FINDING COMMON GROUND BIKE TOUR AND DOCUMENTARY



EXPLORING ENERGY OPTIONS & OPPORTUNITIES IN THE BATTLE RIVER WATERSHED

WHAT WE HEARD

PROGRAM PARTNERS

All Finding Common Ground events were made possible by the Government of Alberta's Community Environment Action Grant (CEAG)

"The Community Environment Action Grant (CEAG) helps Albertans to work together as stewards to take action on climate change.

Albertans are already committed to environmental stewardship through initiatives that showcase our water and land literacy. This grant program provides an opportunity to broaden climate literacy, meaning that we think, plan, and act with climate change in mind to help reduce greenhouse gas emissions.

While the focus on reducing greenhouse gas emissions is the main environmental outcome for all funded projects, projects must demonstrate social benefits such as creating or supporting community and partnership-building opportunities."



Source: "Community Environment Action Grant." *Government of Alberta*. https://www.alberta.ca/alberta-community-environment-action-grant.aspx

About the Battle River Watershed Alliance

The Battle River Watershed Alliance (BRWA) was created in November 2006 as a non-profit society. Shortly after its formation, the BRWA was selected by Alberta Environment, under the Water for Life Strategy, as the designated Watershed Planning and Advisory Council for the Battle River and Sounding Creek watersheds in Alberta. We are a non-governmental organization dedicated to preserving and enhancing the land and water in these basins. As a well-respected community organization, our work takes a balanced approach for healthy natural areas, resilient communities, and a stable economy.

Defining our Watershed

A watershed is like a funnel, collecting rain and snow and draining it into a larger body of water (such as a wetland, stream, river or lake). The Battle River watershed is a large area of land covering most of east-central Alberta which drains into the Battle River. The Battle River itself is a modest, prairie-fed (as opposed to glacier-fed) river that lies within a valley that seems much too big for it. That's because its path was carved out long ago when glacial meltwaters from prehistoric Lake Edmonton gushed southward, carving a large valley into the earth.



Within the complex living system of a watershed, everything is connected by the shared water and land. The Battle River starts at Battle Lake and flows 800 kilometres eastward across central Alberta, eventually entering the North Saskatchewan River at Battleford, Saskatchewan. The Battle River watershed contains all lands that drain into the Battle River. A number of creeks in the watershed feed into the Battle River, including Pipestone, Iron, Paintearth, Ribstone, and Pigeon Lake creeks.

Learn more about us on our website: www.battleriverwatershed.ca

WE COULDN'T HAVE DONE IT WITHOUT YOU!

We would like to thank and recognize our project partners & hosts who opened their doors to make this tour possible:

- Ryan Poole from the City of Camrose for explaining the new solar project at the Recreation Centre
- Kirk Heuser for informing us on what the Government of Alberta is doing to deal with climate change
- Paul King and Mark Millang from Camrose County for walking us through how the County is using willow trees as biofuel to heat their building
- Ken Eshpeter for sharing his songs
- Marian Williams for her talk and leading a discussion on local food
- Ken Van Luven from the Village of Forestburg for describing how the surrounding region is diversifying and broadening its economic opportunities
- Trent Steil from the Westmoreland Paintearth Mine for touring us around their site
- Barb Bosh and Darryl Stebner for showing us around the ATCO Power plant, providing lunch, and explaining the Alberta electrical grid
- Lazy T Farm hosts, Jenna and Brett Hauck (and Nibourgs), for explaining to us how they're using solar energy on their farm
- Capital Power Operations Manager, Mark Jackson, for sharing his passion for wind at the Halkirk Wind Facility
- Cheryl Fotheringham and the students of the Lougheed Colony School for the popsicles and songs
- Prairie Land and Cattle Company for hosting us and telling us about the regenerative work they're doing with crops and cattle
- University of Alberta Professor, Edward Bork, for explaining to us why grasslands are a critical part of carbon storage
- Enbridge manager, Shane Thompson, for answering our questions about his company's role at the Hardisty Terminal
- Climate scientist, Elaine Wheaton, for delivering a knowledgeable and thoughtful final presentation about how climate is changing the prairies and what we can do to work toward solutions
- Heisler Hotel, Halkirk Hotel, Hardisty Seniors Centre, and Deena's Country Kitchen for providing us a place to eat and hold meetings
- The Battle River Inn in Forestburg for helping a group of tired cyclists get two good nights of rest

DEDICATION

We all share this watershed—from the land and water, to the communities and economy, everyone who lives, works, or plays here is part of our common ground. Our population may be sparse in numbers, but we can more than make up for it with our big hearts and hardwork. And so we dedicate this Finding Common Ground project to both the young people who are coming up as leaders ready to take on local and global challenges, and to the elders who continue to work hard to make the changes needed for the next generation. We had the whole age spectrum involved in the project, and are inspired by all who are committed to finding, and creating, a happy and healthy common ground.

