Regional District of Nanaimo

2023 RECREATION FACILITY USE STUDY

Final Report

Submitted by: RC Strategies

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SECTION 1
INTRODUCTION

Typically, every five years, the Regional District of Nanaimo (the Regional District or the RDN) conducts a study to determine residency of the users of some regionally significant RDN financed indoor and outdoor recreation spaces. This information is used as input to calculations which apportion the net cost of providing those spaces to participating jurisdictions. Previous studies were conducted in 2005, 2010 and 2015. The study that was originally planned for 2020 was delayed due to the impacts of COVID-19.

Early in 2023, the Regional District commissioned RC Strategies to undertake this study. Data was gathered from a variety of sources and used to determine the percentage of users that reside in each of the participating geographic jurisdictions. Details of the methodology of the data collection and analysis process are included in ***Appendix A***. However, it is worth noting that the uses of recreation spaces were divided into three categories as follows:

- **Drop-in uses**, where a user decides, on a case-by-case basis, to visit and use the facility during a scheduled public access timeslot;
- **Program uses**, where a user pre-commits to one or more uses through a registration process;
- **Rental uses**, where a user is part of a group that rents a space within a facility and then controls the users and uses of the space during the rented timeslot.

There were enhancements this year to the way that drop-in uses were captured. In the past, drop-in uses have been determined through a sampling of users that were intercepted as they left a public session. Trained interviewers asked users for their physical address. The sample results were then used to project total proportions of drop-in uses. This year, the surveys continued to capture those drop-in users that did not pay via a pre-paid membership. However, there has been a significant increase in the proportion of users that purchased a pre-paid membership, so computer scan files were used to capture all drop-in users that paid for the use via a membership card. This added process significantly increased the amount of drop-in usage data that could be added to the analysis which in turn improved the statistical reliability of the overall results.

As in the past, program registration files were used to determine the residency of users who registered for program uses and a survey of facility user groups was used to obtain addresses of group members.

The results of this year's study are presented below and are organized by facility type. It is important to understand that due to rounding, some figures don't add to exactly 100%. However, the rounding does not detract from the accuracy of the calculations; just the presentation of them.

STATISTICAL RELIABILITY

The methodology used to conduct the data collection and analysis yielded sufficiently valid and reliable results that apportioning net costs of operation for pools, arenas, and sports fields to participating jurisdictions has a high level of accuracy. While no data is perfect, the consultants assert that the information available and its analysis generate results which are more reliable and valid than industry standard levels of confidence. Industry standard level of confidence in survey data is +/- 5.0% nineteen times out of twenty. For this study, the combination of data sources with different levels of reliability are complicated to combine into a cohesive confidence level. However, the overall result is almost certainly within 2% nineteen times out of twenty. This means that if the methodology were repeated consistently using the same general parameters, use by area of residency would have to shift by more than 2% for it to be reliably identified (nineteen times out of twenty) by the process. The level of reliability is improving over time rendering results which are more reliable in each iteration of this study.

SECTION 2

RAVENSONG AQUATIC CENTRE

Located in the Town of Qualicum Beach, the Ravensong Aquatic Centre has been funded by the Town of Qualicum Beach, the City of Parksville and Electoral Areas F, G, and H. Electoral Area E has recently been added to those participating and will be part of the funding in the future. Usage by jurisdiction of residency is one of the inputs used to apportion funding responsibility to ratepayers across the service area.

Figure One presents the raw usage data (uses and users) for the facility. The first row represents the actual number of drop-in swims recorded by the intercept survey of those that had not paid using a membership card. On this row, only users who paid for the use at the time of use are included. The second row represents membership scans associated with each use paid by a user who had purchased a membership. The third row represents the number of registrations a resident of each jurisdiction made in the program category for a program based at the facility in 2023. The fourth row represents the results of a survey of groups that rented space at the facility in 2023. The residency of members of those groups was coded as to geographical jurisdictions in which they reside.

KEY TO FIGURE COLUMN HEADINGS

A through H are Electoral Areas A through H

CoN is the City of Nanaimo

PV is the City of Parksville

QB is the Town of Qualicum Beach

LZ is the District of Lantzville

O is all Other use (outside the RDN)

Figure One

Summary of Raw Usage Data at Ravensong Aquatic Centre

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In Survey	0	0	0	22	88	37	43	26	104	103	2	29	454
Membership Scans	0	0	0	736	5,236	9,060	2,567	249	10,131	15,844	28	1,356	45,207
Program	0	0	3	189	627	818	262	58	1,318	1,154	35	57	4,521
Rentals	0	0	0	6	10	20	8	2	32	27	0	2	107

The data presented in ***Figure One*** have been turned into percentages in ***Figure Two***.

Figure Two

Raw Usage Data for the Ravensong Aquatic Centre as Percentages

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In Survey	0%	0%	0%	5%	19%	8%	9%	6%	23%	23%	0%	6%	100%
Membership Scans	0%	0%	0%	2%	12%	20%	6%	1%	22%	35%	0%	3%	100%
Program	0%	0%	0%	4%	14%	18%	6%	1%	29%	26%	1%	1%	100%
Rentals	0%	0%	0%	6%	9%	19%	7%	2%	30%	25%	0%	2%	100%

As drop-in survey data and membership scans practically represent the same nature of unstructured and independent facility use (use not associated with an organized program or group), they need to be combined into a single category of drop-in use. Due to the accurate tracking of membership swipes used, a report on the percentage of membership passes used vs. the percentage of participants who used other methods of paying for admissions (cash, credit card and vouchers) was prepared. The 65% (membership) / 35% (intercept survey) split reflects the approximate distribution of these visits and was therefore weighted accordingly. ***Figure Three*** summarizes how these two data inputs were combined into the single Drop-In Use category.

Figure Three

Percentage Drop-In Use Calculations for Ravensong Aquatic Centre

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In Survey	0%	0%	0%	5%	19%	8%	9%	6%	23%	23%	0%	6%	100%
Membership Scans	0%	0%	0%	2%	12%	20%	6%	1%	22%	35%	0%	3%	100%
Intercept Survey @ 35%	0%	0%	0%	2%	7%	3%	3%	2%	8%	8%	0%	2%	35%
Membership Scans @ 65%	0%	0%	0%	1%	8%	13%	4%	1%	14%	23%	0%	1%	65%
Total Drop-In Use	**0%**	**0%**	**0%**	**3%**	**15%**	**16%**	**7%**	**3%**	**22%**	**31%**	**0%**	**3%**	**100%**

The raw data presented in ***Figures Two*** and ***Three*** needs to be further adjusted (weighted) as the proportion of total facility use by each of the three remaining categories (Drop In, Program, and Rentals) is not equal. The following ***Figure Four*** presents the assumptions used to proportion overall facility use by category based on feedback from RDN staff as to how total utilization is normally experienced at the facility.

Figure Four

Category of Use Weighting Assumptions for Ravensong Aquatic Centre

Category of Use	% of Total
Drop-in Use (combined Survey and Membership Scans)	50%
Program Use	40%
Rental Use	10%
Total	**100%**

Figure Five shows the final analysis of Ravensong Aquatic Centre use by location of residency.

Figure Five

Percentage of All Ravensong Aquatic Centre Uses from Each Jurisdiction

	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In	0.00%	0.00%	0.00%	1.50%	7.00%	8.00%	3.50%	1.50%	11.00%	15.50%	0.00%	2.00%	50%
Program	0.00%	0.00%	0.00%	1.60%	5.60%	7.20%	2.40%	0.40%	11.60%	10.40%	0.40%	0.40%	40%
Rentals	0.00%	0.00%	0.00%	0.60%	0.90%	1.90%	0.70%	0.20%	3.00%	2.50%	0.00%	0.20%	10%
Total	**0.00%**	**0.00%**	**0.00%**	**3.70%**	**13.50%**	**17.10%**	**6.60%**	**2.10%**	**25.60%**	**28.40%**	**0.40%**	**2.60%**	**100%**

It is important to note that when attributing the net costs for each of the participating jurisdictions, the percentages in ***Figure Five*** could not be used as they are now. The Other category of use and jurisdictions which don't participate in the service need to be netted out with their share of usage distributed across the participating jurisdictions before final calculations are made. ***Figure Six*** presents the impacts of netting out the usage by non-funding jurisdictions across the past funding jurisdictions as well as the impacts of including Electoral Area E in the service as of 2024.

