Persons with Disabilities
Accessibility to Technical Occupations
Labour Market Partnership Project
Final Report

Prepared by the Applied Science Technologists
and Technicians of British Columbia

January 2017
Preface

ASTTBC is pleased to present this final report of our *Persons with Disabilities Accessibility to Technical Occupations* project. This Labour Market Partnership (LMP) project developed strategies to assist employers from the applied science and engineering sector to consider the untapped talent pool of persons with disabilities to address their skills shortages.

A recent report from the Asia Pacific Gateway Skills Table identified the looming labour market supply challenges for engineers, geoscientists, technologists and technicians with 31,000 potential job openings needing to be filled by 2024. This demand vs. supply imbalance within BC’s tech sector was also identified in the consultations of the BC Tech Sector Labour Market Partnership, highlighting the potential impact to the growth of BC’s businesses requiring an additional 14,500 other workers (i.e. under-represented groups) to fill key roles.

The *Persons with Disabilities Accessibility to Technical Occupations* project final report outlines recommendations to support employers integrating persons with disabilities into our sector. The recommendations are situated within the context of BC’s two key provincial strategies; Accessibility 2024 and the BCTECH Strategy 2016, aligning ASTTBC’s commitment to linking persons with diverse abilities with employment opportunities within the tech sector.

This project was made possible through the support of many partners and individuals who recognized the importance of supporting persons with disabilities accessing employment in technical occupations. They voluntarily contributed time, knowledge and expertise to make this project a success. In particular, I would like to thank our project partners from Association of Professional Engineers and Geoscientists of BC (APEGBC), Association of Consulting Engineering Companies British Columbia (ACEC-BC), British Columbia’s Prior Learning Action Network (BC Plan), BC Centre for Employment Excellence, Back in Motion, and Surrey Board of Trade for their participation in the Project Steering Committee and encouraging their members’ participation in the various employer engagement initiatives.

I also thank volunteer members of the Persons with Disabilities Focus Group who provided valuable insights from their personal experiences seeking employment within the applied science and engineering sector. I acknowledge the work of John Coward, the Labour Market Consultant contracted for this project, for drafting this report with support from ASTTBC staff who contributed information, data and feedback.

Finally, I acknowledge the support of our funder Ministry of Social Development and Social Innovation, through its Community and Employer Partnership Fund, not only for its financial assistance but also its guidance throughout the implementation of this initiative. ASTTBC is committed to build on the learnings from this initiative and work collaboratively with our partners towards expanding opportunities for persons with disabilities in the applied science and engineering sector.

John Leech, AScT, CAE
Chief Executive Officer
Applied Science Technologists and Technicians of BC
Statement of Endorsement

The Steering Committee for the *Persons with Disabilities Accessibility to Technical Occupations* Labour Market Partnership project is a group of industry, employer and community leaders brought together by ASTTBC, to support the development of strategies to support persons with diverse abilities interested in pursuing careers as technologists, technicians or technical specialists as well as the engineering field where appropriate.

The members of the Steering Committee lends its general support to the direction enunciated in this ASTTBC report and encourages decision-makers, business leaders and others in positions of influence to embrace and act on this Report’s recommendations.

This endorsement is offered by the individuals serving on the Steering Committee and does not necessarily represent the views of the organizations with which members are employed.

**Steering Committee Membership**

John Leech - CEO, Applied Science Technologists and Technicians of British Columbia  
Janet Sinclair - COO, Association of Professional Engineers and Geoscientists of BC  
Keith Sashaw - President and CEO, Association of Consulting Engineering Companies British Columbia  
Anita Huberman - CEO, Surrey Board of Trade  
Brent Mulhall - VP of Business Development and Strategy, Back in Motion  
Susanna Gurr - Managing Director, BC Centre for Employment Excellence  
Shawn de Raaf – Research Coordinator, BC Partners in Workforce Innovation  
Charles Joyner – Chairperson, BC Prior Learning Action Network
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Executive Summary

Applied Science Technologists and Technicians of British Columbia (ASTTBC), one of BC’s largest professional associations/regulators, offers initiatives focused on promoting careers in the applied science and engineering sector. ASTTBC has played a leading role promoting under-represented groups accessing employment opportunities in technical occupations and recognize the potential of persons with disabilities as an additional talent pool for employers to consider in addressing their skills shortages. This Persons with Disabilities Accessibility to Technical Occupations Labour Market Partnership project reflects ASTTBC’s ongoing leadership in developing initiatives to support persons with disabilities in the workforce and the employers who pave the way with strategies to “increase the success of people with disabilities in trades/technical programs or high labour market demand programs”, as outlined in the Province’s Accessibility 2024 action plan.

Recent labour market reports outline the critical skills shortages in particular the “looming labour market supply challenges for engineers, geoscientists, technologists and technicians with more than 31,000 job openings needing to be filled by 2024” necessitating “employers...to develop innovative ways to acquire and integrate skilled talent”. The Province’s Accessibility 2024 action plan calls for innovative training and initiatives to ensure “B.C. has the highest labour participation rate for people with disabilities in Canada by 2024”. ASTTBC’s project aligns with this by mobilizing employers to support “the success of [persons with disabilities] in technical and high-demand markets” and addressing skills shortages in technical careers.

ASTTBC developed an organizational structure for the project implementation including a Steering Committee composed of the project partners, a Persons with Disabilities Focus Group composed of persons with a variety of abilities interested in technical careers, and finally a Research Team composed of partner organization representatives with particular expertise related to working directly with addressing the needs of persons with disabilities and the employers who may hire this population group into technical occupations. Project partners included ASTTBC, Association of Professional Engineers and Geoscientists of BC (APEGBC), Association of Consulting Engineering Companies British Columbia (ACEC-BC), British Columbia’s Prior Learning Action Network (BC Plan), Surrey Board of Trade, Back in Motion, and BC Centre for Employment Excellence.

