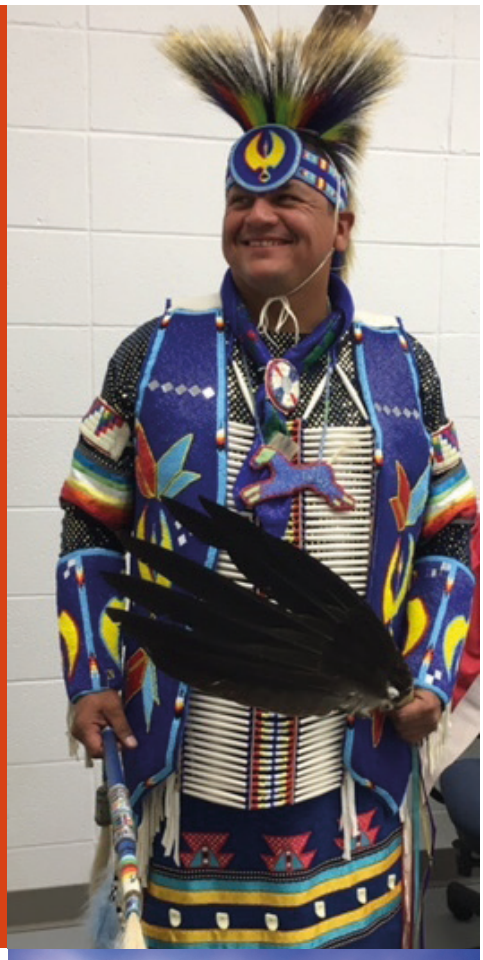
WASTE MANAGEMENT TRAINING PROGRAM REPORT



TRIBAL CHIEFS EMPLOYMENT & TRAINING SERVICES ASSOCIATION

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GREEN EMPLOYMENT PROGRAM

PROJECT HOST:	Tribal Chiefs Training and Services Association
PROJECT FUNDING:	Government of Alberta Indigenous Relations
STUDENT SUPPORT FUNDING:	TCETSA, ASETS, Sub-Agreement Holders - Cold Lake First Nations, Frog Lake First Nation, Kehewin Cree Nation, Whitefish (Goodfish) Lake First Nation
TECHNICAL TRAINING:	First Nations Technical ServicesAdvisory Group (TSAG), Westie Design Inc.
ADDITIONAL TRAINING:	NAIT, University of Alberta Faculty of Extension
PARTNER EMPLOYERS:	County of St.Paul, Evergreen Regional Waste Management Commission, Town of Bonnyville, ACDEN, and Seven Lakes Oilfield Services
PARTNER EMPLOYMENT SUPPORT SERVICES:	North East Alberta Apprenticeship Initiative (N.E.A.A.I.)

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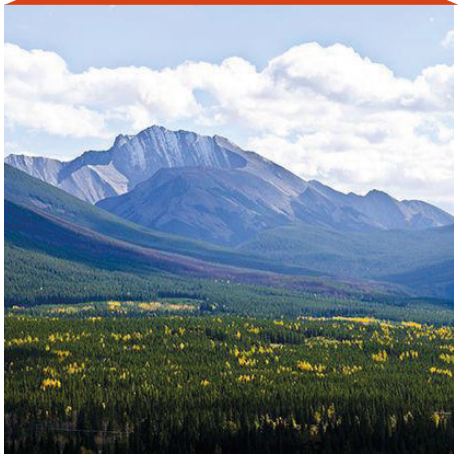

Acknowledgement of Traditional Territories

TCETSA and our Partners would like to acknowledge and thank the Frog Lake First Nation and Kehewin Cree Nation for welcoming students, staff, and instructors to live, learn and share educational experiences on the traditional territories of these Nations.

Executive Summary

First Nations people are connected to the land, and consequently the degradation of the environment due to increased GHG leads to a decline in the way of life for the people and thus a decline in the cultural health of Nations. Climate change is a reality and the lack of current resolve over these issues has left Nations people feeling the consequences to their environment: rivers, land, and air.

Tribal Chiefs Employment and Training Services Association recognized that there has been a history of having limited landfill operations and little to no recycling programs in Tribal Chief Ventures (TCV) First Nations which directly contributes to GHG and damaging effects to the environment. In order to take climate action, it was identified that there were three main factors that needed to be addressed. The first was that waste management frameworks are lacking at the community level. This causes environmental damage because of higher than average GHG emissions and also negatively affects the health and well-being of the community. Second, more education is needed. There is a need for greater education and awareness of climate change, GHG and waste management issues. Training that incorporates Traditional knowledge is also important in formulating appropriate responses to these issues. Finally, there is a lack of links to green employment opportunities both within and outside of the TCV communities.

The Waste Management Training Program was unique to TCETSA in its attempt to address these concerns, climate change and the reduction of GHG emissions through waste management and sustainability training. Because the current methods of dealing with waste management concerns within the communities are inadequate, TCETSA felt that a new approach was needed which recognized each community's own abilities to reduce GHG emissions and for the graduates of the program to be able to find green employment opportunities that could support future community waste management initiatives or to gain external work experiences to bring back to their communities.

The expectations and goals of the Waste Management Training Program were to prepare the participants so that they could seek employment in industries that actively reduce GHG emissions both inside and outside of TCV communities. Participants would increase their knowledge of climate change and the waste and recycling industry as well as take part in skills and training opportunities that would better position them to gain and maintain employment in the green economy overall. To accomplish this, the Waste Management Training Program was created which included the following waste management courses: Introduction to SWM, Landfill Basics, Site Operations & Maintenance, Asbestos Waste Awareness, Transfer Station Basics, Household Hazardous Waste, Site Safety, Job Hazard Analysis/ Risk Management, Waste Screening, Source Water Protection/Solid Waste Management, and Freon Removal.