Figure Six

Net Overall Use of Ravensong Aquatic Centre Attributed to the Jurisdictions Funding the Service in 2023

Jurisdiction	% Usage Attributed to Each Participating Jurisdiction (excluding EA E)	% of Funding Responsibility (including EA E)
Electoral Area E	N/A	3.90%
Electoral Area F	14.80%	14.23%
Electoral Area G	18.75%	18.02%
Electoral Area H	7.24%	6.95%
City of Parksville	28.07%	26.98%
Town of Qualicum Beach	31.14%	29.93%

Figure Seven provides an averaging of the data from the three most recent usage studies in 2010, 2015, and 2023. The second last row averages the past three studies. The last row reallocates the use from non participating jurisdictions to those that levy taxes to help pay for the service and averages over the past three years.

Figure Seven

Ravensong Aquatic Centre Averaging of the Three Usage Studies (2010, 2015, 2023)

Study Year	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
2010	0%	0%	0%	5.2%	14.7%	16.0%	7.4%	0.1%	25.6%	27.1%	0%	3.9%	100%
2015	0%	0%	0%	3.9%	19.6%	18.7%	6.3%	1.0%	24.2%	21.8%	0.1%	4.3%	100%
2023	0%	0%	0%	3.7%	13.5%	17.1%	6.6%	2.1%	25.6%	28.4%	0.4%	2.6%	100%
Average Overall	**0%**	**0%**	**0%**	**4.3%**	**15.9%**	**17.3%**	**6.8%**	**1.1%**	**25.1%**	**25.8%**	**0.2%**	**3.6%**	**100%**
Average with only participating jurisdictions	**N/A**	**N/A**	**N/A**	**4.5%**	**16.7%**	**18.2%**	**7.1%**	**N/A**	**26.4%**	**27.1%**	**N/A**	**N/A**	**100%**

SECTION 3
OCEANSIDE PLACE ARENA

Located in City of Parksville, Oceanside Place Arena has two regulation sized ice sheets and some dry floor activity spaces. The facility is supported financially by Electoral Areas E, F, G and H as well as the Town of Qualicum Beach and the City of Parksville.

Figure Eight presents the raw usage data (uses and users) for the facility in 2023. The first row represents the actual number of drop-in visits recorded by the intercept survey of those that had not paid using a membership card. The second row represents membership scans associated with each use paid by a user who had purchased a membership. The third row represents the total number of program registrations a resident of each jurisdiction made for a program based at the facility in 2023. The fourth row represents the results of a survey of groups that rented space at the facility in 2023. The residency of members of those groups was coded as to geographical jurisdictions in which they reside.

Figure Eight

Summary of Raw Usage Data at Oceanside Place Arena

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In Survey	6	0	7	16	15	46	7	43	52	23	7	28	250
Membership Scans	0	0	0	497	245	821	226	9	1,474	945	0	43	4,260
Program	0	2	2	63	80	185	45	29	226	98	10	23	763
Rentals	1	0	2	86	108	154	35	47	228	93	6	61	821

The data presented in Figure Eight has been turned into percentages in ***Figure Nine***.

Figure Nine

Raw Usage Data for the Oceanside Place Arena Expressed as Percentages

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In Survey	2%	0%	3%	6%	6%	18%	3%	17%	21%	9%	3%	11%	100%
Membership Scans	0%	0%	0%	12%	6%	19%	5%	0%	35%	22%	0%	1%	100%
Program	0%	0%	0%	8%	10 %	24%	6%	4%	30%	13%	1%	3%	100%
Rentals	0%	0%	0%	10%	13%	19%	4%	6%	28%	11%	1%	7%	100%

As drop-in survey data and membership scans practically represent the same nature of Drop-in use, they need to be combined into a single category. Due to the accurate tracking of drop in use payment types a report on the percentage of membership passes used vs the percentage of participants who used other methods of paying for admissions (cash, credit card and vouchers) was prepared. The 47% (membership) / 53% (intercept survey) split reflects the approximate distribution of these visits and was therefore used to weight the two inputs accordingly. ***Figure Ten*** summarizes how these two data inputs were combined into the single Drop-In Use category.

Figure Ten

Overall Drop-In Use Calculations for Oceanside Place Arena

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Survey at .53	1%	0%	1%	3%	3%	10%	1%	9%	11%	5%	1%	6%	51%
Membership Scans at .47	0%	0%	0%	5%	3%	9%	2%	0%	16%	10%	0%	0%	45%
Total Drop-in	**1%**	**0%**	**1%**	**8%**	**6%**	**19%**	**3%**	**9%**	**27%**	**15%**	**1%**	**6%**	**100%**

The raw data presented in ***Figures Nine*** and ***Ten*** needs to be further adjusted (weighted) as the proportion of total facility use by each of the three remaining categories (Drop-In, Program, and Rentals) is not equal. The following ***Figure Eleven*** presents the assumptions used to proportion overall facility use by category based on feedback from RDN staff as to how total utilization is normally experienced at the facility. Normally, for arenas, about 80% of the use is in the rental category. However, the use of other dry floor spaces in Oceanside Place causes an increase in the program category at the expense of rentals.

Figure Eleven

Category of Use Weighting Assumptions for Oceanside Place Arena

Category of Use	% of Total
Drop-in Use (combined Survey and Membership Scans)	10%
Program Use	25%
Rental Use	65%
Total	**100%**

Figure Twelve shows the final analysis of Oceanside Place Arena use by location of residency with the weights from ***Figure Eleven*** applied.

Figure Twelve

Proportion of All Oceanside Place Arena Uses from Each Jurisdiction

Category	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In	0.13%	0.00%	0.15%	0.89%	0.59%	1.88%	0.40%	0.92%	2.73%	1.53%	0.15%	0.64%	10%
Program	0.00%	0.00%	0.00%	2.00%	3.00%	6.00%	1.00%	1.00%	8.00%	3.00%	0.00%	1.00%	25%
Rentals	0.08%	0.00%	0.16%	6.81%	8.55%	12.19%	2.77%	3.72%	18.05%	7.36%	0.48%	4.83%	65%
Totals	**0.21%**	**0.00%**	**0.31%**	**9.76%**	**12.14%**	**20.07%**	**4.17%**	**5.64%**	**28.78%**	**11.89%**	**0.63%**	**6.47%**	**100%**

It is important to note that when attributing the net costs for each of the participating jurisdictions, the percentages in ***Figure Twelve*** could not be used as they are now. Jurisdictions which don't participate in the service need to be netted out with their share of usage distributed across the participating jurisdictions before final calculations are made. ***Figure Thirteen*** presents the impacts of netting out the 13.26% of usage by non-funding jurisdictions and apportioning them across the current funding jurisdictions.

