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Functional Accessibility on the Web:

How the AODA Fails End Users

By

Jamie Kramer

An Internship Paper
Submitted to the Faculty of Graduate Studies
Through the Department of Political Science
In Partial Fulfillment of the Requirements for
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2017

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Functional Accessibility on the Web:

How the AODA Fails End Users

by

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December 11, 2017

Declaration of Originality

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Abstract

The *Accessibility for Ontarians with Disabilities Act, 2005* (AODA) impacts the way persons with disabilities are able to access goods and services in Ontario. With more than 3 million people living with disabilities in Ontario, it is essential to enact the legislation to create equity. The AODA equates “obtainable” with “accessible” without recognizing the stark contrast between having *access* to something and being able to keep informed because the content is created with persons with disabilities in mind. This paper focuses on the effectiveness of the AODA’s website compliance standards under the Web Content Accessibility Guidelines (WCAG) as required by Ontario Regulation 191/11, section 14 (O. Reg. 191/11s.14). Through an examination of the compliance requirements in comparison to the “Five E” Approach to Policy Analysis it is apparent that the AODA does not create equity or equality, but rather is a tool for the Ontario Government to demonstrate that it is moving toward making Ontario accessible for persons with disabilities. The “Five E” Approach to Policy Analysis of the AODA demonstrates that O. Reg. 191/11 s.14 does not have the proper mechanisms in place to ensure equity in Ontario with regards to websites and internet usage. It is hoped that this study will increase awareness about the discrepancy between what is written in the AODA and the type of accessibility needed for persons with disabilities in Ontario so the Government can move forward towards true equity.

Dedication

This paper is dedicated to everyone who suffers from a disability.

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Introduction

As the world progresses into a state of globalization where everything can be found online in some capacity, it is essential this content is accessible to everyone. Many believe “accessible” to be synonymous with “obtainable”; however, “obtainable” content may not be “accessible” in terms of being readable by persons with disabilities. Creating accessible versions of web content, including documents, html content, and all other forms of media, is increasingly important not only to keep every individual as informed as possible, but also to ensure that all individuals are treated equitably. There is a stark difference between the legislative compliance requirements for accessibility and how this translates into functional accessibility for content creators and end users. It is important to understand the difference between the intended results of legislation, what is feasible for the creators, and what the end users require to consume this new content.

On a federal level, there has been minimal progress to achieve accessibility in Canada; however, each province and territory has the ability to create legislation that will ensure companies and governmental operations that lay within the jurisdiction will be accessible to persons with disabilities. In Ontario, this can be understood through the *Accessibility for Ontarians with Disabilities Act, 2005* more commonly referred to as the AODA. The AODA was signed into law in 2005 and, through Ontario Regulation 191/11, the Integrated Accessibility Standards, establishes standards for compliance for companies and governmental operations with specific regard to easing the obstacles that persons with disabilities face when attempting to use services, purchase goods, and enter buildings in Ontario. This replaced the *Ontarians with Disabilities Act, 2001* that was criticized for “no en-

forcement, imposed no penalties, and required no deadlines.”¹ Using resources such as persons living with disabilities and non governmental organizations that specialized in working with persons with disabilities, the Ontario government updated the AODA to incorporate these criticisms and with it created the new standards that required businesses and organizations to be accessible with the last scheduled date for compliance in 2025.²

The AODA was created with good intentions about ensuring the increase in quality of life for persons with disabilities. The AODA’s main goal is to ensure there is an Act specifically to address the needs of persons with disabilities rather than whether or not this Act creates equity for persons with disabilities that are using the goods and services provided by the government and other businesses that must comply with the AODA.

There is room for improvement within the standards and requirements for website compliance. This paper focuses on the effectiveness of the AODA’s website compliance standards under the Web Content Accessibility Guidelines (WCAG) as required by Ontario Regulation 191/11, section 14 (O. Reg. 191/11s.14). Through an examination of the compliance requirements in comparison to the “Five E” Approach to Policy Analysis, it is apparent that the AODA does not create equity or equality, but rather is a tool for the Ontario Government to demonstrate that it is moving toward making Ontario accessible for persons with disabilities. The “Five E” policy analysis of the AODA demonstrates that O. Reg. 191/11 s.14 does not have the proper mechanisms in place to ensure equity in Ontario with regards to

¹ Vanhala, Lisa. *Making rights a reality?: disability rights activists and legal mobilization*. Cambridge: Cambridge University Press, 2013.

² Mason, Rita; Truelove, Janine; Dakai, Carol, eds. (2006). *Canadian Master Labour Guide* (20th ed.). CCH Canadian Limited. ISBN 1553675622.

websites and internet usage. As the data demonstrates, every web page except for one tested for the Government of Ontario had at least one known problem with multiple potential problems occurring as well further proving that the AODA does not have sufficient standards to meet the needs of persons with disabilities.

Literature Review

Academics tend to analyze the AODA through an overarching lens rather than analyzing specific portions such as the compliance regulations found in O. Reg. 191/11. The literature focuses on how the Act will impact businesses, as well as training guidelines to understand the AODA. The Accessible Web and Web Content section under Information and Communication Standards has not been analyzed on its own merits; however, as the internet is becoming increasingly pertinent to the sharing and distribution of documents, media, and information, it is essential to ensure this aspect of the AODA creates equity for persons with disabilities. The literature review is divided into two (2) sections: (1) literature regarding the AODA specifically, and; (2) policy analysis within Canadian context, especially regarding the *Ontarians with Disabilities Act, 2001* that was the AODA's predecessor and legislation that affects protected groups under the Ontario Human Rights Code.

Accessibility for Ontarians with Disabilities Act, 2005

The Law Commission of Ontario has created a Framework for interpreting all the laws regarding persons with disabilities including the Canadian Charter of Rights and Freedoms, the Ontario Human Rights Code, and the *Accessibility for Ontarians with Disabilities Act, 2005*, along with international documents that

have been ratified by Canada.³ This Framework was created for “Policy-makers, courts and legislators; Advocacy organizations and community groups that work with persons with disabilities and/or deal with issues that affect them; and Public or private actors that develop or administer policies or practices that may affect persons with disabilities.”⁴ It is important to note that this Framework attempts to ensure that persons with disabilities receive the utmost benefits from the implementation of this legislation that impact them.⁵ This Framework examines the best practices for compliance with all pieces of legislation without comprehensive analysis of the compliance for AODA.

In their forecast report for the AODA, Kemper et. al. analyze the prospects for businesses when meeting the standard requirements.⁶ This analyzed the increase in persons with disabilities working with businesses that coincided with the increase in the self-identification as such because the Act created a less hostile workplace for those with visible and invisible disabilities.⁷ The study found that although there will be initial costs for businesses in Ontario, these are worth the investment as it allows those who wish to work but do not have the ability because of lack of policies and infrastructure to have the opportunity to become a part of the workforce in Ontario.⁸ Their analysis focuses specifically on the workforce,

³ Law Commission of Ontario. A framework for the law as it affects persons with disabilities: advancing substantive equality for persons with disabilities through law, policy and practice: final report. Toronto, Ont.: Law Commission of Ontario, 2012.

⁴ Ibid.

⁵ Ibid.

⁶ Kemper, Alison et. al. Gibson Library Connections, Inc, Martin Prosperity Institute, and Rotman School of Management. Releasing Constraints Projecting the Economic Impacts of Increased Accessibility in Ontario. Toronto, Ont.: Martin Prosperity Institute, 2010.

⁷ Ibid.

⁸ Ibid.

considering a “what if” scenario rather than looking at how the specific standards will make a substantial impact on those with disabilities. Additionally, the focus is placed on those who have the ability to work but are facing current obstacles rather than those who need to access the services that are provided.

In 2010, Charles Beer conducted a review of the AODA that included recommendations for the standards that would be revised and refined as well as the inclusion of future standards.⁹ His recommendations focused on accountability by the government to ensure that the standards would be met by those that must be compliant rather than analyzing whether or not the standards were functional.¹⁰ Beer suggested that the AODA be a foundation for the Government of Canada to implement legislation and standards surrounding disabilities that was also compliant with the United Nations Convention on the Rights of Persons with Disabilities.¹¹ The recommendations in Beer’s report acknowledge that the revisionary board should include persons with disabilities as they would have the most knowledge on the subject¹²; however, the focus was with regards to creating new standards rather than revising and refining the older standards to ensure functionality. While it is essential to have input of the affected group when creating a new policy, it is crucial that they are part of the board that revisits the policy after implementation to ensure that it is working correctly and how to best change it to be functional for those that deal with the obstacles on a daily basis.

⁹ Beer, Charles, Ontario, and Gibson Library Connections, Inc. Charting a Path Forward Report of the Independent Review of the Accessibility for Ontarians with Disabilities Act, 2005. Toronto, Ont.: [Government of Ontario], 2011.

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

As discussed in Flaherty and Roussy, the AODA was thought to be a leap forward for post-secondary education but has failed as the type of reforms that are given within the legislation do not expand much further beyond the accessibility policies and procedures that are already in place for post-secondary institutions.¹³ The authors consider how disability impacts access to education then describe what post-secondary institutions were required to do prior to the AODA before determining whether anything has significantly changed under the AODA.¹⁴ While this article specifically analyzes the legislation with regards to post-secondary education, it is the basis for analytical understanding as this paper will analyze the AODA in a similar manner with regards to the website compliance standards.

In a similar vein, Chittenden and Dermody analyze the impact of the AODA on libraries and library services.¹⁵ The main difference in analysis between Chittenden and Dermody and Flaherty and Roussy is the method used for analysis. In Chittenden and Dermody, there is a tendency for a hypothetical “how” it can be accomplished rather than whether it is an attainable goal or useful for the patrons.¹⁶ This article takes into consideration more than just one standard of the regulations and attempts to understand all the potential standards that would af-

¹³ Flaherty, Michelle and Alain Roussy. "A Failed Game Changer: Post-Secondary Education and the Accessibility for Ontarians with Disabilities Act." *Education Law Journal* 24, no. 1 (12, 2014): 1-23, <https://search-proquest-com.ledproxy2.uwindsor.ca/docview/1642147868?accountid=14789> (accessed October 2, 2017).

¹⁴ Ibid.

¹⁵ Chittenden, Michele and Kelly Dermody. "Removing Barriers to Access: Libraries and the Accessibility for Ontarians with Disabilities Act." *Feliciter* 56, no. 3 (2010): 94-96, <https://search-proquest-com.ledproxy2.uwindsor.ca/docview/347850502?accountid=14789> (accessed October 4, 2017).

¹⁶ Ibid.

fect libraries on a surface level without specific details of any of the regulatory standards analyzed.¹⁷

Ross argues the linguistic barriers of how the AODA is written and the term “disabilities” having sometimes opposing definitions within the Act and in discourse surrounding disabilities hinders the advancement of proper accessibility in Ontario.¹⁸ This argument is further made by Fudge with regards to the definition of “employer” in Pay Equity Acts.¹⁹ This paper, while not analyzing the specific use of “accessibility” as a term, does not discount the change in definition of the term depending on the government in charge and context. These articles demonstrate the significance of words, definitions, and who is using terms as this changes the contextual importance and how it will be interpreted to best suit the needs of whoever is contributing to the discussion. As the AODA uses the same definition of “disability” as the Ontario Human Rights Code, but this definition differs within other pieces of legislation that discusses persons with disabilities, this article is imperative to understanding linguistic choice as well as contextual understanding of terms. Context is critical because it allows the receiver to understand where to place the importance of the term, what assumptions to draw, and where the meaning truly lays.²⁰ In this case, the term “disability” is defined differently within

¹⁷ Chittenden, Michele and Kelly Dermody. "Removing Barriers to Access: Libraries and the Accessibility for Ontarians with Disabilities Act." *Feliciter* 56, no. 3 (2010): 94-96, <https://search-proquest-com.ledproxy2.uwindsor.ca/docview/347850502?accountid=14789> (accessed October 4, 2017).