Additional courses offered were: Computer Fundamentals and App Development, Skid Steer Training, Introduction to Energy, Alternative Energy, and Indigenous Consultation & Project Management.

Extensive hands-on training was also implemented and as a result of the overall program, employment opportunities has been developed and a core group of environmentally trained individuals within the TCV communities has been established. This gives the Nations the foundational capacity for future climate action initiatives that will increase waste diversion, reduce greenhouse gas, and put a stop to further land contamination.

This report is intended to give an overview of the program courses and hands-on experiences, to share the outcomes and lessons learned for future references, and to give insight into the impact the program had. Finally, the last part of the report is dedicated to future recommendations for continued initiatives that will address climate change, GHG reduction, and green employment within TCV communities.

Eva John-Gladue, TCETSA Operations Manager initiated discussions about the program in early spring 2018 and the program came to fruition for the first training session in July, 2018. The core of the waste management technical training was provided by First Nations Technical Services Advisory Group (TSAG). Computer training, which added an important technology training element to the program,

was provided by Westie Design Inc.

TCETSA was also able to provide the opportunity for the participants to access additional training sessions that occurred outside of the program from NAIT and the University of Alberta Faculty of Extensions. These programs gave an in-depth introduction to energy efficiencies and the different alternative energy technologies available and also to environmental assessments and consultation.

PARTNER BUSINESSES

There were five Partner businesses from North Eastern Alberta that actively participated in the training by offering hands-on work experience which were: the County of St. Paul, Evergreen Waste Management, the Town of Bonnyville, ACDEN and Seven Lakes Oilfield Services. The North East Alberta Apprenticeship Initiative continues to be a partner agency whose role is to provide support through employment referrals and mentor-ship that will assist the graduates in obtaining green employment which is ongoing.

The partnerships described led to collaboration and action. There was regular communication by TCETSA, particularly in the form of clear, updated and accurate scheduling information.

This communication was matched by the partners' high levels of effort, organizational leadership support, and a willingness to be flexible. Additionally, closer partnerships were formed between First Nation communities and neighboring municipalities which broadened opportunities for program graduates.

PROGRAM DESIGN & DEVELOPMENT

During the program design and development stage, TCETSA was focused on two main curriculum objectives. The first one was to develop a curriculum for the training of "green" employment opportunities in the environmental industry that would ultimately lead to reduced GHG emissions by better waste management practices and procedures. The second was to implement a holistic approach by taking into account the specific needs of the TCV communities, and integrating educational content related to the First Nations cultural land traditions.

The outcome was a seven month training program which was made available to trainees from the six First Nation shareholders of Tribal Chiefs Ventures Inc. which are; Beaver Lake Cree Nation, Cold Lake First Nation, Heart Lake First Nation, Frog Lake First Nation, Kehewin Cree Nation and Whitefish (Goodfish) Lake First Nation. Each month of the program offered one week of in-classroom training, followed by three weeks of on-site work experience with one of the partnering employers in the private sector, municipal, and First Nations settings.

"Creating a better world requires teamwork, partnerships, and collaboration." - Eva John-Gladue

Elder involvement and continued support and mentor-ship after program graduation was also implemented into the program. Each of these design elements were considered a strength by both participants and partners and the ability to assemble them into a cohesive program was a significant accomplishment involving innovation and collaboration.

PROGRAM MAIN OBJECTIVES

The Waste Management Training Program was focused on the development of a locally trained environmental workforce that would be dedicated to reducing GHG emissions while simultaneously building and strengthening relationships with the Nations.

Program Overview & Main Objectives

The following were some of the main objectives:

- Developing an overall understanding of GHG emissions, climate change, and how waste management best practices can positively contribute to environmental and community well-being.
- Understanding the formative role of the solid waste management industry in society and education aimed at equipping the students to improve the waste management practices of TCV communities.
- Developing a more complex view of technology and the computer basics necessary to excel in work processes in green employment.
- Developing knowledge about energy efficiencies and the different alternative energy technologies.

Courses & Hands-On Experience

> ***"After seeing how damaging leachate is to the earth, I can now see potential issues within my own community that before, I wouldn't have recognized or known how to make positive changes."*** - Student

First Nations Technical Services Advisory Group (TSAG) - Solid Waste Management Training Program

TSAG builds community capacity through competency-based classroom and hands-on training. For the Waste Management Training Program, they provided courses that focused on landfill basics, site operations and maintenance, transfer station basics, asbestos waste awareness, household hazardous waste, waste screening, site safety, and source water protection/solid waste management.

Each course promoted safe, environmentally sound, and efficient waste management practices through in-depth training grounded in work competencies based on Canadian best practices. The program also focused on enabling participants to have the opportunity to obtain steady, sustainable employment and to increase community education on waste diversion benefits which will have positive effects on GHG reduction and the environment.

"There is a significant appetite at the First Nation, provincial and federal government levels to collaborate to address environmental concerns stemming from ineffective solid waste management. This program demonstrated how municipalities, private companies, and First Nations can work together to advance a common goal of moving waste to sites that are safe for people, animals and the environment. The well-rounded training and experience that participants received through this program helped put First Nations as leaders in this field. This was a great opportunity for community growth and advancement, as well as individual employment." - Amanda Doyle, Director of Lands and Environment, TSAG

(For full course outline see Appendix A)

Westie Design Inc. - Computer Training Fundamentals and Development Program

The core purpose for integrating the Computer Fundamentals and Development Program into the Waste Management Training Program was to open the students' eyes to the myriad of educational and career opportunities, including green employment opportunities. Because of the lack of access and training in technology, First Nations individuals' scope of what's possible is often times limited. TCETSA recognized that by incorporating technology training into the Waste Management Training Program, it would increase the opportunities for the students to be better connected.

