

## **TRU Environmental Sustainability Advisory Committee Chair Report to Senate October 15, 2018**

### **Section 1. External forces or influences**

Three external factors that have influenced TRU's shift to more environmentally and socially responsible business practices are:

1. **Resource Scarcity and Climate Change.** "In Kamloops, water and energy consumption rates are some of the highest in Canada on a per capita basis, and watershed protection has been identified as an area of concern. It is essential for institutions to address their demands on natural resources such as water, energy, and land and to turn their wastes into resources. This affects all areas of the institutions' design and operation, such as how buildings are constructed, how they operate, what materials and equipment the institution procure, etc." ... "Global climate change is how we plan for the future. Key global climate change trends include: changing precipitation patterns and melting snow, ice, and glaciers which are affecting water quantity and quality; negative impacts on crop yields; increased frequency and severity of extreme weather events such as heatwaves and floods; and an increased burden from ill-health. The Government of British Columbia has identified increases in the frequency of extreme weather events, heat waves, and sea level rise and flooding risk as climate issues of concern for the province. For Kamloops, a predicted warmer, drier climate trend could result in elevated risks from forest fires, changes in local ecosystems which may affect natural resource industries, and rising building and infrastructure maintenance costs as a result of

extreme weather events.” ([“Thompson Rivers University Campus Strategic Sustainability Plan,”](#) pp. 6-7)

2. Legislation and Regulation. “Legislation intended to reduce greenhouse gas emissions and promote energy efficiency has been introduced by both the provincial and federal governments in recent years. Sample legislation includes:
  - Federal Passenger Vehicle and Light Truck Greenhouse Gas Emission Regulations that require new vehicles sold in 2016 and beyond to be 40% more efficient than vehicles sold in 2008;
  - The British Columbia Building Code now requires developers of complex buildings to meet the National Energy Code for Buildings 2011 standards or the ASHRAE 90.1 (2010) standards, which can achieve energy savings of 15%; and
  - The National Energy Code of Canada for Buildings 2011 mandates an overall 25% improvement in energy efficiency over the previous model energy code” ([“Thompson Rivers University Campus Strategic Sustainability Plan,”](#) pp. 6-7).
  
3. Student Demographics and Attitudes. “The movement toward campus sustainability has been triggered at least in part by changing student attitudes. The Princeton Review survey indicates that 61% of prospective students polled and 60% of their parents stated that having the ability to compare universities based on their commitment to environmental issues would have an impact on their decision to attend a school. This attitude is also reflected in the TRU SSP survey where 64% of respondents indicated that it is very or extremely important to them that TRU be a leader in sustainability among Canadian post-secondary institutions” ([“Thompson Rivers University Campus Strategic Sustainability Plan,”](#)

7). This was demonstrated with Student Trash Bashes that were inaugurated in November of 2017, and have continued in May and September of 2018, under the sponsorship of the the Sustainability Office and ESAC. This complements the Annual Sustainability Trash Bash occurring in May and open to all at TRU. Student participation is also evident (and a requirement) in TRU's Sustainability Grant Projects, and these projects got funds in 2017-2018:

- TRU Center for Respiratory Health and Sleep Science – Aaron Ladd
  - Project Goals: To reduce or eliminate the use of paper in the Center for Respiratory Health and Sleep Sciences for physician communication and logistical documentation. To dramatically reduce overall print and paper costs.
- [Bird Strike Remediation Project](#) – a study of bird mortality at TRU due to collisions with window frontage and what can be done to reduce the number.  
Tom Dickinson, Matt Mcisaac
- Pilot e-bike Sharing System for TRU – Musfiq Rahman
- Land-Based Learning about Sustainability based on Indigenous Knowledge and Laws as part of the TRU Law Truth and Reconciliation Days - Nicole Schabus
- [Bee Happy Garden Proposal](#) – Valerie Law
- Faculty Sustainability Research Grant - Protecting the salmon: An environmental education and research project – Dr. Nan Stevens

## Section 2. Internal forces or influences

The TRU Strategic Plan 2014-2019 lists Increasing Sustainability as one of its five key Priorities for this period. As such, “TRU will prioritize initiatives that mutually benefit the university and the communities we serve” ([“TRU Strategic Plan 2014-2019”](#)). Two subfactors listed in the Plan have formed goals that have influenced TRU’s shift to more environmentally and socially responsible business management practices and define how TRU does business:

