843 Smith Street
Vancouver, BC V4C5J6

August 2, 2022

Carmen Gonzalez
Director of Parks, Recreation & Culture
City of Delta
4500 Taylor Crescent
Delta, BC V4K 3E2

Dear Carmen,

Please see below for the attached report, Improving Check-in Procedures at North Delta Recreation Centre. Thank you for your assistance in redirecting the e-mail questionnaire to Steve Napper, their responses were crucial to the formation of the report.

As a resident of North Delta and frequent user of the facility, I set out to create a report which provides feasible and realistic recommendations which benefit the environment, user experience, and operational efficiency. I sincerely hope that the user data and suggestions outlined in the paper will assist in your decision-making processes and help improve the facility for all.

Thank you once again for helping make the report possible. If you have any questions or comments regarding the report, please feel free to email me at harbirsd@student.ubc.ca.

Sincerely,

HDhaliwal

Harvey Dhaliwal

Improving Check-in Procedures at the North Delta Recreation Centre

for
Carmen Gonzalez
Director of Delta Parks, Recreation & Culture

by
Harvey Dhaliwal
English 301 Student

August 2, 2022

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Figures and Tables

Abstract

This paper investigates queueing procedures and wristband use at the North Delta Recreation Centre to provide suggestions for decreasing waste and improving user satisfaction and operational efficiency. Facility users' experiences with the current system and attitudes towards change were surveyed. An e-mail questionnaire was sent to the Director of Delta Parks and Recreation to determine solutions that may have been considered, and what limitations exist.

A substantial proportion of polled users were at least somewhat dissatisfied with the current line-up system. Similarly, a sizable number of users felt that the wristbands were at least somewhat uncomfortable and/or difficult to apply and remove. Questionnaire data revealed that the facility has considered turnstiles and remote check-in procedures but are limited by budget shortages. This paper recommends the implementation of an express entry lane and the elimination of wristbands in favour of an electronic check-in system. The addition of clearly marked signage and receptacles informing users to recycle their wristbands are also suggested prior to wristband elimination.

Introduction

Background

The North Delta Recreation Centre is a large, recently expanded multi-purpose recreation facility located in North Delta, British Columbia. It features a hockey rink, curling rink, weight room, gymnasium, and outdoor pool. Each day, many residents visit the North Delta Recreation Centre and are required to complete a face-to-face check-in procedure with a facility employee. This procedure involves first waiting in a queue for an available attendant, scanning your facility card, and receiving your wristband. This is a standard process which pass holders, new registrants, and drop in visitors must complete.

Statement of Problems

Although the facility has recently renovated its online program sign-up process, the check-in process could be improved. Firstly, all individuals are required to wait in the same line-up regardless of their needs. For example, a person who holds a monthly pass and simply needs to scan in is required to wait behind someone who wants to learn more about the available programs. This can cause unnecessary delays during busy periods.

The second problem is the use of wristbands to identify all visitors. While many facilities and fitness centres no longer use wristbands, North Delta Recreation Centre continues to enforce them. The colour and pattern of the wristband varies daily, to ensure that the visitor has paid for that specific day. Moving away from this system would reduce waste, considering the bands are single use. The use of wristbands also creates added difficulty for those with

limited finger and hand dexterity. They are cumbersome to put on as they require two hands and can only be sized once. The implementation of an alternative system would benefit individuals on the autism spectrum, children, and seniors through increased comfort and independence.

Method of Research

A facility user survey was conducted to poll user experiences with the current system and their attitudes towards proposed changes. The survey was distributed through North Delta Community Corner, a Facebook page for North Delta residents. The survey received a total of thirty-five responses. Additionally, an email questionnaire was sent to the Director of Parks and Recreation Carmen Gonzalez to learn more about the current process and organizational limitations.

Body

Queuing System

Currently, the North Delta Recreation Centre operates using a single line multiple server system. During slower times, a single operator is tasked with all check-in related duties. This includes answering questions, checking users in, and taking payment.

Inefficiencies

The current single line up system creates inefficiencies as queued visitors are required to wait in the same line regardless of their needs. When there is only a single operator on staff,

a passholder who simply needs to scan in may need to wait for an extended period behind an individual who has lengthy program-related questions. Improvements to the current process would result in reduced wait times and increased user satisfaction.

