiling finishes are acoustic tiles and a variety of other finishes. Appliances include laundry washer/ dryer and a combination of domestic and commercial appliances. General furnishings include chairs, tables, benches, washroom partitions, metal storage lockers, public signage, millwork, display cases, billiards table and a brick fireplace. Recreation furnishings include dasher boards, sports clock, skate sharpening equipment and audiovisual equipment. Amenities include six curling rinks, arena, social lounge, concession, several multipurpose rooms and administration offices.	Delaminated nosings at stair treads. Scratches and markings on various walls and doors.	Replace stair treads. Prime and paint interior walls and doors in various high traffic locations.	\$10,000 A \$20,000 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 11

Refrigeration	<p>3 The refrigeration equipment consists of three Mycom N8A compressors (1972), one Mycom N4A compressor (1972), three 60 HP motors (1976), one 40HP motor (1976), two 20" x 16" chillers (2008), two 25HP brine pump (2002), one at the arena and one at the curling rink; as well as two condensers (1992). The capacity is 144 tons of refrigeration at 10°F SST and 90°F SDT. Two DX based dehumidification units mounted in arena area.</p>	<p>The evaporative condenser is approaching the end of its service life. The arena floor is approaching the end of its service life and may fail in the next few years.</p>	<p>Replace condenser and arena floor. Replace desiccant based dehumidification for arena.</p>	<p>\$0 A</p>
				<p>\$1,400,000 B</p>

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 12

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1999
 LIFE CYCLE STAGE (TL-STAGE): 2
 GROSS FLOOR AREA: 55,000
 NUMBER OF BUILDINGS: 1
 ESTIMATED REPRODUCTION COST (CRV): \$12,880,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$235,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%)
 X CONSULTANT FEES (15%) (SOFT COSTS) \$107,000
SUM OF BACKLOG (BL) \$340,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$2,140,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%)
 X CONSULTANT FEES (15%) (SOFT COSTS) \$973,000
SUM OF RENEWALS (R5) \$3,110,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) **2.6% ^A**
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) **26.8% ^{A + B}**
 FACILITY NEEDS INDEX (TD-FNI) **29.1% ^{A + B + C}**
OBSCOLESCENCE ESTIMATE ("GET-AHEAD")
FUNCTIONAL OBSOLESCENCE (FO) \$290,000 ^C



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	5	Concrete foundation and slab-on-grade. Structural frame consists of concrete columns, HSS steel columns, timber trusses, long-span glu-laminated roof beams and long-span steel trusses. Roof structure is steel rafters and steel deck. Walls are steel stud infill and reinforced concrete block masonry.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$0 ^A \$0 ^B
Building Enclosure	3	Roofs are 2-ply SBS, standing seam sheet steel and hidden gutter with EPDM liner. Skylights are aluminum frame T-bar and sloped sealed units. Walls are brick masonry veneer, face-sealed stucco, exposed ends of timber roof beams and exposed concrete. Windows are aluminum storefront. Doors are automatic sliding aluminum and steel frame exit doors. Plantings are found around the building at-grade.	Hidden gutter roof requires cleaning and service. Slope sealed skylights are prone to water penetration and T-bar skylights have failed sealed units. Brick walls are suffering from sealant failure and graffiti. Face-sealed stucco is subject to deterioration at exposed locations. Ends of timber roof beams are deteriorating due to weather exposure and exposed concrete is subject to water penetration. Steel frame doors are dented with graffiti. At-grade plantings are encroaching on wall assemblies.	Clean and service hidden gutter roof assembly. Replace deck assembly. Replace sealed units in T-bar skylights and replace slope sealed units with improved units. Clean and seal brick walls with graffiti and replace sealant. Replace exposed stucco. Rehabilitate and protect timber. Seal crack and joints and apply coating to exposed concrete. Clean and repaint steel frame doors. Prune plantings away from building.	\$200,000 ^A \$2,100,000 ^B
Electrical	P	The main Culter Hammer is rated at 600 Volt and 600 Amps. There are also two 225 kVA step down transformers that provide power to plugs and low voltage loads.	Staff reports that energy consumption is high and still being investigated. Visual review did not identify any significant capital expenditures in the electrical system over the next five years.	Review findings and recommendations of ongoing investigation into energy consumption. Conduct infrared scan and implement necessary corrective measures, based on findings and recommendations. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$10,000 ^A \$0 ^B

Level 1 - Facility Assessment

Recreation Facility - Facility: 12

TD02

Mechanical	P	Eleven roof mounted air handling units (most with gas heat and electric cool). Two indoor mounted indirect fired air handling units. There are two hot water boilers and two 1000 litre storage tanks for the service hot water systems. In addition there is a steam generator for the steam room.	There may be compressor failures within the next five years (can be covered as part of maintenance budget). There may be control failures or problems with dampers. The steam generator is approaching the end of its service life.	Replace steam generator, which is at the end of its useful service life. Replace compressors and refurbishing dampers and actuators. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$10,000 A \$40,000 B
Fire Safety	6	There is an AFP multi-zone fire alarm control panel. The smoke detectors, heat detectors, pull stations and speakers throughout. The building is fully sprinklered with a wet sprinkler system.	No significant capital expenditures are expected over next five years.	Provided the fire detection and suppression systems are maintained according to the NFPA and BC Building Code requirements, the systems should continue to operate reliably for the next five years.	\$0 A \$0 B
Interior Finishes	5	Flooring is ceramic tile, resilient, wood, painted concrete, and carpet. Walls are wallpaper, ceramic tile and moveable partitions. Window coverings are blinds. Ceilings are flat painted finish, acoustic tile. Millwork includes countertops, cabinets and some mouldings. Appliances are limited to domestic fridge, domestic stove, and laundry washer/dryer. Furnishings include chairs, tables, metal storage lockers, washroom partitions and central mailboxes. Amenities include fitness equipment, steam room, pre-school, multi-purpose rooms, meeting rooms, vending machines.	Small stains on carpet flooring. Damage to walls in gymnasium from sports activities. Wear of paint finish on interior handrails. Water damage to wall in sprinkler room. Loose panel in gym. Exploratory opening in ceiling above stairs.	Spot clean carpets to remove small stains. Repair and repaint water damaged wall in sprinkler room. Refasten loose wood panel on wall. Patch hole in drywall at top of stairs. Consider future adjustments to height of protective walls in gymnasium to mitigate impact damage from sports activities. Repaint interior handrails.	\$15,000 A \$0 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 13