ABOUT FINDING COMMON GROUND

The Finding Common Ground project was created to increase knowledge, dialogue, and action about energy and climate change in the Battle River region. Three main components of the project were a cycling tour, a documentary film, and a community conversations series.

This report distills "what we heard" along the way: the stories, participants' feedback and input from all three parts of the project.

The Finding Common Ground project began with a three-day bike tour around the watershed to see different types of energy systems. Guest speakers and tours were a starting point for discussions about the use of energy in Alberta, our future, and climate. We visited seven energy sites, listened to 17 presentations and biked 186 km—all in three days! Details of this tour are described on pages 10 to 21.

Filmmaker Alison Bortolon of Radical Productions joined the tour to take footage and create a documentary film. The Finding Common Ground documentary showcases the highlights of the tour, and the perspectives and ideas that emerge. It is now available on the BRWA's YouTube channel at www.youtube.com/battleriverwatershed

The third part of the project focused on facilitating discussions about energy, climate change, and resilience in the Battle River watershed. By visiting and hosting 12 community conversations throughout the watershed region, participants watched the film and provided their own opinions on the topics. More on these community conversations can be seen on pages 24-27.

The tour emphasized open and constructive dialogue. This gave participants the chance to safely ask questions and consider concerns, in order to work toward positive changes. People were introduced to new practices, tools, products, and services required to avoid greenhouse gas emissions (GHGs)—as presented through fellow participants and guest presenters. The hope was that those involved would not only increase their knowledge and understanding of energy and climate change but would have the opportunity to share their opinions, plans and ambitions.

We had a wide range of people participate in one of the three phases of the project. This ranged from students to farmers to educators to community supporters, from YouTube surfers and cyclists to municipal staff. Our hosts and presenters were also diverse and varied: university professors, farmers, local business people, government leaders and energy representatives.

The Finding Common Ground cyclists and crew as they prepare to leave Camrose on September 5, 2017.









documentary screenings

bike tour participants

The Battle River watershed is an energy rich hub

As we began to plan this tour, we realized a diverse group of energy producers exist in the Battle River region. The watershed is rich with energy options and opportunities. So during this time of changes in our climate and economies, how do we power our way forward?

Energy sources and their development have propelled industry and technology into new realms of discovery. Primary energy comes from natural resources like wind, water, coal, gas and solar sources. Once the energy is in a form that can be used, it is known as secondary energy.

Much of the energy used in the past century has come through non-renewable fossil fuel sources like oil, coal and gas. The Battle River region is no exception, as coal mines like the one south of Forestburg and the oil and gas terminal at Hardisty have been operating since the 1950s.

From the ATCO Power coal-fired generating station to new biofuel alternatives, energy producers continue to seek out ways of creating energy more efficiently and with a smaller footprint. They all recognize the value of investing in new technologies and renewable alternatives.



View of ATCO Power's Battle River Generating Station showcases the Battle River in the foreground. The river has been dammed here to serve as a reservoir for the plant, which uses water to cool the equipment.

We are not only a region rich in natural resources of coal, gas and oil, but a good source of sun, wind and biofuel. An increasing number of individuals, farms and cooperatives are harnessing these renewables to power homes, offices, and neighbourhoods in our region.

The final route was chosen based on site locations, the safety of the routes, and the travel distance of each day.

It was amazing, and much to the credit of our partners, that the BRWA had no trouble arranging energy site tours and guest speakers. Even with a video camera in hand, we were welcomed in at sites across the tour and given a "full-access pass" to the operations.

BIKE TOUR ROUTE AND COMMUNITY CONVERSATIONS



FINDING COMMON GROUND BIKE TOUR ITINERARY

Day 1 - Tuesday September 5th — "Fuelling Up"

CAMROSE TO FORESTBURG, 88 KM

STOPS & PRESENTATIONS

- Camrose Recreation Centre presentation on their new solar array
- Government of Alberta presentation on climate change impacts and mitigation
- Camrose County presentation on their biofuel generator
- Heisler Hotel for dinner and discussion about local food
- Shuttle or bike to Forestburg Battle River Inn for a movie night or resting up

Day 2 - Wednesday, September 6th – "Recharge" FORESTBURG TO BIG KNIFE PROVINCIAL PARK TO HALKIRK, 55 KM