Survey Data

Of those who responded, 64.7% identified themselves as drop-in visitors rather than passholders. Evidently, there are a significant number of people who fall into either of these categories and would benefit from a more personalized approach to check-in. Further, the mean time that respondents waited in line on average was 4.14 minutes. This value appears to be quite high, especially considering that 35.3% of respondents are passholders and should simply need to scan their cards to enter. Finally, as illustrated in Figure 1, the most common response when asked to rate satisfaction with the current lineup system was “somewhat unsatisfied”. The data shows that users are not satisfied with the current system, and changes to resolve the current inefficiencies would be valuable.

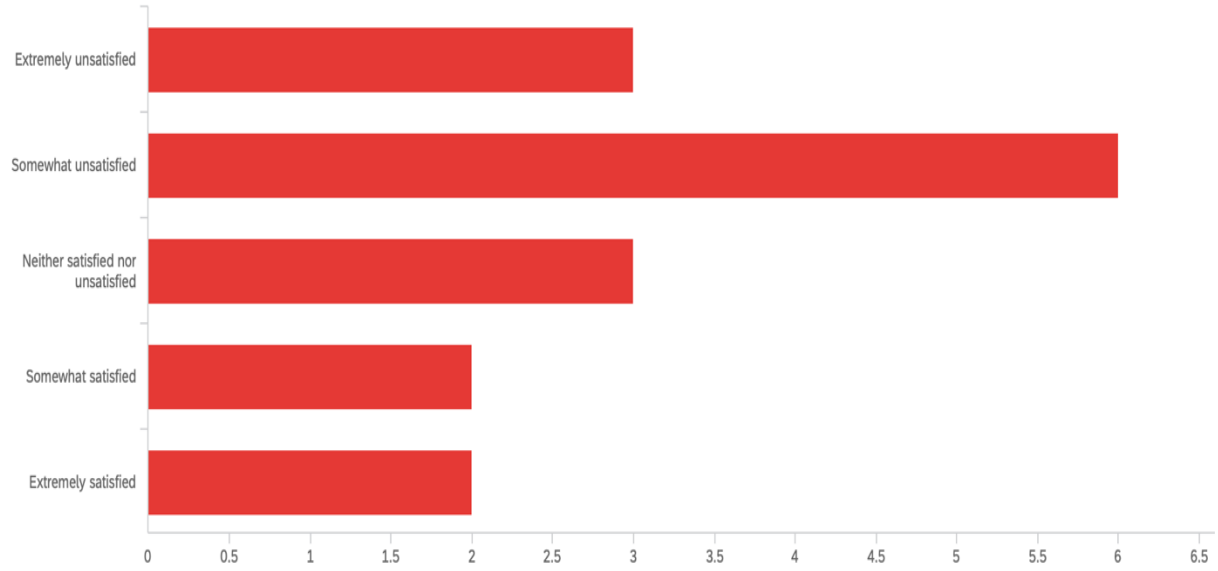

Figure 1. Count Data for Question 5: How satisfied are you with the current line-up system?

Questionnaire Data

The e-mail questionnaire was redirected to Recreation Complex Facility Manager Steve Napper, who provided the responses to the questions. According to Steve Napper, the City of Delta has considered using alternatives to current queueing procedures but have been limited by budget constraints. The alternatives involved using turnstiles and remote check-ins (Napper).

Wristbands

The use of wristbands to identify facility users is mandatory for all visitors and is one of the check-in steps. The bands vary in pattern daily, and different bands are used for certain types of pass-holders. For example, users who hold a pass for the weight room only wear a specially marked wristband.

Related Issues

Using wristbands creates two main issues. The first is user comfort and satisfaction, and the second is the creation of unnecessary waste. The wristbands can be cumbersome to apply and uncomfortable during workouts. For example, the wristbands can get in the way when playing basketball or lifting weights.

The second issue is the creation of waste. The questionnaire data reveals that the wristbands are partially composed of biodegradable materials and are recyclable (Napper). However, the rest of the materials used in the creation of the wristband are not stated, and it is unclear whether they are plastic or another material. Regardless, these unknown materials are not biodegradable and therefore contribute to waste if they are not recycled appropriately. Figure 2 shows the waste and recycling receptacles nearest to the entry/exit area of the facility. There are currently no clearly labelled signs or receptacles that provide users with information or the opportunity to recycle their wristbands.