1. Environmental Sustainability. The Environmental Sustainability Advisory Committee of Senate was created to advance those goals in conjunction with and support from the Sustainability Office of TRU ([“Terms of Reference, TRU Environmental Sustainability Advisory Committee”](#)). In response to the TRU Strategic Plan, the Sustainability Office has formulated its five-year Plan to advance these goals ([“Thompson Rivers University Campus Strategic Sustainability Plan October 2014”](#)).
2. Financial Sustainability of the University. Environmental Sustainability is good business and helps TRU’s bottom line by reducing costs, improved operating efficiencies, and government subsidies for green initiatives. Matt Milovick, VP Administration and Finance, TRU recognized and applauded these results:
  - “Over \$3 million in grants for energy-saving initiatives\* Organizations awarding grants to TRU include BC Hydro, Fortis, Public Sector Energy Conservation Agreement, Natural Resources Canada, and Fraser Basin. These grants have led to a \$400,000 annual reduction in overall utility

costs from 2011 to now. Green House Gas (GHG) emissions have been reduced by 33%, and TRU is on track to reduce GHG by 45% by 2018.

- Paper use reduced by 60% since 2012, from 22 million sheets per year down to 9 million sheets per year.
- Energy savings of \$500,000 per year - greater than those achieved by any other BC post-secondary - was recognized by BC Hydro from 2010 - 2016. Biomass renewable energy savings of 16% at Williams Lake. The 400kW Biomass Boiler is designed to heat the Catalina Elementary School, E.J. Bare Education Centre and the Thompson River University Campus. The locally sourced biofuel used by this boiler system will reduce the carbon dioxide emission by approximately 360 T/yr.”

(“[Leading Strategies in Sustainability](#)”)

Sustainability is now a core part of TRU’s investment strategy. “TRU will begin including environmental, social and governance factors in its investment decisions through membership in the United Nations-supported initiative called Principles for Responsible Investment (PRI)” (“[Investment strategy to include sustainability](#)”).

Formulation of a Sustainable Procurement Policy is being investigated by the Sustainability Office, in partnership with Purchasing Services and ESAC. (“[Sustainable Procurement](#)”)

### **Section 3. Global impacts of sustainable development initiatives**

One very real global impact of the sustainable development initiatives of TRU is a reduction of Green House Gas (GHG) emissions by 33%, and TRU is on track to reduce

GHG by 45% by 2018, as mentioned before. These savings are the direct result of a wide variety of projects across TRU. TRU has installed an industrial-sized composter in the Culinary Arts building and added zero waste recycling stations through much of campus. Waste volume has been reduced by 500 tons per year, with 40-60% of GHG-producing waste now being diverted from landfills. Vehicle sharing programs at TRU means less traffic and fewer emissions. TRU has programs for employee car sharing with the TRU RideShare Program, community car-sharing ([“Zipcar drives onto campus”](#)), free hybrid-fueled car loan-outs with the TRU CarShare Program, free electric bicycle (“E-bike”) rentals, and an employee payroll deduction program for E-bike purchase at reduced cost. ([“TRU Employee E-Mountain Bike Incentive”](#)) All of these initiatives together are meaningful, measurable, and significant contributions made by TRU to reduce its global footprint on Climate Change caused by GHG emissions ([“2014 Carbon Neutral Action Report”](#)).

Another important factor is TRU’s efforts to influence Sustainability awareness and engagement not only locally on campus but with a global reach. TRU made it the theme for the Staff In-Service Day in February of 2017, an event that germinated as an idea from ESAC and the Sustainability Office. “Cultural, social, economic and environmental sustainability are a priority for the people who work and study at TRU - which is why increasing sustainability is one of the five Strategic Priorities of our institution. In Service Day 2017 explored this broad theme with talks, a keynote presentation, group sessions and display booths.” ([“Sustainability It’s in Our Hands”](#))

TRU’s International Days (IDays) 2017 events were organized around the United Nations Sustainable Development Goals (SDGs). TRU stated on its website that “our

goal is to inform, educate and motivate people to join forces to create a better future for all by 2030. It is a small step in the direction of change for a better world, and we want you to be involved” (“[IDays](#)”). This theme carried over to IDays 2018 to “explore culture, sustainability and the local-global connection, highlighting four of the UN’s Sustainable Development Goals.” (“[IDays 2018](#)”) Planning for IDays 2019 is now underway, which aims to “build on the tradition of integrating the UN’s Sustainable Development Goals into the week’s events.” (“[IDays March 12-19, 2019](#)”)

#### **Section 4. Harnessing technology for sustainable development**

TRU is leveraging the Internet in combination with a wide array of technologies in a big way to assist in its efforts to move towards sustainable business and development:

##### Continuous Optimization Program

TRU has enrolled all of its major buildings into BC Hydro’s Continuous Optimization Program (COP). The multi-year program utilizes TRU’s Energy Management Information System (EMIS) software to analyze buildings’ energy efficiency and is designed to reduce energy use through low-cost re-commissioning measures. The British Columbia Center for Online Learning (BCCOL) building was TRU’s first building to go through all phases of the Program. The energy conservation measures identified in the BCCOL were implemented in March 2014 and are projected to reduce energy use and GHG emissions by greater than 10 percent in all five buildings.