¹⁸ Ross, Tim. "Advancing Ontario's Accessibility: A Study of Linguistic, Discursive, and Conceptual Barriers." *Canadian Journal of Urban Research* 22, no. 1 (Summer, 2013): 126-144.

¹⁹ Fudge, Judy. "Limiting Equity: The Definition of Employer Under the Ontario Pay Equity Act." *Canadian Journal of Women and the Law* 4, no. 2 (1991): 556-563.

²⁰ Engaged HR. "Communication: The Importance of Context." Engaged HR. May 18, 2017. Accessed November 28, 2017. <http://engagedhr.com/the-importance-of-context/>.

each piece of legislation which mistakenly allows compliant bodies to believe they are in compliance with all legislation if they are compliant with one.

Unlike with the *Ontarians with Disabilities Act, 2001*, there has not been much analysis of the AODA. The focus has been on implementation schedules and cost-effective policies and procedures for businesses rather than understanding the needs of the targeted group - and if the AODA truly meets those needs. Flaherty and Roussy analyze the AODA in a critical lens of “usability”; however, the focus was on post-secondary education. The AODA is a multi-faceted legislation that focuses on a broad number of topics and each must be analyzed and understood to determine if the regulations and standards are effective for persons with disabilities. Many articles have focused on specific aspects of the AODA rather than a broad analysis of the legislation. Additionally, the literature has not acknowledged the compliance mechanisms for standards and best practices.

Canadian Policy Analysis

Jongbloed analyzes the trends in disability policies in Canada from the early 20th century until 2003 stating that while persons with disabilities have made progress in social policies in Canada, there is still room to improve the legislation.²¹ This was written prior to the implementation of the AODA and serves as a critique of the prior legislation with recommendations that are within the new Act. Jongbloed concludes by stating that the prior legislation co-exists rather than replacing one another which does not allow for the complex nature of disabilities.²² This type of critique of legislation is important to understand the social aspect of the Act rather than focusing on the legal aspects. It is important to

²¹ Jongbloed, Lyn. "Disability Policy in Canada." *Journal of Disability Policy Studies* 13, no. 4 (Spring, 2003): 203-209

²² Ibid.

understand the legislation and the implementation; however, it is equally important to realize all legislation impacts people - in the case of the *Ontarians with Disabilities Act, 2001* and the *Accessibility for Ontarians with Disabilities Act, 2005*, a protected group of people. To this extent, Lepofsky and Graham have found that “an ounce of inaccessibility prevention is worth several ton[ne]s of equality.”²³

Another protected class that has preventative legislation is women, especially with regards to the Pay Equity Act. McDonald and Robert question whether the Pay Equity laws in Ontario and Quebec have had an impact on gender pay gaps.²⁴ Fudge critiques the limitations of Pay Equity by analyzing the definition of “employer” under the Act.²⁵ Additionally, there have been many case studies analyzing how Pay Equity has been used in practice, such as with Air Canada,²⁶ Supermarkets,²⁷ and Public Service Alliance of Canada.²⁸ Each of these studies analyzed how legislation that was created and the limitations on the successes of an Act that is for a specific protected group.

²³ Lepofsky, M. D. and Randal N. M. Graham. "Universal Design in Legislative Drafting - how to Ensure Legislation is Barrier-Free for People with Disabilities." *National Journal of Constitutional Law* 27, (2009): 129-157.

²⁴ McDonald, Judith Ann and Robert Thornton. "Have Pay Equity Laws in Canada Helped Women? A Synthetic-Control Approach." *The American Review of Canadian Studies* 46, no. 4 (12, 2016): 452-473.

²⁵ Fudge, Judy. "Limiting Equity: The Definition of Employer Under the Ontario Pay Equity Act." *Canadian Journal of Women and the Law* 4, no. 2 (1991): 556-563.

²⁶ Kainer, Jan and Patricia McDermott. "Pay Equity in the Sky: The Case of Air Canada and Canadian Airlines." *Canadian Woman Studies* 23, no. 3 (Spring, 2004): 78-83

²⁷ Kainer, Jan. "Pay Equity and Part-Time Work: An Analysis of Pay Equity Negotiations in Ontario Supermarkets." *Canadian Woman Studies* 18, no. 1 (Spring, 1998): 47-51

²⁸ Hertwig, Kim. "Pay Equity Legislation in Canada: A Study of the Public Service Alliance of Canada Case." *Canadian Woman Studies* 19, no. 1 (Spring, 1999): 186-193

Canadian policy analysis has also focused on creating policies to stop a negative action from occurring²⁹ and creating affirmative action within the education system³⁰ using different measures and metrics to achieve their analysis. However, each analysis has used only one type of data collection model, either quantitative or qualitative in nature, without examining the opposite metrics and their effects. As demonstrated in Schwindt et. al.,³¹ the importance of policy analysis lays in the recommendations for positive change rather than the metrics used to come to any one conclusion.

This literature demonstrates that the main requirement to conduct policy analysis is creating recommendations for how the policy should be updated to fit the true needs of the intended persons. Each article used a different methodology to come to their conclusion and although arguments in certain articles were stronger than others, it is essential to understand the type of methodology used within each article.

Gaps in the Literature

The main gap in the literature centres around how and if persons with disabilities are positively affected by the changes in legislation, policy, and procedures that have occurred since the implementation of the *Accessibility for Ontarians with Disabilities Act, 2005*. Many studies have focused on hypothetical situations or those entering the workforce rather than those who access services provided by the Government of Ontario or other designated compliant sectors. It is

²⁹ Winton, Sue, and Stephanie Tuters. "Constructing bullying in Ontario, Canada: a critical policy analysis." *Educational Studies* 41, no. 1-2 (2014): 122-42. doi:10.1080/03055698.2014.955737.

³⁰ Jongbloed, Lyn. "Disability Policy in Canada." *Journal of Disability Policy Studies* 13, no. 4 (Spring, 2003): 203-209

³¹ Schwindt, Richard, Aidan R. Vining, and David Weimer. "A Policy Analysis of the BC Salmon Fishery." *Canadian Public Policy* 29, no. 1 (03, 2003): 73-94.

important to understand the reflective nature of having persons with disabilities in the workplace to serve the diverse needs of the population while considering how compliance standards are able to serve the needs of the persons with disabilities that are unable to enter the workforce. This discussion has a time sensitive aspect as not only do the majority of changes and implementations occur within the next eight (8) years, but also due to the newest version of WCAG, WCAG 2.1, becoming available as a standard in 2018 which could affect the compliance requirements of O.Reg.191/11s.14.

Methodology

This paper will analyze the *Accessibility for Ontarians with Disabilities Act, 2005* using an analycentric approach which focuses on a specific piece of legislation and analyzes the problems while creating solutions.³² This will be conducted through the “Five E Approach to Policy Analysis” as defined in Kirst-Ashman’s book *Introduction to Social Work & Social Welfare*.³³ This approach analyzes the (1) effectiveness; (2) efficiency; (3) ethical considerations; (4) evaluations of alternatives, and; (5) establishment of recommendations for positive change of a policy to analyze whether the policy addresses the targeted problem while meeting the needs of the people and achieves its goals.³⁴

The “Five E” approach specifically focuses on policy and legislation that affects a targeted group of people, which is essential for analyzing the AODA. It is imperative to understand the benefits of the legislation on the intended protected

³² Bührs, Ton, and Robert V. Bartlett. *Environmental policy in New Zealand: the politics of clean and green?* Auckland: Oxford University Press, 1993.

³³ Kirst-Ashman, Karen K. *Introduction to Social Work & Social Welfare: Critical Thinking Perspectives*. Empowerment Series. Cengage Learning, 2016.

³⁴ *Ibid.* 234.

group as well as the implementation process by those who must comply with the legislation. Although the legislation may not be able to address individualized needs to a generalized problem, the parameters surrounding implementation by the specific governments and businesses could potentially be causing more obstacles for persons with disabilities. Therefore, the analysis of the AODA must include the legal and social aspects to be thorough and inclusive. The “social” perspective in the policy analysis endorses the need to consider the “people” while examining the benefits and drawbacks of the legislation which may not have been considered when creating the legislation or implementation strategy. This “people” based analysis includes those who drafted the legislation, those who implement the standards, and those who are targeted by the potential benefits and drawbacks of said legislation.

When establishing the “Effectiveness” of a policy, the analysis is based upon the “extent to which a policy accomplishes its goals.”³⁵ This is determined by asking questions such as “How well does the policy’s program implementation achieve its goals?”³⁶ “Efficiency” is the “extent to which a policy and its implementation through a program are economical.”³⁷ The policy should address the issue in the most time, cost, and people capital efficient manner.³⁸ This also analyzes the amount of work it will entail for those affected by the policy and if the solutions are worth the associated cost.³⁹ “Ethical Considerations” analyzes the policy

³⁵ Kirst-Ashman, Karen K. *Introduction to Social Work & Social Welfare: Critical Thinking Perspectives*. Empowerment Series. Cengage Learning, 2016.

³⁶ *Ibid.*, 234.

³⁷ *Ibid.* 235.

³⁸ *Ibid.* 235.

³⁹ *Ibid.* 235.

through the scope of the extent that the policy and implementation strategy “respect[s] people’s right to dignity, confidentiality, and self-determination.”⁴⁰ This analytical aspect will ensure not only the legality of the legislation but also how this potentially benefits the protected class. “Evaluations of alternatives” entails a comparison to other solutions to the problem to determine if there is a more efficient, ethical, or effective way of creating the same solution or a better solution.⁴¹ The last area of analysis, “Establishment of recommendations for positive change,” strives to create modifications for policies to create the best practice for the programs to enrich people’s lives.⁴² This includes determining whether there should be amendments to current policies or a completely new legislation must be created and enacted.⁴³

The “Five E” analysis of the website compliance standards found in section 14 of O.Reg. 191/11 will determine whether the type of web content produced by governments and businesses online is “functional” rather than just “practical” for those who require accessibility. It is essential to ensure that any legislation enacted for protected groups, such as persons with disabilities, is creating true, functional accessibility as the legislation should be improving the quality of life.

The effectiveness concept to be measured as part of the “Five E” analysis is the proven ability of the persons with disabilities to access information on the Government of Ontario’s website. This will be identified through placing a sample of the Government of Ontario’s web content through AChecker, <https://achecker.->

⁴⁰ Kirst-Ashman, Karen K. Introduction to Social Work & Social Welfare: Critical Thinking Perspectives. Empowerment Series. Cengage Learning, 2016.

⁴¹ Ibid. 235.

⁴² Ibid. 236.

⁴³ Ibid. 236.

ca/checker/index.php, to determine the accessibility of specific web pages. This website is listed as one resource on the W3C website to check compliance with WCAG 2.0 for web pages. As the Government of Ontario date of compliance with Level A and AA of WCAG 2.0 was January 1, 2016, the websites that are owned and operated by the Government of Ontario, which for the purposes of this paper are directly linked from the Government of Ontario website, should have no known, likely, or potential problems after AChecker has finished its analysis. This effectiveness test would have included a sampling of the compliance of PDFs; however, the Government of Ontario website does not include PDFs on their website further indicating the difficulty of creating an accessible PDF and the exorbitant cost of remediating PDF documents.

The primary data analysis model focuses the majority of its attention on exegesis and a close reading of section 14 of *Accessibility for Ontarians with Disabilities Act, 2005*, Ontario Regulation 191/11, and WCAG 2.0 Levels A and AA. The exegesis technique of historical criticism will primarily be used to analyze the legislations to establish the context of the legislation.⁴⁴ Through this form of exegesis, an analysis of the *Ontarians with Disabilities Act, 2001* will also be undertaken including the critique of this Act by the persons with disabilities, and how it was then modified to become the AODA. Furthermore, the requirements for website compliance standards to create accessibility, Ontario Regulation 191/11 section 14 and WCAG 2.0 Levels A and AA, will be analyzed for the type of required changes that will be made and the cost for these changes by analyzing the cost of consul-

⁴⁴ Boland, Richard J., Mike Newman, and Brian T. Pentland. "Hermeneutical Exegesis in Information Systems Design and Use." *Information and Organization* 20.1 (2010): 1-20.

tants, training, and accessible document utilities as listed on their respective websites.