The Computer Fundamentals Course focused on computer management, the basics of Microsoft Word, and designing and building resumes. After this course was completed, the UX Development & Design course was also offered which taught the concepts of website development and mobile application. This course was created around the interest of the students and their objectives and goals towards reducing GHG emissions and improving green employment opportunities both within their communities and externally in industry.

> ***"I witnessed the students gain confidence as they realized the power of technology and that it can improve society and the environment as a whole."*** - Jim Bilodeau, Westie Design Inc.

(For full course outline see Appendix B).

Each of these courses provided the participants with the skills and

knowledge necessary to work at a variety of levels in the environmental industry. There were also additional courses that were made available to the students which gave them a broader overview of climate change and the environmental industry. These were instructed by NAIT - Introduction to Energy & Alternative Energy and University of Alberta Faculty of Extension - Indigenous Environmental Consultation and Project Management. *(For full additional courses outlines see Appendix C & D).*

HANDS-ON EXPERIENCE

A significant portion of the Waste Management Training Program was dedicated to a hands-on experience for the participants as hands-on training has been proven to be the acquisition of knowledge, skills and competencies needed in the workplace. In addition to the hands-on experience, it is important to note that there were a number of relevant tours that TSAG coordinated in conjunction with their program that gave the students direct access to a variety of waste and recycling programs. *(For information on TSAG tours see Appendix E).*

EVERGREEN WASTE MANAGEMENT

The learning objectives listed in the TSAG Waste Management Program were projected to be met once the trainees attended classes and completed hands-on work experience. In-class, the students learned about the foundational subjects of solid waste management including the main components of a landfill.The work experience at the Evergreen Landfill, gave the students the opportunity to take the foundation of in-class learning and apply their knowledge in a hands-on manner.

This work experience model was coordinated by Paul Poulin, Manager of Evergreen Waste Management Services Commission. It was separated into nine blocks which had specific on the job tasks. *(For full description of blocks see Appendix F).*

> ***"The students gained a lot of experience in the tasks and duties performed. It was a pleasure to work with them as they displayed, through their work duties, that they want to experience as much as possible with this training program."*** - Paul Poulin Manager, Evergreen Regional Waste Management Commission.

There were also hands-on experiences at multiple transfer station sites such as Elk Point, Ashmont, St.Paul, and Bonnyville. There, the function of key infrastructure elements of a transfer station and related safety requirements were learned including: skid steer experience, applying recycling knowledge, and identifying waste streams and associated hazards.

> ***"We considered the program to be very helpful in the aid of cleaning up our site where manpower is sometimes in short supply."*** - Jay Duffee, Town of Elk Point

LANDFILL CLEANUP PROJECTS

The students started the landfill cleanup projects on Nov 15, 2018 in Frog Lake, and Jan 15, 2019 in Kehewin. The objective was to help the Nation clean up their landfill sites and give the students hands-on experience on learning the proper procedures necessary to maintain a landfill. There, the students learned how effective and appropriate solid waste management programs can bring benefits in other areas, including the provision of economic development opportunities such as programs in recycling, green employment, social responsibility, and elder/youth mentoring.

> ***"Cleaning up the transfer station made me really proud. People were waving at us and encouraging us as they passed by. I checked the site a few days after we finished the project and it was still clean which made me feel really happy that my community was respecting the hard work that we did."*** - Student

The students had other valuable hands-on work experiences that were provided by Seven Lakes Oilfield *(see appendix G)* and Westie Design Inc. *(see appendix H).*

Learning & Program Outcomes

LEARNING OUTCOMES

The following are some of the learning outcomes that were met once the trainees attended classes and completed hands-on work experience:

- The students now have a better opportunity to obtain steady, sustainable green employment and also have an increased awareness of waste diversion benefits and the positive effects on GHG reduction and the environment. They can identify potential adverse impacts of GHG within their communities.
- The students can now critically review options and make sound choices to optimize the energy efficiency in their homes to reduce their overall environmental footprint.
- Students can incorporate the basics of technology skills and maximize organization, productivity, and efficiency in any workplace.
- The students can compare the different alternative energy technologies available today and understand the latest government policies and regulations at both the federal and provincial level.
- They understand the basic terminology needed to understand, interpret, and respond to project notification letters and environmental impact assessments.
- They can identify potential and actual adverse impacts of a project on Treaty Rights, traditional land use, and the environment.
- Students understand the common terminology, concepts, and methods involved in environmental consultation from an Indigenous perspective.
- The students know the proper procedures necessary to maintain a transfer station and can identify: Maintaining cleanliness around the disposal bins • Seeing that metals, tires, and appliances were segregated and stored in separate areas • Screen wastes (No hazardous items) • How to separate paper and cardboard from trash for recycling program.
- The students understand the foundational subjects of solid waste management and the main components of a landfill: Bottom liner, cells (old and new), leachate collection system, storm water drainage, methane collection system, cover (or cap), groundwater monitoring stations.
- Students understand the importance of the connection between humans and Mother Earth (the natural world).

PROGRAM OUTCOMES

There were twelve individuals who originally started with the program. Unfortunately, five of those individuals left the program because of immediate employment opportunities and family emergencies. Four new students were then enrolled. Eight students completed the training portion of the program and seven completed the entire program. Securing employment was a fundamental reason the individuals enrolled and sixty four percent of the students said that preparing for a specific job in green employment was the most important reason for attending the program.

The North East Alberta Apprenticeship Initiative (NEAAI) is currently assisting graduates in the employment process. NEAAI is a collaboration of 11 indigenous communities in North East Alberta, the industries and businesses in the region, Alberta Government departments, pre-apprenticeship and technical training institutions, and additional partnerships for apprenticeship enhancements.

The staff have been working in collaboration between the graduates seeking green employment opportunities and employers seeking engagement of the Waste Management Training Program graduates as well as First Nations communities.

Currently, four of the seven that completed the training portion are employed however, they are not employed within their recent training background. As well, one of the training providers took a keen interest in a graduate and is looking at hiring him on full time. This would involve the individual relocating to Edmonton which TCETSA and NEAAI are currently working on.