ASTTBC, in collaboration with our partners, has developed a consultation process with employers from the applied science and engineering sector across the Lower Mainland. This engagement process included two employer workshops with 34 employers in attendance held in Surrey and Vancouver, an online employer survey with 160 responses, and exceeded all targets for employer engagement. The participating employers reflected 28 of 29 disciplines regulated by ASTTBC and represented the full spectrum from micro to large businesses. The consultation solicited input about the barriers and opportunities employers face when considering persons with disabilities to be hired into technologists, technicians and technical specialists’ positions. The engagement process was further enhanced by the additional consultation with key stakeholders including job developers, ASTTBC Managers and Disability Service Providers with particular expertise working with employers to place persons with disabilities. The data and recommendations collected through the consultations were reviewed and further developed by the project Research Team as well as Persons with Disabilities Focus Group for inclusion in this final report.
The consultation process revealed significant insights into the unique challenges and opportunities that persons with disabilities face in the applied science and engineering sector. The most interesting finding was that the label *persons with disabilities* had negative connotations associated with the limitations implied and it was suggested that the reframed term *persons with diverse abilities* be used to emphasize abilities versus limitations.

The engagement led to a deeper understanding and breadth of commitment from the various groups interested in collaborating and participating in ongoing ASTTBC initiatives supporting persons with disabilities pursuing technical occupations. The project’s key findings highlighted that the applied science and engineering sector’s current culture is not well informed about hiring persons with disabilities, nor is it aware of the various resources available to support recruitment and workplace accommodation. Employers recognize that alternative talent pools including persons with disabilities are essential to meeting their current and future skills shortages. Employers are receptive to exploring the hiring of persons with disabilities into technical occupations with consideration to safety and risk mitigation strategies, as well as having access to best practices.

There is significant interest in supporting ASTTBC’s future initiatives to develop a one-stop repository of resources and success stories to support the hiring of persons with diverse abilities with overwhelming support for ASTTBC’s proposed TechABILITY webpage. There is recognition of the need for more research and test occupational pathways to determine the best fit and alignment of the capabilities of persons with diverse abilities, as well as safety and risk mitigation strategies. From the consultation, 38 employers have committed to support ASTTBC’s various ongoing and future research and training initiatives to support persons with disabilities in advancing their careers in applied science and engineering.

The consultation clearly demonstrated the interest of employers from the applied science and engineering sector in considering persons with diverse abilities as a talent pool to tap into to address skills and labour shortages in the sector. A significant number of employers believed that persons with diverse abilities could occupy almost all technical occupations given the relevant training and appropriate workplace accommodations and supports. A wide range of strategies and recommendations were identified to target this talent pool to address sector needs, potential ASTTBC initiatives and opportunities for persons with diverse abilities. Many of these recommendations can be quickly initiated while others will require additional allocation of resources to support their implementation. ASTTBC’s goal is to serve as a catalyst and facilitator to inform and drive a shift in the culture within the sector to consider persons with diverse abilities as candidates for technical occupations, given relevant training and workplace accommodations and supports.
Background

Applied Science Technologists and Technicians of British Columbia (ASTTBC) is a not for profit, provincial non-governmental professional organization operating in BC, serving the public by registering and regulating applied science and engineering technologists, technicians and technical specialists. ASTTBC, one of the largest professional associations/regulators in BC with over 10,500 members, was established in 1958 and granted self-governing professional status with the ASTT Act in 1985. One of ASTTBC’s strategic directions is to develop initiatives focused on promoting technology careers, skills and education in BC with specific emphasis on under-represented groups including youth, Aboriginals, immigrants, people with disabilities and women.

ASTTBC has been developing and delivering labour market programming, tools and resources for technologists, technicians and technical specialists in BC for over 25 years with a strong commitment to a safe, healthy, and sustainable society and environment. ASTTBC has broad experience in the tech sector specifically as it relates to regulating technologist, technicians and technical specialists in 45 occupations including: information & communication technology; digital media & wireless; life sciences; clean technology; aerospace services & manufacturing; and engineering & other services. Our areas of technical specialist certification and training expertise include: building design, construction safety, property inspection, steel detailing, public works inspection, underground utility locator, onsite wastewater, site improvements surveys and fire protection.

ASTTBC has taken a leadership role in working with governments, industry and educational institutions to develop a strategic plan to promote technology careers and skills training in BC. The organization was instrumental in developing a number of innovative tools and resources to support labour market programming and professional development. These include the websites: TechJOBS, TechPROFILE, Technology Registrations Canada (TRC) and International Technology Education Recognition (ITER) which host numerous labour market focused occupational specific training resources including self-study guides, videos, online workshops, etc.

ASTTBC has played a leading role promoting under-represented groups accessing employment opportunities in applied science and engineering including supporting the development of BC Women in Technology (BCWiT), First Nations Career Council (FNCC) and Internationally Trained Technology Professionals (ITTP). We recognize the potential of persons with disabilities as an additional talent pool for employers to consider in addressing their skills shortages.

ASTTBC initiated discussions with Community Living British Columbia (CLBC) and other disability service providers to explore how the organization might assist employers in recruiting and successfully integrating persons with disabilities into applied science and engineering technical occupations. This resulted in ASTTBC joining BC Partners in Workforce Innovation (BCWiN) to strengthen our commitment to develop strategies specific to this specialized population.
At one of BCWIN’s events showcasing employer best practices, we were introduced to Randy Lewis, former Senior Vice President of Supply Chain and Logistics at Walgreens, who “pioneered a disability employment model in its distribution centers that resulted in ten percent of its workforce consisting of people with disabilities”. Randy Lewis was invited to ASTTBC’s Annual General Meeting (AGM) to present on Walgreen’s model that has been referred to as the “gold standard of disability hiring”. His presentation motivated ASTTBC to consider initiatives building on this example of best practice, and inspired the development of our Persons with Disabilities Accessibility to Technical Occupations LMP project. This LMP project is reflective of our organization’s ongoing drive to be a leader in developing initiatives to support people with disabilities in the workforce and the employers who pave the way with strategies to “increase the success of people with disabilities in trades / technical programs or high labour market demand programs”, as outlined in the Province’s Accessibility 2024 action plan.