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1978
 LIFE CYCLE STAGE (TL-STAGE): 4
 GROSS FLOOR AREA: 14,590
 NUMBER OF BUILDINGS: 1
 ESTIMATED REPRODUCTION COST (CRV): \$3,100,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$494,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$225,000
SUM OF BACKLOG (BL) \$720,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$160,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$73,000
SUM OF RENEWALS (R5) \$230,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) **23.2% ^A**
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) **30.6% ^A + ^B**
 FACILITY NEEDS INDEX (TD-FNI) **80.7% ^A + ^B + ^C**
OBSCOLESCENCE ESTIMATE ("GET-AHEAD")
FUNCTIONAL OBSOLESCENCE (FO) \$1,550,000 ^C



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	4	Foundation system is concrete beams spanning between pile caps and concrete slab on timber piles. Structural frame consists of glu-lam beams and wood frame. Roof structure is wood decking. Walls are wood framed.	Building is designated by the City to perform as a post-disaster facility. Differential slab settlement resulting in cracking of floor tiles in various rooms.	Review seismic upgrade requirements to address City's intent for building to operate as a "post disaster" facility. Investigate differential settlement resulting in cracks in floors in various rooms. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$10,000 ^A \$0 ^B
Building Enclosure	3	Roofs are 2-ply SBS, sloped metal and cedar shingle. Canopy is 2-ply SBS. Skylights are Kal Wall. Walls are wood siding. Windows are storefront glazing and aluminum windows. Doors are metal swing and storefront. There are plantings and landscaping at-grade.	2-ply SBS roof is blistering and cracking with ponding water and debris on roof. There are signs of water penetration on mid-level roof. Sloped metal roof is leaking at parapet interface, and has aged and deteriorated sealant. Wood siding has peeling paint throughout and some areas of wood deterioration. Storefront frame damaged in weight room. Metal doors are scratched. Trees are encroaching on roof.	Replace 2-ply SBS roof above gym and offices. Locally repair sloped metal roof and replace sealant. Budget for replacement of cedar shingle roofs. Repaint wood siding and locally repair deteriorated wood. Budget for replacement of aluminum windows. Repair damaged storefront frame. Repaint metal doors. Prune trees at perimeter of building.	\$370,000 ^A \$80,000 ^B
Electrical	4	Transformer is exterior pad mounted. Facilities include a sound system and intercom/PA system. Security features include surveillance cameras and intrusion alarm.	Detached lamp grate. Burnt out lamp in lobby fixture. As a result of some differential settlement, there is concern that the drainage and plumbing systems may become disrupted.	Budget for phased replacement of interior light fixtures. Budget for replacement of exterior light fixtures with metal halide fixtures. Refasten detached lamp grate. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$10,000 ^A \$35,000 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 13

Mechanical	4	Controls are DDC and pneumatic. Gas fired water heater. Sump pumps, two cast iron atmospheric heating boilers. Heating is supplied through hydronic baseboards and Herman Nelson tempered air units. Cooling is by sleeve type air conditioner. Ventilation by air makeup units and ceiling fans.	Damaged hydronic baseboards. Through-wall ventilators are old and damaged. Outdated inspection tag on fan coil unit. Facility staff report problems with operations of HVAC control system. As a result of some differential settlement, there is concern that the drainage and plumbing systems may be disrupted.	Replace pneumatic air compressor on HVAC control system. Replace recirculation pump. Budget for replacement of domestic water heater. Budget for replacement of sump pumps. Replace Herman Nelson tempered air units. Replace damaged hydronic baseboards. Replace rooftop air make-up unit. Replace washroom exhaust fans. Update inspection tag on fan coil unit. Conduct in-drain camera survey to investigate for misalignment, leakage or breaks resulting from differential settlement. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required. Insulate drain pipe and supply lines in washrooms.	\$70,000 \$20,000
Fire Safety	4	fire control panel. Portable fire extinguishers are mounted throughout. One fire hydrant. Kitchen fume hood suppression. Emergency lighting.	Improper storage in service room. Burnt out bulb in exit sign. Door in fire separation not provided with self closure. No fire stopping at some service penetrations. No fire detector in storage shed.	Replace emergency lights and exit lights. Remove storage obstructing exit path. Remove storage in service room. Replace burnt out bulb in exit sign. Install door closer hardware in fire separation. Install fire stopping at some service penetrations. Install heat detector in storage shed. Consider installation of buzzer/strobe in gym area and washrooms.	\$4,000 \$15,000
Interior Finishes	4	Flooring is resilient sheet, carpet, ceramic tile, rubber, sprung wood and painted concrete. Walls are painted drywall, wood panel, glass board panel and ceramic tile. Ceilings are acoustic tile and cedar paneling. Window coverings are blinds. There is a combination of domestic and commercial kitchen appliances. Regular furnishings include chairs, tables, millwork and public signage. Recreation equipment includes sports equipment, fitness equipment, sound system and metal storage lockers. Amenities include a fitness room, gym, kitchens, change rooms, multipurpose rooms and administration offices.	Cracked tile flooring is cracked around perimeter of main lobby. Worn tile finish on washroom floors. Dirty grout on floor tiles. Delamination of baseboard. Broken wood panel and delaminated glass board panel in the gym. Water stains on cedar ceiling finish. Walls and doors are scratched and have peeling paint.	Replace cracked tile flooring, including installation of flexible joints between floor and wall to accommodate future movement at various locations. Clean grout on floor tiles. Refasten delaminated baseboard. Replace broken wood panel and delaminated glass board panel. Locally repaint interior walls and doors. Ensure that roof repairs are carried out promptly to mitigate further water ingress damage to interior wood finishes.	\$30,000 \$10,000