COMMUNITY OUTCOMES

The pride of trainees in applying new skills and knowledge, especially within their own communities was a powerful outcome. Enabling trainees to bring their skills to a visible and meaningful problem in the community was extremely important. The awareness of waste management practices and their importance to the community spread to community members who then changed their approach to their own treatment of household waste. People in the communities noticed the changes, learned from them and acted upon them. The trainees' pride was also seen the leadership roles a number of them took in their own community waste sites.

The evidence of the broad impact of the Waste Management Training Program are still apparent. The awareness of the importance of cleaning up the communities' landfills, and better waste management practices, such as recycling, have been brought to the communities which have caused further discussion for continued environmental initiatives.

There was overwhelming agreement from stakeholders and participants that developing the programming in service of Mother Earth, protector of the environment, was fully aligned with the spirit and intention of cultural traditions of the First Nations communities involved in the program. The program has enabled participants to represent their culture as keepers of the land, to promote overall health and to preserve the environment. The specific target of the program may be employment for a few individuals, but its impact will be felt by future generations.

Lessons Learned

"Spending time together and developing relationships helped us (instructors) build trust with the students. As we heard students' stories and became familiar with the realities of their day-to-day lives, including their obligations to family and community, we started to better understand the students strengths, challenges and resilience. " - Instructor

The following lessons learned were complied at the Stakeholder meeting and describe some of the critical aspects that need to be considered in the planning of future green employment and climate change initiatives within indigenous communities.

Communications

Efforts should be made to improve communication with all involved with the program, including stakeholders, participants, communities, front-line employees/supervisors, Band leadership, Elders and funders. Key stakeholders in each group/organization need to be communicated with so that intentions are aligned, expectations are clear, and momentum is maintained.

It may be helpful to develop progress reports that all contribute to. There could be a simple template for stakeholders to fill in on a regular schedule, and directions could be given to ASETS technicians regarding ways to communicate/distribute the reports (e.g., via band managers).

There is a need to promote the whole program and generate good will with a variety of groups. Front-line meetings and train-the-trainer sessions would allow on-the-ground changes to be better managed, and including front-line supervisors in stakeholder meetings would ensure continuity in communication. Hiring a project coordinator may solve some of the communications issues; such a coordinator could lead the communications for the whole initiative.

Scheduling / Logistics

Ideally, the program would start in late spring, but the start date is highly dependent on funding. A late spring start would solve a number of problems besides simply weather issues, but clearly weather is a significant issue. If the start time cannot be controlled, then it would be useful to strategize ways to overcome weather-related challenges. For example, if cold weather prevents outdoor work, perhaps trainees could do office work on those days.

Equipment

Equipment Funds need to be allocated to ensure that equipment/tools are available to the trainees when they need them.

Transportation

Three actions would help resolve the transportation issues of trainees:

• Continue to ensure gas money is provided to trainees (budget for this in the program) • include driver training in the program, and/or • in the future, purchase driver-less shuttles!

Trainees

Trainees Motivation would rise if there was more thorough screening of program applicants on their desires/values – i.e., their reasons and motivations for wanting to enter the waste management field. Then, a more thorough orientation with trainees would provide a better context for them and deepen their motivation. Reiterating the scope of jobs in the sector during the first week of training would also enhance motivation, as would to include both traditional and western knowledge in the classroom training.

The Waste Management Training Program made every effort to address climate change issues and to train individuals for green employment opportunities, but were the participants in the program satisfied with themselves and the programs achievements?

Four Waste Management Training Program participants were interviewed on the subject of their experiences in the program using an open interview style. Interviews ranged from an hour to an hour and a half. Discussion revolved around two key areas: strengths and weaknesses of the program and personal growth and wellness. Students benefited in a variety of ways from the Waste Management Training Program. Overall, it was found that participants valued the training and perceived significant benefits for their communities and themselves.

Community Benefits

Respondents commented that they felt that the program inspired the communities in which the activities took place. Community members who knew the students and witnessed their growth became excited about what they were learning. Others became interested in accessing similar training when they were introduced to the program through the students. Sharing in the students' successes raised morale and stimulated communities to think about broader climate change and waste management educational and economic opportunities for their own people going forward.

Transformative Learning Experiences

Respondents also described the ways in which the knowledge they gained through the Waste Management Training Program translated into transformative learning experiences which caused them to interact differently with the earth, their environment and to attach new meaning to their surroundings. By seeing first-hand how destructive waste is for the environment helped them to see things differently. They discovered new realities while they were out on landfill work sites like identifying recyclables, because suddenly they knew what they were looking for. As well, by just being a part of an efficient team where everyone worked together to achieve goals, all had a significant impact.

Those who participated in the transfer station activities and the hands on training at Evergreen Regional Waste Management Commission acknowledged that the learning they experienced extended beyond academic indicators and into the realms of personal development and community wellness. There may have been a whole variety of challenges that some students were working through, but at the same time they really benefited from being part of the hands-on training experience. They all expressed that they experienced personal growth, and a sense of pride, which helped them have a more healthy outlook on life. The hands-on training gave great results in terms of contribution and their active role in society and the students also connected with the cultural significance of what their part is in caring for the earth that they would not have otherwise.

Respondents also shared that they gained self-confidence from the work they were doing through the Waste Management Training Program. For example, some students were taking courses to set a positive example for their children. For other students, the chance to come to class, follow a routine, engage in discussion and connect with other people contributed to their mental and physical wellness. The increased access to education helped students realize that they could access and transition into a post-secondary environment in the future. Through the Waste Management Training Program, the participants felt the pride of being a student and an identity shift occurred

Student Feedback

that prompted several individuals to consider further educational pursuits in the environmental industry.