Figure 2. Dhaliwal, Harvey. Photograph of North Delta Recreation Centre Waste Disposal Bins. 31 Jul. 2022. Author's personal collection.

Survey Data

In terms of survey questions relating to wristband comfort and ease of use, user opinions vary. As described in Figure 3, 25% of respondents rated the wristbands as “extremely comfortable” while 6.25% rated them “very uncomfortable”. Similarly, 6.25% of respondents answered “somewhat comfortable” while 25% answered “somewhat uncomfortable”. The most popular rating was “neither comfortable nor uncomfortable” at 37.5%. Considering the data, there exists a sizable proportion of respondents who find the wristbands at least somewhat uncomfortable.

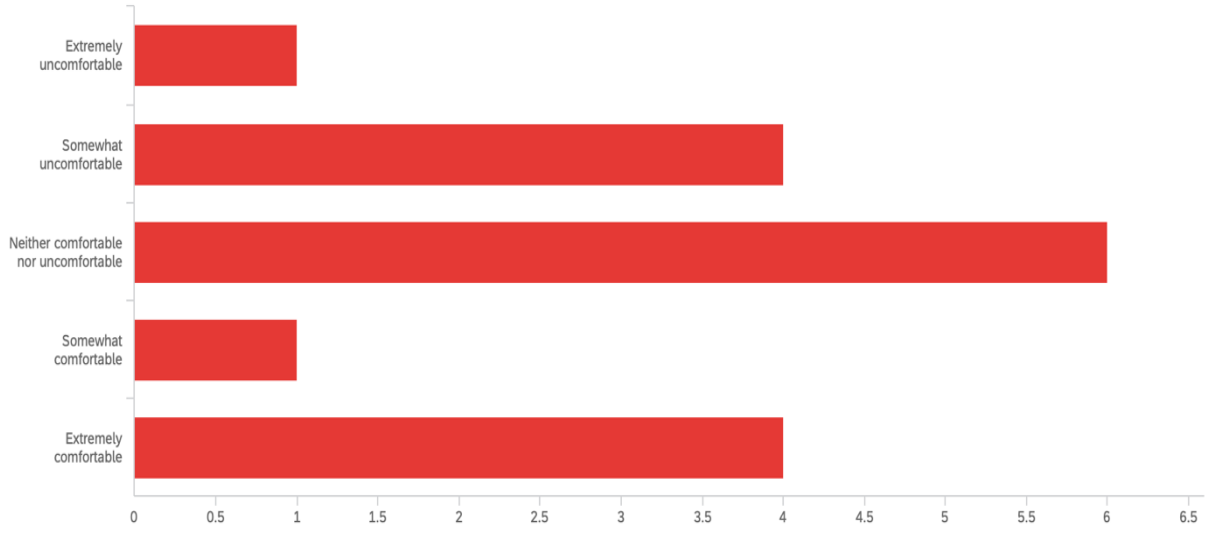

Figure 3. Count Data for Question 7: How comfortable are the wristbands?

As seen in Figure 4, the responses to the question polling ease of application and removal of the wristbands exhibited a perfect bell curve. While 13.3% of respondents answered “extremely difficult” or “extremely easy”, 20% answered “somewhat difficult” or “somewhat easy”. Finally, 33.3% answered “neither easy nor difficult”. This pattern shows that while some are satisfied with the ease of using wristbands, a significant number of people are not.