The Skills Gap in Applied Science and Engineering Sector

The Asia Pacific Gateway Skills Table’s recent Engineers, Geoscientists, Technologists and Technicians Labour Market Information report outlines the critical skills shortages projected out to 2024, in 31 out of 45 technical occupations. This report was developed in partnership with ASTTBC and summarized the “looming labour market supply challenges for engineers, geoscientists, technologists and technicians with more than 31,000 job openings needing to be filled by 2024, and nearly 11,500 new jobs in 31 key occupations will be created”. The report identified that “employers will be required to develop innovative ways to acquire and integrate skilled talent in the key positions highlighted in the study,” as stated by Keith Sashaw, Chief Executive Officer, ACEC-BC.

ASTTBC, through its engagement with their database of over 500 employers in regulated sectors, has been encouraged to broaden its programming focus on additional under-represented groups beyond Aboriginals, immigrants, and women to include people with disabilities, to meet the needs of employers requesting strategies to tap into alternative labour pools to address their hiring needs. People with disabilities have been identified as a talent pool as they are highly motivated, committed and loyal, with diverse technical abilities to offer employers, given the opportunity as a previously untapped pool. People with disabilities would benefit from access to well-paid employment opportunities they would not normally be able to access without employer and community support.

The Province’s Accessibility 2024 action plan includes innovative training and initiatives to support their goal to ensure “B.C. has the highest labour participation rate for people with disabilities in Canada by 2024”. The labour market participation gap for persons with disabilities in B.C. is significant, with “more than 546,000 people in B.C. over the age of 15, who identify as having a disability (15%)”; and “the employment rate for people with disabilities (aged 15 to 64 years) is 18 percentage points lower than for people without disabilities”, resulting in higher unemployment rates for this population group. ASTTBC’s Labour Market Partnership project aligns with BC’s Accessibility 2024, by mobilizing employers to support “the success of [persons with disabilities] in technical and high-demand markets”, addresses skills shortages in technical careers while supporting the successful integration of persons with disabilities in the workforce as highlighted in the BC Jobs Plan.
LMP Project Organizational Structure

ASTTBC developed an organizational structure for the LMP project including a Steering Committee composed of the project partners, a Persons with Disabilities Focus Group composed of persons with a variety of abilities interested in technical careers, and finally a Research Team composed of partner organization representatives with particular expertise related to working directly with addressing the needs of persons with disabilities and the employers who may hire this population group into technical occupations. Each of these groups adopted Terms of Reference outlining the focus of their roles, responsibilities and commitments to support the project.

Steering Committee

The Steering Committee was composed of senior executives from ASTTBC, Association of Professional Engineers and Geoscientists of BC (APEGBC), Association of Consulting Engineering Companies British Columbia (ACEC-BC), BC Centre for Employment Excellence, British Columbia’s Prior Learning Action Network (BC Plan), BC Partners in Workforce Innovation, Back in Motion, and Surrey Board of Trade.

The Committee met three times during the project, providing overall leadership and direction to the initiative. Committee members conceptualized the project’s organizational structure, developed the workplan, reviewed the employer engagement process, and endorsed the recommendations outlined in this final report.

On September 27, 2016, a number of these partner organizations attended the launch of the project, at an employer recognition event hosted by the BC Partners in Workforce Innovation (BCWIN), where John Leech, CEO of ASTTBC, thanked the Ministry of Social Development and Social Innovation for supporting this collaborative and innovative initiative designed to meet the dual objectives of supporting the workforce needs of BC businesses and improving employment outcomes for people with disabilities.

https://www.youtube.com/watch?v=v0dC1SM2mC4&feature=youtu.be

Shown - BCCFEE; Brent - Back in Motion; Jamie - BCWIN; John - ASTTBC; Amelia - ASTTBC
Persons with Disabilities Focus Group

The Persons with Disabilities Focus Group was composed of eight members with a variety of disabilities, all of whom had experience or interest in careers as technologists, technicians and technical specialists. The group provided the project guidance from the perspective of persons with disabilities interested in technical career opportunities, and provided personal insights into the barriers that might impact employment opportunities in the sector. In addition, the group provided ongoing consultation support to the project, offering input and feedback on various project activities including the development of the employer workshop format, employer survey content, analysis of information and data collected from the employer engagement. One of the members of this Focus Group, Amelia Cooper was hired as the project’s administrative assistant to provide support in recording minutes of various meetings.

The group met four times over the course of the project with members attending the workshops to network with employers and bring their experience to the discussions. The group also provided feedback on the PowerPoint used in the workshops as well as the summations from the employer workshops and survey to assist in the development of recommendations included in this report.

Brandon Dahl, an aspiring young artist, contributed an artistic rendition of the impact of technical occupations on our communities. The image was used in the PowerPoint for the employer workshop as well as on the online survey. Brandon has worked at Studio Seventy Three, a growing business proudly supported by Community Living Society.

Research Team

The Research Team was comprised of representatives of the partners ASTTBC, Back in Motion, BC Partners in Workforce Innovation, and BC Prior Learning Action Network (BC PLAN) with particular expertise related to working directly with addressing the needs of persons with disabilities and the employers who may hire this population group into technical occupations. Kerry Jothen, a labour market consultant well-known in the sector for research and industry surveys, provided assistance in the development of the online employer survey. The Team met three times over the course of the project and provided valuable input on the development of the employer workshop model, as well as the structure and content of the employer online survey. Members recommended the inclusion of additional focus groups for the consultation including job developers, disability service providers and ASTTBC managers and to provide further insight into employer recruitment strategies and supports as well as the identification of technical occupational pathways suitable for persons with disabilities. Finally, the Research Team reviewed the data collected from the engagement process and offered recommendations included in this final report.

Engagement and Consultation with Employers

ASTTBC, in collaboration with members of the project steering committee, developed an engagement and consultation process with employers from the applied science and engineering sector across the Lower Mainland. This engagement process included employer workshops, an online employer survey as well as
additional focus groups with key stakeholders supporting the integration of persons with disabilities within the sector. The consultation was structured so that both the employer workshops and the online survey mirrored each other in soliciting input about the barriers and opportunities for hiring persons with disabilities into technologists, technicians and technical specialists’ positions. The data and recommendations collected through the consultations were reviewed and further developed by the project Research Team as well as Persons with Disabilities Focus Group for inclusion in this final report.