Overall, the respondents commented that the Waste Management Training Program provided them with new knowledge of climate change and waste management, the opportunity to advance their green employment goals and the foundation to build significant skills that could be applied in the environmental industry.

"One of my goals now is that I want people in my community to be able to understand how to manage waste and take care of our planet. I really think the training has helped me to think differently - especially about our responsibilities as keepers of the earth. I think the Waste Management Training Program is exactly what we need for our communities." - Student

Future Plans & Sustainability

SO WHERE DO WE GO FROM HERE?

Tribal Chiefs Employment and Training Services Association and partners have taken the first step in training individuals for green employment opportunities and also introducing waste management, energy management, and environmental assessment training to the TCV communities.

Waste management and proper disposal and handling of waste are imperative within the TCV communities. More recycling can also be done to divert recyclable materials from entering disposal sites and to improve the sustainability of waste management. Waste Management directly contributes GHG and the footprint of disposal site areas.

Waste management requires careful planning, investment, and ongoing management and monitoring. Training the participants to be prepared for green employment opportunities was a main focus of the program but enabling these individuals to work within their communities is also extremely important.

The TCV communities face particular geographic and demographic obstacles in responding to and preparing for climate change risks. In particular, physical isolation, limited economic diversity, and higher poverty rates, combined with a growing population, increase the vulnerability of these communities.

If the TCV communities are to respond adequately to future climate changes, they will likely need help assessing their risks and vulnerabilities, prioritizing and coordinating projects, funding and allocating financial and human resources, and deploying information-sharing and decision support tools. Collaboration and timing are both critical aspects to this and engaging community leaders early in decision processes can influence behavior and choices in ways that enhance positive outcomes of adaptation and mitigation.

Through the educational process of the Waste Management Training Program, the graduates were able to take stock of their community's current waste management situation and are ready and qualified to take action. A next step could be to help provide the students with future training to assist in opportunities within the TCV communities in setting environmental priorities and goals, identifying and evaluating options, developing and implementing a waste management plan, and then partaking in the tracking of progress to make adjustments over time.

Regarding future plans and initiatives, all of the Waste Management Training Program partners are willing and able to continue efforts and have expressed their interest in the sustainability of the program.

"Trainees were eager to apply the skills learned in this program to their own communities. TSAG would like to support this extension in the form of supporting trainees to present to chief and council, helping organize community information sessions, school presentations, workshops. TSAG would also like to support trainees to present at other TSAG offered training as guest instructors/speakers." - TSAG

Tribal Chiefs Employment and Training Services Association appreciates the opportunity to provide input on future green employment and climate change initiatives for the TCV Nations and are committed to collaborating with all levels of governments and other professionals to continue to contribute to the implementation of climate change strategies.

"Our peoples have always been caretakers of our land. As the elders said Ay'kanakotahk (Kanata-Canada) "that this land is clean" they also believed, as an integral part of their world view, that this land remained clean because it was taken care of and that it was passed down from one generation to the next as our creator intended because we are only borrowing it from those yet unborn." - Jamie John-Kehewin

Special Thanks To

Town of Bonnyville "It's Multi-Natural"

COLD LAKE FIRST NATIONS

EVERGREEN REGIONAL WASTE

Frog Lake First Nation

Kehewin Cree Nation #123 kihew nêhiyaw-askiy

N.E.A.A.I North East Alberta Apprenticeship Initiative www.neaai.co

Seven Lakes Oilfield Services

ACUEN

19 COUNTY ST. PAUL

FIRST NATIONS TECHNICAL SERVICES ADVISORY GROUP INC

Whitefish Lake First Nation #128

Westie Design Inc.

TRIBAL CHIEFS EMPLOYMENT & TRAINING SERVICES ASSOCIATION

Tribal Chiefs Employment and Training Services Association (TCETSA) strives to provide a collaborative forum for those committed to the success of First Nations people by exploring and creating opportunities for increased meaningful and sustainable workforce participation.

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Appendix

APPENDIX A

FIRST NATIONS TECHNICAL SERVICES ADVISORY GROUP – SOLID WASTE MANAGEMENT TRAINING PROGRAM OUTLINE

Course Instructors:

Pam Haggarty, Paul Poulin, Molly Fyten, Rosey Radmanovich, Aaron Campbell, Dave Souch, Chantel Ducharme , Len Chomlak, Jim Donaldson, Tim Erickson, Gerard Duffy, and John Wettstein

Course Overview

TSAG is a non-profit provider of quality technical services and training for First Nations in Alberta. Their team of environmental scientists and technicians provide environmental management and planning services, as well as training and outreach programs to promote sustainable traditional and reserve lands and water.

First Nations communities continue to seek out solutions for improved solid waste management on reserves and many Nations are looking for alternatives to current "dumping sites". TSAG has been running waste management related training courses with course participants from Treaty areas 6, 7 & 8 for a number of years. Their courses are designed to provide participants the opportunity to have steady, sustainable employment and also to increase community education on waste diversion benefits which will have positive effects on GHG reduction and the environment.

Course Modules

Module 1: Introduction to Solid Waste Management
Module 2: Landfill Basics
Module 3: Site Operations & Maintenance
Module 4: Asbestos Waste Awareness
Module 5: Transfer Station Basics
Module 6: Household Hazardous Waste
Module 7: Site Safety
Module 8: Job Hazard Analysis/Risk Management
Module 9: Waste Screening
Module 10: Source Water Protection/ Solid Waste Management
Module 11: Freon Removal

Evaluation Criteria

TSAG provided a competencies checklist that was intended to be used as an assessment tool for trainee in-the-job competency performance evaluation for the Solid Waste Management Training Program. The categories were based upon a facilitated process with industry including international solid waste management companies, regional landfill commissions and authorities, First Nations public works directors, and

independent subject matter experts. The competencies directly aligned with the learning outcomes as presented through the FNTSAG solid waste management curriculum.

