

Memo: Accessibility of ActiveRH

TO: Rob Jones -- Director Information Technology, CIO
Kelvin Kwan -- Commissioner Planning & Infrastructure
Grant Taylor -- Commissioner Community Services
David Dexter -- Director Financial Services & Treasurer

FROM: Matthew do Santos-Zounon – Information Systems Consultant.

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SUBJECT: Improving accessibility useability in the ActiveRH portal.

1. The unnecessary difficulty in registering for a facility program creates accessibility issues that need to be addressed so that everyone, including our residents with accessibility needs, will feel comfortable registering. The overarching problem lies within the new online facility booking pages. In this memo, I will further detail this problem and outline my proposed solution in a later document. As a technical consultant, I have spent years understanding and resolving similar issues. As a reflection of my experience, Mrs. Smith has entrusted me to diagnose and propose a solution that adheres to the accessibility guidelines. Mr. Hendricks shall review the upcoming recommendation report, so the IT department is well informed on implementing a robust solution. Mr. Lee will also review the recommendation report to assess the budget required.

2. Residents of Richmond Hill who want to access services are faced with multiple barriers before they are successfully registered. Each of these barriers is unnecessary in that they do not add any security or other functionality. Take the perspective of an elderly member of the community who wants to register for the 55+ Badminton program. Once they access ActiveRH and login into their account, they are faced

with a table of data. Here lies the first barrier. Much of the data is useless or even actively confusing. The 'Number' column has no meaning to the customer; similarly, the 'Day(s)' and 'Time' columns are often empty even when registration slots available. Further, the 'Date(s)' column sometimes provides a single date from months ago or a range of dates spanning a few months. The lack of consistency and even contradiction in information creates confusion in what should be interpreted from each value. Given the customer has found their desired listing, they now must decide on whether to click on the name link, "55+ Badminton Drop In Reservations" or the "Add to cart" button or the "Check details for fees" link. Ironically, each of these choices leads to the same "Program Detail" page. Here again, the customer may be confused, wondering why after clicking "Add to cart" there is no prompt to complete the transaction. The program detail page again is filled with information that is often confusing. In the case of 55+ badminton, 45min time ranges are given but the only dates provided are a 2-week range. There is no opportunity for a customer who is unfamiliar with the schedule to learn it. If the customer decides to click the "Enroll Now" button they will finally be redirected to the booking page. The booking page is cluttered and hard to make intuitive sense of but, a set of instructions at the top may lead the customer to finally make their registration.

The amount of disorganization and inaccurate information may be enough to let a customer who is able and comfortable with computer technology to give up on the process. These barriers stand tall for those who find regular computer use challenging. The effect is even worse for those who have accessibility needs. ActiveRH lacks information organization and does not meet accessibility requirements.

3. The municipality of Richmond Hill exists to serve the city and each of its residents. The events that run at the various community centers keep the community engaged and active. Barriers to participating in these events reflect precisely how much the government cares about their residents.

In the short term the municipality may have saved money by implementing a quick fix but did so at the expense of resident's quality of life. In addition to the loss of faith, many residents may spend more of our help desk resources, trying to fix the same registration issue. The municipality loses credibility each time a customer requires help fixing an issue the municipality itself created.

4. A solution is necessary for increasing public trust in the city's competence. Residents fund the government with taxes, so residents expect the city to place them first. In implementing a robust solution, the municipality actively shows that it cares about all its residents. Those with accessibility needs may feel increased trust in the municipality's priorities. Everyone will find the system easier to use, quality of life increases for everyone who uses the system.

5. The global pandemic has caused many changes to how people interact with a business. In wanting to keep facilities open and enforce social distancing, the municipality has decided to build an online platform where customers may register for their activities. This way bookings will be made ahead of time, and no physical interaction is necessary. Simply appended to the existing program schedule, the resulting platform was created hastily and without careful thought. Leading to the many issues currently hindering the platform.

6. My upcoming recommendation report will outline the issue and provide a reasonable plan forward for reaching my recommended solution. The recommendation report will inform the IT and Budgeting departments as to the severity and solutions requirements. The report covers what work is to be done by the IT department and the amount of money to be approved by the treasurer.