**Employer Workshops**

ASTTBC organized two employer workshops, one co-hosted with Surrey Board of Trade in Surrey, and the other in Burnaby attracting employers from Vancouver and surrounding municipalities. With the cooperation of our partners, APEGBC, ACEC-BC, BCWiN, Back in Motion, and Surrey Board of Trade, we extended invitations to over 400 employers from the applied science and engineering sector to participate in the consultation process. There were 34 employers in attendance at the workshops, surpassing our target of 20-30 employers to provide insight into the challenges and potential opportunities for hiring persons with disabilities into the applied science and engineering sector.

The employer workshops were audio-recorded to capture the discussion of strategies to assist integration of persons with disabilities into the applied science and engineering sector through the identification of occupational pathways as well as supports available to facilitate workplace integration. The workshops included presentations from various organizations that provide supports to employers hiring persons with disabilities (BC Partners in Workforce Innovation, Neil Squires Society’s Technology@Work Program, Rick Hansen Foundation Accreditation) as well as work subsidy programs through WorkBC Centres and BC Centre for Ability’s Opportunities Fund for Persons with Disabilities.

The consultation process highlighted examples of best practices of workforce inclusion strategies adopted by large and small employers in the sector including BC Hydro, City of Surrey, VanCity, Pacific Bolt Manufacturing, Jorgensens Inc., Focus Professional Services, etc. It included discussions of inclusive hiring strategies including recruitment, interviewing, onboarding, integration, workforce preparation and succession planning to support persons with disabilities into applied science and engineering positions. It was noted that significant progress has been made in developing these strategies in relationship to the integration of immigrants and Indigenous populations, however more work could be done to tailor these strategies to address the particular needs of persons with disabilities.

**Online Employer Survey**

ASTTBC developed the initial online employer survey that was reviewed and modified with input from the project research team and persons with disabilities focus group. The online survey was designed to mirror the employer workshops, and offer an opportunity for those employers who were not able to participate in the face-to-face workshops, to provide their input into the consultation process. Although we initially were going to utilize Survey Monkey as our online survey platform, we opted to use Google Survey as it provided us with the opportunity to load video clips of the project announcement, reference materials and comprehensive analytics. The data from the survey was compiled and presented to both the project research team and the persons with disabilities focus group for review.
Employer Profile Information

With the assistance of APEGBC, ACEC-BC, Surrey Board of Trade, and Back in Motion, the survey was sent out to over 10,000 employer contacts who were given two weeks in which to respond. A follow up request to participate was sent out after the first week which significantly increased the volume of employer responses. Overall, there were 160 responses returned, exceeding our projected target of 125 responses, as outlined in the contract.

The foundational data on employers revealed that the sample represented 28 of 29 ASTTBC disciplines, with the largest group of respondents identifying Civil Engineering as their primary business activities.

Participating employers represented various sized companies with the majority being medium and large. These employers indicated that they were facing significant challenges recruiting skilled candidates to fill job vacancies in the applied science and engineering sector with:

- 45.2% currently hiring
- 42.8% having difficulty finding qualified candidates
- 46.7% expressing concern about future workforce shortages

Inclusive Workplace Findings

Employers voiced a strong commitment to a diverse and inclusive workforce, and recognized themselves as ‘inclusive employers’ with half the respondents indicating that they have diversity and inclusion policies in place. Although employers acknowledged significant strides in hiring Aboriginals, immigrants and women to enhance their inclusive hiring practices, they recognized that limited progress had been made in hiring persons with disabilities.

In fact, a staggering 65.6% of the survey respondents indicated that less than 1% of their workforce identified as persons with disabilities with only 1.3% of employers having more than 10% of their workforce from this population group. This exemplifies a significant disconnect between the employers perception of their organizational commitment to inclusive diverse workplaces, and the actual composition of their workforce. It also to some extent, may reflect a lack of awareness of the extent of staff with undisclosed disabilities in their respective workplaces, due to a fear of disclosure and potential discrimination.
As the chart above indicates, half the participating employers have diversity and inclusion policies with 43.6% promoting themselves as inclusive employers, only 7.4% indicated that they strategically recruit persons with disabilities into technical occupations and only 10.7% regularly hiring this talent pool.

**Current Recruitment Strategies for Persons with Disabilities**

In responding to questions pertaining to current recruitment strategies specific to persons with disabilities, an overwhelming 61.6% recognized that they could do more to hire from this untapped labour pool. Employers indicated that they had minimal awareness of community services and supports available to them to hire persons with disabilities, and expressed interest in accessing available resources. Overall employers were receptive and interested in considering persons with disabilities as a potential talent pool to meet their hiring needs, given the right training and necessary accommodations and supports to ease the integration process. It was well regarded that post-secondary educational institutions with applied science and engineering programs, as well as ASTTBC as the BC regulator, were working collaboratively to support the transition of graduates with disabilities to technical occupations.
Top Technical Occupational Pathways

Participating employers recognized that there were opportunities to engage persons with disabilities in all technical occupational areas in the sector, given the right training, alignment of the disability with the occupation and appropriate employer supports. The top identified occupational pathways were IT, electronics, building design and technical specialists, because there are fewer perceived physical barriers to integrating persons with disabilities into the workplace.

Perceived Barriers to Hiring Persons with Disabilities

A portion of the employers expressed reservation about the perceived barriers of persons with disabilities integrating successfully into the workplace, with 42.8% identifying safety risks and the need for mitigation strategies as a major barrier to hiring from this talent pool. 29.6% of employers were apprehensive about the physical barriers preventing persons with disabilities having the capability to do the work or not fitting into the workplace culture (15.8%), particularly those with developmental disabilities who may have challenges to integrate into the workplace. An additional concern focused on the challenges associated with dismissing persons with disabilities (13.8%) and how it may be perceived in the workplace as to whether the person had to capacity to do the job.

Survey respondents (13.2%) identified the cost of ongoing support and increased supervision requirements as a barrier to hiring persons with disabilities, and whether it was financially viable to hire a candidate with individual needs requiring workplace supports. Concerns were raised about the potential impact on WCB rates for employers and extended health costs. Finally, the cost of accommodation, negative impact on productivity, and safety risks were also concerns, with emphasis on the need for mitigation processes through involvement of WorkSafeBC to support safety protocols in the hiring of persons with disabilities.