STOPS & PRESENTATIONS

- · Village of Forestburg presentation on regional economic diversification
- Diplomat Mine Interpretive Site
- ATCO Power Battle River Generating Station
- Paintearth Mine
- Lazy T Farm solar project
- Capital Power Halkirk Wind Facility
- Dinner and pie at the Halkirk Hotel
- Shuttle back to the Battle River Inn

Day 3 - Thursday, September 7th — "Wind Up" FORESTBURG TO HARDISTY, 66 KM

STOPS & PRESENTATIONS

- Lougheed Colony School
- Prairie Land and Cattle Company for a BBQ and presentations about the farm and research from the University of Alberta about rangeland ecosystem goods and services
- Enbridge at Hardisty Terminal
- Climate change presentation at Hardisty Seniors Centre
- Shuttle back to Camrose

FINDING COMMON GROUND BIKE TOUR ROUTE



"[The trip] has been one of the most interesting trips I've ever been on. We visited different energy sites, saw the technology that was being employed, saw the history of the operations, and also got a glimpse into what the future might look like." — Alan Ford, Camrose

BIKE TOUR DAY 1

Camrose Recreation Centre Solar Array, City of Camrose

Our tour began with a talk about Camrose's Recreation Centre's new solar array. The solar project was a partnership between the City of Camrose and ENMAX Energy, with partial funding provided by the Climate Change and Emissions Management Corporation (CCEMC).

General Manager of Community Services, Ryan Poole, says he was impressed at how the city has taken steps to be leaders in the area of the environment. He spoke about how the Recreation Centre now has the second largest commercial solar rooftop in Canada. Poole



View of the 2,886 solar panels that power about 1/3 of the Recreation Centre's electricity in Camrose.

says, "From what I can tell, Camrose has always been [a leader]. The people here have a more positive attitude towards fitness, towards alternative transportation, towards parks. The number of green spaces per capita is... one of the top ones in Canada.

That didn't just happen in the last 5 years or 10 years or 20 years. That happened for the last 100 years. It's just been a slow evolution that the mindset here in Camrose is that we care about our surroundings around us...This is just the next step."



The 33,000 square foot solar array generates about 1 MW output (the equivalent of 118 homes), or 30% of the energy-intensive building. While this meant committing to more money upfront, he is pleased that the next generations will reap the benefits by proactive choices in the present.

Willow biofuel, Camrose County

Our last stop before leaving town was to the Camrose County office. The County uses willows grown in plantation, at Ohaton, irrigated with municipal grey water, to



The willow harvester at work in Ohaton, Alberta.

burn as biofuel to heat part of their 24,000 square foot administration building. County Administrator, Paul King, walked us through the operation, which is the only working biofuel heated municipal building facility the



County is aware of. The initial cost of the biofuel project was \$249,000 plus labour, which means the County should recover their money (at today's natural gas prices) within fifteen years. The feed stock silo must be filled about twice a year and currently runs on about 3 acres of willow trees, according to Manager of Agricultural Services, Mark Millang. Because of the density of the willow wood, the County uses a special harvester that cuts the trees into chips.

King says the County now saves about "42% on our winter energy costs... We're spending \$3000 a year to make it all happen... all our own County resources." This incredibly efficient system is also eco-friendly as it produces zero emissions.

Climate Leadership in Alberta

As Director of the Climate Summits and Adaptation Strategy, Kirk Heuser said that we need to prepare for change and adapt for the future. The rise in temperature and erratic precipitation has caused an increased amount of damaging weather events that have spinoff impacts on food availability, health, and the economy.

Heuser noted a shift in views about resource extraction and the need to consider green alternatives as Alberta continues to 'overachieve' in its emission levels. Carbon tax is not new to Alberta, though it now targets a broader spectrum than just the big emitters. Steps are being taken to deal with methane emissions, which are 25 times more potent than CO2. The renewable energy market is rapidly expanding, as Alberta is tapping into some of the best solar potential in the country.





Alberta's current natural subregions are shown on left. The predicted changes (based on a median model) to subregions by the 2050s on the right. Map images from: Richard R. Schneider. "Alberta's Natural Subregions Under a Changing Climate: Past, Present and Future," 2013. http://biodiversityandclimate.abmi.ca/resources/map-galleries/natural-subregions/

Heuser says that "action is needed and fortunately action taken today can mitigate a lot of the effects that we're seeing." He explains that the Climate Leadership Plan is about preparing Alberta for the future and making it better able to compete and succeed "in a carbon constrained world."



"I feel that all energy, whether it's renewable, non-renewable, whether it's coal, whether it's wind, whether it's oil-field related - all of our energy needs should be environmentally and fiscally responsible. Regardless of the source."