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 14

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION:	1992
LIFE CYCLE STAGE (TL-STAGE):	3
GROSS FLOOR AREA:	52,000
NUMBER OF BUILDINGS:	1
ESTIMATED REPRODUCTION COST (CRV):	\$7,800,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG)	\$309,000
OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$141,000
SUM OF BACKLOG (BL)	\$450,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS)	\$220,000
OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS)	\$100,000
SUM OF RENEWALS (R5)	\$320,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI)	5.8% ^A
EXTENDED FACILITY CONDITION INDEX (TD-EFCCI)	9.9% ^{A + B}
FACILITY NEEDS INDEX (TD-FNI)	17.1% ^{A + B + C}



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	3	Foundation system is concrete footings and slab-on-grade. Structural frame consists of post and beam reinforced concrete and post and beam structural steel. Roof structure is OWSJ and steel deck, as well as OWSJ and timber deck. Walls are tilt-up concrete.	Strain gauge mounted beneath stairs at southeast hallway. Suspected differential settlement at southwest doorway, resulting in potential trip and fall hazard at door threshold.	Review findings of report associated with strain gauge at SE stairs and determine extent of additional movement at affected locations. Reconstruct SW door threshold with flexible joint to accommodate movement and relevant to alleviate trip and fall hazard at exterior doorway. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$10,000 ^A \$0 ^B
Building Enclosure	4	Roofs are sloped metal and 2-ply SBS. Deck is pre-cast concrete pavers over waterproofing. Skylights are sloped glazing in aluminum T-bar. Walls are concrete block masonry, tilt-up concrete, sheet steel siding and face-sealed stucco cladding. Windows are aluminum store-front and pressed steel frame. Doors are sliders off decks, store-front automatic exit doors and pressed steel frame exit doors. Canopies are front entry and tubular steel frame and fabric. Large trees and plantings are found at-grade.	There is leakage at the perimeter of the 2-ply SBS roof and at the west stairway on the metal roof. Debris accumulation was noted on both roofs. Skylights are experiencing chronic leakage. Some concrete block masonry walls are exposed and cracked panels are present in the tilt-up concrete. Pressed steel frame windows are vulnerable to water penetration. Coatings on doors are in distress. Fabric is missing on canopy. Plantings and trees are encroaching the cladding and roof.	Repair drain and saddle condition at sloped metal roof. Repair 2-ply SBS roofs. Sweep all roof areas. Replace skylights. Recoat concrete block masonry with elastomeric coating. Repair cracks in tilt-up concrete and apply new sealant and elastomeric coating. Re-seal and recoat stucco. Re-seal and repaint pressed steel frame windows. Replace aged sliders and service pressed steel frame doors. Replace fabric on canopy. Prune trees and plantings.	\$270,000 ^A \$100,000 ^B
Electrical	5	Main breaker is a Westinghouse rated at 120/208 Volt and 1,600 Amps. The lighting is predominantly T8 fluorescent.	Staff reports that some fixtures are extremely hard to access.	Relocate some of the hard to access stairwell fixtures. Provided that the electrical system is properly maintained, there are no significant capital expenditures anticipated over the next five years. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$14,000 ^A \$0 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 14

Mechanical	5	There are 4 x 120,000 BTUH input instantaneous water heaters domestic hot water to the north building. There are 3 gas heat/electric cool air handling units on the south building and 6 heat pumps units and gas fired make-up air unit on the north building. Ceiling fans provide local air movement in some locations.	The roof top units show signs of environmental degradation.	Replace 5 roof top units within the next five years. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$0 A \$100,000 B
Fire Safety	5	There is an Edwards 6632 multi-zone panel in the north building with a Mircom panel serving the southing which alarms in the north panel. The north building is fully sprinklered and the south building has no fire suppression system other than in a commercial kitchen, which contains a fume hood suppression system.	Based on a visual review and readily available documents, there were no significant issues identified.	Provided the fire detection and suppression systems are maintained according to the NFPA and BC Building Code requirements, the systems should continue to operate reliably for the next five years.	\$0 A \$0 B
Interior Finishes	2	Flooring types are resilient, wood, carpet and high impact rubber sports flooring. Walls are painted drywall, painted masonry block, ceramic tile and brick. Doors are solid core wood with pressed steel frames. Window coverings are blinds. Ceilings are acoustic tiles, flat painted finish. General furnishings include chairs, tables, washroom partitions, and public signage. Commercial kitchen appliances are limited to domestic fridges, stoves, dishwashers. Recreation furnishings include fitness equipment, and sports equipment. Hot tub and sauna have been removed. Amenities include fitness room, pre-school, multi-purpose rooms, meeting room, facility administration offices, RCMP offices and a seniors centre.	Asbestos containing materials in boiler room flooring at south building and at other locations. Water stain on carpet in south building. Wood floor in gymnasium has recently been refinished. Water stains on wall in south stairwell. Caretaker suite on 3rd floor has been converted to storage space. Water stains on acoustic ceiling tiles. Cracked mirrors on wall in gym.	Remove water stain from carpet. Repaint walls and doors in various locations throughout. Obtain inventory of asbestos containing materials. Make preparation for future safe removal of asbestos containing materials in various locations, including tiled flooring in boiler room. Replace water damaged acoustic ceiling tiles once source of leak has been addressed. Repaint water damaged wall in south stairwell. Remove mirrors on wall in fitness room and install appropriate finish in proximity to free weights.	\$15,000 A \$20,000 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 15