Employers shared that they were looking to hire highly motivated individuals with the ‘right fit’ to the organization, and a candidate who disclosed a disability would be considered, given the appropriate accommodations were available to support the successful integration into the workplace. It was interesting to note that 32.3% of respondents did not perceive there being any barriers to integrating persons with disabilities into their workplaces.
Overall, the online survey results indicated that employers acknowledged the needs to consider persons with disabilities, they expressed enthusiasm to consider this untapped pool with 38 employers committed to work with ASTTBC on developing initiatives to support the recruitment and integration of persons with disabilities in their workplaces, exceeding our target of 10 employers outlined in the contract. These employers showed considerable interest to recognize persons with disabilities as an important talent pool to tap into to address their labour and skills shortages in the upcoming years.

ASTTBC’s involvement as regulator gave employers more confidence to hire persons with disabilities with the capacity to work within technical occupations, given the appropriate workplace accommodations and employer supports. Employers expressed interest in reviewing examples of best practices in successful hiring of persons with disabilities as a component of a clearly articulated business case for hiring persons with disabilities, with specific emphasis on examples from tech sector to encourage more applied sciences and engineering employers to recruit and integrate persons with disabilities into the workforce.

**Job Developers Focus Group**

As recommended by the Project Research Team, a Job Developer Focus Group was hosted by Back in Motion, with 17 attendees representing various community service providers who work placing persons with disabilities with employers. Job developers reviewed strategies to support employers in hiring persons with disabilities interested in careers in applied science and engineering. Their discussions focused on recruitment, interviews, on-boarding, workplace integration, retention, risk-management, as well as the issue of client disclosure. The job developers debated client privacy versus disclosure, and all agreed that full disclosure of a client’s disabilities would provide greater opportunity to work more effectively with employers to address issues and develop solid workplace integration strategies.
Focus group participants shared that there was reluctance from employers to sign up for wage subsidies due to administrative documentation requirements, so it was imperative for job developers to establish long term trusting relationships with employers to ensure work placement matches met the needs of both the client and employer. It was established that all parties were better served when clients disclosed their disabilities, allowing job developers to affirm established trusting relationship with their employer contacts, leading to more successful work placements. This foundation of trust with employers was especially relevant given the time needed for job developers to establish long term relationships with employers, to identify the right match to support positive employment outcomes and contribute to the development of welcoming and inclusive workplaces.

The Focus Group discussed best practices related to recruitment, selection and integration strategies for persons with disabilities into the applied sciences and engineering sector, given the opportunity for relevant training and workplace accommodations. Job developers were in support of the development of the TechABILITY webpage as a tool to support employers committed to hiring persons with disabilities into technical occupations. The job developers recommended various resources to include in a repository of employer resources and supports to highlight inclusive hiring practices. Job developers were also in support of the idea of a consultation service for employers to provide advice pertaining to onboarding, integration, supervisory issues etc.

**Business Case for Inclusive Employers**

The Focus Group identified that there was a need for employer champions particularly from applied science and engineering sector in order to entice more employers to consider persons with disabilities for technical occupations. Job developers shared that a more articulated business case was needed, along with additional resources to support employers, including post hiring consultant services as ongoing support to problem solve any issues that may arise in the workplace integration process. The Job Developer Focus Group identified two employers, BC Hydro and City of Surrey, as having developed a strong business case to support a diverse and inclusive workplace.

BC Hydro as one of the largest employers of technologists, technicians and technical specialists, made diversity central to its employment strategies in 2006, when its board of directors endorsed a diversity statement and initiated strategies towards having a “workforce fully representative of the BC labour market by 2017”. The business case was based on research that demonstrated that a diverse workforce improves financial performance, strengthens organizational innovation and customer relations.

BC Hydro has a strong commitment to a welcoming and inclusive workplace by reducing barriers and encouraging hiring managers to consider candidates from diverse groups. They have been particularly successful in establishing recruitment and integration strategies targeted at immigrants, women and Aboriginal persons, and are committed to developing similar strategies for persons with disabilities. BC Hydro is dedicated to supporting new employees from different backgrounds feeling welcomed and included, with the provision of diversity and cross-cultural workshops, Aboriginal awareness, and multi-generational workforce integration strategies including internal support groups.
The City of Surrey values and embraces diversity, and seeks to ensure that all people feel welcome and included. The City of Surrey believes in providing equal opportunities for all with inclusive hiring practices, innovative programs and services to ensure accessibility and inclusion are considered in order to inspire participation, create social connections, and foster lifelong learning. The City of Surrey is focused on attracting, hiring and promoting a diverse workforce that includes individuals with disabilities. They strive to interview and hire persons with disabilities into existing positions in the City with a minimum of accommodations. To date, the City has been successful in a number of hires, in a variety of roles in the City’s Parks, Recreation and Culture departments using this approach.

The City’s Measuring Up Committee is a network of community leaders that have a commitment to increasing accessibility, employment, recreation, literacy and volunteerism for people with a disability. Measuring Up is a resource to community and business groups who want to be more inclusive and accessible to Surrey. The Committee promotes accessibility and inclusion for Surrey residents by offering accessibility and consulting services and providing a virtual hub of resources and support.

The City works with a wide range of community based organizations promoting various diversity and inclusion initiatives with specific emphasis on targeted groups including immigrants and persons with disabilities. The City of Surrey (Measuring Up), in collaboration with Community Living BC (CLBC), Rotary Club of Surrey, Milieu Family Services and WorkBC Employment Services Centre host an annual Inclusive Employer Awards, to create an opportunity to learn about the business case and benefits of having an inclusive workforce. The Inclusive Employer Awards celebrates employers who believe in hiring people with disabilities and encourages networking and sharing with others best practices of inclusive employers.

The City also hosts an annual hiring fair in collaboration with Surrey WorkBC Employment Services Centres to showcase inclusive employers who are committed to hiring persons with disabilities. Since 2010, The City has partnered with the Rick Hansen Foundation to bring accessibility to the forefront through the utilization of PLANAT, a tool that allows visitors the accessibility of locations across the community, actively remove barriers to create an accessible world.