Figure Thirteen

Net Overall Use of Oceanside Place Arena Attributed to the Jurisdictions Funding the Service

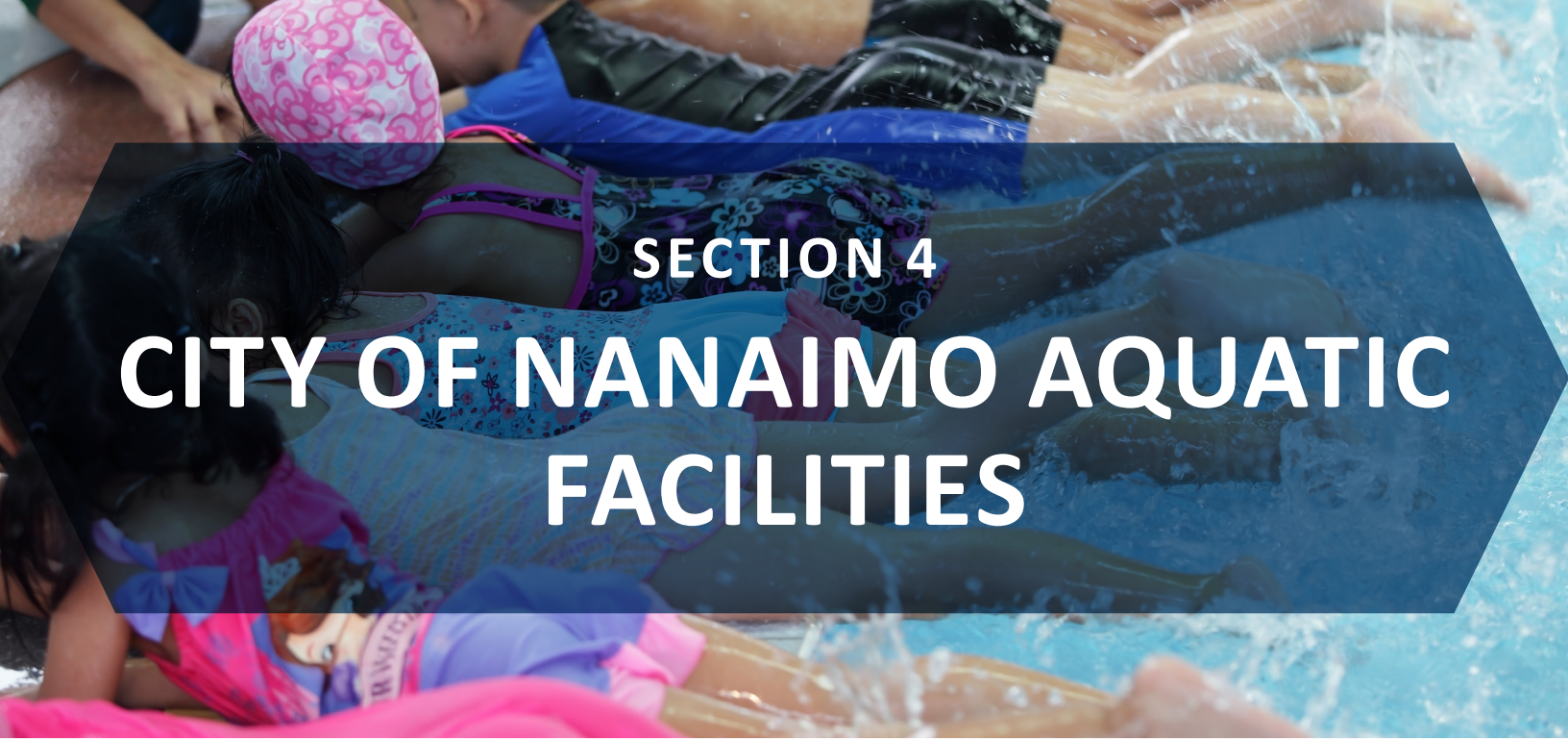
Jurisdiction	% Usage Attributed to Each Participating Jurisdiction
Electoral Area E	11.25%
Electoral Area F	14.00%
Electoral Area G	23.14%
Electoral Area H	4.81%
City of Parksville	33.18%
Town of Qualicum Beach	13.71%
Total funding	**100%**

Figure Fourteen provides an averaging of the data from the three most recent usage studies in 2010, 2015, and 2023.

Figure Fourteen

Averaging Percentage of the Past 3 Usage Studies for Oceanside Place Arena

Jurisdiction	2010	2015	2023	Average of 2010, 2015 and 2023
Electoral Area E	13.3	11.3	11.3	12.0%
Electoral Area F	9.6	12.8	14.0	12.1%
Electoral Area G	23.3	22.4	23.1	22.9%
Electoral Area H	2.6	4.2	4.8	3.9%
City of Parksville	35.1	34.0	33.2	34.1%
Town of Qualicum Beach	15.8	15.3	13.7	14.9%
Total funding	**100%**	**100%**	**100%**	**100%**



SECTION 4

CITY OF NANAIMO AQUATIC FACILITIES

There are two indoor aquatic centres in Nanaimo. The Beban Pool and the Nanaimo Aquatic Centre are operated by the City of Nanaimo but are tax supported by the jurisdictions in the Southern Recreation Area of the RDN.

The City of Nanaimo has decided to combine the uses of the two facilities and present the data for both facilities together. ***Figure Fifteen*** shows the raw numbers of visits to both pools presented as a total combined data set.

Figure Fifteen

Summary of Raw Usage Data at City of Nanaimo Pools

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-in Survey	27	12	24	18	22	9	3	1,057	36	11	28	118	1,365
Membership Scans	7,103	1,962	4,389	1,262	326	310	124	190,816	856	154	4,094	6,874	218,270
Program Registrations	273	63	267	143	30	17	4	11,148	36	42	289	237	12,549
Rentals	19	4	50	14	4	8	3	806	22	24	48	20	1,022

The data presented in ***Figure Fifteen*** has been turned into percentages in ***Figure Sixteen***.

Figure Sixteen

Raw Usage Data for City of Nanaimo Pools as Percentages

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In Survey	2%	1%	2%	2%	2%	1%	0%	77%	3%	1%	2%	9%	100%
Membership Scans	3%	1%	2%	1%	0%	0%	0%	87%	0%	0%	2%	3%	100%
Program	2%	1%	2%	1%	0%	0%	0%	89%	0%	0%	2%	2%	100%
Rental Groups	2%	0%	5%	1%	0%	1%	0%	79%	2%	2%	5%	2%	100%

As drop-in survey data and membership scans practically represent the same nature of unstructured, casual facility use, they need to be combined into a single category of Drop-In Use. Due to the accurate tracking of membership swipes used, a report on the percentage of membership passes used vs the percentage of participants who used other methods of paying for admissions (cash, credit card and vouchers) was prepared. The 60% (membership) / 40% (intercept survey) split reflects the approximate distribution of these visits and was therefore weighted accordingly. ***Figure Seventeen*** summarizes how these two data inputs were combined into the single Drop-In Use category using those weights.

Figure Seventeen

Percentage of Drop-In Use for Nanaimo Pools

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Survey at .40	0.79%	0.35%	0.70%	0.70%	0.64%	0.26%	0.09%	30.97%	1.05%	0.32%	0.82%	3.46%	40%
Membership Scans .60	1.95%	0.54%	1.21%	0.35%	0.09%	0.09%	0.03%	52.45%	0.24%	0.04%	1.13%	1.89%	60%
Total Drop-In	**2.74%**	**0.89%**	**1.91%**	**1.05%**	**0.73%**	**0.35%**	**0.12%**	**83.42%**	**1.29%**	**0.36%**	**1.95%**	**5.35%**	**100%**

The raw data presented in ***Figures Sixteen*** and ***Seventeen*** needs to be further adjusted (weighted) as the proportion of total facility use by each of the three remaining categories (Drop In, Program, and Rentals) is not equal. The following ***Figure Eighteen*** presents the assumptions used to proportion overall facility use by category based on feedback from City of Nanaimo staff as to how total utilization is normally experienced at the facility.

Figure Eighteen

Category of Use Weighting Assumptions for City of Nanaimo Pools

Category of Use	% of Total
Drop-in Use (combined Survey and Membership Scans)	50%
Program Use	40%
Rental Use	10%
Total	**100%**

Figure Nineteen shows the final analysis of Nanaimo pool use by location of residency.