The assessment tool was intended to provide both the employer and the trainee with feedback on job performance and competency ratings for each of the occupational skill categories. It suggested that the process included three reviewers: 1) Employer on the job mentor, 2) Trainee self-assessment, 3) Employer Supervisor.

The scores and comments were aggregated and an exit interview provided the opportunity for the program facilitator to discuss the outcomes with the trainee. The intent of the interview was to identify outstanding competencies that require supported practice or training, capture the competencies that would be valuable to include in a resume for future waste management employment opportunities and provide feedback to the project partners for future program delivery improvement.

APPENDIX B

WESTIE DESIGN INC – COMPUTER FUNDAMENTALS AND DEVELOPMENT PROGRAM

Course Instructor:

Jim Bilodeau

Course Overview

The technology sector is one of the fastest growing sectors in Alberta, and there's a tremendous amount of potential around employment and sustainable employment.

Indigenous people, however, represent an estimated two per cent or less of the IT and technology sector in the province. And so, there are a number of perspectives, knowledge and ideas that aren't being captured and there are also a number of barriers that are still in place in the TCV communities; everything from connectivity and access to technology to limited skills development opportunities.

The core purpose for integrating the Computer Fundamentals and Development Program into the Waste Management Training Program was to open the students' eyes to the myriad of educational and career opportunities, including green employment opportunities. Because of the lack of access and training in technology, First Nations individuals' scope of what's possible is often times limited. TCETSA recognized that by incorporating technology into the Waste Management Training Program, this would increase the opportunities for the students to be better connected.

The Computer Fundamentals Program was designed to enable the students to learn the basics of technology skills in all sectors. The skills of these digital tools can be used to maximize organization, productivity, and efficiency in any workplace.

Course Description

The Computer Fundamentals course was provided to the students to ensure that the students were being kept current with basic computer concepts like windows 10 functionality, internet connections through Wi-Fi, basics of Excel, and PowerPoint. In addition to this, the course taught an introduction to Microsoft Word including saving, font changes, and tables columns. These are fundamental skills required for creating basic computer documents and spread sheets. Finally, the ability to implement resume design techniques, proof reading skills, and new design ideas for resumes and Microsoft Word templates was integrated which is a vital skill for any individual seeking employment.

Part I - Computer Fundamentals Course Modules

Module 1: Computer Management
Module 2: Basics of Microsoft Word
Module 3: Designing and Building Resumes

Part II - UX Development & Design Course

After the Computer Basics course was completed, there were discussions about learning objectives for the next course would work. During this brainstorming session, ideas what the students would like to learn on the longer teaching term were determined and the concepts of website development and mobile application development were explored and integrated into the UX Design course.

Course Overview

The UX Design Course was created around the interest of the students and their objectives and goals towards reducing GHG emissions and improving green employment opportunities both within their communities and externally in industry. User experience (UX, UXD, UED or XD) is the process of building user loyalty with a product or service by improving the usability, accessibility, satisfaction and provided in the interaction with the product or service. User experience design encompasses traditional human–computer interaction (HCI) design, and extends it by addressing all aspects of a product or service as perceived by users. During this course students completed building online user interfaces for Frog Lake Waste Management Transfer Station including a website and a mobile application.

Website Design Course Objectives

Transfer stations play an important role in a community's waste management system. In the Frog Lake Community welcomed the intent for the trainees to promote the use of best practices in transfer station operation to maximize the facilities' effectiveness and efficiency, while minimizing its impact on the community. It was designed to assist facility owners and operators and the public to choose best practices for environmental goals and to provide

service information of the transfer station.

Application Development Course Overview and Description

The design and purpose of the website and application was directed by Frog Lake Waste Management and students using UX design techniques taught in class.

Course Modules

Module 1: UX Design
Module 2: Web Development
Module 3: Application Development IDE
Module 4: Application Design
Module 5: Application Building

"Individuals in rural communities and more so First Nations communities, often have fewer opportunities for exposure to technology than their urban or suburban counterparts. Westie Design Inc. recognizes the very real "digital divide" between rural and non-rural areas. For rural communities to remain economically viable and environmentally sustainable, these communities need to fully understand the potential that technology can provide in helping the environment.
Rural areas are generally not where technology companies have offices, students interested in this type of career often find little community support in terms of local internship opportunities, education training programs, and/or mentoring opportunities.

I witnessed the students gain confidence and develop a sense of community as they accomplished building the apps as a team. The students learned new information and realized the power of technology and that it can improve society and the environment as a whole. I would like to see this training expanded into more classrooms and more First Nation communities so individuals can build websites and applications to bring learning and trading of ideas into their own communities."

- Jim Bilodeau, Westi Designs Inc.

APPENDIX C

NAIT – INTRODUCTION TO ENERGY

Course Instructor:

Jason O'Shea

Course Overview

Alternative energy presents many opportunities and challenges in today's environmentally responsive world. As a result, many First Nations communities will play an ongoing role in shaping Alberta's energy activities. TCESTA integrated courses on energy management to assist the students on understanding how they can take advantage of policies and programs that would strengthen their communities by participating in the energy sector in a way that is consistent with their cultural and environmental values. This includes conserving energy and better managing its use for the communities, gaining the skills and knowledge needed to generate renewable energy where they live and work, and establishing a better understanding of the kinds of opportunities available to them and their communities in the energy field.

Course Description

As the students explored the opportunities provided by alternative energy, it was an essential goal to enable the students to become well-informed about the vast array of issues and options presented around conventional and alternative energy.

The knowledge gained in this course was designed to empower the students to critically review options and decisive sound choices to optimize the energy efficiency of their homes, businesses, and to reduce their overall environmental footprint.

Graduates of this course were also able to discuss the impact of greenhouse gases, clarify how to interpret residential and commercial energy bills, and describe potential career opportunities in the exciting and critically important field.