The various initiatives outlined from the best practices showcased by the City of Surrey were particularly well received by representatives of the human resources departments of other municipalities from the Lower Mainland that attended the employer workshops.

Technical Occupations Aligned with Specific Disabilities

BC Partners in Workforce Innovation and Back in Motion have been working with two employers who have developed strategies that align occupational pathways in software development and application with the unique abilities offered by individuals on the autism spectrum. An overview was provided to the Job Developer Focus Group of various strategies to affirm the business case for hiring persons with disabilities, highlighting the following examples of best practice.
SAP International, multinational software corporation, shared examples from their Autism in the Workplace program, where “adults with autism represent an untapped labor force with unique potential” and are hired for their suitability to IT and electronics positions. SAP’s “goal is to have 1 percent of its global workforce, or about 650 employees”, on the autism spectrum and as of the end of 2015, SAP has “on-boarded 100 colleagues on the autism spectrum and rolled out the program in eight countries”.

Another example includes Focus Professional Services Inc. working in collaboration with VanCity to support the hiring of persons with autism to work on software/data projects. Focus Professional Services Inc. was contracted to provide a team of five Software Testers who are individuals on the autism spectrum. Vancity testimonial included, “the team is very efficient and they follow the instructions to complete the tasks as per the plan. They are quick learners. In case they face any issues, they try their best to figure out a solution themselves and confirm their findings with the stream leads”.

Outside of these initiatives focused on disabilities from the autism spectrum, more work needs to be done to align and test the alignment of specific technical occupational pathways regulated by ASTTBC with other disabilities including mobility, auditory, vision, developmental, etc.

**ASTTBC Managers Focus Group**

As recommended by Project Research Team, ASTTBC Managers from various technical specialty occupations met to review the list of occupations regulated by ASTTBC as well as the various types of disabilities to identify the best possible occupational pathways. The managers identified risks associated with the hiring of persons with disabilities into specific technical specialist occupations and outlined the need for further consultation with WorkSafeBC and ASTTBC to address both potential workplace safety issues as well as potential impacts to public safety. The group agreed that persons with disabilities, who were properly supported for their particular disability and having appropriate training and certification for technical specialty area, could fulfil the requirements of most, if not all, of ASTTBC regulated occupations.

The group identified four technical specialty areas (fire protection, waste water, underground utility locator, and public works) and other emerging technologies with the most potential to best integrate people with disabilities into entry level positions. The managers identified the need for more research on alignment of disabilities and training necessary to support persons with disabilities to be considered for technical occupations. Specifically, more research was recommended to identify and explore potential safety risks and mitigation strategies, addressing public safety concerns by regulators as well as employee safety concerns mandated by WorkSafeBC. Managers familiar with public safety risks recognized employer concerns regarding employee safety are not only for persons with disabilities but also for the fellow workmates and the public. It was important to research and identify risk mitigating factors supporting both public and employee safety needs with support from ASTTBC and WorkSafeBC.
The group recommended further research to address these issues within an applied research model (i.e. Research and Innovation Project) to explore in more depth the alignment of occupational pathways with various disabilities that address regulator and employer safety risks. They recommended connecting with WorkSafeBC on future initiatives addressing safety risks and mitigation strategies. Finally, managers supported the development of a repository of disability community service provider resources and supports for employers housed on the proposed TechABILITY webpage.

**Disability Service Providers Engagement**

ASTTBC attended the Association of Service Providers for Employability & Career Training (ASPECT) annual conference to promote the project and engage with disability service providers from the Lower Mainland. The goal was to identify the range of supports provided to both to employers and person with disabilities which could be promoted to employers from our sector. In addition, we connected with other disability service providers to promote the project and engage them in ongoing support to ASTTBC’s initiatives.

Participating organizations included BC Partners in Workforce Innovation, Community Living BC, Neil Squire Society, BC Centre for Ability, Sam Sullivan Disability Foundation, and Rick Hansen Foundation. They identified accommodations and supports suitable for both employers and clients with disabilities who may be interested in pursuing careers in applied science and engineering. Disability service providers were enthusiastic in supporting ASTTBC’s initiative to assist persons with disabilities interested in higher paying entry level technical occupations leading to long term employment in applied sciences and engineering sector. These organizations indicated interest in having their services identified on ASTTBC’s proposed TechABILITY webpage to broaden employer awareness of disability employment services available from community service providers.

**Key Findings**

The consultation process revealed significant insights into the unique challenges and opportunities those persons with disabilities face in the workforce, particularly in technical occupations in the applied science and engineering sector. The most interesting finding was that the label *persons with disabilities* was negatively perceived, not only by employers and disability service providers but most importantly, by the persons from our Persons with Disabilities Focus Group who wished to challenge the stigma and negative connotations associated with the limitations implied by the terminology. It was suggested that the label be reframed to a more respectful term “*persons with diverse abilities*” to emphasize the unique capabilities offered by those seeking to be known for their abilities versus their limitations.

ASTTBC has committed to referring to this population group moving forward as “*persons with diverse abilities*”, a term that is increasingly being adopted by other organizations including Community Living British Columbia (CLBC). ASTTBC recognizes that advocacy and implementation for the broader utilization of the term persons with diverse abilities will support the cultural shift in recognizing the potential contributions this unique population group offers to the labour market.
The consultation process involved a broader engagement initiative than initially established in the proposed LMP project. The project was initially conceived to focus on employers from the applied science and engineering sector and persons with diverse abilities interested in careers in technical occupations. The Project Research Team’s recommended to broaden the engagement process by including additional focus groups (Job Developers, ASTTBC Managers and Disability Service Providers) with extensive expertise in working with persons with diverse abilities and/or employers in technical occupations.