Figure Nineteen

Percentage of all City of Nanaimo Pool Uses from Each Jurisdiction

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In	1.37%	0.45%	0.95%	0.53%	0.37%	0.17%	0.06%	41.71%	0.65%	0.18%	0.97%	2.67%	50%
Program	0.87%	0.20%	0.85%	0.46%	0.10%	0.05%	0.01%	35.53%	0.11%	0.13%	0.92%	0.76%	40%
Rentals	0.19%	0.04%	0.49%	0.14%	0.04%	0.08%	0.03%	7.89%	0.22%	0.23%	0.47%	0.20%	10%
Totals	**2.43%**	**0.69%**	**2.29%**	**1.13%**	**0.51%**	**0.30%**	**0.10%**	**85.13%**	**0.98%**	**0.54%**	**2.36%**	**3.63%**	**100%**

It is important to note that when attributing the net costs for each of the participating jurisdictions, the percentages in ***Figure Nineteen*** could not be used as they are now. The Other category and jurisdictions which do not participate in the service need to be netted out with their share of usage distributed across the participating jurisdictions before final calculations are made. ***Figure Twenty*** presents the impacts of netting out the 7.18% usage by non-funding jurisdictions and distributing it across the current funding jurisdictions.

Figure Twenty

Net Overall Use Attributed to the Jurisdictions Funding City of Nanaimo Pools

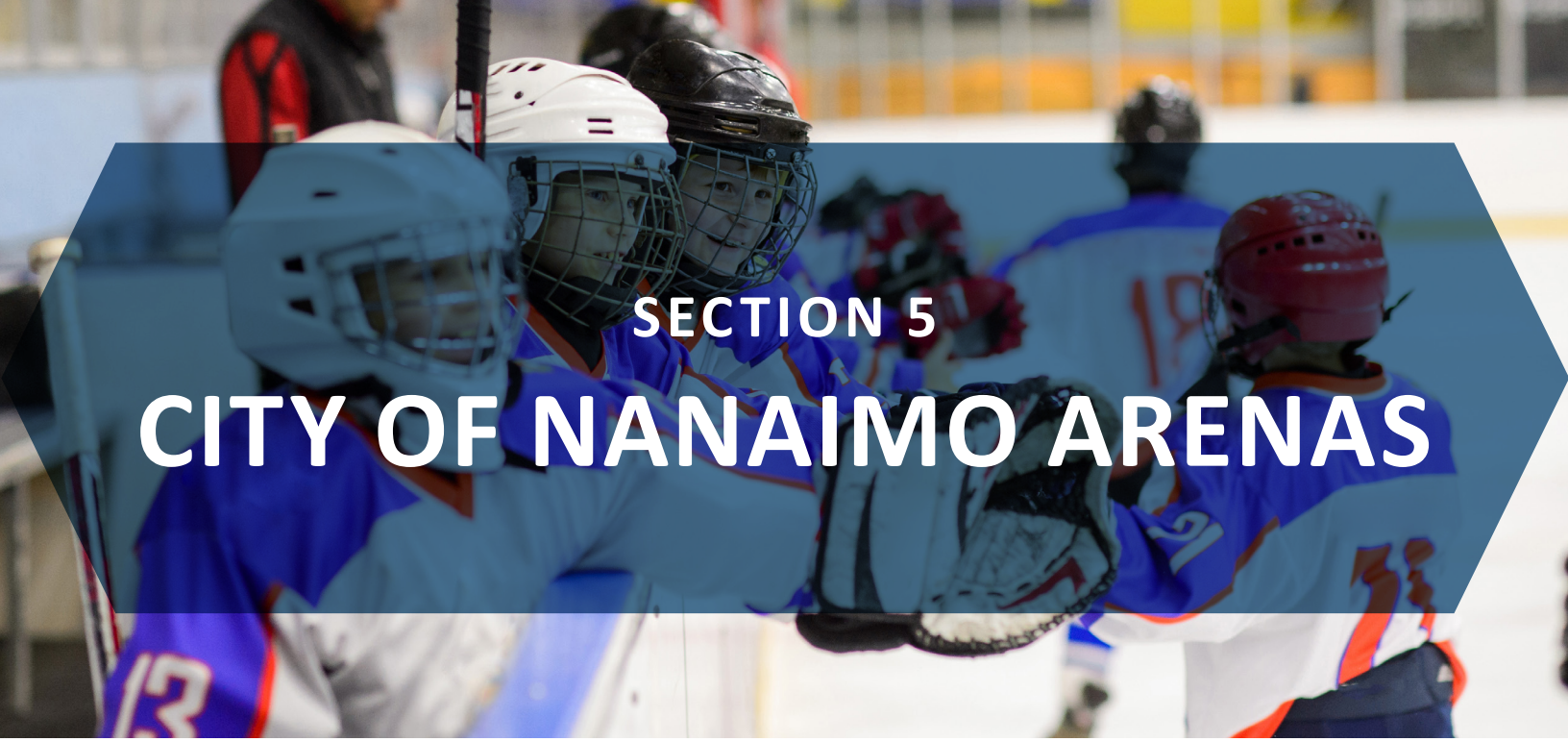
Jurisdiction	% Usage Attributed to Each Participating Jurisdiction
Electoral Area A	2.62%
Electoral Area B	0.74%
Electoral Area C	2.48%
City of Nanaimo	91.67%
District of Lantzville	2.54%
Total	**100.00%**

Figure Twenty-One provides an averaging of the data from the three most recent usage studies in 2010, 2015, and 2023.

Figure Twenty-One

Averaging of the Three Usage Studies (2010, 2015, 2023) for City of Nanaimo Pools

Jurisdiction	2010	2015	2023	Average of 2010, 2015 and 2023
Electoral Area A	3.7%	1.9%	2.6%	2.7%
Electoral Area B	1.1%	1.0%	0.7%	0.9%
Electoral Area C	1.7%	1.9%	2.5%	2.0%
City of Nanaimo	88.8%	91.2%	91.7%	90.6%
District of Lantzville	4.7%	3.9%	2.5%	3.7%
Total funding	**100%**	**100%**	**100%**	**100%**



SECTION 5

CITY OF NANAIMO ARENAS

The City of Nanaimo has two arena sites which comprise a total of four regulation sheets of ice. Two are located within the Beban Park Complex and two are at the Nanaimo Ice Centre. Operated by the City of Nanaimo, they are used by many users outside of the City as well. While data for Drop-In and Program uses was collected separately for the two facilities, the City elected to provide rental user data which combined the use of all ice facilities in the City and requested that the overall information be analyzed in a combined format.

Figure Twenty-Two presents the raw usage data (uses and users) for the two facilities in 2023. The first row represents the actual number of drop-in visits recorded by the intercept survey of those that had not paid using a membership card. The second row represents membership scans at both facilities associated with each use paid by a user who had purchased a membership. The third row represents the total number of registrations a resident of each jurisdiction made for a program based at the arenas in 2023. The fourth row represents the results of a survey of groups that rented ice at either site in 2023. The residency of members of those groups was coded as to geographical jurisdictions in which they reside.

Figure Twenty-Two

Summary of Raw Usage Data at City of Nanaimo Arenas

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Surveys	24	0	30	11	2	5	0	622	3	0	18	56	771
Membership Scans	378	107	79	85	69	40	17	7,567	95	6	287	582	9,312
Program Registrations	223	19	182	119	18	31	1	5,576	33	42	277	195	6,716
Rental Groups	171	13	146	50	11	24	6	3,118	21	15	213	270	4,058

The data presented in ***Figure Twenty-Two*** have been turned into percentages in ***Figure Twenty-Three***.