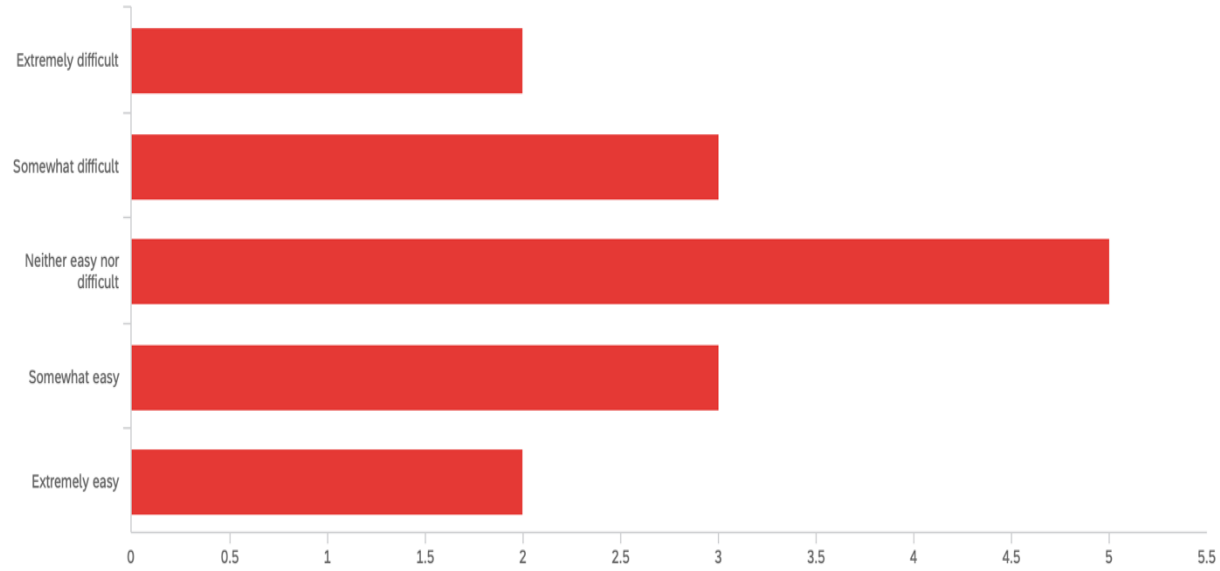

Figure 4. Count Data for Question 8: How easy are the wristbands to apply and remove?

The most common method of disposing the wristbands was in the garbage rather than recycling, with 100% of respondents selecting this option. In terms of support for alternatives to wristbands, 43.75% of respondents answered “somewhat agree”, while 37.5% chose “neither agree nor disagree” and 18.75% selected “somewhat disagree”. These results show that while there may be some hesitation to change, most respondents would not be opposed to alternatives.

Questionnaire Data

On average in a single year, 80,000 wristbands are used at the North Delta Recreation Centre (Napper). Further, it costs the facility $2,500 to purchase the 80,000 wristbands from their contracted supplier (Napper). The exact material composition of the wristbands was not disclosed, but the supplier states that “85% of the material contains a major component for

biodegradable products" (Napper). They also state that the wristbands are recyclable (Napper). The previously mentioned turnstiles and remote check in procedures have been considered as an alternative to wristbands, however lack of budget has halted their implementation (Napper).

Recommendations

Suggestions to Improve Queueing

One suggestion that can improve queueing efficiency is creating an express line for passholders who simply need to scan their cards. This express line could be operational during peak hours when there are extra staff available to manage customer inflow. Implementing this solution would eliminate the inconvenience of passholders having to wait behind individuals who may have lengthy questions or would like to sign up for a program. From a facility standpoint, the assets needed to implement this change (scanners, staff) already exist so no new investment would need to be made.

Suggestions for Wristband Alternatives

Although the wristbands are recyclable, survey data shows that none of the respondents are recycling them. One hundred percent of respondents stated that they dispose of their wristband in the garbage. While wristbands are still in use, informational signs reminding users that wristbands are recyclable along with a dedicated receptable for easy disposal would be of great benefit. This costs to implement this change are miniscule, however the environmental benefit of recycling rather than throwing wristbands in the garbage would be immense.

While taking steps to ensure wristbands are being disposed properly is worthwhile, the goal should still be the complete elimination of wristbands to improve operational efficiency and user satisfaction. Currently, all facility users must have an identification card which electronically stores their information. This includes their photo, address, and any passes that they hold. This information is already available to employees when users scan their cards and is an integral part of the proposed solution. The steps are outlined as follows:

1. User enters the facility
    a. If they have questions, want to register for a program, or want to pay for drop-in they can join the normal line up.
    b. If they already hold a pass and simply need to scan in, they can enter the express line and scan their card. A front desk employee can verify their photo and existence of a prepaid pass.
2. User enters specific area (ex. arena, weight room, gymnasium)
    a. Each area of the facility generally has at least one staff member overseeing the activity. This staff member can be tasked with scanning user cards with handheld scanners to verify their eligibility for that specific program or area.
    b. Once verified, the user can partake in their activity of choice. If they would like to visit a different area, they would simply scan in again at that point of entry.