The involvement of these groups offered insight into the differing perspectives of the issues and needs faced by persons with diverse abilities entering the regulated applied sciences and engineering sector. Their involvement expanded the consultation process leading to a deeper understanding and breadth of commitment from the various groups interested in collaborating and participating in ongoing ASTTBC initiatives supporting persons with disabilities pursuing technical occupations. Common themes were reinforced by the various focus groups, thereby enriching the LMP project’s key findings:

**Applied Science and Engineering Sector**

- The sector is not well informed on hiring persons with diverse abilities and have concerns, whether well founded or not, as to why employers are not tapping effectively into this talent pool
- The current culture within the applied science and technology sector does not focus on recruiting and hiring persons with diverse abilities, however the skills shortages demand consideration of alternate talent pools including persons with diverse abilities
- There is an interest in the sector to engage persons with diverse abilities providing the employers have the necessary supports and risks mitigation strategies are in place
- Many opportunities in the applied sciences and engineering sector and persons with diverse abilities should be considered to fill higher paid entry level positions in technical occupations
- Although employers identify themselves as “inclusive employers” with progress made with under-represented groups (i.e. Aboriginals, immigrants and women), they have not achieved the same progress for persons with diverse abilities due to perceived barriers of integration challenges
- Marketing strategies at post-secondary educational institutions for their applied science and engineering programs be targeted to under-represented groups particularly persons with diverse abilities
- Post-secondary educational institutions establish the links for employers to consider graduates with diverse abilities for employment in sector
- Need for a comprehensive business case specific to applied science and engineering with employers champions, clearly identified best practices, etc.
- Employers, service providers and job developers acknowledged ASTTBC leadership in initiating the LMP for persons with diverse abilities in the applied science and engineering sector
- Stakeholders recommended that ASTTBC continue to lead and support initiatives to assist employers and people with diverse abilities to connect and find the right fit to achieve meaningful employment for persons with diverse abilities and help employers fill the skills gap
- Participants from the consultation process were all supportive of ASTTBC in implementing future initiatives with significant commitment to engage as partners
Support for ASTTBC Future Initiatives

- Recognized need for a one-stop repository of resources and supports available to both employers and persons with diverse abilities, leading to overwhelming support (45.9%) for ASTTBC’s proposed TechABILITY webpage
- Employers (both workshops and online survey) expressed interest in participating in ASTTBC’s proposed TechABILITY initiative
- 38 employers committed to supporting research and training initiatives, far surpassing the contracted target of 10 employers transitioning to next steps
- Further research is needed to address safety concerns and risk mitigation strategies, as well as better communication of existing supports to employers
- Occupational pathways need to be researched and tested to determine the best fit and alignment of the capabilities of persons with diverse abilities
- ASTTBC to establish some organizational structure to support members and non-members with diverse abilities to advance their careers in applied science and engineering

Strategies and Recommendations

The consultation revealed a wide range of strategies and recommendations for action targeted at organizations and employers in the applied sciences and engineering sector including ASTTBC, as well as opportunities for persons with diverse abilities. Many of these recommendations can be quickly initiated while others will require additional allocation of resources to support their implementation.

Recommendations to the Sector (ASTTBC, APEGBC, ACEC-BC)

- Embrace the recommended term “persons with diverse abilities” as a better acknowledgement of the contributions offered by this talent pool
- Enhance federal and provincial government funded integrated services to support persons with diverse abilities so they are better situated to pursue careers in technical occupations
- Develop a province wide media initiative promoting a business case for hiring persons with diverse abilities in the applied science and engineering sector
- Jointly host an annual sector event during Disabilities Employment Month (September)
- Connect with public post-secondary educational institutions to support the recruitment of persons with diverse abilities to applied science and engineering technical positions
• Identify resources to support employers hiring persons with diverse abilities in the sector
• Ensure that persons with diverse abilities are included as an outreach target population in the Tech Sector LMP, funded by the Ministry of Jobs, Tourism and Skills Training
• ASTTBC and APEGBC to present to the Executive Directors and Registrars from other professional regulatory bodies in BC to promote persons with diverse abilities as an alternative talent pool

Recommendations to ASTTBC

• Establish TechABILITY webpage with resources for employers and persons with diverse abilities
• Establish a Diverse Abilities Advisory Committee composed of ASTTBC’s members with diverse abilities and others to provide advice to ASTTBC on strategies and initiatives for this population group, as well as support to prospective members with diverse abilities
• Make adjustments to ASTTBC’s ‘Associate’ non-dues paying membership status providing specific eligibility for persons with diverse abilities interested in employment in the sector through the use of a PLAR approach
• Engage new stakeholders to both support and participate in research and training initiatives
• All occupations regulated by ASTTBC should be identified with National Occupational Classification (NOC) codes to align technical occupations with the competences required for each occupation. The NOC codes will provide greater awareness of the competencies required for each technical occupation to determine the best fit for the individual capacity alignment of persons with diverse abilities into various technical specialist positions
• ASTTBC to consider the development of a mentorship program to link their members with persons with diverse abilities interested in pursuing careers in the applied science and engineering sector
• Establish a list of inclusive employers who are committed to interviewing qualified and trained persons with diverse abilities for consideration as candidates for technical occupation postings

Recommendations for Training Initiatives to Support Persons with Diverse Abilities

• ASTTBC to consider developing an Research and Innovation (R&I) proposal under Community Employer Partnership Funding
• ASTTBC to consider developing a Project Based Labour Marketing Training (PBLMT) proposal for persons with diverse abilities to support training into technical specialist occupations
• ASTTBC and Back in Motion to work with employers to secure Canada/BC Jobs Grant funding for persons with diverse abilities
• ASTTBC to work with service delivery organizations working with persons with diverse abilities to gather and develop training resources for employers to support recruitment, selection, onboarding, integration and retention of persons with diverse abilities
• Review other funding options with the federal government in particular the Opportunities Fund for Persons with Disabilities to support sector specific programming
Conclusions

The changing demographic landscape in applied sciences and engineering is reflected in the increasingly diminished supply of skilled workers, requiring employers to think more strategically about how to attract and retain employees. Individuals in under-represented groups, specifically persons with diverse abilities represent a unique pool of untapped labour that could potentially help mitigate the effects of increasing skill shortages in technical occupations.