7. Annotated Bibliography

Below I have provided an annotated bibliography of the sources I used to better understand the problem at hand. I focus primarily on accessibility on the web and have included Richmond Hill's budget plan. I decided to include our budget plan so that the reader understands the lack of accessibility planning we have in place. Other sources were chosen because they demonstrate the importance of accessibility in modern respected institutions. In my upcoming report, I will further research the expense that this issue currently has on our system and how expensive it will be to fix. Additionally, I will research the best practices of creating an accessible online environment so that our online environment will be the best it can be.

Acosta-Vargas, P., Acosta, T., & Lujan-Mora, S. (2018). Challenges to Assess Accessibility in Higher Education Websites: A Comparative Study of Latin America Universities. *IEEE Access*, 6, 36500–36508.

<https://doi.org/10.1109/access.2018.2848978>

Acosta-Vargas, Acosta, and Lujan-Mora demonstrate the degree to which Latin American universities lack accessible websites. Using the WAVE extension, the researchers assessed the accessibility of 348 university websites. As universities expand their online presence, often with resources available to the general public, it is important that everyone has equal access to the information. IEEE is a highly credited journal with an influence on the technology industry. IEEE's choice to publish this paper is a sign to the industry that accessibility on the web is an important topic.

Budget Committee of the Whole. (2020). 2021 Draft Capital Budget. *Richmond Hill*. Retrieved from

<https://www.richmondhill.ca/en/shared-content/resources/documents/2021-Draft-Capital-Budget.pdf>

Information Technology CIO Rob Jones describes the current state and future goals for the Information Technology department in Richmond Hill. CIO Jones writes about the importance of implementing new enterprise systems that will improve data management efficiency. As a quickly growing city, Richmond Hill is concerned with keeping up with the rapidly evolving technologies. CIO Jones is wholly focused on implementing new technologies for the future; however, he fails to consider how detrimental current systems can be for common residents. Nowhere in the document does Jones reference the need to improve systems that everyday citizens interact with.

Kuhar, S., Pusnik, M., Sumak, B., & Kous, K. (2019). Comparative analysis of faculties' websites accessibility based on an automatic evaluation. *2019 42nd International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO)*, 1498–1502.
<https://doi.org/10.23919/MIPRO.2019.8757202>

Kuhar, Pusnik, Sumak and Kous are researchers who seek to explain the lengths to which accessibility guidelines are ignored in university faculty websites. An automated evaluation tool was used to test and rate the websites. The results show that while most universities have improved their site's accessibility over one year, some have not changed, and some have gotten worse. Citing the increase of students with disabilities in universities, the researchers aim to demonstrate the lack of consideration these increasing groups of students receive. This study shows that many universities recognize online accessibility as an essential goal to work towards because it demonstrates that one cares about their user's experience.

Palmer, Z. B., & Palmer, R. H. (2018). Legal and Ethical Implications of Website Accessibility. *Business and Professional Communication Quarterly*, 81(4), 399–420. <https://doi.org/10.1177/2329490618802418>

Palmer and Palmer argue that website accessibility is an issue of ethics. The authors cite many United States legal cases where accessibility plays a central role. From the author's point of view, legal cases demonstrate that accessibility is an ethical issue. Because the internet is so widely used, one should not forget to discuss how accessibility will play in websites' design. Palmer and Palmer make an excellent argument for why accessibility issues need to be at the forefront of design when creating our online environment.

Petrie, H., & Kheir, O. (2007). The relationship between accessibility and usability of websites. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '07*, 397–406. <https://doi.org/10.1145/1240624.1240688>

Petrie and Kheir perform a study to demonstrate that a user's complaints about a website have some overlap regardless of whether they are disabled or not. Further, usability guidelines do not accurately reflect the importance of these complaints. Six blind and six sighted people are asked to investigate the usability of two websites. The results show that blind and sighted users have issues with retrieving information from the site, but their complaints were almost non-intersecting. Further, when the users ranked the accessibility complaints, there was found to be no correlation to official accessibility guidelines. Petrie and Kheir likely wrote this journal to present the challenges that result in making an accessible website by criticizing the common notion that accessibility guidelines are accurate. While accessibility guidelines are a good start, they are not an accurate benchmark for creating an accessible

site. People will interact with our content in vastly different ways, which is a fact that can not be ignored.