— Terry Vockeroth, Galahad



"It's more a societal shift and a behavioral change, but I think we need to get out of the mindset that we can strictly engineer solutions."

— Alison Robert, Edmonton (on mitigating climate change)



"We breathe the same air, drink from a common source, walk on this land." - Community

conversation participant

"There needs to be change on how we produce energy, but it is idealistic to think that it will be painless or quick or easy."

- Community conversation participant

Dinner and discussion, Big Willy's at the Heisler Hotel

After a couple of snack breaks in Bawlf and Daysland, we pedalled on to Heisler. Farmer and businessman, Ken Eshpeter, serenaded us with songs inspired by the



Battle River. Following our dinner at the Heisler Hotel, local food aficionado, Marian Williams, talked to us about the importance of eating local. She said that for her, eating local begins with her own garden, moves to buying from farmers from her County, then to Central Alberta, and outward. Williams named local producers and processors and what they are doing to be sustainable. She then talked about the Alberta Farm Fresh Producers Association (a farm direct network) and the Food Artisans of Camrose County, which connect local farmers and producers to local consumers. After her talk, we spent some time talking in groups about how and why buying local is a key part of a sustainable future.



Marian Williams spoke to us about the importance of eating local. We then talked as a group about our own experience of buying and eating locally.

ABOVE: Dinner at Big Willy's was followed by a lively discussion. LEFT: Ken Eshpeter entertained with some of his songs.



"We need to have more places around a glass of wine, a glass of beer, a cup of coffee, a locally produced pie or food - to just talk about it... personally and then collectively. I think that's what's really been missing in Alberta. An opportunity for dialogue that is not political, but [where] we really talk about our lived-in environment and what we can do to sustain it." — Annie McKitrick, MLA for Sherwood Park "People are more aware that we need to diversify our energy sources. I think we're only limited by the laws of physics and our own imagination of how we can realize our energy needs."

- Leslie Lindballe, Camrose

"Rural residents are great conservationists in many ways. Ways that are often overlooked. Growing your own food, canning and preserving fruits & vegetables and using reusable canning jars are just ways of life on the farm, but they also reduce greenhouse gas emissions from transportation and food production." — Doreen Blumhagen, Councillor, County of Paintearth

BIKE TOUR DAY 2

Regional Opportunities and Impact Study for Urban Systems, Forestburg

On day 2, we met with the Village of Forestburg's head of Economic Development, Ken Van Luven. With the possible phase out of coal in the region by 2022, the surrounding counties and municipalities have joined forces to study how they can transition from coal to other economic opportunities. They've looked at how the region might diversify, retrain employees and place



more emphasis on growing industries like tourism. Van Luven says that they've spoken to workers, officials, and organizations — and that everyone involved has been helpful in trying to work toward a positive solution.

"We're all involved in the region. We come together and we say the impact is going to be this...It's going to affect everybody...The question is how do we move forward from there. It will have to be together, we have to find a commonality, basically join together. Not one of us can do it alone." — Ken Van Luven, Village of Forestburg, on 'Common Ground'



The Brutus dragline shown in action at Westmoreland's Paintearth Mine south of Forestburg.

Coal Mining, Westmoreland Paintearth Mine

Mining engineer, Trent Steil, toured us around the Westmoreland Coal Company's Paintearth Coal Mine. It's

WESTMORELAND COAL COMPANY

the same mining site where both his dad and grandfather worked. Steil said the combination of the seams being close to the surface (as shallow as 8 metres down) and the power plant being right next door make it one of the more profitable coal mines in the province.

Steil talked about what the mine is doing to remain sustainable. Reclamation begins immediately after the coal has been mined, and restoring the land to its original purpose (generally farming) can take less than one year. Currently, the mine must replace a minimum amount of 52 cm of subsoil and 18 cm of topsoil. The land must be monitored for several years to ensure land capability meets or exceeds levels prior to mining in order to be certified by the provinicial government. A percentage of the land must be available for wetland habitat, and vegetation studies for crops and native plants are done on an annual basis. The original farmer is given right of first refusal to the land but can also opt to lease it out to other farmers. Steil said many of the farms are producing better crops than before the area was mined.

With ATCO's decision to transition to burning natural gas by the end of 2021, the staff of 150 employees at Westmoreland dropped to 75 in 2015 and to just over 50 in 2017. Steil admits that the bleak future for coal has been hard on employee morale, but he believes that money should be put into finding more economic ways to capture emissions from burning coal.