This realization by employers was reflected in the success of ASTTBC’s Labour Market Partnership initiative Persons with Disabilities Accessibility to Technical Occupations project in exceeding the initially proposed project activities and expected results. The two employer workshops engaged more employers than initially targeted and the online employer survey resulted in significantly broader participation by employers than outlined in the project deliverables. The engagement with additional stakeholders (job developers, ASTTBC Managers and disability service providers) enriched the discussion leading to comprehensive key findings and recommendations. In addition, it expanded ASTTBC’s relationships with disability service delivery providers creating a deeper commitment and capacity to move recommendations forward.

The online survey results clearly indicated that employers believed that persons with diverse abilities represented an important potential pool of candidates for employment in technical occupations. Survey respondents recognized that there were opportunities to engage persons with diverse abilities in all technical occupational areas in the sector, given the right training, alignment of their diverse abilities with the occupation and the appropriate employer supports in place. The top identified occupational pathways were IT, electronics, building design and technical specialists, as these occupations presented fewer physical barriers to integrating persons with diverse abilities into the workplace. Interestingly, 24.6% of employers stated that all occupations could be a good fit for persons with diverse abilities given the above factors.

The ASTTBC Managers Focus Group identified four key technical specialist occupations (fire protection, waste water, underground utility locator, and public works) out of the 17 regulated by ASTTBC, which had particular potential to align with the capabilities of persons with diverse abilities. The managers believed that more research and testing were required to accurately determine the best alignment of particular disabilities with occupational requirements for technical positions. Specifically, the Managers Focus Group pointed to safety considerations and workplace accommodations required for particular diverse abilities categories. This prompted ASTTBC to take the initiative to research and align of all of ASTTBC’s technical occupations with their specific National Occupational Codes (NOC) to identify competencies that could be analysed in respect to diverse capabilities that persons with diverse abilities presents in relation to technologists, technicians and technical specialist areas.

The consultation clearly demonstrated the interest of employers from applied science and engineering sector in considering persons with diverse abilities as a talent pool to tap into to address skills and labour shortages in the sector. A significant number of employers believed that persons with diverse abilities could occupy almost all technical occupations given the relevant training and appropriate workplace accommodations and supports.
What was evident was the need for more success stories specific to the applied science and engineering sector representative of all sizes of businesses, to affirm the business case for hiring persons with diverse abilities. Safety and risk mitigation was a significant concern, not only for the persons with diverse abilities but also their colleagues on the jobsites, necessitating the involvement of WorkSafeBC as a partner in ensuring these concerns are addressed in future initiatives. The involvement of ASTTBC as the regulator was seen as essential in ensuring that both professional competency and public safety issues were identified and addressed.

Employers involved in the survey disclosed their minimal awareness of services and supports available to them in tapping into a hidden talent pool to recruit, accommodate and integrate persons with diverse abilities into technical occupations to address skills shortages. Employers were eager to learn more about the free employment services available to them and were receptive to working with service providers to recruit and hire persons with diverse abilities into entry-level applied science and engineering positions.

Given the various locations to research and find resources, employers were supportive of a one-stop repository of employer resources and supports on the proposed TechABILITY webpage, along with examples of employer champions in technical occupations sharing success stories to affirm the business case of hiring persons with diverse abilities. The most exciting outcome of this project was that 38 employers (over triple the projected target), participating in the consultation committed to working with ASTTBC to support ongoing initiatives related to hiring persons with diverse abilities seeking technical careers.

Next Steps

ASTTBC has developed a comprehensive dissemination plan to promote the recommendations and strategies outlined in this final report to employers and organizational partners from the sector, disability service providers, WorkBC Employment Services Centres, career development practitioners, post-secondary educational institutions and persons with diverse abilities who may be interested in pursuing technical careers in applied science and engineering.

ASTTBC and project partners are committed to posting the final report on their respective websites, to coincide with a media release developed in collaboration with the Ministry. Both the media release and final report will be distributed to all employers and community stakeholders who participated in the project. ASTTBC recommends that the Ministry post this LMP final report along with other LMP reports on the WorkBC and BC Centre for Employment Excellence websites to share information with other organizations.

On January 17, 2017, an online webinar was hosted by the BC Centre for Employment Excellence was presented to over 45 career development practitioners on the interim results of the consultation process, strategies and recommendations. ASTTBC is scheduled to deliver a workshop on project highlights at the BC Career Development Association (BCCDA) annual Career Development Conference (CDC) on March 27-28, 2017. Both events are targeted at career development practitioners across the project to disseminate highlights of project recommendations and strategies to effectively support person with diverse abilities interested in pursuing technical occupations, as well as the employers WorkBC Centre staff work with, who may be interested in
recruiting and hiring from this hidden talent pool. In addition, ASTTBC will submit a speaker proposal to present at the Association of Service Providers for Employability and Career Training (ASPECT) Conference in November 2017, as part of the dissemination process to network with other disability organizations from across British Columbia.

ASTTBC, as part of its ongoing commitment to supporting persons with diverse abilities seeking employment opportunities in the applied science and engineering sector, has secured the TechABILITY domain name. This proposed TechABILITY webpage on the ASTTBC website will be an ongoing legacy to the LMP project, and will include a copy of this final report and offer a one-stop-shop platform for a repository of resources for employers and persons with diverse abilities seeking employment in technical occupations.

ASTTBC’s goal is to serve as a catalyst and facilitator to inform and drive a shift in the culture within the sector to consider persons with diverse abilities as candidates for technical occupations, given relevant training and workplace accommodations and supports. In addition, we are committed to work across sectors with other regulatory bodies to promote persons with diverse abilities as an important alternative talent pool to be considered across a wide range of professional occupations.

The LMP project has identified barriers that limit the opportunities for persons with diverse abilities in moving towards potential careers in technical occupations and recognized that research is required to test the alignment of diverse abilities with specific technical occupations and the accommodations necessary to ensure successful integration into the workplace. This research could identify the training necessary to address skills gaps and career pathways to technical occupations that might be done by people with varying abilities. The LMP project has provided ASTTBC the opportunity to develop stronger relationships with service agencies, and to engage persons with diverse abilities with the intent of identifying technical occupations that align with their diverse abilities that will assist them in securing meaningful employment in the applied science and engineering sector.
Bibliography