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1957
 LIFE CYCLE STAGE (TL-STAGE): 5
 GROSS FLOOR AREA: 40,800
 NUMBER OF BUILDINGS: 1
 ESTIMATED REPRODUCTION COST (CRV): \$6,900,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$270,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$123,000
SUM OF BACKLOG (BL) \$390,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$640,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$291,000
SUM OF RENEWALS (R5) \$930,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) **5.7% ^A**
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) **19.1% ^A + ^B**
 FACILITY NEEDS INDEX (TD-FNI) **109.2% ^A + ^B + ^C**
OBsolescence ESTIMATE ("GET-AHEAD")
FUNCTIONAL OBsolescence (FO) \$6,210,000 ^C



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	5	Concrete foundation and slab-on-grade. Structural frame consists of timber frame, steel bow-string truss and structural steel frame. Roof structure is wood decking, and steel deck on structural steel.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of drawings on site for further condition assessment purposes.	\$0 ^A \$0 ^B
Building Enclosure	3	Roofs are sloped, prefinished steel sheet; 2-ply SBS and inverted assembly with EPDM membrane. Skylights are sloped glazing in aluminum T-bar, aluminum frame with acrylic dome and aluminum frame with double-glazed units. Walls are face-sealed stucco and deep profile prefinished steel cladding. Windows are aluminum frame. Doors are steel exit doors, aluminum frame, double out-swing and automatic sliders. Canopies are sloped with sheet steel roofing and low-slope with pyramidal acrylic skylights. At-grade consists of landscaping and plantings.	Steel sheet roof has corroded fasteners and gaskets are failing. Inverted roof has hidden gutter assembly and areas exhibiting sealant failure. Walls are protected by roof overhangs with limited exposed areas. Windows have sealant failing at perimeter; glazing stops and weather seals require service. South elevation door is leaking at sill. Plantings are encroaching on cladding.	Service EPDM on inverted roof assembly and replace sealant. Replace fasteners on steel sheet roof. Service glazing and framing on T-bar skylights. Replace exposed areas of stucco. Clean, apply sealant and recoat stucco at protected locations. Service windows and replace sealant. Steel exit doors require rehabilitation. Reduce soil level and prune plantings.	\$170,000 ^A \$350,000 ^B
Electrical	5	The main service is 600 Volts and 600 Amps. There is a 150 kVA dry type transformer supplying power to the plugs and low voltage loads. The lighting is a combination of incandescent fixtures and T8 fluorescents. The exit signs are compact fluorescent.	There have been some efforts to reduce energy consumption but more can be done especially with the lighting systems. Given the age of the facility we are concerned about the condition of some of breakers and possibly the transformer. Lens discoloured on exterior fixture. The panels are labeled and the equipment was clean.	Motion sensors and timers should be used in all areas of the building to control the lights. The exit signs should be changed to LED type lights. Replace the 150 kVA transformer within the next 5 years. Replace exterior light fixture with discoloured lens. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$30,000 ^A \$0 ^B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 15

Mechanical	4	The building is heated with roof mounted indirect gas fired air handling units. There are electric force flow heaters at some of the entrances. There are 4 x 20 ton (approx capacity) units (electric cool gas heat), although one of these units has just been replaced. There are 4 x 5 ton packaged air conditioning units (approximate capacity) and two indirect gas fired make up air units. There are two service water boilers (1 x 330,000 BTUH input and 1 x 60,000 BTUH input) and 4 x 120 gallon storage tanks. Mixing valves are used to control water temperatures for fixtures. There is a commercial kitchen with an NFPA 96 hood and grease trap. Ceiling fans in library.	Virtually all of the roof mounted equipment is original. The large air handling units and two of the packaged air conditioning units are approaching the end of their service lives. Domestic water systems are approaching the end of their service lives.	Budget for the eventual replacement of the large air handling units and 2 of the packaged air conditioning units. In addition, budget for the replacement of the service hot water systems. Cycle all isolation valves through full operation to test for full isolation and replace seized valves as required.	\$0 A \$180,000 B
Fire Safety	4	Mircon multi-zone fire alarm panel. Hand held fire extinguishers mounted to walls in various locations throughout the building. The exit signs are compact fluorescent.	The fire alarm panel is aged and finding replacement parts may be increasingly difficult.	Replace the fire alarm control panel, excluding field wiring.	\$0 A \$60,000 B
Interior Finishes	3	Flooring types are laminate, resilient sheet, carpet, and rubber tile. Walls are painted drywall, ceramic tile, washroom partitions. Window coverings are horizontal blinds. Ceilings are flat painted finish. Millwork includes countertops, cabinets and some mouldings. Appliances are limited to domestic fridges, stoves, dishwashers. Furnishings include chairs, tables, fitness equipment, and sports equipment. Amenities include fitness room, pre-school, multi-purpose rooms, meeting rooms, and public library. Hot tub and sauna have been eliminated.	VAT tile in basement. Water stained ceiling tiles. Scuff marks, scratches and gouges on various doors, frames and walls. Graffiti on exterior metal doors. Stained and torn carpet in library. Cracked tile in lobby. Damaged washroom partitions. Significant storage limitations and squash courts are currently being used for storage.	Repair stained and worn carpet in library. Replace damaged resilient flooring. Replace cracked tile floors. Repaint walls in squash court. Repaint doors, frames and walls in various locations throughout. Replace water stained ceiling tiles. Refasten loose ceiling tiles. Remove graffiti from exterior metal doors. Repaint corroded exterior bollards. Make arrangements for appropriate storage.	\$70,000 A \$50,000 B

