

Challenge Brief: Southwest Experiential Learning Lab (SWELL)

What is the initiative?

The Southwest Experiential Learning Lab (SWELL) is a place-based experiential learning initiative to expand and improve systems thinking and design thinking. The initial focus of SWELL is energy systems, and building capacity to design and develop energy systems the future will require. SWELL will expand its focus over time to include water systems, food systems, data systems and other systems for meeting human economic needs.

SWELL creates energy-related experiential learning opportunities for children, youth and adults, making use of the many and diverse energy-related features of southwest Alberta's landscape. These include Castle Provincial Park, Waterton Lakes National Park and Head-Smashed-In Buffalo Jump World Heritage Site (natural and indigenous energy systems); regional agricultural operations (energy from crops and biomass); Frank Slide Interpretive Center (energy from coal); Shell Waterton Complex (energy from oil and gas); Oldman River Dam hydro plant (energy from water); and the region's many wind farms and solar installations (energy from wind and light).

SWELL is governed by a Steering Committee comprised of people with proven track records in designing, developing and delivering experiential learning programs and services in southwest Alberta. Administration and fundraising support for SWELL is provided by the [Southwest Alberta Sustainable Community Initiative \(SASCI\)](#), a backbone organization in Pincher Creek, Alberta.

Why is this initiative important?

Shell Canada's Waterton Gas Complex has been a major economic generator for southwest Alberta since the early 1960s. Shell publicly announced in 2015 that downsizing and eventual closure of the Waterton Complex would likely occur within 10 to 15 years. SASCI conducted an assessment of projected socio-economic impacts of the closure, which concluded that:

- Annual GDP in the region will decline by \$34 million.
- Tax revenues to the Municipal District of Pincher Creek will decline by over 20%.
- An estimated 265 high-paying full-time equivalent jobs will be lost at Waterton Complex and in local service businesses, affecting 8% of the current local labour force.
- As many as 650 people could leave the region as workers and their families relocate to new jobs, affecting up to 9% of current local housing stock.

Communities across rural Alberta will face similar impacts over the coming decades, as global energy transition accelerates and fossil fuel use enters terminal decline. Community resilience will require strong and sustained commitment to community innovation, and to designing and developing new ways of organizing and functioning as communities. This includes building the social and physical infrastructure required to open and develop new frontiers for growth.

What is the ambition for this initiative?

“Rural communities are to societies as roots are to trees, and resilient trees grow resilient roots.”

SWELL’s immediate ambition is to address two pressing needs in rural southwest Alberta:

- Build and protect community resilience by building capacity for community innovation;
- Retain and attract youth to protect and build capacity for social and economic innovation.

From a longer-term perspective, SWELL is a step towards building a robust community-based ecosystem for social and economic innovation. A helpful metaphor is Canada’s exceptional ecosystem for producing world-class talent in ice hockey, figure skating and speed skating. Canada’s excellence in skating athletics principally reflects the nation’s abundance of community-based social assets (teams, leagues, schools, coaches, mentors and fans) and community-owned physical assets (arenas, rinks, nets and Zambonis), which create abundant opportunity for Canadians young and old to engage and excel in skating interests and pursuits.

SWELL’s longer-term ambition is to help build a robust community-based ecosystem that produces abundant world-class talent in creative and technical pursuits. This includes the creative and technical talent that Canada requires for designing and developing energy, water, food and other systems that will be essential to meeting future economic needs.

Experiential learning is the most effective way to grow the talents and cultures that will enable communities to innovate and maintain resilience and prosperity in an increasingly complex and unfamiliar future. Knowledge relating to the nature and science of energy will be uniquely valuable in growing these talents and cultures, and Alberta’s energy history and culture offer real advantages. SWELL will leverage these to design and deliver experiential learning that is relevant and appealing to the broadest possible range of learners. SWELL will also leverage the knowledge and experience of SASCI, the [Olds Institute for Community & Regional Development](#) and other backbone organizations that support community innovation in Alberta and beyond.

What challenges are there to achieve the ambition?

Management guru Peter Drucker famously quipped that ‘culture eats strategy for breakfast’. He understood that culture is usually the root obstacle to innovation, and that it typically causes a struggling organization or community to rally around knowledge and vested interests rather than learning and innovating to adapt to evolving market and operating needs. Also, cultures often create social and political conditions that deter or drive out talented youth and other innovators.

Many communities in Canada have developed around the production, transportation and value-adding of commoditized non-renewable resources. Market volatility, technological progress and resource depletion have left many of these communities struggling, and some have failed. The boom-bust cycles of resource industries continue to dominate most regional economies in Canada, despite longstanding efforts to diversify these economies and reduce their vulnerability to volatility in global commodity markets. These efforts have largely failed for lack of community capacity to innovate, a condition typically rooted in local cultures, politics, and social identities.

A further challenge to the SWELL initiative is that Pincher Creek is a one hour drive from Lethbridge and a two hour drive from Calgary. This poses challenges in making services accessible and affordable in key potential markets. These challenges are compounded by other logistical needs required experiential learning, especially for learners with physical disabilities. Realizing economies of scale will be essential to meeting these challenges.

What is a partnership and business model that would allow all Albertans to experience SWELL? What constraints must be respected?

- Inclusivity (available to all learners, including the physically disabled)
- Accessibility (accessible for learners throughout southwest Alberta including cities)
- Affordability (service costs fit family, school, student, tourist and traveller budgets)
- Scalability (sufficient funding and talent can be secured to meet growing demand for services and realize economies of scale)

What has been tried in the past? Has it worked?

SPACE Program

SPACE is an acronym for Southwest Places for Augmented Cognitive Engagement. Every September for the last six years, SWELL proponents have delivered an annual day long experiential learning mission for students of NAIT’s Alternative Energy Technology program. These missions have now expanded beyond its original footprint in southwest Alberta to include visits to a bioreactor near Lethbridge and a megawatt-scale solar farm near Brooks in southeast

Alberta. More learning opportunities are becoming available as more facilities are built and more partnerships are established with facility operators.

SWELL proponents also designed and delivered a two-day experiential learning mission in the spring of 2017 for a class of Grade 9 science students from Calgary's Ted Harrison School. This pilot initiative was successful, but has not led to further program development for lack of funding and lack of consistent interest and support from secondary schools. Managing cost and risk are key concerns for school administrators and educators, and longer-term investment will be required to realize the economies of operating scale that can effectively address their concerns.

Pincher Creek RCADE

RCADE ('arcade') is an acronym for Regional Centre for Applied Design & Entrepreneurship. SWELL proponents established the Pincher Creek RCADE as a community 'rink' for creative and technical pursuits. The RCADE provides experiential learning around personal and household electronic devices and their design and application, especially digital devices. The RCADE has hosted an after-school drop-in program for children 8 to 17 years of age over its three years of operation. It has also hosted the Coder Rodeo summer robotics camp, digital gaming and storytelling workshops, an experiential learning field trip to DIRT Environmental in Calgary, and other experiential learning events. SWELL proponents have secured a \$10,000 sponsorship for RCADE expansion from Enel Green Power, a global leader in renewable energy development and production. The funds will be used to buy equipment and expand programs.