Definitions

For the purposes of this paper, “accessibility standard,” “barrier/obstacle” “disability,” and “organization” will retain the same meaning as in the AODA, which has taken these definitions from the Ontario Human Rights Code.⁴⁵ An accessibility standard is a standard created by regulation under section 6 of the Act; A barrier is anything that prevents a person with a disability from participating in society because of his or her disability and is sometimes referred to as an obstacle in the Act; Disability is “any degree of physical disability, infirmity, malformation or disfigurement that is caused by bodily injury, birth defect or illness and, without limiting the generality of the foregoing” and can also refer to “a condition of mental impairment or a developmental disability,” including a learning disability, a mental health illness, or an injury for which the person has claimed benefits under the Workplace Safety and Insurance Act, 1997 and can be referred to as “handicap.”

The term “functional accessibility” is the end user’s, the person with the disability, ability to obtain and use new content with reduced barriers/obstacles because of the compliance standards required by the legislation. Functional accessibility will be assessed through the WCAG 2.0 standards, guidelines, and techniques for achieving compliance in comparison to the cost of completing this compliance to create accessible web content for persons with disabilities.

⁴⁵ Government of Ontario. “Accessibility for Ontarians with Disabilities Act, 2005.” Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/statute/05a11/v1>.

When referring to a “skeleton” website, this paper defines this as a website that only contains html content that is not downloadable by the end user, including limiting the amount of pictures, graphics, tables, media content, and other aspects of a “typical” website that would have been made available prior to the enacted AODA. These have since been changed or removed from the website due to the complexity surrounding the creation of this type of content as they are difficult to create in an accessible format. This paper stipulates that removal of this content does not create equity for persons with disabilities because there are techniques to make these aspects accessible, but businesses are choosing the “easier” route and eliminating them completely.

It is vital for this paper and readers of this paper not to assume all persons affected by a disability to need similar treatment to overcome the obstacles faced as there are other factors that affect a person’s life. Although a disability may have the same name, it may not manifest itself the same way in every individual, which is especially true for persons with “invisible” disabilities such as mental health disorders. Moreover, factors such as race, socioeconomic status, gender, sexual orientation, and other individual identifiers can create additional barriers to entering the workforce, using services, and gaining assistance for the disability for which they have a diagnosis. People do not fit into only one category, but are a combination of a variety of identities adding additional dimensions to the barriers they face when interacting with businesses and the Government. In addition, this paper has been created to be accessible to persons with disabilities using techniques found in the WCAG 2.0 Level A and AA guidelines.

Contextual Understanding

All persons with disabilities interact with web content in differing ways. Persons with low vision or vision impairment will make use of a screen reader. Screen readers are software programs that can be added to a computer that has a speech synthesizer or braille display and acts as an interface between a computer's operating system, the applications, and the user.⁴⁶ Screen readers are used mainly by those who do not have the capacity to read text on the screen.⁴⁷ Some of these softwares include Job Access With Speech (JAWS) which is the "world's most popular screen reader, developed for computer users whose vision loss prevents them from seeing screen content or navigating with a mouse."⁴⁸ With the internet browser Google Chrome, users can enable a "browser extension" entitled "ChromeVox" that is an html based screen reader that works "identically to other screen readers and assistive technology on other platforms."⁴⁹ With regards to media content, persons who are hard of hearing will need captions on the media content they engage with, such as videos or live streams. However, persons with vision impairment will require audio description of the video to ensure they understand the context of the scene that they are not able to use visual cues to comprehend.⁵⁰ As noted in the WCAG 2.0 success criteria, there are multiple ways of creating web content that is accessible for persons with disabilities; however, using the tech-

⁴⁶ American Foundation for the Blind. "Screen Readers." Screen Readers - Browse Results - American Foundation for the Blind. Accessed December 11, 2017. <http://www.afb.org/prodBrowseCatResults.aspx?CatID=49>.

⁴⁷ Ibid.

⁴⁸ Scientific, Freedom. "BLINDNESS SOLUTIONS: JAWS®." Freedom Scientific. Accessed December 11, 2017. <http://www.freedomscientific.com/Products/Blindness/JAWS>.

⁴⁹ Google. "Introducing ChromeVox." ChromeVox. Accessed December 11, 2017. <http://www.chromevox.com/>.

⁵⁰ The best example of audio description is the Audio Description for *The Lion King (1994)*: <https://www.youtube.com/watch?v=jT5AsjzglC4>

niques does not guarantee that persons with disabilities will be able to fully access every piece of web content on every web page.

History and Interpretations

Ontarians with Disabilities Act, 2001

Prior to enacting the *Accessibility for Ontarians with Disabilities Act, 2005*, another legislation was signed into law to protect persons with disabilities entitled *Ontarians with Disabilities Act, 2001* (ODA). In his history of the ODA, Lepofsky outlines the initial grassroots movement that began the process of creating the ODA, the obstacles faced by the movement when dealing with the Conservative government, and how they organized to keep the disability movement in the news and on the minds of every Ontarian.⁵¹ The signing of the ODA was the process of a seven (7) year grassroots movement that lobbied the government to produce a law that would create a “barrier-free Ontario for the up to 1.9 million Ontarians who have a physical, mental, or sensory disability, and for all others who would get a disability in the future.”⁵² Although the passing of this law was momentous as no prior piece of legislation had addressed the needs of persons with disabilities, the disability community was “disappointed at the contents” of the ODA as there were no guidelines for compliance or specific standards to which businesses and the government had to meet.⁵³ The essence of the ODA grassroots movement was to recognize the daily barriers that people with disabilities face while living in Ontario and taking that into consideration when creating businesses, buildings, ser-

⁵¹ Lepofsky, M. David. “THE LONG, ARDUOUS ROAD TO A BARRIER-FREE ONTARIO FOR PEOPLE WITH DISABILITIES: THE HISTORY OF THE ONTARIANS WITH DISABILITIES ACT -- THE FIRST CHAPTER.” *National Journal of Constitutional Law* 15, no. 2 (April 2004): 125-33.

⁵² *Ibid.* 125.

⁵³ *Ibid.* 125.

vices, and all other aspects of life.⁵⁴ The primary change prior to the ODA was to amend the Ontario Human Rights Code making it illegal to discriminate based on disability and adding “persons with disabilities” to the protected class.⁵⁵

The ODA movement came together to create eleven (11) principles that expressed the goals of an Ontario policy that would eliminate barriers for persons with disabilities; however, these were not met within the legislation that was created and passed.⁵⁶ Although the grassroots movement was disappointed with the ODA and the lack of regulations, standards, and enforcement, it continued to work with the Government of Ontario to ensure all the benefits would be given to the Ontarians with disabilities during the implementation process.⁵⁷ During the 2003 election, both the NDP and the Liberals promised to update the ODA by amending it within one year of taking office from the Conservatives, which led to the election of Dalton McGuinty.⁵⁸

The main criticisms of the ODA were the lack of ability to enforce the regulations, the lack of standards, and the ability for the government to supersede their own legislation without penalty.⁵⁹ The ODA was not the “strong and effective” piece of legislation that the grassroots movement wanted as it did not address the core of the issues that persons with disabilities face on a daily basis but rather allowed the Government of Ontario to appear to be making progress with a

⁵⁴ Lepofsky, M. David. "THE LONG, ARDUOUS ROAD TO A BARRIER-FREE ONTARIO FOR PEOPLE WITH DISABILITIES: THE HISTORY OF THE ONTARIANS WITH DISABILITIES ACT -- THE FIRST CHAPTER." *National Journal of Constitutional Law* 15, no. 2 (April 2004): 125-33.

⁵⁵ *Ibid.* 125.

⁵⁶ *Ibid.* 128.

⁵⁷ *Ibid.* 128.

⁵⁸ *Ibid.* 130.

⁵⁹ *Ibid.* 130

protected class while doing the bare minimum.⁶⁰ However, the process of creating a grassroots movement allowed the disabled community to learn more about the “needs of others with different disabilities” which created a more solidified front when critiquing the lack of substance in the ODA.⁶¹ This movement was hopeful that the new McGuinty government would refresh the ODA to incorporate the eleven (11) principles outlined by the movement and create true, barrier-free living for Ontarians with disabilities.

Accessibility for Ontarians with Disabilities Act, 2005

The AODA was signed into law in 2005, signalling the beginning of Ontario’s commitment to reconciling the history of discrimination against those people who live with disabilities.⁶² With the passing of this legislation, Ontario was the first jurisdiction in Canada to develop and implement mandatory accessibility standards.⁶³ There were a multitude of standards set by this legislation including building codes, time frames for compliance, and website accessibility. The main purpose of this Act was to ensure the compliance of these standards by January 1, 2025, although some standards must be met prior to this date.⁶⁴

This Act has received positive attention from the media and the grassroots disabled community that began the process for the ODA; however, it is not without

⁶⁰ Lepofsky, M. David. "THE LONG, ARDUOUS ROAD TO A BARRIER-FREE ONTARIO FOR PEOPLE WITH DISABILITIES: THE HISTORY OF THE ONTARIANS WITH DISABILITIES ACT -- THE FIRST CHAPTER." *National Journal of Constitutional Law* 15, no. 2 (April 2004): 125-33.

⁶¹ *Ibid.* 132.

⁶² Government of Ontario. "Accessibility for Ontarians with Disabilities Act, 2005." Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/statute/05a11/v1>.

⁶³ Flaherty, M., & Roussy, A. (2014). A failed game changer: Post-secondary education and the accessibility for ontarians with disabilities act. *Education Law Journal*, 24(1), 1-23. Retrieved from <https://search-proquest-com.ledproxy2.uwindsor-ca/docview/1642147868?accountid=14789>

⁶⁴ Government of Ontario. "Accessibility for Ontarians with Disabilities Act, 2005." Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/statute/05a11/v1>.

its critics. Accessibility “watchdogs” have been critical of the implementation procedures of the Government. The AODA promised to engage both the private and the public sector to create true accessibility for all persons with disabilities.⁶⁵ Additionally, it enshrined functions for the Government to penalize those who do not comply with the standards and regulations addressed in the legislation. However, it does not address the outdated Ontario Building Code which is “the only practical means of enforcing real accessibility for persons with disabilities in both the public and private sectors.”⁶⁶ As well, it uses definitions from the Ontario Human Rights Code causing some businesses in the public and private sector to believe that if they comply with the AODA, they are in compliance with the Ontario Human Rights Code and vice versa, leading to fines and penalties for these businesses as each piece of legislation has different requirements for compliance that do not necessarily overlap.

The Act standards are outlined within the Ontario Regulation 191/11, “Integrated Accessibility Standards”; however, the Act does define what is meant by disabilities, the process to develop standards, how to develop the implementation time frames, the types of inspections to expect, and the penalties for noncompliance.⁶⁷ Parts I and II of the AODA relate to the interpretation and application while Part III makes the regulations that allow the establishment of accessibility standards.⁶⁸ Parts IV, V, and VI outline the process of inspections, penalties, and how to

⁶⁵ Accessibility News. “History of the COAAC.” History of the COAAC, AODA and ODA. Accessed October 11, 2017. http://accessibilitynews.ca/acnews/coaac/history/coaac_history.php.

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ “Health Law:: Accessibility for Ontarians with Disabilities Act, 2005 (Statutes of Ontario 2005, Chapter 11).” *Commonwealth Law Bulletin* 31, no. 2 (2005): 143-51.

appeal those charges as a business.⁶⁹ Part VII coordinates the continuance of the Accessibility Advisory Committees while Part VIII handles the administrative portion of the AODA including the Directors and the Accessibility Standards Advisory Council.⁷⁰ Part IX and Part X give general information about the Act and how it is to be understood in the broader context of Ontario legislation.⁷¹

The requirements for the standards are found within the Integrated Accessibility Standards, Ontario Regulation 191/11. Ontario Regulation 430/07, known as the Exemption from Reporting Requirements, and Ontario Regulation 429/07, which was the Accessibility Standards for Customer Service, were previous standards under the AODA. Both were revoked after the Integrated Standards were amended to include the Customer Service Standards.⁷² The Integrated Accessibility Standards outlines the compliance practice for the AODA and the requirements for meeting targeted deadlines depending on the standard to be met.