Level 1 - Facility Assessment

TD02

Recreation Facility - Facility: 16

FACILITY PARAMETERS

DATE OF ORIGINAL CONSTRUCTION: 1964
 LIFE CYCLE STAGE (TL-STAGE): 5
 GROSS FLOOR AREA: 10,050
 NUMBER OF BUILDINGS: 1
 ESTIMATED REPRODUCTION COST (CRV): \$2,200,000

BACKLOG MAINTENANCE ("CATCH-UP")

COST OF DEFICIENCIES (BACKLOG) \$296,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$135,000
SUM OF BACKLOG (BL) \$430,000 ^A

5 YEAR RENEWALS ("KEEP-UP")

COST OF 5 YEAR RENEWALS (RENEWALS) \$148,000
 OVERHEAD AND PROFIT (15%) X CONTINGENCY (10%) X CONSULTANT FEES (15%) (SOFT COSTS) \$67,000
SUM OF RENEWALS (R5) \$220,000 ^B

FACILITY INDEXES

FACILITY CONDITION INDEX (TD-FCI) 19.5% ^A
 EXTENDED FACILITY CONDITION INDEX (TD-EFCI) 29.5% ^{A + B}
 FACILITY NEEDS INDEX (TD-FNI) 112.1% ^{A + B + C}
OBsolescence ESTIMATE ("GET-AHEAD") FUNCTIONAL OBsolescence (FO) \$1,820,000 ^C



SYSTEM	RATING	SUMMARY OF SYSTEM	SUMMARY OF CONCERNS	SUMMARY OF RECOMMENDATIONS	EST. COST
Structural	3	Piled foundation under addition. Concrete strip footing under original building. Structural frame is timber post and beam, and glue-lam roof beams. Roof structure is wood decking.	Based on a visual review of the exposed structural components and a cursory review of available structural drawings, there were no significant concerns noted at this time.	Provided the building enclosure components (such as roofs, walls and windows) are properly maintained, the underlying, protected structural components are not expected to require any significant capital expenditures over the next five years. Assemble and retain a package of structural and geotechnical drawings on site for further condition assessment purposes.	\$0 ^A \$0 ^B
Building Enclosure	3	Roof is 2-ply SBS. Skylights are aluminum frame with acrylic dome and slope sealed units in T-bar aluminum frame. Walls are face-sealed stucco, horizontal and vertical wood siding. Windows are wood frame and aluminum frame. Doors are double out-swing, wood and steel clad exit doors. Canopy is fabric with metal frame. Landscape soils and plantings are found at grade.	Roof has significant ponding and blisters. Rainwater leaders on roof are disconnected. Vertical wood siding is aged with voids and unsealed joints. Exposed horizontal siding at roof fascia is deteriorated. Wood frame windows are coming adrift. Glazing stops and weather seals on aluminum windows require service. Double out-swing doors are aged, have a lack of weather resistance and poor security. Wood and steel clad exit doors are incompletely installed. Fabric in canopy is slit. Plantings are encroaching on cladding. Heaving asphalt from tree roots beside walkways.	Replace roof over gymnasium and install new drains over west roof. Repair rainwater leaders. Replace exposed areas of stucco. Locally repair vertical wood siding. Replace horizontal wood siding at fascia. Replace wood frame windows and service aluminum windows. Replace double out-swing doors and complete installation of wood and steel clad exit doors. Replace fabric on canopy. Reduce soil level and prune plantings at-grade. Locally repair heaving and cracked asphalt on perimeter walkways.	\$220,000 ^A \$80,000 ^B
Electrical	4	There is a 400 Amp, 120/208 main disconnect that feeds a 400 Amp splitter. There are various panels throughout the building in various service rooms. Lighting is predominantly T8. Sound system and audiovisual equipment in some of the amenity rooms.	The electrical room being used for storage. The electrical equipment is clean, properly labeled and appears to be in good condition. Some of the panels are older with older style breakers. What was visible of the wiring appeared to in good condition. At the time of our review, most of the interior fixtures had been upgraded to T8s.	Upgrade some of the distribution panels and wiring. Replace missing lamps from fixtures, replace cracked lens. Conduct infrared scan, review findings and recommendations, and implement necessary corrective measures. Review adequacy of breaker labelling and de-energize panels to test isolation.	\$16,000 ^A \$0 ^B