Delivery Method

This course was taught using a variety of delivery methods which may include face-to-face, online, or blended teaching platforms. Collaborative exercises/ assignments, seminars, labs, discussion, audio/visual presentations, case studies, and other such activities may be used to support learning.

Course Completion Requirements and Student Responsibility

This course was graded on a pass/fail basis. A minimum grade of 50 percent was required to pass.

Enrolment at NAIT assumes that the student will become a responsible citizen of the Institute. As such, each student will display a positive work ethic, assist in the preservation of Institute property, and assume responsibility for his/her education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

NAIT – COURSE #2 - ALTERNATIVE ENERGY

Course Instructor:

Jason O'Shea

Course Description

The world of alternative energy is a complex one. A wide variety of different technologies, all operating on different principles, presents a unique range of advantages and disadvantages. To make prudent decisions, you must stay abreast of the many options available from solar energy and wind generation to geothermal and biomass energy systems.

Skills acquired in this course enabled the students to compare the different alternative energy technologies available today as well as the implications of cogeneration approaches. Familiarize themselves with the latest government policies and regulations at both the federal and provincial level (Alberta) and how to be aware of what they need to know in order to make difficult and important decisions.

Recommended prerequisite:
Introduction to Energy

Delivery Method

This course was taught using a variety of delivery methods which may include face-to-face, online, or blended teaching platforms. Collaborative exercises/ assignments, seminars, labs, discussion, audio/visual presentations, case studies, and other such activities may be used to support learning.

Course Completion Requirements and Student Responsibility

This course was graded on a pass/fail basis. A minimum grade of 50 percent was required to pass.
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Student Feedback

"I feel smarter learning this course, ready to take on alternative energy."
- Student

"I truly enjoyed these courses, there were lots of opportunities to share experiences and situations, look at solutions, in addition to learning possible alternative energy sources."
- Student

APPENDIX D

UNIVERSITY OF ALBERTA FACULTY OF EXTENSION – INDIGENOUS ENVIRONMENTAL CONSULTATION AND PROJECT MANAGEMENT

Course Instructors:

Leigh Ann Ward & Marvin Ward

Course Overview

The value of Indigenous traditional knowledge being taken into account in climate change studies and environmental assessments studies as historically is largely ignored. Also, because of the ongoing regulatory reviews of environmental assessment practices and the need to adopt a co-designed and co-conducted environmental assessment process that is an equal partnership between governments and Indigenous communities, it is recognized that there needs to be individuals trained and prepared to participate in future equal collaboration between Indigenous communities and governments in environmental assessment processes within the TCV communities.

Course Description

Through lecture, case study, and field work students explored the common terminology, concepts, and methods involved in environmental consultation from an Indigenous perspective including land use, project planning, assessment, reporting, and communication.

Students explored the common terminology, concepts, and methods involved in environmental consultation from an Indigenous perspective including land use, project planning, assessment, reporting, and communication.

Course Modules

Module 1: Creation Story
Module 2: Traditional Land Use
Module 3: Terminology and Case Study Introduction
Module 4: Ecosystems and Environmental Effects
Module 5: Different Types of Assessments
Module 6: Consultation Process and Case Study Work
Module 7: Cumulative Impacts, Reclamation, and Climate Change
Module 8: Field Trip and Case Study Presentations

APPENDIX E

FIRST NATIONS TECHNICAL SERVICES ADVISORY GROUP (TSAG) TOURS

Transfer Station Tours

- Evergreen Landfill, Whitefish Solid Waste Site, and St. Paul Transfer Station Tours

Material Recovery Processes and Tours

- #### Evergreen Mattress Recycling – A Division of Redemptive Developments

  Evergreen recycles mattress from retailers, wholesalers and even manufacturers. Additionally, after many years of lobbying the local government to implement a mattress recycling program, in 2017 Redemptive Developments was successfully awarded the contract to recycle an anticipates 30,000+ units each year.

  Since these contracts have been in place, Redemptive has been able to recycle millions of pounds of material and divert it from the waste stream. Not only is Redemptive's mattress facility accomplishing great environmental success, it

has allowed RD to create over 30 full time jobs for local, deserving individuals and that number is always growing.

- ### GEEP E-(electronics) Recycling

  Recycling Global Electric Electronic Processing (GEEP) is committed to responsibly managing the consequences of the electronic age.

  They provide the means for safe reuse and recycling of electronic waste. As a leader in managing the complete lifecycle of IT assets, they assist companies in data secure refurbishing, asset remarketing and maximum return on their investments with end of life recycling.

  They believe in a sustainable future. Their mission is to encourage consumers and businesses to reuse whenever possible. When that isn't feasible, they strive to achieve a zero landfill objective with a maximum recovery of natural resources all with environmentally friendly operational practices.

- ### The Edmonton Waste Management Centre

  The Edmonton Waste Management Centre (EWMC) is a unique collection of advanced waste processing and research facilities. Owned and operated by the City of Edmonton, the EWMC is an integral part of Edmonton's sustainable approach to waste management.

- ### Discussion with Elders Roland Dion and Percy Moosapayo

  First Nation communities are losing their connections to the land and water, and this plays a big role in being disconnected from the threats of climate change. The elders shared how the land is changing and informed the students of the changes in the land from their experience as they have used the land throughout their lives and can offer insight into how to find solutions.

  Climate change was prophesized by elders over the last hundred years. It was spoken that all of humanity is to blame for climate change and it's time for society to take responsibility and make lasting lifestyle changes.