Figure Twenty-Three

Raw Usage Data for the City of Nanaimo Arenas as Percentages

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-In Survey	3%	0%	4%	1%	0%	1%	0%	81%	0%	0%	2%	7%	100%
Membership Scans	4%	1%	1%	1%	1%	0%	0%	81%	1%	0%	3%	6%	100%
Program	3%	0%	3%	2%	0%	1%	0%	83%	1%	1%	4%	3%	100%
Total Arena Rental Groups	**4%**	**0%**	**4%**	**1%**	**0%**	**1%**	**0%**	**77%**	**1%**	**0%**	**5%**	**7%**	**100%**

As drop-in survey data and membership scans practically represent the same nature of unstructured and independent facility use, they need to be combined into a single category of drop-in use. Due to the accurate tracking of drop-in use payment types a report on the percentage of membership passes used vs the percentage of participants who used other methods of paying for admissions (cash, credit card and vouchers) was prepared. The 60% (membership) / 40% (intercept survey) split reflects the approximate distribution of these visits and was therefore used to weight the two inputs accordingly. ***Figure Twenty-Four*** summarizes how these two data inputs were combined into the single Drop-in Use category using the aforementioned weights.

Figure Twenty-Four

Percentage of Drop-In Use for City of Nanaimo Arenas

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Survey at .40	1.25%	0.00%	1.56%	0.57%	0.10%	0.26%	0.00%	32.27%	0.16%	0%	0.93%	2.91%	40%
Membership Scans at .60	2.44%	0.69%	0.51%	0.55%	0.44%	0.26%	0.11%	48.76%	0.61%	0.04%	1.85%	3.75%	60%
Total Drop-in	**3.69%**	**0.69%**	**2.07%**	**1.12%**	**0.54%**	**0.52%**	**0.11%**	**81.03%**	**0.77%**	**0.04%**	**2.78%**	**6.66%**	**100%**

The raw data presented in ***Figure Twenty-Four*** needs to be further adjusted (weighted) as the proportion of total use of both arenas by each of the three remaining categories (Drop-In, Program, and Rentals) is not equal. The following ***Figure Twenty-Five*** presents the assumptions used to proportion overall facility use by category based on feedback from Nanaimo staff as to how total utilization is normally experienced at the facility.

Figure Twenty-Five

Category of Use Weighting Assumptions for City of Nanaimo Arenas

Category of Use	% of Total
Drop-in Use (combined Survey and Membership Scans)	10%
Program Use	10%
Rental Use	80%
Total	**100%**

Figure Twenty-Six shows the final analysis of Nanaimo arena use by location of residency with the weights from ***Figure Twenty-Five*** applied.

Figure Twenty-Six

Percentage of All City of Nanaimo Arena Uses from Each Jurisdiction

	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Drop-in	0.33%	0.07%	0.21%	0.11%	0.05%	0.05%	0.01%	8.10%	0.08%	0.00%	0.28%	0.67%	10%
Program	0.33%	0.03%	0.27%	0.18%	0.0%	0.05%	0.00%	8.30%	0.05%	0.06%	0.41%	0.29%	10%
Rentals	3.37%	0.26%	2.88%	0.99%	0.22%	0.47%	0.12%	61.47%	0.41%	0.30%	4.20%	5.32%	80%
Totals	**4.03%**	**0.36%**	**3.36%**	**1.28%**	**0.27%**	**0.57%**	**0.13%**	**77.87%**	**0.54%**	**0.36%**	**4.89%**	**6.28%**	**100%**

It is important to note that when attributing the net costs for each of the participating jurisdictions, the percentages in ***Figure Twenty-Six*** could not be used as they are now. Jurisdictions which don't participate in the service need to be netted out with their share of usage distributed across the participating jurisdictions before final calculations are made. ***Figure Twenty-Seven*** presents the impacts of netting out the 9.45% of usage by non-funding jurisdictions and apportioning it across the current funding jurisdictions.

Figure Twenty-Seven

Use of City of Nanaimo Arenas Attributed to the Jurisdictions Funding the Service in 2023

Jurisdiction	% Usage Attributed to Each Participating Jurisdiction
Electoral Area A	4.46%
Electoral Area B	0.39%
Electoral Area C	3.71%
City of Nanaimo	86.00%
District of Lantzville	5.40%
Total funding	**100%**

Figure Twenty-Eight provides an averaging of the data from the three most recent usage studies in 2010, 2015, and 2023.

Figure Twenty-Eight

Averaging of the 3 Usage Studies (2010, 2015, 2023) for Nanaimo Arenas

Jurisdiction	2010	2015	2023	Average of 2010, 2015 and 2023
Electoral Area A	5.8%	5.8%	4.5%	5.4%
Electoral Area B	0.2%	1.0%	0.4%	0.5%
Electoral Area C	4.9%	2.3%	3.7%	3.6%
City of Nanaimo	84.1%	86.8%	86.0%	85.6%
District of Lantzville	5.0%	4.1%	5.4%	4.8%
Total funding	**100%**	**100%**	**100%**	**100%**

SECTION 6

SPORT FIELDS IN THE SOUTHERN COMMUNITY RECREATION SERVICE AREA

There are 21 sports fields listed in the side bar within the City of Nanaimo which are considered subregional in nature and which are used substantially by residents of the Southern Recreation Service Area. The operation of these fields is financed by Electoral Areas A, B and C as well as the District of Lantzville and the City of Nanaimo. Groups that have used these fields in 2023 were surveyed. The residency of members of those groups was coded as to geographical jurisdictions in which they reside. Use of these fields has been combined and is presented in the following Figures. The only category of use of these fields that has been captured is rental uses.

- Beban Artificial Turf 1 (Merle Logan)
- Beban Artificial Turf 2 (SATF)
- Beban Gyro Soccer/Ball 1-4
- Bowen West Ball/Soccer
- Caledonia Field Comox Field
- Departure Bay Field Ball/Soccer
- Deverill Field
- Elaine Hamilton Field Ball/Soccer
- Groveland Field
- Harry Wipper Field Ball/Soccer
- Mansfield - Ball/Soccer
- May Bennett/Pioneer Park - Ball/Soccer
- May Bennett/Pioneer Park - Football
- May Bennett/Pioneer Park - Rugby
- Pleasant Valley Field - Ball/Soccer
- Q'unq'inuqwstuxw Stadium Field
- Robins Park - Ball 1
- Serauxmen Fields - Ball 1-4
- Serauxmen Stadium
- Sid Clark Gyro Park - Ball 1-2
- Sherry Fields (Currently under reconstruction)

Figure Twenty-Nine presents the raw usage data (uses and users) for the sports fields in 2023.

Figure Twenty-Nine

Summary of Usage Data at Regionally Significant City of Nanaimo Sports Fields

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Field Rentals	219	34	212	78	22	43	12	6,916	31	26	365	287	8,245
Percentage of Field Rentals	2.7	0.4	2.6	0.9	0.3	0.5	0.1	83.9	0.4	0.3	4.4	3.5	100

As there is only one category of use recorded for sports fields, the breakdown in ***Figure Twenty-Nine*** represents all uses in 2023. However, not all jurisdictions contribute to the operation of theses sports fields. So, the 6.0% of use by non-participating jurisdictions and those uses from outside of the RDN need to be netted out to and apportioned to the contributing jurisdictions to determine the proportion of funding for each. That summary is illustrated in ***Figure Thirty***.

Figure Thirty

Net Overall Use of City of Nanaimo Sports Fields Attributed to the Jurisdictions Funding the Service in 2023

Jurisdiction	% Usage Attributed to Each Participating Jurisdiction
Electoral Area A	2.87%
Electoral Area B	0.43%
Electoral Area C	2.77%
City of Nanaimo	89.26%
District of Lantzville	4.68%
Total funding	**100.00%**

Figure Thirty-One provides an averaging of the data from the three most recent usage studies in 2010, 2015, and 2023.