Level 1 - Facility Assessment

Recreation Facility - Facility: 16

TD02

Mechanical	4	There are 4 gas fired warm air furnaces that heat building. In addition, there is a gas fired make-up air unit for the gym and a roof mounted air conditioning unit for the weight room. There are also two gas fired domestic hot water heaters. Direct digital control system.	The roof gas fired make up air unit and packaged air conditioning unit appear to have reached the end of their service lives. The warm air furnaces also appear to all be original and as such have reached the limit of their service lives as well. Extensive upgrades to the building controls system have recently been completed.	\$0 A
Fire Safety	4	There are smoke detectors and hand held fire extinguishers throughout the building.	The fire alarm system is nearing the end of its useful service life.	\$0 A \$38,000 B
Interior Finishes	2	Flooring types are resilient sheet & tile, sprung wood, carpet, rubber tile, and epoxy. Walls are painted drywall, washroom partitions. Window coverings are blinds. Ceilings are flat painted finish. Millwork includes countertops, cabinets and some mouldings. Appliances are limited to domestic fridges and stove. Furnishings include chairs, tables, fitness equipment, sports equipment. Amenities include fitness room, gymnasium, games room, pre-school, and multi-purpose room.	Carpet floors are significantly stained. Resilient sheet and tile floors are delaminating in some locations. Asbestos containing materials are suspected in some of the finishes. Interior paintwork and drywall is damaged in several locations as a result of mechanical exposure to storage and traffic and absence of bumper guards. Localized cracking of drywall. Some interior doors are similarly damaged.	\$60,000 A \$0 B
			Investigate ACM content in some of the floor finishes. Remove resilient flooring from service rooms and install more durable finish, such as painted concrete. Replace stained and aged carpet flooring in administration. Repair damaged drywall, repaint interior walls, and install protective mouldings in high traffic locations to mitigate further damage to walls and doors. Reconsider equipment storage practices or install bumper guards to mitigate further damage to adjoining wall areas.	