"I understood quite a lot before but seeing first-hand how landfill and transfer sites operate makes it clear what is needed and possible in our own communities". - James Jackson Trainee

APPENDIX F

EVERGREEN REGIONAL WASTE MANAGEMENT COMMISSION HANDS-ON EXPERIENCE

Evergreen Regional Waste Management Services Commission

Evergreen Regional Waste Management Services Commission is made up of seven Municipalities. County of St. Paul #19, Town of St. Paul, County of Smoky Lake, Town of Smoky Lake, Town of Elk Point, Village of Vilna and the Village of Waskatenau. Evergreen Regional landfill opened to the public in January, of 2005 and is a Class 11 landfill. Evergreen Regional Waste Management Services Commission has five full time employees. Commission Manager, Site Operator, Equipment Operator, Transfer station Operator, and a Scales Operator/ Bookkeeper. Three employees on site are certified landfill Operators.

Hands-On Experience Overview

The learning objectives listed in the TSAG Waste Management Program were projected to be met once the trainees attended classes and completed hands-on work experience. At the beginning of the program, TSAG coordinated relevant tours to give the students a real life comparison on what a regulated, well maintained landfill looks like compared to a dump site and other methods of waste management such as: open burning, unmaintained dumping site, abandoned vehicles and white goods, lack of diversion programs, or recycling, composting, and safe hazardous waste management. Then, in-class, the students learned about the foundational subjects of solid waste management including the main components of a landfill:

- Bottom liner
- Cells (old and new)
- Leachate collection system
- Storm water drainage
- Methane collection system
- Cover (or cap)
- Groundwater monitoring stations

The work experience at the landfill, gave the students the opportunity to take the foundation of in-class learning and apply their knowledge in a hands-on manner in a work experience model.

Blocks Description

Block 1 Solid Waste Management Industry General Knowledge
Block 2 Site Maintenance and Operations
Block 3 Site Maintenance and Operations
Block 4 Site Maintenance and Operations
Block 5 Safety
Block 6 Communications Skills
Block 7 Commercial/Household Hazardous Waste
Block 8 Commercial/Household Hazardous Waste
Block 9 Peer On the Job coaching

Program Related Experiences

Examples of the program related experiences are:

- Worked with freon removal
- Operated skid steer
- Operated zero turn lawnmower
- Loaded cardboard baler
- Sorted recycling (e-waste, paint, cardboard, chemical jugs)

- Worked with gate attendant
- Rode in garbage truck
- Drilled holes on leachate pipes
- Worked on a new class 3 cell installing leachate pipe
- Performed hazardous assessments

APPENDIX G

SEVEN LAKES OILFIELD SERVICES

Seven Lakes Oilfield Services is proudly owned by seven First Nation organizations: Cold Lake First Nations, Frog Lake First Nation, Kehewin Cree Nation, Saddle Lake Cree Nation, Goodfish Lake First Nation, Beaver Lake Cree Nation and Heart Lake First Nation, and is also a subsidiary of Primco Dene LP and Pimee Well Servicing Ltd.

They are the proud recipient of the Eagle Feather Business Award of Distinction category of the Alberta Business Awards of Distinction for demonstrating outstanding achievement in business and incorporating entrepreneurial and cultural concepts into our operations for long term success.

Seven Lakes Oilfield Services has been in the Waste Management business since 2002 and takes great pride in being one of the major Waste Management companies in Northeastern Alberta. They currently provide exclusive waste services to all major industry providers in Northeastern Alberta as well as commercial business and residential services throughout the Lakeland area.

Hands-On Work Experience Overview

The students had to prepare and sort materials or products for recycling, identify and remove hazardous substances, and dismantle components of products such as appliances. The following were some of the duties performed:

- Sort materials, such as metals, glass, wood, paper or plastics, into appropriate containers for recycling.
- Clean recycling yard by sweeping, raking, picking up broken glass and loose paper debris, or moving barrels and bins.
- Operate forklifts, pallet jacks, power lifts, or front-end loaders to load bales, bundles, or other heavy items onto trucks for shipping to smelters or other recycled materials processing facilities.
- Sort metals to separate high-grade metals, such as copper, brass, and aluminum, for recycling.
- Clean, inspect, or lubricate recyclable collection equipment or perform routine maintenance or minor repairs on recycling equipment, such as star gears, finger sorters, destoners, belts, and grinders.
- Collect and sort recyclable construction materials, such as concrete, drywall, plastics, or wood, into containers.
- Extract chemicals from discarded appliances, such as air conditioners or refrigerators, using specialized machinery, such as refrigerant recovery equipment.
- Deposit recoverable materials into chutes or place materials on conveyor belts.
- Operate balers to compress recyclable materials into bundles or bales.
- Clean materials, such as metals, according to recycling requirements.
- Record logs of recycled materials or waste chemicals removed from products.

Mentorship Program

The students who were placed with Seven Lakes also received training from the Mentorship Program. Each individual was assigned a competent Mentor who provided coaching and guidance resulting in their compliance and comprehensive of all company Standards and expectations. This included working through a check list that verified that each competency was achieved.

APPENDIX H

WESTIE DESIGN INC. – WEBSITE AND APP DEVELOPMENT HANDS-ON EXPERIENCE

Frog Lake Community needed new ideas to manage and report waste issues. The first app was designed for the transfer station to help the community better understand how to dispose and report waste. The mobile app provided information to the community and the ability to report waste issues. Users can take photographs and report locations where waste has collected including GPS coordinates and also allows users to easily contact Frog Lake Waste Management through a form or phone number and give the location of the waste management site on a map. To assist in better recycling practices, the app provides information on how to recycle and reduce household waste.

The second app was designed for TCETSA as a quiz for individuals looking to pass the Alberta drivers training exam. Alberta has one of the most difficult written driver exams in Canada and this issue has continuously been an obstacle for individuals within the TCV communities that are trying to obtain their driver's license. Ultimately, this is a barrier for individuals in First Nations communities to find green employment opportunities both on and off the reserve. The creation of a quiz app using questions from the Alberta Drivers Training Manual and using game mechanics will help equip users with a better understanding of the Driver Exam and will assist individuals who are interested in preparing for green employment opportunities.

Both activities gave the students the hands-on experience working with technology with sustainability best practices in mind.