Figure Thirty-One

Averaging of the Three Usage Studies (2010, 2015, 2023) for City of Nanaimo Sports Fields

Jurisdiction	2010	2015	2023	Average of 2010, 2015 and 2023
Electoral Area A	3.4%	2.5%	2.9%	2.93%
Electoral Area B	0.6%	0.5%	0.4%	0.5%
Electoral Area C	3.6%	3.3%	2.8%	3.23%
City of Nanaimo	85.3%	89.4%	89.3%	88.00%
District of Lantzville	7.1%	4.3%	4.7%	5.37%
Total funding	**100%**	**100%**	**100%**	**100.00%**

SECTION 7

SPORTS FIELDS IN THE NORTHERN COMMUNITY RECREATION SERVICE AREA

There are several sports fields within the City of Parksville, the Town of Qualicum Beach and Electoral Area E which are considered subregional in nature and which are used substantially by residents of the Northern Recreation Service Area. Those included in this study include Qualicum Beach Community Park sports fields in the Town of Qualicum Beach, the Springwood Park sports fields and the City of Parksville Community Park sports fields in City of Parksville, and the Jack Bagley field in Electoral Area E.

The operation of these fields is financed by Electoral Areas E, F, G and H as well as the City of Parksville and the Town of Qualicum Beach. The use of these fields has been combined and is presented in the following Figures. The only category of use of these fields that has been captured is rental uses.

Figure Thirty-Two presents the raw usage data (uses and users) for the sports fields in 2023 and that usage expressed as a percentage of total use.

Figure Thirty-Two

Summary of Raw Usage Data at District 69 Sports Fields

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Field Rentals	0	0	2	151	173	222	64	46	349	180	3	65	1,255
Percentage of Field Rentals	0.0	0.0	0.2	12.0	13.8	17.7	5.1	3.7	27.8	14.3	0.2	5.2	100

As there is only one category of use recorded for sports fields, the breakdown in ***Figure Thirty-Two*** represents all uses in 2023. However, not all jurisdictions contribute to the operation of theses sports fields. So, the 9.3% of use by non-participating jurisdictions and those uses from outside of the RDN needs to be netted out to and apportioned to the contributing jurisdictions to determine the proportion of funding for each. That summary is illustrated in ***Figure Thirty-Three***.

Figure Thirty-Three

Net Overall Use of District 69 Sports Fields Attributed to the Jurisdictions Funding the Service in 2023

Jurisdiction	% Usage Attributed to Each Participating Jurisdiction
Electoral Area E	13.23%
Electoral Area F	15.21%
Electoral Area G	19.51%
Electoral Area H	5.62%
City of Parksville	30.65%
Town of Qualicum Beach	15.77%
Total funding	**100.00%**

Figure Thirty-Four provides an averaging of the data from the three most recent usage studies in 2010, 2015, and 2023.

Figure Thirty-Four

Averaging of the 3 Usage Studies (2010, 2015, 2023) for District 69 Sports Fields

Jurisdiction	2010	2015	2023	Average of 2010, 2015 and 2023
Electoral Area E	12.0%	13.4%	13.2%	12.87%
Electoral Area F	20.2%	16.1%	15.2%	17.17%
Electoral Area G	17.1%	22.3%	19.5%	19.63%
Electoral Area H	5.0%	4.8%	5.6%	5.13%
City of Parksville	28.2%	29.5%	30.7%	29.47%
Town of Qualicum Beach	17.5%	13.9%	15.8%	15.73%
Total funding	**100%**	**100%**	**100%**	**100.00%**

SECTION 8

RECREATION FACILITIES IN THE SOUTHERN COMMUNITY RECREATION SERVICE AREA

Within the District 68 Sports Field and Recreation Services Agreement between the Regional District of Nanaimo (RDN) and City of Nanaimo, recreation services in City of Nanaimo facilities listed in the agreement that are regionally significant and available at no extra cost to RDN Electoral Areas A, B,C and District of Lantzville residents. Regionally significant is defined as when more that 10% of facility usage is by residents of RDN Electoral Areas A, B, C and District of Lantzville. Also within the agreement are provisions as to when and how new recreation facilities and sports fields are added to the Agreement.

The City of Nanaimo owns, operates and finances the Oliver Woods Community Centre which is located within the City. It requested that this facility be added to this study even though it is not currently part of a funding agreement. This study focuses on the double gym within the Centre.

While no intercept surveys were conducted at this site, membership card swipe data was collected and used in combination with the program registration data to determine the level of attendance at public sessions, which is how regional significance is determined according to the terms of the Southern Recreation Service Area Agreement. Data regarding the breakdown of the residency of membership of groups renting the facility has also been presented within the following tables for consistency but needs to be considered separately.

Figure Thirty-Five presents the raw usage data (uses and users) for the Oliver Woods Community Centre double gym in 2023.

Figure Thirty-Five

Summary of Raw Usage Data at Oliver Woods Community Centre Gyms

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Membership Scans	5	11	1	2	0	0	0	722	7	0	2	0	750
Program Registrations	455	173	155	143	73	82	10	18,560	144	45	783	499	21,122
Rental Groups	62	5	67	34	18	22	1	1,499	28	21	98	98	1,953

The data presented in ***Figure Thirty-Five*** have been turned into percentages in ***Figure Thirty-Six***.

Figure Thirty-Six

Usage Data for Oliver Woods Community Centre Gyms Expressed as Percentages

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Membership Scans	1%	2%	0%	0%	0%	0%	0%	96%	1%	0%	0%	0%	100%
Program	2%	1%	1%	1%	0%	0%	0%	88%	1%	0%	4%	2%	100%
Rental Groups	3%	0%	3%	2%	1%	1%	0%	77%	1%	1%	5%	5%	100%

Figure Thirty-Seven illustrates the proportion of use the staff believe is associated with each of the three categories of use.

Figure Thirty-Seven

Category of Use Weighting Assumptions

Category of Use	% of Total
Drop-in Use (Membership Scans)	10%
Program Use	50%
Rental Use	40%
Total	**100%**

Figure Thirty-Eight represents all uses in 2023. As the facility is currently financed entirely by the City of Nanaimo, it is provided for information only.

Figure Thirty-Eight

Percentage Breakdown of all 2023 Use of Oliver Woods Community Centre Gyms by Jurisdiction

Category of Use	A	B	C	E	F	G	H	CoN	PV	QB	LZ	O	TOTAL
Membership Scans	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	9.6%	0.1%	0.0%	0.0%	0.0%	10%
Program Registrations	1.1%	0.4%	0.4%	0.3%	0.0%	0.2%	0.0%	43.9%	0.3%	0.1%	1.9%	1.2%	50%
Rentals Group Uses	1.3%	0.1%	1.4%	0.7%	0.4%	0.5%	0.0%	30.7%	0.5%	0.4%	2.0%	2.0%	40%
Totals	**2.5%**	**0.7%**	**1.8%**	**1.0%**	**0.4%**	**0.7%**	**0.0%**	**84.2%**	**0.9%**	**0.5%**	**3.9%**	**3.2%**	**100%**

SECTION 9
SUMMARY

Based on the analysis provided throughout this report, the consultants are able to draw a number of conclusions about the process.

1. The methodology used for this project is sufficiently valid and reliable to be used to apportion net costs of operation for pools, arenas, and sports fields. While no data is perfect, the consultants assert that the information available and its analysis generate results which are more reliable and valid than industry standard levels of confidence. Industry standard level of confidence in survey data is plus or minus 5% nineteen times out of twenty. For this study, the combination of data sources with different levels of reliability are complicated to combine into a cohesive confidence level. However, the overall result is almost certainly within 2% nineteen times out of twenty. In this study more than 344,000 usage data points were collected and analyzed. Because some (i.e. program registrations that may represent up to 10 uses each, and group members that used the facility potentially dozens of times) represent many uses, the data represents more than half a million uses; more than ten times the data collected in previous iterations of this study.
2. This means that if the methodology were repeated consistently, use by area of residency would have to shift by more than 2% for it to be reliably picked up (nineteen times out of twenty) by the process. Anything less could be the result of measurement error.
3. This level of reliability is better than in past surveys of use. The methodology is improving over time, rendering results which are more reliable.
4. The fact that each iteration of this study shows results similar to the previous ones, with only small, fairly consistent shifts in breakdowns by area, verifies this high level of reliability.
5. The methodology used for this project could fairly easily be incorporated into the City of Nanaimo and RDN operating plan and implemented internally in future, negating the need for retaining outside expertise to achieve the same outcome. However, the RDN and the City of Nanaimo may wish to have an objective outside agency collect the data on their behalf.