Ontario Regulation 191/11

The standards for the AODA are listed under the Ontario Regulation 191/11 (O. Reg. 191/11), Integrated Accessibility Standards, and include the best compliance practice for each standard. There are five (5) general headings for the standards in O. Reg. 191/11 with subsections under each for more specific standards: Information and Communication Standards, Employment Standards, Transportation

⁶⁹ Government of Ontario. "Accessibility for Ontarians with Disabilities Act, 2005." Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/statute/05a11/v1>.

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² AODA Alliance. "Changes to the Customer Service Standard." Accessed October 13, 2017. <http://www.aodaalliance.org/strong-effective-aoda/ontario-government-summary-of-proposed-revisions-to-customer-service-and-integrated-accessibility-standards-regulations.doc>.

Standards, Design of Public Space Standards, and Customer Service Standards.⁷³

Additionally, O. Reg. 191/11 includes information about the Regulation including the purpose and how to apply it along with definitions that are required within the AODA and O. Reg. 191/11.⁷⁴ Furthermore, O. Reg. 191/11 includes a section entitled “Compliance” that defines the types of penalties that could be incurred, how to pay these penalties, and the type of appeal tribunal that can be requested along with the scheduled dates for compliance.⁷⁵ The standard for website compliance is listed under under Part 2, “Information and Communication Standards,” Section 14, “Accessible websites and web content.”⁷⁶

The website compliance standard requires the Government of Ontario and Legislative Assembly to reach the compliance earlier than designated public sector organizations and large organizations. Section 14(1) states that the Government of Ontario and the Legislative Assembly will ensure their intranet and internet websites along with the media content is compliant to Level AA in accordance with WCAG 2.0 by the outlined date within the schedule, January 1, 2016.⁷⁷ Additionally, section 14(2) expresses that designated public sector organizations and large organizations must initially make their internet websites conform with WCAG 2.0 Level A prior to increasing to Level AA in accordance with the schedule, which has

⁷³ Government of Ontario. "O. Reg. 191/11: INTEGRATED ACCESSIBILITY STANDARDS." Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/regulation/110191>.

⁷⁴ Ibid.

⁷⁵ Government of Ontario. "O. Reg. 191/11: INTEGRATED ACCESSIBILITY STANDARDS." Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/regulation/110191>.

⁷⁶ Ibid.

⁷⁷ Ibid.

a scheduled date of January 1, 2021 five (5) years after the compliance date of the Ontario Government and Legislative Assembly.⁷⁸

This regulation incorporates a differentiation between “extranet website,” “internet website,” and “intranet website” as each of these has different requirements, schedules, and guidelines to follow. However, the most contested definition is “new internet website” as this means “either a website with a new domain name or a website with an existing domain name undergoing a significant refresh” without defining what a “significant refresh” means with regards to the legislation.⁷⁹ This is important to note as there are different required dates of meeting the Guidelines within the regulation depending on the type of website that is discussed. For example, by January 1, 2014, new internet websites and web content on those sites must conform with WCAG 2.0 Level A which would include a website that has undergone a “significant refresh.”⁸⁰ The interpretation of this subsection is unclear as the standard does not give a definition of a “significant refresh.” Due to this discrepancy, it is unclear whether adding new documents or deleting older documents qualifies as a “significant refresh.” Without a clear definition, the Government of Ontario does not allow compliant businesses to fully enact the legislation in their business.

The website compliance requirements refer to the “World Wide Web Consortium Web Content Accessibility Guidelines (WCAG) 2.0, initially at Level A and increasing to Level AA.”⁸¹ There are exceptions to the success criteria that must be

⁷⁸ Government of Ontario. “O. Reg. 191/11: INTEGRATED ACCESSIBILITY STANDARDS.” Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/regulation/110191>.

⁷⁹ Ibid.

⁸⁰ Ibid.

⁸¹ Ibid.

met, including success criteria 1.2.4 Captions (Live) and success criteria 1.2.5 Audio Descriptions (Pre-recorded).⁸² It is important to note that written into O. Reg. 191/11 is the understanding of practicality and that organizations should consider the “availability of commercial software or tools or both” which indicates that the Government of Ontario is suggesting to ensure compliance, the organization must include the purchase of accessibility utilities within their budgets.⁸³

O. Reg. 191/11 does not outline what the success criteria are nor does it give indication as to the best practices to implement these success criteria. Rather, this information is found through the WCAG website, specifically through the information surrounding WCAG 2.0.

Web Content Accessibility Guidelines

The Web Content Accessibility Guidelines (WCAG) “is developed through the W3C process in cooperation with individuals and organizations around the world, with a goal of providing a single shared standard for web content accessibility that meets the needs of individuals, organizations, and governments internationally.”⁸⁴ WCAG is created by the Accessibility Guidelines Working Group, which is not under Canadian jurisdiction.⁸⁵ The standard used by the AODA and O. Reg. 191/11 is WCAG 2.0 which was released in 2008 and can be found under international standard ISO/IEC 40500:201.⁸⁶ WCAG 2.0 was created in response to the feedback re-

⁸² Government of Ontario. "O. Reg. 191/11: INTEGRATED ACCESSIBILITY STANDARDS." Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/regulation/110191>.

⁸³ Ibid.

⁸⁴ W3C. "WCAG Overview ◦ Web Accessibility Initiative ◦ W3C." W3C Web Accessibility Initiative (WAI). Accessed October 11, 2017. <https://www.w3.org/WAI/intro/wcag>.

⁸⁵ Ibid.

⁸⁶ Ibid.

ceived after the release of WCAG 1.0 in May 1999.⁸⁷ WCAG 2.0 has twelve (12) guidelines organized under four (4) principles: perceivable, operable, understandable, and robust.⁸⁸ Each guideline has testable success criteria at three (3) levels: A, AA, and AAA.⁸⁹

The four (4) principles of accessibility are: (1) Perceivable, which means information and interface components are presented to users in a way they can perceive and it is not invisible to all of their senses⁹⁰; (2) Operable, meaning that the interface components and navigation options must be functional to use by the user⁹¹; (3) Understandable, which requires that the information is not beyond the understanding of the user,⁹² and; (4) Robust, meaning that the content must be as robust as possible that it can be interpreted “reliably by a wide variety of agents, including assistive technologies” and must be available as that technology advances.⁹³ Each of these principles have twelve (12) guidelines that provide the main goals a content creator should be working toward in terms of creating accessible content for users with different disabilities.⁹⁴ Under each guideline is a

⁸⁷ W3C. "Development of Techniques for WCAG 2.0." Development of Techniques for WCAG 2.0. July 7, 2005. Accessed October 13, 2017. <https://www.w3.org/WAI/GL/wcag20.html>.

⁸⁸ Ibid.

⁸⁹ Ibid.

⁹⁰ W3C. "W3C Recommendation." Web Content Accessibility Guidelines (WCAG) 2.0. December 11, 2008. Accessed October 13, 2017. <https://www.w3.org/TR/WCAG/#contents>.

⁹¹ Ibid.

⁹² Ibid.

⁹³ Ibid.

⁹⁴ Ibid.

testable success criteria under three levels of conformance: A (lowest), AA, and AAA (highest).⁹⁵

As noted on the W3C website, even with these conformance levels in place, some persons with disabilities may not be able to access content as there are a variety of obstacles to accessing web content that is not fixable with the use of these success criteria.⁹⁶ W3C encourages web content creators to use the full range of techniques that are available on their website to best implement accessible content on the website while understanding that the use of Metadata may assist users that are disabled in finding suitable content.⁹⁷ The full list of Guidelines, Success Criteria, and Techniques to meet these can be found online.⁹⁸ A reference guide for WCAG 2.0 has been included as **Appendix A**. The success criteria state what must be done to ensure compliance and what level has been achieved if this criterion has been met by the content creator. It includes techniques for meeting this criteria as well as what a “failure” would appear as within the content.

To conform with the WCAG 2.0, one (1) of the three (3) levels of conformance must be met in full.⁹⁹ For Level A conformance, the minimum level of conformance, the Web page must satisfy all of the Level A Success Criteria, or an alternative version is provided.¹⁰⁰ For Level AA conformance, the Web page must sat-

⁹⁵ W3C. "W3C Recommendation." Web Content Accessibility Guidelines (WCAG) 2.0. December 11, 2008. Accessed October 13, 2017. <https://www.w3.org/TR/WCAG/#contents>.

⁹⁶ Ibid.

⁹⁷ Ibid.

⁹⁸ W3C. "How to Meet WCAG 2.0." How to Meet WCAG 2.0. Accessed October 31, 2017. <https://web.archive.org/web/20171013151636/https://www.w3.org/WAI/WCAG20/quickref/>. Note: This link was saved on October 13, 2017 at 11:12am EST to the Wayback Machine in order to preserve the status of the web page for reference in the future without any changes made to the interpretation of the website within this paper.

⁹⁹ W3C. "Conformance Requirements." Web Content Accessibility Guidelines (WCAG) 2.0. Accessed October 13, 2017. <https://www.w3.org/TR/WCAG20/#conformance-reqs>.

¹⁰⁰ Ibid.

isfy all of the Level A and Level AA Success Criteria, or an alternative version is provided.¹⁰¹ For Level AAA conformance, the Web page must satisfy all of the Level A, Level AA, and Level AAA Success Criteria, or an alternative version is provided.¹⁰² W3C does not recommend that Level AAA conformance be required as a policy for accessible web pages as it is not possible to complete all Level AAA Success Criteria for certain content.¹⁰³ To be considered reaching the conformance level, the entire web page must reach the desired level and it will not be achieved if part of a web page is excluded from testing.¹⁰⁴ Partial conformance based on language can be granted if the page does not conform to the standards, but would conform if support existed “for (all of) the language(s) used on the page. The form of that statement would be, ‘This page does not conform, but would conform to WCAG 2.0 at level X if accessibility support existed for the following language(s): [...]’”¹⁰⁵ The W3C grants compliance certification to websites that reach a desired Level of conformance after receiving the proper documentation.¹⁰⁶ Although there is an update to the current guidelines to be released in 2018, WCAG 2.1, the current version, WCAG 2.0, will remain a stable guideline to creating accessibility.¹⁰⁷

The W3C and WCAG 2.0 attempt to create accessible web content for persons with disabilities and make changes to the guidelines based on feedback from

¹⁰¹ W3C. "Conformance Requirements." Web Content Accessibility Guidelines (WCAG) 2.0. Accessed October 13, 2017. <https://www.w3.org/TR/WCAG20/#conformance-reqs>.

¹⁰² Ibid.

¹⁰³ Ibid.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

users with disabilities. However, without stipulation within the AODA or O. Reg. 191/11 to update the specific version of WCAG to match the most current guidelines, success criteria, and techniques the W3C and the amount of accessibility available on the web will be limited.

“Five E” Approach to Policy Analysis

Effectiveness

To measure the effectiveness of the AODA, this paper will follow the steps for measuring legislative effectiveness as found in Chapter 2, “Measuring Legislative Effectiveness” of *Legislative Effectiveness in the United States Congress: The Lawmakers* by Volden and Wiseman.¹⁰⁸ These steps include: (1) an explicit definition of the concept that will be measured; (2) identifying the indicators of the defined concept; (3) combining the indicators into a set of scores that capture the defined concept, and; (4) scoring or measuring that is assessed by validation criteria.¹⁰⁹

The effectiveness concept to be measured is the proven ability of the persons with disabilities to access information on the Government of Ontario’s website. The full data set of this testing is attached as **Appendix B: “Accessibility Testing for the Government of Ontario Website.”** Each web page visited was run through the AChecker website <https://achecker.ca/checker/index.php>. This website analyzes the web page in accordance with meeting success criteria for WCAG 2.0 Level AA which must incorporate success criteria for Level A. These web pages were all assessed between 6:00pm EST and 6:30pm EST on Thursday, October 12,

¹⁰⁸ Volden, Craig, and Alan E. Wiseman. *Legislative effectiveness in the United States Congress: the lawmakers*. New York, NY: Cambridge University Press, 2014.