Appendix 4

Sample Photos



Phase IV Validation Sample: Community Centres, Lower Mainland, British Columbia

1. SAMPLE DEFICIENCY PHOTOS
2. SAMPLE ROOM PHOTOS
3. OTHER PHOTOS



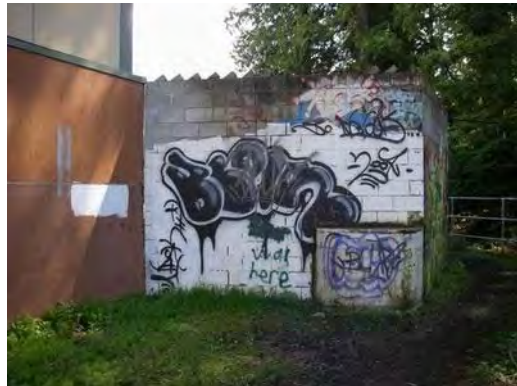
COATING PEELING ON METAL WALL



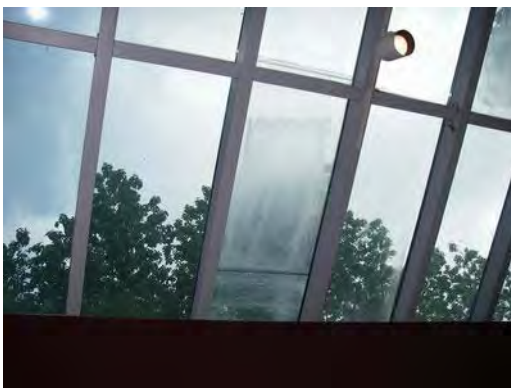
DAMAGED EIFS WALL



DAMAGED STUCCO WALL



GRAFFITI ON BLOCK WALL



LEAKING SKYLIGHT



ROOF BLISTERS



SEALANT FAILURE



STAINED STUCCO



VEGETATION GROWTH ON ROOF



WALL DAMAGED FROM FALLEN TREE



WALL INSULATION MISSING



PLUGGED ROOF DRAIN



PONDING WATER ON ROOF



MISSING ROOF DRAIN SCREEN



MOSS GROWTH ON ROOF



PAINT PEELING ON FLASHING



DAMAGED WOOD FASCIA



DAMAGED WOOD SHINGLE ROOF



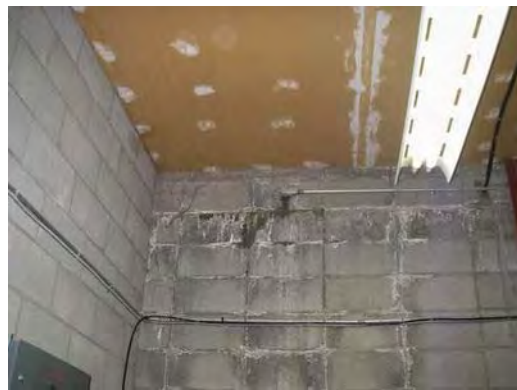
LEAF ACCUMULATION ON ROOF



FAILED WINDOW SEAL



PONDING WATER ON CANOPY



EFLUORESCENCE ON CONCRETE WALL



CORROSION STAINS FROM WINDOW



DISPLACED ROOF INSULATION



DAMAGED DECK PAVERS



PAINT SCRATCHES ON DOOR



WATER DAMAGE TO DOOR



FASCIA DAMAGE



ROOF DOWNSPOUT DENTED



ROOF MEMBRANE EXPOSED

Electrical

BCRPA - Sample Photos



STORAGE IN ELECTRICAL ROOM



CORRODED LIGHT SWITCH



FAULTY TIMER/PHOTOCELL



LOOSE BASEBOARD HEATER



GRAFFITI ON TRANSFORMER



DETACHED LIGHT FIXTURE

A09



DAMAGED PIPE INSULATION



LOOSE FAN FILTERS



PAINTE PEELING ON HOUSINGS



PLASTIC ON AHU



VENTILATION DIRT STAINS



AGED BOILERS



ELECTROLYSIS OF COPPER PIPING



CORRODED HOUSING



CORRODED PIPING



LEAKING FLOOR DRAIN



CORRODED B-VENTS



CORRODED CONDENSER FAN BLADE



DAMAGED THERMOSTAT CONTROLS