APPENDICES

Appendix A – Some Details of Study Methodology

Overview

The intent of the study, as outlined in a Request for Proposals document sent out early in 2023, is to determine through data collection and analysis the geographic residency of users of the following recreation facilities.

- Ravensong Aquatic Centre
- Oceanside Place Arena
- Regionally significant District 69 Sports Fields
- City of Nanaimo Aquatic Centres
- City of Nanaimo Arenas
- Regionally significant City of Nanaimo Sports Fields
- Oliver Woods Community Centre

The above reference to geographical residency is intended to break down uses of the bulleted sites by each of the members of the RDN and an Other category for those users who reside outside the RDN.

As far as is reasonably possible, the data is intended to cover all of the 2023 calendar year. In fact, facility intercept survey sessions were scheduled during several public use sessions between March and November of 2023, program registration data covered all registrations made for programs delivered January through December of 2023, and surveys of user groups covered rental uses during all of 2023.

Facility use data was collected for all three broad categories of facility uses, namely;

- Drop-in uses – where an individual elected on a case-by-case basis to drop into a public use session at a facility;
- Program uses – where an individual elected to pre-commit to one or more uses by registering to a program offered at one of the above bulleted facility sites;
- Rental uses – where a group was allocated a specific timeslot for use of a facility and then controlled the users and uses of that facility during the allocated time slot.

Different strategies and data sources were used to gather data in each of the above referenced three categories of uses as follows:

- For Drop-in uses, those uses where a patron paid using a membership card were collected by way of computer files which tracked the membership card scans and attached them to a residential address of the card holder. For those uses where another form of payment was used, public sessions were selected and trained interviewers approached patrons as they exited the building and recorded their residential addresses. These sampled uses where then projected and combined with the computer files to estimate all Drop-in use.
- For program uses, computer files were used to analyze the residential addresses of all program registrants.
- For rental uses, all major user groups were surveyed and asked to submit the residential addresses of their members and those submissions were used to project all rental uses.

Intercept Surveys

Students were recruited through Vancouver Island University in Nanaimo and trained in survey techniques. A total of 50 data collection sessions were scheduled throughout the year at six sites. At each session two interviewers set up display boards that explained that a survey was happening and the reason for it. The interviewers then approached patrons as they left the building, asking initially about their payment method. For those that did not pay via a membership card, the patron was asked the number of individuals in the party that participated during this visit, and the address of each one that did. These addresses were entered into a data base and the GIS unit of the RDN then coded each address attaching one of the RDN's geographic jurisdiction to it (or Other). A total of 2840 valid records were realized in the 50 sessions.

Beban Park Pool	Day	Survey Hours
31-Mar	Friday	1:00- 3:30
05-Apr	Wed	11:00 -1:00
14-Apr	Friday	1:30-3:30
08-Aug	Tuesday	1:30-3:30
10-Aug	Thursday	3:00-5:00
18-Aug	Friday	2:00-4:00
20-Oct	Friday	1:30 2:45
21-Oct	Saturday	1:00-3:00
03-Nov	Friday	1:00-3:00

Nanaimo Aquatic Centre	Day	Survey Hours
25-Mar	Saturday	1:30 - 3:30
26-Mar	Sunday	6:00 - 8:00
03-Apr	Monday	6:00 - 8:00
29-Apr	Saturday	2:30-4:30
15-Jul	Saturday	2:30-4:30
16-Jul	Sunday	11:00-1:00
18-Jul	Tuesday	3:30-5:30
15-Oct	Sunday	1:00- 3:00
21-Oct	Saturday	4:00-6:00
25- Nov	Wednesday	6:00 - 8:00

Ravensong Aquatic Centre	Day	Survey Hours
25-Mar	Saturday	3:00-5:00pm
02-Apr	Sunday	3:30-5:30
12-Apr	Wednesday	6:30-8:30
15-Apr	Saturday	3:00 - 5:00 pm
16-Apr	Sunday	2:00 -4:00
09-Jul	Sunday	2:00-4:00pm
12-Jul	Wednesday	6:30-8:30
16-Jul	Sunday	2:00-4:00pm
17-Sep	Sunday	3:00-5:00pm
23-Sep	Saturday	3:00-5:00pm
04-Oct	Wednesday	6:00- 8:00 pm

Nanaimo Ice Centre	Day	Survey Hours
24-May	Wed	6:30-8:30
26-May	Friday	4:15 to 6:15
09-Jun	Friday	6:30-8:30
21-Jun	Wed	6:30-8:30
12-Oct	Thursday	615- 745
15-Oct	Sunday	4:00-6:00
19-Oct	Thursday	6:15 -7:45
22-Oct	Sunday	4:00-6:00

Frank Crane/ McNabb Arenas	Day	Survey Hours
02-Apr	Sunday	3:00 5:00
05-Apr	Wed	6:30 - 8:30
19-Apr	Wed	6:30-8:30
23-Apr	Sunday	3:00 5:00
26-Apr	Wed	6:30 - 8:30
28-Oct	Saturday	1:15 - 2:45
29-Oct	Sunday	12:00- 1:30
04-Nov	Saturday	1:15 - 2:45
05-Nov	Sunday	12:00- 1:30

Oceanside Place Arena	Day	Survey Hours
22-Apr	Saturday	12:15 - 2:00pm
29-Apr	Saturday	12:15 - 2:00pm
02-May	Tuesday	9:30-11:00
01-Oct	Sunday	12:00 1:30
07-Oct	Saturday	12:00 1:15
08-Oct	Sunday	12:00 1:30
13-Oct	Friday	6:30 - 7:45
27-Oct	Friday	6:30 - 7:45

List of Groups that Submitted Membership Addresses

A letter was sent to all groups of users that were allocated rental uses of all types of facilities within the scope of the study. It included a request to provide a list of the residential addresses of all members. Several follow-ups were added to the request. The majority of all groups, and the vast majority of major user groups submitted their members' addresses. Following is a list of the 108 groups that responded to the request. Their official names have not been checked. Instead, many are more common nicknames.

Oliver Woods Community Centre Gymnasium Users

Badminton Nanaimo (incl. Oddfellows)

LS Lassies Pickleball

Blunt Women's Basketball

Dueck Floor Hockey

Fab Academy Basketball

Gourmet Pickleball Group

Island Swish Basketball

Mariners Volleyball

Marshall Floor Hockey

Murray Sergent Pickleball Group

Nanaimo Basketball

Nanaimo Pickleball Club

Nanaimo Ultimate Association

Nanaimo Power Wheelchair Soccer

Nanaimo Volleyball Club

North Bay Bucks Basketball

Probus Pickleball

Roadrunner Ball Hockey

Nanaimo Wheatsheaf Women's Soccer

Youth Badminton

Oceanside Place Arena User Groups

Ballenas Secondary Hockey Program

Oceanside Recreational Men's Hockey League

Brandon Skipness

Oceanside garden strata

C19MOB

Parksville NHL

French Creek Residents Association

Panters Hockey

Golden Eagles

Sandy Shores Skate Club

Minor Lacrosse

VI U17 Team

Oceanside Minor Hockey

VIAHA impact hockey

Ravensong Aquatic Centre User Groups

Masters Swim Club

RAC Breakers

Ravensong Waterdancers

Special Olympics

Southern Recreation Area Field User Groups

Cdn. Amateur Football Association
Coed Recreational Soccer
Masters Soccer
Nanaimo 7 Aside Soccer
Nanaimo Hornets Rugby Club
Nanaimo Minor Baseball Assoc.
Nanaimo Minor Softball
Nanaimo Sport and Social
Nanaimo Ultimate
Nanaimo United Football Club
Nanaimo Women's Field Hockey
Mid Island Pirates Baseball
The Academy Soccer
VI Mariner College Prep
VI Raiders Football Club
VI Premier
Nanaimo Wheatsheaf Women's Soccer