This approach to user identification would eliminate the need for wristbands, thereby lessening the facility's environmental impacts and improving user experience. The facility would

also save on the cost of purchasing and storing the wristbands. The investments associated with this shift would be the handheld scanners and computers which can display the card information, assuming these assets cannot be repurposed from existing inventory. A laptop or tablet would be sufficient, depending on how the facilities computer systems are structured. In the long run, this initial investment would result in net savings as no wristbands would need to be purchased again. Further, this solution would be considerably cheaper than installing turnstiles or implementing remote check-ins. This is crucial as the lack of budget has been the limiting factor to alternative check-in procedures.

Conclusion

The main concerns this report seeks to address are the lineup inefficiencies and continued wristband use. Based on the primary data collected, a sizable number of users are dissatisfied with the current system and would not oppose change. Further, it was determined that a lack of funding has blocked the facility from eliminating wristbands.

The central proposed solutions are the implementation of an express entry line and the elimination of wristbands in favour of an electronic system. These changes require minimal investment in assets and will likely result in cost savings over the long run. The implementation of clear signage and receptacles encouraging wristband recycling is also suggested prior to their elimination. By implementing these feasible recommendations, organizational efficiency and user satisfaction would increase while the facility's environmental footprint would be reduced.

Works Cited

Dhaliwal, Harvey. Photograph of North Delta Recreation Centre Waste Disposal Bins. 31 Jul. 2022. Author's personal collection.

Napper, Steve. "Re: Request for Information." Received by Harvey Dhaliwal, 27 Jul. 2022.

Appendix

Survey Questions

Hello, I am an undergraduate student at the University of British Columbia conducting this survey for a course project. The purpose of this survey is to collect information from users of the North Delta Recreation Centre to provide recommendations for the improvement of current check-in procedures. The completed report will be presented to Carmen Gonzalez, the Director of Delta Parks, Recreation and Culture. This survey contains 10 questions and should take approximately three to five minutes to complete. Your responses are voluntary and anonymous. Thank you for participating in this survey.

- How many days on average per week do you visit the North Delta Recreation Centre?
    - Slider from 0-7 inclusive
- At what time of day do you usually visit?
    - Afternoon
    - Evening
- Please select which description best applies to you
    - Drop-in visitor
    - Pass holder
- How long, on average, do you currently wait in line?
    - Slider from 0-15 inclusive
- How satisfied are you with the current line-up system?
    - Extremely unsatisfied
    - Somewhat unsatisfied
    - Neither satisfied nor unsatisfied
    - Somewhat satisfied
    - Extremely satisfied
- How often do you wear the provided wristband?
    - Always
    - Most of the time
    - About half the time
    - Sometimes
    - Never
- How comfortable are the wristbands?
    - Extremely uncomfortable
    - Somewhat uncomfortable
    - Neither comfortable nor uncomfortable
    - Somewhat comfortable
    - Extremely comfortable
- How easy are the wristbands to apply and remove?
    - Extremely difficult
    - Somewhat difficult

    - Neither easy nor difficult
    - Somewhat easy
    - Extremely easy
- How do you normally dispose of your wristband?
    - Garbage
    - Recycling
    - Other
- Would you support methods for visitor identification other than wristbands?
    - Strongly disagree
    - Somewhat disagree
    - Neither agree nor disagree
    - Somewhat agree
    - Strongly agree

Questionnaire

Hello,

I am an undergraduate student at the University of British Columbia conducting this questionnaire for a course project. The purpose of this questionnaire is to collect information to provide recommendations for the improvement of current check-in procedures at North Delta Recreation Centre. This includes queueing systems and the use of wristbands. A facility user survey will also be conducted to poll user experiences and attitudes towards the current system. The completed report will be provided to you with the aim of outlining possible changes to enhance operational efficiency, sustainability, and user experience.

This questionnaire includes five questions, and all responses are voluntary. Responses can be written directly as an email reply. Thank you for participating in this questionnaire, your time is greatly appreciated. If you have any questions or comments, please reply to this e-mail.

Questions

1. How many wristbands are used annually, and what is the cost associated with acquiring them?

2. What material are the wristbands made of (ex. Tyvek), and are they easily recyclable in Delta?

3. What are some of the reasons why the North Delta Recreation Centre continues to use wristbands to identify visitors?

4. Have any alternatives to wristband use been proposed or trialed? If so, why were they not adopted?

5. Have any alternatives to current queueing systems been proposed or trialed? If so, why were they not adopted? For example, using automated check-in gates for existing pass holders.

Kind regards,
Harvey Dhaliwal