¹⁰⁹ *Ibid.*

2017 from Windsor, Ontario and could have been updated after this to meet compliance standards. A sampling of twenty (20) web pages were assessed and all were accessed starting at the homepage “Government of Ontario,” which can be found at <https://www.ontario.ca/page/government-ontario>, prior to selecting a link to reach a different web page that was owned and operated by the Government of Ontario. Each page was assessed in English and French, the official languages of the Government, to ensure that there was no bias between either language in terms of accessibility.

AChecker defines “Known Problem” as “problems that have been identified with certainty as accessibility barriers” that must be modified and fixed.¹¹⁰ “Likely Problems” are “problems that have been identified as probable barriers, but require a human to make a decision.”¹¹¹ “Potential Problems” are problems that AChecker cannot identify, that require a human decision which may require modification but “in many cases ... just need to confirm that the problem described is not present.”¹¹²

The data in *Table 1: A Checker Testing for the Government of Ontario* in **Appendix B** states “Problems” only if the category of problems that had more than one listed. It does not list the type of problem or the success criteria that was not met for each problem. As the data demonstrates, every web page except for one tested for the Government of Ontario had at least one known problem with multiple potential problems occurring as well. This demonstrates that the Government of Ontario has not been able to meet their own compliance requirements for their

¹¹⁰ AChecker. “AChecker Handbook.” AChecker Handbook. Accessed October 12, 2017. <https://achecker.ca/documentation/index.php?p=checker%2Findex.php>.

¹¹¹ Ibid.

¹¹² Ibid.

internet website by the timeframe required. Additionally, there is a discrepancy between the websites in English and French as there are different known problems on pages that should be identical as they have the same information. This lack of compliance demonstrates the inability of the governing body to meet the requirements of the standards that are within the legislation they have enacted, indicating there is a lack of effectiveness in the AODA to not only meet the compliance standards but also to enforce accessibility in Ontario on web pages.

Furthermore, the web pages that were subdivisions of the Ontario Government, i.e. [ontario.ca/PAGENAME](#), were the most compliant with only one Known Problem and fifty seven (57) Potential Problems that were the same for every page tested. The pages operated by the Ontario Government that addressed a specific Ministry or sub-section of the Government, such as Foodland Ontario or Ministry of Advanced Education and Skills Development, had varying degrees of Known, Likely, and Potential Problems depending on the web page. These were aggravated if the web page had figures, tables, graphics, or other media content that has higher requirements for compliance than plain text. Web pages that are specifically addressed to the needs of persons with disabilities, such as Ontario Works, Ontario Disability Support Program (ODSP), and Social Assistance Policy Directives, had the most Known and Potential Problems combined as compared to other web pages with even more Known and Potential Problems on the French web page as opposed to the English web page which demonstrates the lack of functional accessibility on the Ontario Government's website. This does not create the type of equity that the AODA was enacted to provide.

It should be noted that the PDFs available on the Government of Ontario web page were mainly forms which have different compliance requirements than

other types of PDF or media documents.¹¹³ This further implies the difficulty of ensuring web content is made accessible and compliant to WCAG 2.0 standards by the scheduled dates; however, the AODA and the Government of Ontario require all public and private sector institutions that are required to meet the AODA standards will ensure compliance by January 1, 2021.

Efficiency

To measure the efficiency of the web standards for the AODA, an analysis of the potential cost of outsourcing training, outsourcing PDF remediation, website audit consultants, and buying software that assists with the creation of accessible documents will be assessed and considered. It is important to understand outsourcing of training as without sufficient proof that at least one employee has been trained on the concepts, there is no justification for how the documents or website has been created leading to penalties by the Government of Ontario. By having one employee undertake training and then becoming certified as a “Trainer” on the specifics, it will save the compliant company from facing legal and financial burdens in the future. Four (4) of each of those listed above were consulted for prices and were found based on consultations with Glassdoor.ca, a business review website, using the terms “PDF remediation,” “WCAG training,” “WCAG compliance,” and “WCAG software.” The chosen companies were Eliquo, David Berman Communications (DBC), CanAdapt, and WCAG Compliance Inc. A full listing of the training courses offered, along with their description and prices can be found in **Appendix C via Tables 2 through 5.**

¹¹³ Hudson, Roger. “Accessible forms using WCAG 2.0.” Web Usability. September 5, 2008. Accessed October 31, 2017. <http://usability.com.au/2008/09/accessible-forms-using-wcag-2-0/>.

As demonstrated through the costs listed in **Tables 2 through 5**, it is an enormous cost to outsource the creation of accessibility for a website to companies. The average cost for training for the companies was \$465 (combination of CAD and USD, as some companies listed in CAD or USD and were not converted into one of the currencies). Eliquo had higher overall costs and WCAG Compliance Inc. had lower costs of training. The majority of Eliquo's training was at least one full day whereas WCAG Compliance Inc. specialized in half-day training sessions. The total cost for one employee to receive all website accessibility training from Eliquo is a total of \$12,300 CAD; however, Eliquo offers "Training Passports" that would allow the employee a discount on a package of training from them in increments of "20, 50, 100, 200, or many days as you need within a 12 month period" that could decrease the price by up to eighty five percent (85%) per day.¹¹⁴ Additionally, Eliquo allows for the trainee to retake the training course within one year of completion and an allotted thirty (30) minute one-on-one session with the trainer that can be used to answer questions or solve problems that occur when attempting to use the training in the workplace.¹¹⁵

The training costs do not include travel expenses that could be incurred by trainees and businesses: some of the listed training courses were offered in Ottawa, Ontario without a web-based option available. Additionally, many of these training courses required specific software, such as Adobe InDesign which would acquire an additional cost of up to \$50.00 USD per month per employee or user.¹¹⁶

¹¹⁴ Eliquo. "Training Passports." Training Passports - Eliquo Training and Development. Accessed October 13, 2017. <http://eliquo.ca/en/training-passports.php>.

¹¹⁵ Eliquo. "Course Listing - Eliquo Training and Development." Eliquo Training and Development. Accessed October 13, 2017. <http://eliquo.ca/en/training/index.php?filter=1>.

¹¹⁶ Adobe Systems Incorporated. "Buy Adobe InDesign CC." Adobe InDesign CC. Accessed October 13, 2017. <http://www.adobe.com/ca/products/indesign.html>.

Eliquo required trainees to have certain prerequisite training or experience prior to being admitted into another training course, increasing the cost of training from one course's listed price to as many as three (3) or more.¹¹⁷ Prices for training programmes were not listed on the CanAdapt website which required the business to contact them with regards to best pricing for the requesting company; however, their training courses differed from the other companies as they were more technical based.¹¹⁸ David Berman Communications does not have a set training schedule or availability as training is given on an ad hoc basis.

For businesses that must comply with the AODA, it is difficult to incorporate costs of outsourced training into existing budgets as they are costs that could be recurring or only appear once depending on what is being purchased. This is especially true if only one employee is trained on creation of accessible web content and then leaves the company requiring new training to be conducted. Not every company will require every training course to ensure compliance; however, websites that produce Word documents, PDFs, PowerPoints, and Excel spreadsheets that use Eliquo for training would be required to enroll in ten (10) courses¹¹⁹ for a total of \$5,610 CAD per employee with an additional cost of purchasing Adobe In-Design.

The costs for audits and PDF Remediations were not readily obtainable on the websites for Eliquo, CanAdapt, or David Berman Communications as companies can request quotes that would address the specific needs of the PDF remediation.

¹¹⁷ Eliquo. "Course Listing - Eliquo Training and Development." Eliquo Training and Development. Accessed October 13, 2017. <http://eliquo.ca/en/training/index.php?filter=1>.

¹¹⁸ CanAdapt. "Courses." WCAG Accessibility Training. Accessed October 13, 2017. http://www.davidmacd.com/web_accessibility_training_wcag_ottawa.html.

¹¹⁹ ADAC301, ADAC307, ADID302, ADLD501, EAWW101, EAWW201, EAWW202, EAWW209, MSEP301, and MSMW301

Prices for PDF remediation were listed on WCAG Compliance Inc. with the option to send in a sample of the PDFs to be remediated for a more thorough estimate of cost. WCAG Compliance Inc. offers PDF Remediations at between \$8USD to \$30USD per page of the PDF, depending on the complexity of the document, with an initial cost of \$60USD per hour for a quote of the total cost of PDF remediation.¹²⁰

It is difficult to assess the internal costs for creation of in-house training, PDF remediation, and Information Technology (IT) accessibility costs as this will vary on a company-by-company basis. Nonetheless, costs associated with training in-house include: training the trainer; paying the trainer; time off the typical job for both the trainer and those being trained; preparation and administration costs; materials; facilities; and refreshments for the trainees.¹²¹ It is typically more cost efficient to create training in-house as once the training has been created and the trainer is trained, the costs associated with training tend to decrease.¹²² Additionally, the training can be tailored to the specific needs of the workplace that may differ from the generalized training provided by outside companies.¹²³ With regards to PDF remediation, WCAG Compliance Inc. demonstrates that it is cost efficient to outsource this task rather than complete it in-house for the following reasons:

“Time: You must train someone to effectively remediate documents which takes months and even when they are fully trained it still may take him/her 1 - 4 hours to fix any given page. PDF Techs ... are already trained and can fix documents, on average, 3 - 4 pages per hour.

¹²⁰ WCAG Compliance Inc. "PDF Remediation Services." Services. Accessed October 12, 2017. <http://wcagcompliance.com/services/pdf-remediation-services/>.

¹²¹ Saks, Alan M., and Robert R. Haccoun. *Managing performance through training and development*. Toronto: Nelson Education, 2014.

¹²² *Ibid.*

¹²³ *Ibid.*

Quality: Even after training and testing can you ensure that the document is Section 508 compliant? PDF Techs ensures all documents are 100% Section 508 compliant before returning the document back to the customer.

Price: After purchasing tools, investing in training and then actually getting the employee to output maybe 1 page every 2 - 3 hours, PDF Techs is still cheaper. Assume you pay your employee \$20 - \$30 USD per hour. At the end of the day you have paid \$160 - \$240 USD and only have anywhere from 4 - 8 pages of fixed PDF pages that may or may not pass Section 508 requirements. For approximately \$480 USD a day PDF Techs can output approximately 24 - 32 pages of PDF that are %100 Guaranteed Section 508 Compliant. It would take your employee approximately 4 - 8 days and approximately \$800 - \$1,600 USD of salary to get the same output that, again, may or may not be Section 508 Compliant.” (WCAG Compliance Inc., “FAQ”)

Although this passage from the Frequently Asked Questions makes specific reference to Section 508, the United States equivalent to the AODA, and is biased as WCAG Compliance Inc. is a company that relies on companies outsourcing PDF remediation for their own profit, the information regarding time, quality, and price are nonetheless correct. In addition to these costs, most PDF remediation requires a software utility to make the remediation process more efficient and timely. These utilities, such as CommonLook Global Access PDF, cost approximately \$1,000 USD per user and the training to use the software is a total of \$1,790 USD minimum per student and is only available by travelling to the CommonLook headquarters in Washington, D.C.¹²⁴

Costs associated with creating accessibility are immense; however, if one person has the capability to read a web page or web content because of the accessibility aspects, it is worth the price. The decision that is to be made is whether the budget allows for outsourcing the tasks to become compliant or completing them in-house. There are benefits and drawbacks to both situations, but these are

¹²⁴ CommonLook. "Document Accessibility Training | 508 Compliance." CommonLook by NetCentric Technologies. October 11, 2017. Accessed October 13, 2017. <http://commonlook.com/document-accessibility-training/accessibility-training/>.

purchases that must be made to be compliant with the AODA and O. Reg. 191/11. Nevertheless, these costs do not make for an efficient use of time, resources, or manpower.