Northern Recreation Area Field User Groups

Oceanside FC
Oceanside Minor Baseball Association
Oceanside Minor Softball Association
Oceanside Track and Field
Oceanside Women's Soccer
Oceanside Youth FC
PGOSA2
Qualicum Eagles Shady Rest
Parksville Royals

Nanaimo Indoor Aquatics User Groups

Canucks Autism Network
Nanaimo Diamonds Artistic Swimming
Ebbtides Swim Club of Nanaimo
Ravensong Aquatic Club (Breakers)
Nanaimo White Rapids Swim Club
Nanaimo Riptides Swim Team
Swimming Rockers Club
BC Special Olympics Swimming
Van Isles Masters Artistic Swimming
Ravensong Water Dancers Artistic Swim Club

Nanaimo Arena User Groups

Argue Hockey
Athletics 4 All
Bartlet Hockey
Briggs Hockey
Credit Union Mavrix Stars Hockey
Cross Family
Dhillon Hockey
Ecstasy Audio Hockey Group
Nanaimo Skating Club
Nanaimo Summer Hockey league
Nanaimo Tubbbers
Parsons Hockey
Salish Storm Hockey Association
Seals Hockey
Grumpy Old Men Hockey
Harmack Hockey
Heslop Hockey
Jr B T2 Lacrosse League
Nanaimo Masters Lacrosse Association
Nanaimo Adult Hockey League
Nanaimo Casual Hockey League
Nanaimo Islanders Female Hockey Assoc.
Nanaimo Minor Hockey Association
Sr B Timbermen Lacrosse
Jr A Timbermen Lacrosse
VIU Mariners Hockey
VI Royals
Sr A Timbermen Lacrosse

Some Survey Research Terms

Survey Sample

When a survey is being implemented, the net "sample" is all respondents that get recorded into a data base. A questionnaire may get returned with no questions answered. In that case, it might be recorded as part of the returns, but it is not part of the net sample. The net sample is virtually always a subset of the population being surveyed. Very rarely is the entire population included in the results of a study.

Random Sample and Representative Sample

A random sample would be realized if every individual in the population would have an equal opportunity to respond and would be equally likely to respond. Equally likely to respond is challenging to determine as several variables will affect this such as reading levels and language as well as timing of the random sampling to name a few.

Since the bar to defend a sample as truly being random is so high, researchers rarely use that term but instead strive for the next best thing which is a representative sample. A representative sample is one to which RCS has applied some testing and feels is close to representative of the entire population on a variety of characteristics. RCS goes to great lengths to ensure that it can refer to its final survey samples as representative of the entire population, or comment on why and how it may over or under - represent certain subsets of it.

Statistical Reliability

Technically, the term statistical reliability can only be used if the sample is truly a random sample. However, most researchers make a reference to such statistical reliability even if the net sample cannot be defended as truly random. Reliability can be thought of as the likelihood of repeatability. A reliable survey sample is one that RCS can assert can be reliably replicated and therefore, from a research perspective, it can be relied upon it to give consistent answers that closely reflect the reality of what is happening in the overall population surveyed. If a survey project is repeated every five years and the answers are different, it can be assumed that the difference is "real" and not simply due to sampling error, or problems with the survey methodology. The degree of reliability is measured using a Confidence Interval.

Confidence Interval

A confidence interval is a statistical calculation of how reliable a sample is deemed to be. The interval is expressed in two parts. A loose "industry standard" level of confidence that is most often sought is to be 95% confident that the results are with plus or minus 5% of perfectly reliable. That means that if a survey was repeated 20 times, in 95% of those times (19 out of 20) the answers would be within 5% of the answers in the initial survey.

As an example, if a survey is designed with a methodology to reach the industry standard threshold of reliability, and once the survey is completed it finds that 50% of respondents said that their household used a swimming pool within the past year, it could be concluded that somewhere between 45% and 55% of households actually used the pool. If the same survey conducted five years later found that 60% said that their household had used that pool within the past year, it can be concluded with 95% confidence that the increased proportion of household use is "real" because the increase of 10% (from 50% to 60%) is outside the margin of sampling error of plus or minus 5%. If, however, the increase over the five-year period between surveys were only 3%, it could not be concluded with any level of confidence that it is a "statistically significant" difference in the result over that period. In fact, one could not rely on the small difference as actually representing an increase in proportionate use.

Sample Size

Statistical reliability is always a function of sample size. If a sample is truly random or at least representative, the larger the sample the more reliable it is and the higher the confidence in its result. There are confidence interval tables that show the resulting level of confidence for all sample sizes. Those tables show that there is a "law of diminishing returns". If there are more than 25,000 adults in a population and the sample size is at least 1000, one could triple the sample size and not increase the resulting level of confidence significantly. Therefore, there is no need to spend more money trying to get 3000 returns once a study has realized the first 1000 survey returns. It may seem counterintuitive, but if one wants to know what thirty-five million Canadians are thinking or doing, once you have a random sample of 1000 of them, you don't need to increase your sample size to get a more reliable picture of what you want.

Validity

Validity is completely separate from reliability. Validity has to do with how information is collected. If survey questions include some inherent bias, the answers are not likely valid. Bias can be inserted into questionnaire development in a number of ways. If a researcher is trying to ascertain a respondent's physical address there is very little chance of introducing bias into the question. However, as an example, if there were a fee structure for use of a facility that had a higher fee for a non-resident, that could introduce an incentive for a respondent not to be truthful in their answer and that could render the results somewhat less valid.

Mean/Median/Standard Deviation

In survey research, if one is testing an opinion or a behaviour or characteristic of the respondent that has a range of answers along a continuum, a researcher can calculate a **mean** or average answer or a **median** which is the mid point in the range of all stated answers and subsequent frequency distribution of answers can be created which is a graph showing where on the continuum most answers fall. In these cases a Standard Deviation of answers can be calculated which illustrates how much variability there is in the answers. That is, do most answers fall close to the mean (a small standard deviation) or are answers spread over a wider range (a larger standard deviation). For example, if one is asking about household income, there will be a mean along that series of answers which shows what the average household income is within the population surveyed. There will also be a median above which and below which the same number of households fall. And, a standard deviation can be calculated which shows how much "spread" there is on this single characteristic.

In the RDN usage study a respondent either uses a facility or doesn't. So, there is no continuum of answers, no mean, no median and no standard deviation of answers to calculate.

Mixing Data and Sample Types

In some cases, such as the RDN usage survey, research methodology can mix sources of data which complicates the mathematics of calculating confidence levels about where facility users live. One can have many sources of data with varying levels of reliability as follows:

- All program registrants over a year – which represents a perfect 100% population of all program registrants (rather than a sample of them) of all programs at a pool and therefore is 100% reliable. There is no level of confidence interval. We are 100% confident of this data, or as close to it as we can be.
- A complete data base of all drop-in users of a pool that paid via a purchased membership card that gets scanned for each drop-in to a public swim – as above, we have 100% confidence that we have a perfect reflection of all such drop-in users that paid using a membership card that requires a person to apply for the card with an address.
- A representative sample of 800 drop-in pool users drawn at different times of the week and in different months that has a calculated confidence interval of 95% plus or minus 4%.
- A list of all addresses of all members of most of the main pool user groups with a confidence interval of 95% plus or minus 5%

To get an overall confidence level in such a case, RCS combines all the levels of confidence in a way that reflects how much use is roughly associated with each source of data. In the above case, that confidence level would be "better" than the industry standard.