##### Boiler Replacements

In 2014 four large boilers were replaced with high efficiency condensing boilers in the Campus Activity Center (CAC). Funding through the Carbon Neutral Capital Projects (CNCP) fund and Fortis BC boiler replacement program were instrumental in completing this project, which when combined with the COP measure in the CAC have reduced natural gas use by 50 percent.

### Solar Panel Installations

A 10 kilowatt solar PV system was installed on the roof of the Student Union Building in the fall of 2014 to complement solar thermal installations on the CAC, Old Main, and the Culinary Arts Training Centre. These systems are designed to supply electricity and help to reduce demand (“[Harnessing the sun](#)”). The Solar Sidewalk and Solar Compass Sustainability Grant projects involved student, staff, Faculty and industry partners to create ground-breaking solar panel installations that were firsts in Canada. (“[Solar road project shines light on renewable energy](#)”)

### Remote Electricity and Natural Gas Monitoring and Reporting

Developed by Pulse Energy, the software connects to energy meters installed throughout each major campus building. Data is collected, analyzed, then the results displayed in real-time on this website dashboard:

<https://my.pulseenergy.com/ThompsonRiversUniversity/dashboard/#/overview>

### HVAC Scheduling and Override software

HVAC scheduling and override software are installed in most buildings on campus to improve the efficiency of building heating and cooling:

<https://www.tru.ca/sustain/initiatives/buildings-and-grounds/details-on-buildings.html>

### TRU RideShare and Car Share Websites

This website helps students, faculty and staff quickly and securely find carpool partners with similar schedules, thus reducing single occupancy vehicle traffic and GHG emissions: <https://www.trurideshare.com/Public/Home.aspx>

This website enables TRU staff to reserve energy efficient gas/electric hybrid vehicles, or one pure electric car instead of using car rental agencies or their personal vehicles for TRU business: <http://tru2-demo.libcal.com/booking/CarShareto>

All of the above are a part of the "[TRU Strategic Energy Management Plan 2016](#)".

### **CONCLUSION**

It is very gratifying for me, as a person who works at TRU and Chair of the Environmental Sustainability Advisory Committee (ESAC) of Senate, to see concrete results from the efforts that TRU has made in this area so critical to our future. The work of students, staff, faculty, and administration has resulted in collective accomplishments that have gained recognition locally, provincially, and internationally. Our collective engagement and commitment to Sustainability continue to build in our community, which reaches from Kamloops to across the world with our International students, staff, and faculty. These efforts have added enormously to our Triple Bottom Line for Social, Financial, and Environmental Sustainability here at TRU. The Association for the Advancement of Sustainability in Higher Education (AASHE) awarded TRU a Gold rating in its comprehensive Sustainability Tracking, Assessment, & Rating System

(STARS) and is pursuing Platinum status by 2020 ([“Improved environment practices earn TRU gold STARS”](#)).

We may have reached a state of diminishing returns from retrofitting some of the older buildings like Old Main, but opportunities exist at TRU as a whole to achieve carbon neutrality, zero waste and integrate Sustainability further into all aspects of TRU life and study. The Sustainability Office is investigating the feasibility of expanding biomass energy generation from clean wood waste as was done successfully at UBC, and which could significantly reduce TRU’s carbon footprint and energy costs. Work towards Zero Waste as an institutional goal continues with many initiatives ongoing. ([“Moving Towards Zero Waste: Sustainability, Reduction, and Diversion at TRU”](#)) Work continues to integrate Sustainability into the curriculum at TRU, a project lead by Susan Purdy, former ESAC Chair ([“TRU Sustainability Reimagined Workshop 2018”](#)) and recipient of the 2018 ESAC Sustainability Achievement Award.

I look forward to a bright future for Sustainability at TRU in the years to come. I would like to thank the Sustainability Office team lead by its Director Jim Gudjonson, ESAC members, Student Sustainability Ambassador Program volunteers, and all Faculty, Administration, and Staff that have contributed to its success. This legacy will continue as we are in good hands with those who lead into the future.

**Karl Fultz**

**Chair, Environmental Sustainability Advisory Committee**

**Thompson Rivers University, October 15, 2018**

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“Moving Towards Zero Waste: Sustainability, Reduction, and Diversion at TRU” The vision of Jim Gudjonson, Director TRU Sustainability Office was presented as a poster by the ESAC Chair at the International Sustainable Campus Network Conference held in Stockholm, Sweden on June 11-13, 2018. <https://www.international-sustainable-campus-network.org/downloads/conference-and-symposia/486-iscn-2018-book-of-abstracts/file>