It is disquieting that the Ontario Government does not provide alternatives or cost-effective solutions in complying with the standards which leads to companies, the Ontario Government included, creating a “skeleton” website in which only plain html based text information is available. Other content such as PDFs, multimedia presentations, or similar media content cannot be found online. While this creates a cost-efficient solution to creating an accessible website, it does not create equity: the information that was once provided online to the broad audience is now not available to anyone because the company does not want to incur the costs of creating an accessible format for persons with disabilities.

Ethical considerations

To determine the morality behind the AODA, this paper will use the ethical framework known as “The Duty Framework” which allows for interpretation of whether it is the duty of the Government to provide service.¹²⁵ The Duty Framework focuses on the duties and obligations an actor has in a situation while considering the ethical obligations and what actions should never be taken.¹²⁶ Ethical conduct can be defined by the actor performing the duties and “the right thing” with the goal of “performing the correct action.”¹²⁷ Moreover, this framework focuses on ensuring that moral duties have been followed regardless of the outcome

¹²⁵ Brown University. "A Framework for Making Ethical Decisions." A Framework for Making Ethical Decisions | Science and Technology Studies. Spring 2011. Accessed October 12, 2017. <https://www.brown.edu/academics/science-and-technology-studies/framework-making-ethical-decisions>.

¹²⁶ Ibid.

¹²⁷ Ibid.

which means that an actor could be ethical with a negative result.¹²⁸ Therefore, the Duty Framework is best used in situations where the actor has a sense of obligation to act ethically whether or not they create the desired outcome as it is their “duty” to begin a specific course of action, as is the context for the AODA.¹²⁹

If it is the responsibility of the Government to provide these services the question alters to analyze whether or not they are providing them to the best of their abilities.¹³⁰ This can also be referred to as the “Fairness or Justice Approach” that Greek philosophers such as Aristotle reference.¹³¹ To analyze the AODA through this Framework, this paper will use the Santa Clara University Framework for making ethical decisions.¹³²

There are five (5) stages to Santa Clara’s Framework: (1) Recognize an Ethical Issue, which includes analyzing the harm that could come from the implementation of this decision and if the issue is about legality or efficiency; (2) Get the Facts, including learning more about the situation, key stakeholders, and understand all options for acting; (3) Evaluate Alternative Actions, this analyzes the option that treats people equally; (4) Make a Decision and Test It, which analyzes the best practice for the situation and understanding the choice through the eyes of strangers, and; (5) Act and Reflect on the Outcome, which analyzes the implemen-

¹²⁸ Brown University. "A Framework for Making Ethical Decisions." A Framework for Making Ethical Decisions | Science and Technology Studies. Spring 2011. Accessed October 12, 2017. <https://www.brown.edu/academics/science-and-technology-studies/framework-making-ethical-decisions>.

¹²⁹ Ibid.

¹³⁰ Ibid.

¹³¹ Santa Clara University. "A Framework for Ethical Decision Making." Markkula Center for Applied Ethics. August 1, 2015. Accessed October 12, 2017. <https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/a-framework-for-ethical-decision-making/>. Last revised in May 2009

¹³² Ibid.

tation process and measuring the decision to make amendments.¹³³ Each of these stages and questions are addressed below with regards to the AODA, through the viewpoint of the Government of Ontario.

By implementing the AODA, the Government of Ontario could potentially create more harm and inequity as the unintended effects such as the creation of “skeleton” websites do not allow for the same type of online experience for persons with disabilities as those without. The decision to create the legislation relied on the legality of the need to protect the rights of persons with disabilities to ensure their quality of life is equal to the able-bodied Ontarians. As demonstrated through the second E of analysis, Efficiency, the Act has not implemented standards, timelines, or compliance requirements that are the most cost, time, or person efficient. The Government of Ontario was concerned with the legality of protecting persons with disabilities rather than whether this was the best practice.

Within this scenario, the relevant actors are the Government of Ontario, the content creators for the compliant companies, and the persons with disabilities who live in Ontario. The needs of the protected group should outweigh those of the Government of Ontario and the businesses that are to be compliant with the legislation as the Government is elected to serve the needs of the people and the businesses are required to provide goods and services to all persons. It is essential to prioritize the needs of those that are being served rather than those who are engaging in the serving; however, it is imperative to understand the challenges and obstacles that the Government and other compliant companies may face when implementing the standards outlined in the Act. Even within the Duty Framework,

¹³³ Santa Clara University. "A Framework for Ethical Decision Making." Markkula Center for Applied Ethics. August 1, 2015. Accessed October 12, 2017. <https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/a-framework-for-ethical-decision-making/>. Last revised in May 2009

which states that the course of employing the moral obligation is just as if not more important than the outcome, the needs of the persons with disabilities must come first. Due to the ODA being implemented, the AODA appeared to be the logical course of action for the Ontario Government as it was the most cost and time efficient solution for the government. The ODA was created through consultations with the disabled community; however, the eleven (11) goals of the community were not implemented in the original Act and were minimally acknowledged in the AODA.¹³⁴ There could have been additional consultations to ensure the AODA and O.Reg. 191/11 met the compliance requirements of the disabled community prior to being enacted into law.

There were multiple courses of action that could have been endeavoured to create the AODA and other similar legislation including consultations with persons with disabilities and legal counsel. The best practice would have been to consolidate the essential pieces of legislation rather than only update and amend the ODA. If this was not a viable option at the time of creating the legislation, stipulations stating that the AODA would be updated or further discussion surrounding creating a new piece of legislation in the future should have been included in the AODA.

The Government of Ontario's decision to implement the AODA should have been given more care to address the needs of the stakeholders who hold the most value in this scenario: the persons with disabilities living in Ontario. Better mechanisms could have been implemented to assist with interpretation and the initial implementation phase. Essentially, the standards should have been created specif-

¹³⁴ Lepofsky, M. David. "THE LONG, ARDUOUS ROAD TO A BARRIER-FREE ONTARIO FOR PEOPLE WITH DISABILITIES: THE HISTORY OF THE ONTARIANS WITH DISABILITIES ACT -- THE FIRST CHAPTER." *National Journal of Constitutional Law* 15, no. 2 (April 2004): 125-33.

ically for the needs of those in Ontario rather than relying on International Standards. The essential outcome from an amendment to the AODA is the inclusion of a mechanism to ensure every section can be updated based on new knowledge, technology, or needs of the disabled community on an ongoing basis. Although there was the continuance of the accessibility councils that make recommendations to the Government and other companies as needed on accessibility matters, without specific clauses in the AODA to allow these recommendations to be implemented as needed, this body provides no use.

The implementation of the AODA aligns with the ethical Duty Framework: as the serving body of the people, it had the moral and legal obligation to create a law that ensured protection of persons with disabilities living in Ontario through specific standards. However, rather than creating customized standards for obstacles and barriers that are found in Ontario, they took a generalized approach. This is especially true of the website standard compliance section as this is one of the only sections to use an International Standards Organization (ISO) to create the standards for compliance rather than creating their own or using another Ontario Act's or legislation's standards. Although they acted ethically within the Duty Framework by acting upon their moral duty, the outcome was not a positive one. Additionally by not including a stipulation to reexamine the compliance standards, the Government does not allow for the disabled community to make suggestions for amendments to the goods and services they receive or require.

Evaluations of alternatives

When compared to the lack of legislation in many Canadian jurisdictions, including at the federal level, and to the predecessors, the *Ontarians with Disabilities Act, 2001*, the AODA is a masterpiece. However, to determine if the AODA is

the best option for Ontarians with disabilities, alternatives to the current legislation must be considered. The main goal of the AODA is to create equity for persons with disabilities living in Ontario; therefore, the option of “do nothing” or “no alternative” is not realistic as persons with disabilities must be protected through legislation and specific standards to create the type of equity the Government requires. Further, legislation such as the ODA that does not have mechanisms for enforcement or strict standards for compliance is not a true alternative as these will not create goods or services that are accessible for persons with disabilities. Nevertheless, the AODA is not currently sufficient and requires amendments to specific sections, especially the web standards, to become relevant and useful for persons with disabilities.

One alternative to the current Act is the consolidation of all pieces of legislation that impact persons with disabilities such as the Ontario Human Rights Code, the Employment Standards Act, the Ontario Health and Safety Act, and the Ontario Building Code to ensure that meeting compliance standards with one of these pieces of legislation is codependent upon reaching compliance with the others as required. While this alternative would be the most beneficial to businesses and persons with disabilities, it is not the most cost effective solution for the Government of Ontario as it would be especially difficult to update older pieces of legislation and consolidate them to create similar standards for all.

The functional alternative to the current piece of legislation is to amend specific sections of the AODA to fit current needs of persons with disabilities while including provisions that specify these sections should be updated on an ongoing basis. This would ensure that the legislation and its standards are in line with contemporary needs of persons with disabilities living in Ontario as well as reducing

redundancy. Issuing amendments to the AODA would be the most profitable to the Government of Ontario in the short-term. However, long-term it could cost the Government just as much if not more than the initial cost of updating and consolidating all the legislation that impacts persons with disabilities and other protected groups.

Establishment of recommendations for positive change

One of the main critiques of the website standards section of the Integrated Accessibility Standards is that there is no provision written into the legislation that discusses updates or upgrades to the WCAG standards or website technology. This does not account for the reality of the internet and technology in general which is always updating, changing, and gaining new software to be more efficient. The AODA and O. Reg. 191/11 will be outdated in 2018 as WCAG 2.0, which is referenced in the legislation, will be replaced by a new version, WCAG 2.1, three (3) years before WCAG 2.0 compliance becomes mandatory for everyone under the AODA. This update is based on complaints from persons with disabilities to ensure the best guidelines and techniques for creating web content. It is imperative that the AODA be amended to include a condition surrounding the updating of technology and software to include the most recent version of standards, whether those standards are created by the Ontario Government or the W3C through WCAG.

There are options for the website standards of the AODA to be amended to best suit the needs of persons with disabilities. These options include: (1) amendment to include a specific set of standards created by the Ontario Government or a committee strictly dedicated to this which would include creating their own success criteria and techniques for compliance, or; (2) amendment to include a stipulation that the WCAG will still be used with a clause stating that it will be neces-

sary for the websites to comply with the most recent standards if and when they are updated with a six (6) months to one (1) year time period to complete the necessary updates. Either of these options are reasonable and necessary; however, with option one (1), it would still be necessary to update the standards on a regular basis to meet new technological needs.

Furthermore, the legislation does not account for the differences in technology that the end user has access to in their own homes or in government regulated areas. With the regular updates and upgrades to technology, it is easy to assume that each individual will have the best technology to suit their needs, but this is not necessarily the case. Any updates to websites or web content should remain compatible with as many applications, screen readers, and software as possible. In cases where this is not possible, the Ontario Government should offer a subsidized version of the technology necessary to use these websites to those who need it most. The funds for this subsidy can come either through an increase in taxes in the province or by cutting funding to redundant governmental programs.

The most reasonable, positive change to the AODA would be to include a stipulation that while the WCAG will still be used for web compliance, it will be necessary for the websites to update to meet the most recent standards. The companies that must be compliant will be given six (6) months to reach the new requirements for Level A and one (1) year to reach the new requirements for Level AA as this would be the most economical option for the Government while still allowing for persons with disabilities to have an increase to the quality of life.