VENTILATION STAINS



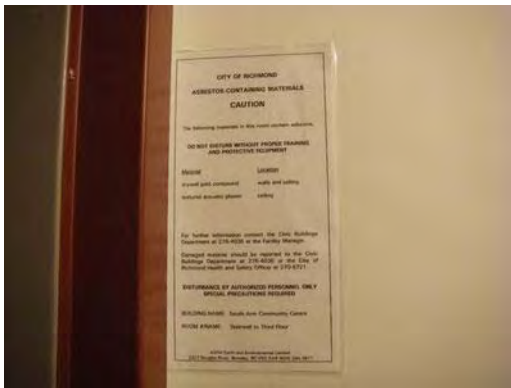
GRAFFITI IN FIRE HYDRANT



OUTDATED EXTINGUISHER TAG



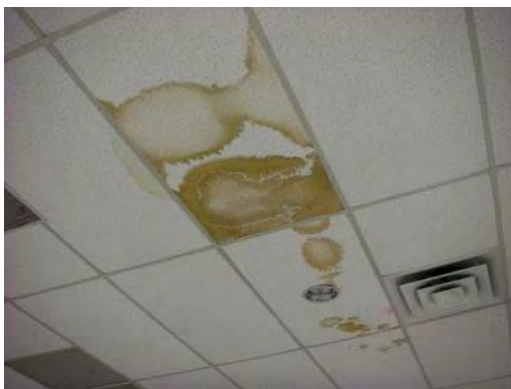
BLOCKAGE IN FGRESS ROUTE



ACM NOTICE



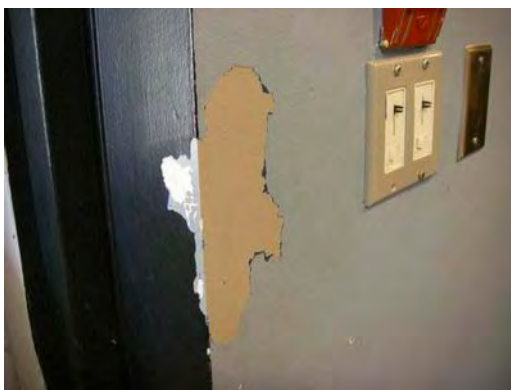
BASEBOARD WALLS STAINS



CEILING TILE STAINS



CRACKED RESILIENT FLOOR



DAMAGED PAINT



DOOR COATING GOUGED



HOLE IN WALL



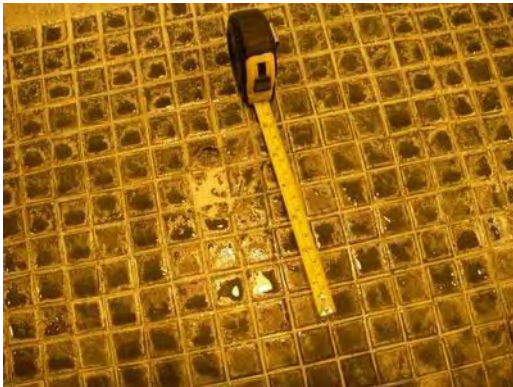
LEAKAGE INTO SPRINKLER ROOM



METAL GATE CORROSION



RIPPED CARPET SEAM



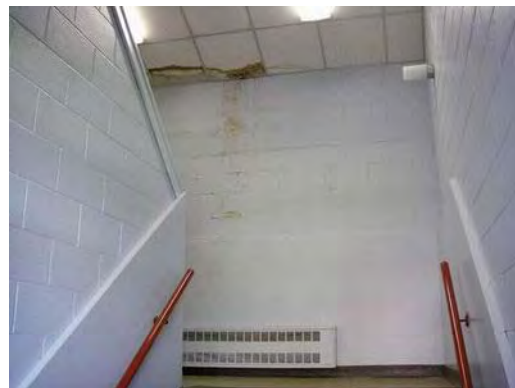
TILE CRACKED ON POOL DECK



URINE STAINS ON FLOOR



WALL DAMAGE



WATER DAMAGED PAINTWORK



WATER RUNDOWN STAINS



WATER STAINED CARPET



WATER STAINED CEILING TILE



CORRODED DOOR PANIC HANDLE



CORRODED DOOR STOP



TORN UPHOLSTERY



DRYWALL DAMAGED



DELAMINATED FLOOR TILE

Interior Spaces
BCRPA - Sample Photos



ADMIN / RECEPTION



POOL



DAYCARE



FITNESS ROOM



GYMNASIUM



GYMNASIUM

A09



GYMNASIUM



LIBRARY



LIBRARY



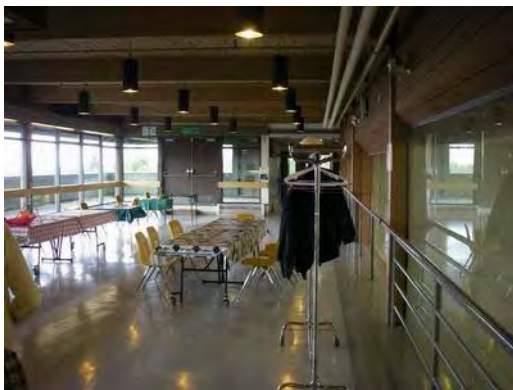
LOBBY



LOBBY AND CAFETERIA



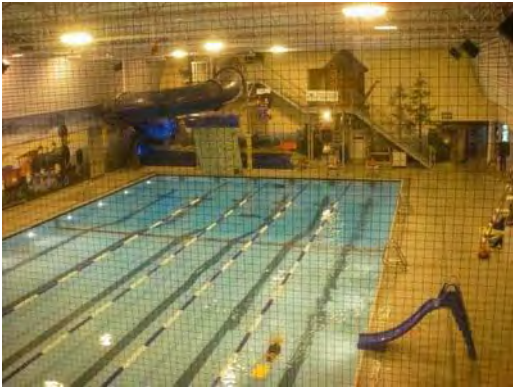
LOUNGE



MULTI - PURPOSE



POOL



Pool



POOL MECHANICAL ROOM



PRE SCHOOL



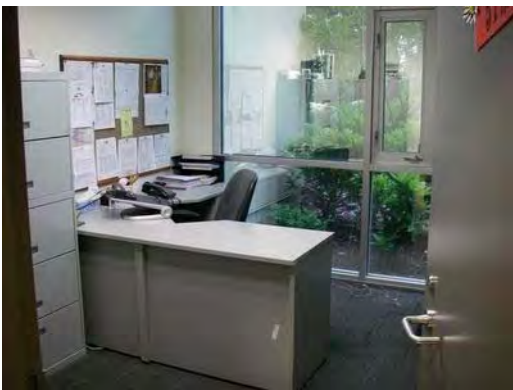
SAUNA



SENIORS CENTRE



SQUASH COURTS



STAFF OFFICES



STEAM ROOM



STEAM ROOM



STORAGE



STORAGE



TENNIS COURT



YOUTH LOUNGE



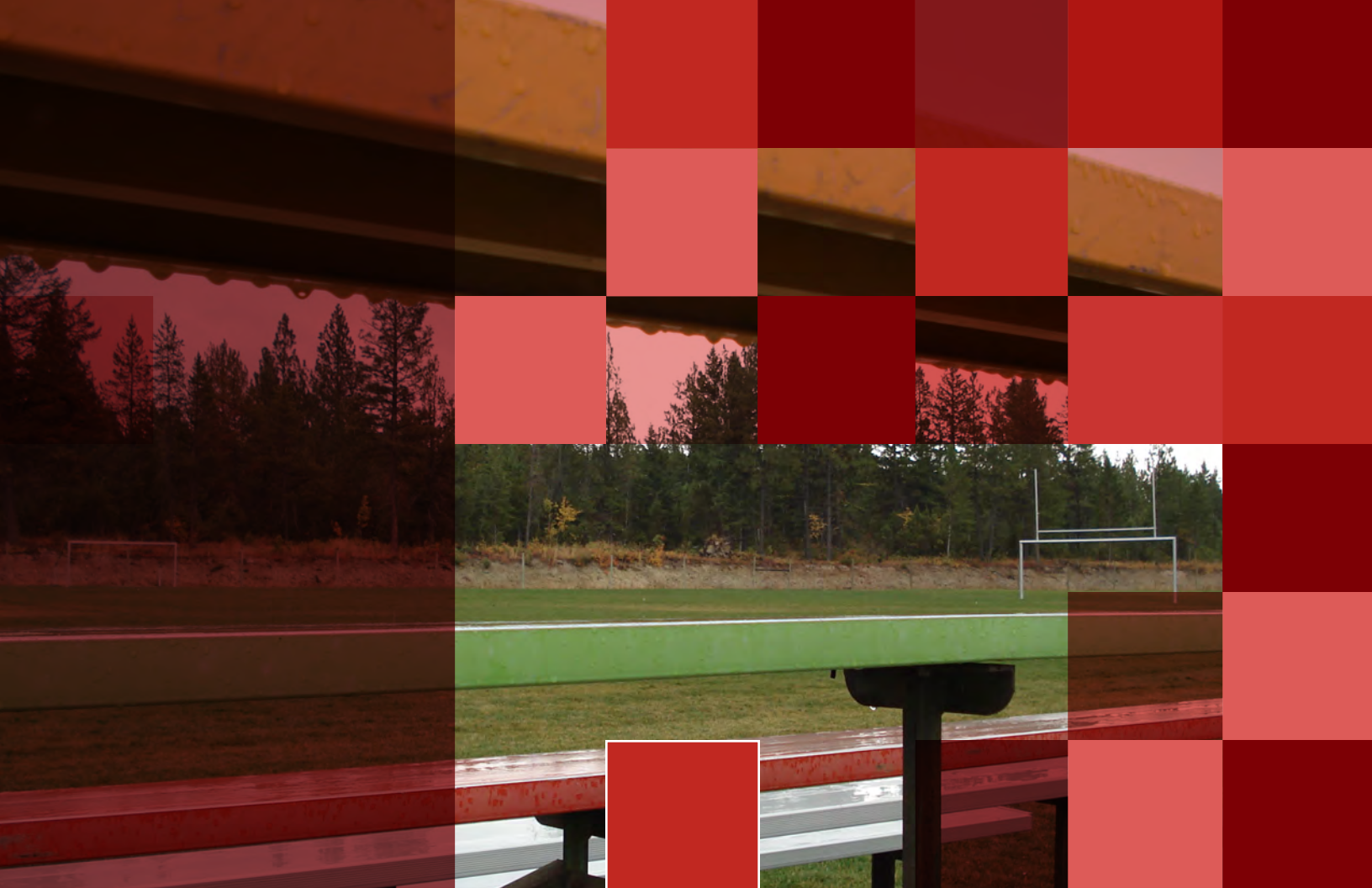
YOUTH LOUNGE



ICE RINK



ICE RINK



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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