These updates could be costly to businesses and other government annexes that have to comply with the legislation as it would include budgeting to incorporate a person or team to constantly be updating the accessibility aspects of the

website to remain compliant and additional training, consultation, and remediation costs. Therefore, the Government should offer ancillary funds of up to \$2,500 CAD for municipalities and not for profit businesses that operate solely within Ontario and up to \$1,000 CAD for small businesses and companies that operate solely within Ontario. This funding would be available through an application process and through demonstration of financial need to be able to update their website to remain compliant. The success criteria could be based on numerous aspects such as typical budget given to the update of the website, website traffic via Search Engine Optimization and unique visitors, and amount of remediation that must be done to be compliant among other criteria on a ranked scale to ensure those who do not have sufficient budget capabilities would receive priority eligibility for this funding. Without this funding, businesses and government annexes would continue to upload less information on their websites, creating even more “skeleton” websites, to guarantee that the essential information about their business is available without incurring a gross cost to their budgets to make the necessary changes to the website or web content that could be in excess of \$100,000 USD.

For example, companies that specialize in assisting with compliance to WCAG 2.0 charge between \$8 USD to \$30 USD per page of the PDF, depending on the complexity with an initial cost of \$60 USD per hour for an initial quote of the total cost of PDF remediation.¹³⁵ For municipal governments that publish Council Agendas online that are in excess of five hundred (500) pages, this would be a total cost of between \$400 USD to \$15,000 USD depending on the complexity of the doc-

¹³⁵ WCAG Compliance Inc. "PDF Remediation Services." Services. Accessed October 12, 2017. <http://wcagcompliance.com/services/pdf-remediation-services/>.

ument. The sheer cost of upgrades to the website is deterring companies and governmental annexes from publishing documents online.

Although it is possible to remediate the documents in-house - or initially create accessible documents that will be published online - the software to do so can be just as costly, without factoring in the cost of either receiving training from an outside company or designing it in-house. Costs could also be associated with the creation of a new position within the business or if it would be required by someone within each department that publishes content to the website. Additionally, if this was a requirement added to a pre-existing job position, it could be cause for a pay increase with the inclusion of this new responsibility. Moreover, this is just one aspect of the web content that is available online and does not incorporate videos, which require captions and audio descriptions, pictures and graphics, which require alternative text, or other attributes to the website that must be compliant under WCAG.

It is essential for updates to the legislation to include stipulations for updates and funding opportunities to be available through the Government of Ontario. This would ensure that rather than creating a “skeleton” website that has no content, which does not assist any citizen whether or not they live with a disability, businesses and governmental annexes will create accessibility on their websites. This will increase education on topics, improve the quality of life, and create more social capital within Ontario which could expand to the entirety of Canada. To truly create equity for Ontarians with disabilities, one of these recommendations must be implemented to update the AODA.

Accessibility Versus Functional Accessibility

It is important to understand the difference between accessibility and functional accessibility: true equity can only be achieved with functional accessibility that includes the ease of meeting compliance standards without reducing the type of content available online. As demonstrated through testing the Government of Ontario's website, there is accessibility on the majority of their web pages; however, this accessibility comes at the cost of not creating and uploading PDF documents that could have essential information in an easier to use format than scrolling through endless web pages.

The type of accessibility that is granted by the AODA is not functional: for persons with disabilities to have equity, there are extremely high costs associated with creation, training, and remediation. By using an ISO rather than creating a new set of standards, the AODA and O. Reg. 191/11 do not meet the functional needs of Ontarians living with disabilities as these needs are different from those of the rest of the global population. Although Section 508 in the United States also subscribes to WCAG 2.0 standards, the governing body for Section 508 offer suggestions as to purchasing tools, services, and other necessary options to create an accessible website. The Government of Ontario does not set the standard for compliance, as their website does not reach WCAG 2.0 Level AA, but also does not offer assistance to create an accessible website for those that must comply.

To create true functional accessibility, the AODA must be amended to include updates to technology, the WCAG standards, and offer assistance to companies and other governmental bodies. The Government has the option to create these amendments through support funds to transition to the new compliance standards or providing resources and subsidies to ensure the cost is not excessive

which forces businesses to choose to create a “skeleton” version of their website to meet compliance. It is essential that persons with disabilities are able to experience browsing the web without obstacles or barriers in the same manner as those who do not have a disability which includes access to documents, videos, and other media content that is available.

It is not enough to have accessible standards that do not ensure a better quality of life for persons with disabilities. Without proper amendments to guarantee the best practices are being met in the standards, the AODA will be a well meaning document that does not meet its goal of creating equity in Ontario. The “Five E” policy analysis of the AODA demonstrates that O. Reg. 191/11 s.14 does not have the proper mechanisms in place to ensure equity in Ontario with regards to websites and internet usage.

Conclusion and Areas for Future Research

This paper focused specifically on the website compliance standard; however, the AODA could be analyzed further as a whole or within each specific standard to determine if the policy is truly creating functional accessibility and equity in Ontario. There are other standards and regulations of the AODA that have the opportunity for enhancement, such as the Transportation Standards or Design of Public Space Standards. It is imperative the AODA be analyzed, critiqued, and updated on a regular basis to meet the needs of the Ontario population that has disabilities. The current means of enforcement are through administrative penalties which can be determined to be “of a minor, moderate or major nature.”¹³⁶

¹³⁶ Government of Ontario. "O. Reg. 191/11: INTEGRATED ACCESSIBILITY STANDARDS." Ontario.ca. April 13, 2015. Accessed October 02, 2017. <https://www.ontario.ca/laws/regulation/110191>.

The current legislation in Ontario that affects persons with disabilities do not have correlating definitions, standards, or compliance mechanisms. While a business may comply with the Ontario Building Code, they may not meet the compliance requirements for the Ontario Human Rights Code or the *Accessibility for Ontarians with Disabilities Act, 2005* and could be liable for legal action under different sections of both. This makes it difficult for businesses to have consistent accessibility standards as well as allow persons with disabilities in Ontario have the quality of life that is assured to them by all pieces of legislation. While this paper focused solely on the website standards, and the O.Reg. 191/11, an analysis could be completed on the different definitions of disability amongst all the current pieces of legislation and how this affects the type of accessibility created in each function.

This paper focused on the end user by analyzing the interpretation of the legislation; however, this did not account for the “middle man”: those who must comply with the legislation and must attempt to interpret and apply the standards. By adding this dimension to further research, a business model could be constructed to determine the best course of action for those that must reach WCAG 2.0 Level AA compliance now and in the future.

This paper was limited by the type of analysis as it focused heavily on interpretation of the legislation and its context; however, it could be improved through incorporating interviews and surveys with those who are protected by the AODA. Furthermore, using experiments, such as having a person with a disability attempt to open media content on a variety of websites, would improve the ability to create recommendations for specific standards for creating new media that functions for the end user in addition to the content creators.

Through a “Five E” analysis of the *Accessibility for Ontarians with Disabilities Act, 2005* and Ontario Regulation 191/11, it is apparent that the Government of Ontario did not take into consideration the future updates in technology for on-line accessibility. By using an International Standards Organization regulation, Web Content Accessibility Guidelines 2.0, rather than creating their own standards for compliance, the AODA does not allow for updates to be made to the compliance of creating an accessible website for governments or businesses. The standards are not effective or cost efficient as the Government of Ontario has not met the requirements for compliance by the intended date.

As the internet and technology are always updating and changing, it is recommended that the AODA be amended to include either a specific set of standards created by the Government of Ontario or a stipulation that the website must comply with the most recent WCAG and be given a year to update after the release of such standards. With the scheduled update to WCAG, WCAG 2.1 that will be released in 2018, it is essential that this amendment be made as soon as possible to ensure that compliance can be met within six (6) months of the standards release date for Level A and one (1) year for Level AA. Without implementing amendments and changes to the website standards and compliance requirements, there will be a lack of accessibility for Ontarians with disabilities, limiting the intended outcome of the *Accessibility for Ontarians with Disabilities Act, 2005*.

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Appendix A: Quick Reference Guide for WCAG 2.0



WCAG 2 at a Glance

Perceivable

- Provide **text alternatives** for non-text content.
- Provide **captions and other alternatives** for multimedia.
- Create content that can be **presented in different ways**, including by assistive technologies, without losing meaning.
- Make it easier for users to **see and hear content**.

Operable

- Make all functionality available from a **keyboard**.
- Give users **enough time** to read and use content.
- Do not use content that causes **seizures**.
- Help users **navigate and find content**.

Understandable

- Make text **readable and understandable**.
- Make content appear and operate in **predictable** ways.
- Help users **avoid and correct mistakes**.

Robust

- Maximize **compatibility** with browsers and user tools.

This page provides a summary of Web Content Accessibility Guidelines (WCAG 2.0); however, it is **paraphrased and it is not a definitive version**.

Please see the following key resources for learning and using WCAG 2.0.

- WCAG Overview — www.w3.org/WAI/Intro/wcag
- How to Meet WCAG 2.0: A customizable quick reference to WCAG 2.0 requirements (Success Criteria) and techniques — www.w3.org/WAI/WCAG20/quickref

Appendix B: Accessibility Testing for the Government of Ontario Website

The effectiveness concept to be measured is the proven ability of the persons with disabilities to access information on the Government of Ontario's website. This will be identified through placing a sample of the Government of Ontario's web content through AChecker, <https://achecker.ca/checker/index.php>, to determine the accessibility of specific web pages. This website is listed as one resource on the W3C website to check compliance with WCAG 2.0 for web pages. As the Government of Ontario date of compliance with Level A and AA of WCAG 2.0 was January 1, 2016, the websites that are owned and operated by the Government of Ontario, which for the purposes of this paper are directly linked from the Government of Ontario website, should have no known, likely, or potential problems after AChecker has finished its analysis. This effectiveness test would have included a sampling of the compliance of PDFs; however, the Government of Ontario website does not include PDFs on their website furthering indicating the difficulty of creating an accessible PDF and the exorbitant cost of remediating PDF documents.

Each web page visited was run through the AChecker website <https://achecker.ca/checker/index.php>. This website analyzes the web page in accordance with meeting success criteria for WCAG 2.0 Level AA which must incorporate success criteria for Level A. These web pages were all assessed between 6:00pm EST and 6:30pm EST on Thursday, October 12, 2017 from Windsor, Ontario and could have been updated after this to meet compliance standards. A sampling of twenty (20) web pages were assessed and all were accessed starting at the home page "Government of Ontario," which can be found at <https://www.ontario.ca/page/government-ontario>, prior to selecting a link to reach a different web page that was owned and operated by the Government of Ontario. Each page was assessed in English and French, the official languages of the Government, to ensure that there was no bias between either language in terms of accessibility.

AChecker defines "Known Problem" as "problems that have been identified with certainty as accessibility barriers" that must be modified and fixed.¹³⁷ "Likely Problems" are "problems that have been identified as probable barriers, but require a human to make a decision."¹³⁸ "Potential Problems" are problems that AChecker cannot identify, that require a human decision which may require modification but "in many cases ... just need to confirm that the problem described is not present."¹³⁹

The data below states only the category of problems that had more than one (1) listed. It does not list the type of problem or the success criteria that was

¹³⁷ AChecker. "AChecker Handbook." AChecker Handbook. Accessed October 12, 2017. <https://achecker.ca/documentation/index.php?p=checker%2Findex.php>.

¹³⁸ Ibid.

¹³⁹ Ibid.

not met for each problem. To view the webpage checked, please click on the title of the webpage in the “Web Page Title” column. Please note that all hyperlinks are in English but have the option to change to French on the website itself.

Table 1: AChecker Testing for the Government of Ontario

Web Page Title	AChecker - English	AChecker - French	Date Accessed	Time Assessed
Government of Ontario	1 Known Problem; 57 Potential Problems	1 Known Problem; 57 Potential Problems	12/10/2017	E: 6:00pm EST F: 6:02pm EST
Education and Training	1 Known Problem; 57 Potential Problems	1 Known Problem; 57 Potential Problems	12/10/2017	E: 6:03pm EST F: 6:03pm EST
Choose a Career	1 Known Problem; 57 Potential Problems	1 Known Problem; 57 Potential Problems	12/10/2017	E: 6:04pm EST F: 6:04pm EST
Ministry of Advanced Education and Skills Development	51 Known Problems; 1145 Potential Problems	49 Known Problems; 1140 Potential Problems	12/10/2017	E: 6:05pm EST F: 6:05 pm EST
Environment and Energy	1 Known Problem; 57 Potential Problems	1 Known Problem; 57 Potential Problems	12/10/2017	E: 6:07pm EST F: 6:07pm EST
Map: Great Lakes Guardian Community Fund	1 Known Problem; 237 Potential Problems	1 Known Problem; 241 Potential Problems	12/10/2017	E: 6:08pm EST F: 6:09pm EST
Foodland Ontario	7 Known Problems; 230 Potential Problems	6 Known Problems; 1 Likely Problem; 232 Potential Problems	12/10/2017	E: 6:10pm EST F: 6:10pm EST

Web Page Title	AChecker - English	AChecker - French	Date Accessed	Time Assessed
Ministry of Indigenous Relations and Reconciliation	1 Known Problem; 57 Potential Problems	1 Known Problem; 57 Potential Problems	12/10/2017	E: 6:11pm EST F: 6:12pm EST
Ontario Disability Support Program (ODSP)	65 Known Problems; 345 Potential Problems	65 Known Problems; 362 Potential Problems	12/10/2017	E: 6:14pm EST F: 6:14pm EST
Ontario Works	65 Known Problems; 346 Potential Problems	65 Known Problems; 1 Likely Problem; 363 Potential Problems	12/10/2017	E: 6:15pm EST F: 6:15pm EST
Social Assistance Policy Directives	65 Known Problems; 764 Potential Problems	65 Known Problems; 1 Likely Problem; 992 Potential Problems	12/10/2017	E: 6:16pm EST F: 6:17pm EST
Ministry Forms: Ontario Disability Support Program	116 Known Problems; 493 Potential Problems	111 Known Problems; 466 Potential Problems	12/10/2017	E: 6:18pm EST F: 6:19pm EST
Health Care in Ontario	1 Known Problem; 57 Potential Problems	1 Known Problem; 57 Potential Problems	12/10/2017	E: 6:20pm EST F: 6:20pm EST
Get Coverage for Prescription Drugs	1 Known Problem; 57 Potential Problems	1 Known Problem; 57 Potential Problems	12/10/2017	E: 6:21pm EST F: 6:21pm EST

Web Page Title	AChecker - English	AChecker - French	Date Accessed	Time Assessed
Central Forms Repository	4 Known Problems; 1 Likely Problem; 263 Potential Problems	4 Known Problems; 1 Likely Problem; 262 Potential Problems	12/10/2017	E: 6:22pm EST F: 6:23pm EST
Seniors Active Living Centres Act, 2017, S.O. 2017, c. 11, Sched. 6	0 Problems	26 Known Problems; 1 Likely Problem; 260 Potential Problems	12/10/2017	E: 6:27pm EST F: 6:27pm EST
e-Laws	72 Potential Problems	74 Potential Problems	12/10/2017	E: 6:27pm EST F: 6:27pm EST
Human Rights	5 Known Problems; 427 Potential Problems	269 Potential Problems	12/10/2017	E: 6:28pm EST F: 6:28pm EST
Better Justice Together	290 Potential Problems	290 Potential Problems	12/10/2017	E: 6:29pm EST F: 6:30pm EST
MPPs	1 Known Problem; 121 Potential Problems	1 Known Problem; 121 Potential Problems	12/10/2017	E: 6:30pm EST F: 6:30pm EST

Appendix C: Cost Analysis for Training, Consultations, PDF Remediations

Eliquo

Eliquo offers twenty-three (23) training courses that specifically address accessibility issues. **Table 2: Eliquo Training Costs** outlines the Training Course name, the amount of time required to take the course, the location to take the training, the language it is offered in, and the price per student. Clicking on the Training Course name will direct you to the webpage for the training course that outlines more information regarding the course including a full description of what the course entails. If an asterisk is next to the course name, this course requires one (1) or more prerequisites to take the course.

Table 2: Eliquo Training Costs

Training Course	Time	Location	Language Offered In	Price Per Student
Adobe Acrobat Pro: Accessible PDFs with PDF/UA and WCAG 2.0 (ADAC301)*	9:00am EST to 4:00pm EST; 2 days	Ottawa or Online	English	\$635CAD
Adobe Acrobat Pro: Accessible PDF Forms (AcroForms) with PDF U/A and WCAG 2.0 (ADAC307)*	9:00am EST to 4:00pm EST; 3 days	Ottawa or Online	English	\$895CAD
Creating Accessible Captivate eLearning Projects (ADCA301)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD

Training Course	Time	Location	Language Offered In	Price Per Student
Adobe InDesign: Creating Accessible PDFs with WCAG 2.0 and PDF/UA (ADID302)*	9:00am EST to 4:00pm EST; 2 days	Ottawa or Online	English	\$635CAD
Adobe LiveCycle Designer: Accessible PDF Forms with WCAG 2.0 (ADLD501)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
Creating Accessible eLearning with Universal Design for Learning (UDL) (EQEL206)*	9:00am EST to 4:00pm EST; 2 days	Ottawa or Online	English	\$635CAD
Creating Accessible Articulate Storyline eLearning Projects (EQEL306)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
Accessible Audio and Video with WCAG 2.0 (EQVP201)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD

Training Course	Time	Location	Language Offered In	Price Per Student
<u>WCAG 2.0: Understanding the Web Content Accessibility Guidelines (EAW101)</u>	9:00am EST to 4:00pm EST; 2 days	Ottawa or Online	English	\$635CAD
<u>WCAG Techniques for Web Content (EAW201)*</u>	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
<u>WCAG Techniques for Web Applications and Forms (EAW202)*</u>	9:00am EST to 4:00pm EST; 2 days	Ottawa or Online	English	\$635CAD
<u>Testing Accessible Web Pages (EAW203)*</u>	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
<u>Testing Accessible Web Applications and Forms (EAW204)*</u>	9:00am EST to 4:00pm EST; 2 days	Ottawa or Online	English	\$635CAD
<u>Testing Accessible PDF Documents with WCAG 2.0 and PDF/UA (EAW205)*</u>	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD

Training Course	Time	Location	Language Offered In	Price Per Student
<u>Testing Accessible LiveCycle Designer PDF (XFA) Forms with WCAG 2.0 AA (EAW206)*</u>	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
<u>Testing Accessible PDF Forms (AcroForms) with WCAG 2.0 AA and PDF/UA (EAW208)*</u>	9:00am EST to 4:00pm EST; 2 days	Ottawa or Online	English	\$635CAD
<u>Understanding the Accessibility for Ontarians with Disabilities Act (AODA) (EAW209)</u>	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
<u>Testing Websites and Documents with Screen Reading Technologies (SRTs) on Desktop for PC (EAW210)*</u>	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD

Training Course	Time	Location	Language Offered In	Price Per Student
Testing Websites and Documents with Screen Reading Technologies (SRTs) on Desktop for Mac (EAW211)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
Testing Websites and Documents with Screen Reading Technologies (SRTs) on Mobile for Android (EAW212)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
Testing Websites and Documents with Screen Reading Technologies (SRTs) on Mobile for iOS (EAW213)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD
Creating Accessible Documents in Microsoft Excel and PowerPoint (MSEP301)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD

Training Course	Time	Location	Language Offered In	Price Per Student
Creating Accessible Documents in Microsoft Word (MSMW301)*	9:00am EST to 4:00pm EST; 1 day	Ottawa or Online	English	\$435CAD

David Berman Communications

David Berman Communications offers one (1) training course that specifically address accessibility issues. **Table 3: David Berman Communications Training Costs** outlines the Training Course name, the amount of time required to take the course, the location to take the training, the language it is offered in, and the price per student. Clicking on the Training Course name will direct you to the webpage for the training course that outlines more information regarding the course including a full description of what the course entails. If an asterisk is next to the course name, this course requires one (1) or more prerequisites to take the course.

Table 3: David Berman Communications Training Costs

Training Course	Time	Location	Language Offered In	Price Per Student
eAccessibility with David Berman: WCAG 2.0 for Web, Office, InDesign, PDF	1:00pm EST to 4:50pm EST; half-day	Ottawa or Online	English	Regular: \$330 CAD (\$260 USD) which includes a manual, certificate, cancellation, and one-on-one coaching after; Economy: \$249 CAD (\$198 USD)

CanAdapt

CanAdapt offers twelve (12) training course that specifically address accessibility issues. **Table 4: CanAdapt Training Costs** outlines the Training Course name, the amount of time required to take the course, the location to take the training, the language it is offered in, and the price per student. Clicking on the Training Course name will direct you to the webpage for the training course that outlines more information regarding the course including a full description of what the course entails. If an asterisk is next to the course name, this course requires one (1) or more prerequisites to take the course.

Table 4: CanAdapt Training Costs

Training Course	Time	Location	Language Offered In	Price Per Student
WCAG for Senior Managers & Policy Makers SMP-01	2 hours; 20 minute summary version available	Online	English	N/A
Introduction to WCAG and Rolling it Out Across Organizations INT-02	½ day	Online	English	N/A
PDF Strategies for Decision Makers Code: PDF-05	½ day	Online	English	N/A
Advanced Deep Dive into WCAG Code: ADD-06*	1 day	Online	English	N/A

Training Course	Time	Location	Language Offered In	Price Per Student
Advanced Deep Dive into WAI ARIA Code: ADD-07*	1 day	Online	English	N/A
Quality Assurance and Testing for WCAG QAT-05*	1 day	Online	English	N/A
Accessible Microsoft Office Documents Word, PowerPoint, Excel MSO-07*	1 day	Online	English	N/A
WCAG for COMS & CMS Content Providers COM-03*	1 day	Online	English	N/A
WCAG for Designers and Marketing, UI and UX COM-04*	½ day	Online	English	N/A
Accessible PDFs with Acrobat Pro PDF-05	1 day	Online	English	N/A
Accessible InDesign Version CS 5.5, 6, Creative Cloud IND-08*	1 day	Online	English	N/A

Training Course	Time	Location	Language Offered In	Price Per Student
Accessible form creation with LiveCycle forms Code: LCF-01*	1 day	Online	English	N/A

WCAG Compliance, Inc.

WCAG Compliance Inc. offers six (6) training course that specifically address accessibility issues. **Table 5: WCAG Compliance Inc. Training Costs** outlines the Training Course name, the amount of time required to take the course, the location to take the training, the language it is offered in, and the price per student. Clicking on the Training Course name will direct you to the webpage for the training course that outlines more information regarding the course including a full description of what the course entails. If an asterisk is next to the course name, this course requires one (1) or more prerequisites to take the course.

Table 5: WCAG Compliance Inc. Training Costs

Training Course	Time	Location	Language Offered In	Price Per Student
Accessible Documents One Day Workshop	7 hours	Ottawa	English	\$349USD (lunch included)
Creating Accessible Word Documents	3 hours	Ottawa	English	\$199USD
Creating Accessible PowerPoint Documents	3 hours	Ottawa	English	\$199USD

Training Course	Time	Location	Language Offered In	Price Per Student
<u>Creating Accessible PDF from Word and PowerPoint Documents</u>	3 hours	Ottawa	English	\$199USD
<u>Creating Accessible PDF Forms</u>	3 hours	Ottawa	English	\$199USD
<u>PDF Remediation Workshop</u>	3 hours	Ottawa	English	\$199USD

Vita Auctoris

Jamie Kramer was born in 1992 in Niagara Falls, Ontario and graduated from Lakeshore Catholic High School in 2010. From there she went on to the University of Ottawa where she obtained an Honours Bachelor of Social Sciences degree. She then received an Ontario Post-Graduate Certificate from Niagara College in 2015 and holds a Certified Human Resources Professional designation. She is currently a candidate for the Master of Art's degree in Political Science at the University of Windsor and hopes to complete her requirements in Fall 2017.