"One of the things that challenged my opinion was coal and seeing the plant [Westmoreland Mine] in action and seeing how quickly it was reclaimed and returned to an agricultural function." — Alison Robert, Edmonton "Sustainability is the common ground, trying to find that balance... I think coal can be sustainable. Especially in Alberta. . . we need it to be part of the puzzle."

- Trent Steil, Westmoreland Paintearth Mine

Coal-fired power generation, ATCO Power Battle River Station



LEFT: Barb Bosh leads the tour around ATCO Power's Battle River Generating Station.

RIGHT: Tour participants check out the station's impressively tall stacks.



We got to see the next phase of the power generating process as we made our way over to ATCO Power's Battle River Generating Station. Environmental and Lab Supervisor, Barb Bosh, and Station Manager, Darryl Stebner, showed us around. The coal supplied by Westmoreland is crushed to a fine consistency, burned in a furnace as fuel which generates steam to drive the steam turbine, connects to an electrical generator, and that generation is connected to Alberta's power grid. Stebner explains, "the flow of electricity goes to wherever the load is."

ATCO Power

Bosh outlined many of the environmental programs created and supported by the local ATCO Power station. Among these are the Air program, which monitors the amount of source effluent in the stacks, two ambient stations as well as particulate monitoring. ATCO Power owns a large part of Big Knife Provincial Park land, and Bosh was once told by an Alberta Environment representative "that the Battle River, ATCO Power, and Big Knife Provincial Park is one of the longest stretches of protected riparian areas in the Battle River watershed."

By partnering with Alberta Environment, Fisheries and Oceans Canada, and Environment Canada, ATCO Power built an "electronic fish barrier. It was the first barrier of that design ever done in Canada," according to Bosh, and uses an electric current. The current prevents fish from getting trapped in warm water areas where they can overheat. The Battle River power plant has been working with Environment Canada for over 50 years as a weather station. Their program to create nesting boxes for peregrine falcon populations has been very successful and their Energy Education Mobile has visited 380 schools.

Stebner says ATCO Power's business development group has collaborated with government to identify ways to reduce greenhouse gases. As for the future of the Battle River plant, ATCO Power is looking at the viability of converting their plant to natural gas with the phase out of coal.

Farm-based solar, Lazy T Farm

We made our way south to Lazy T farm. Here, fifth generation farmers, Brett and Jenna Hauck, use holistic management practices to produce grass-finished beef, free-range eggs, and pastured poultry. Through a government grant with Growing Forward, they were able to get a percentage of the \$24,000 solar project subsidized to power part of their farm. The energy generated from their solar panels first offsets the local loads in the house and around the farm and anything extra is exported into the grid. They say that the solar panels allow them to have greater energy independence, and also use solar-powered electric fences for grazing and solar-powered water pumps.



The solar array can be seen in the background as Brett and Jenna Hauck talk about the subsidized project. The couple co-farm with Jenna's parents, Clara and Tony Nibourg.

Wind facility, Capital Power at Halkirk

Moving on to Halkirk, we met with Mark Jackson, the Operations Manager of Capital Power's Halkirk Wind Facility. Jackson said the wind turbines have the capacity to power about 25,000 homes. Jackson explained that Capital Power has a bird and bat mitigation program which tries to minimize turbines from interfering with birds and bats during their breeding season. Because both birds and wind facilities are trying to optimize the wind zone, turbines go into pause during bat breeding season—especially at night. The facility employs seven technicians and a site manager (all locals), and Jackson is the only direct Capital Power employee. They have a good relationship with landowners and try to support them and address any concerns beforehand. Jackson says the big producers of turbines are in the

US and Canada.

Following the talk, Susanna Bruneau noted, "it was great to see his [Jackson's] passion for it... At the end, just informally, Mark said, 'It's ok if people have different opinions. As long as they're informed opinions." Bruneau agreed. "We're educating ourselves so we can make informed decisions and opinions going forward when we're talking to other people."

Capital C Power

Mark Jackson stands next to one of the wind turbines as he explains how Capital Power's wind facility works.

"Holistic management teaches you that everybody is doing the best that they can with what they have. We don't have solar panels because the coal mine is down the road and we think it's terrible. I have friends and family who work at the coal mine and I'd love to see it succeed and thrive. I think there are different ways that we can all co-exist." — Brett Hauck "Our common ground? The more we do now, the more we have later... The more interest in conversation we have about what renewables are and what they bring to the province and the country... that influences the way people think and hopefully down the road, it becomes more important than it is now."

- Mark Jackson, Capital Power

"Common ground to me is an agreement with all parties that we can actually move forward with the energy uses. Whether it be through fossil fuels, whether it be through wind, it has to be a balance. It can't be one right answer, it's going to be a balance of everybody. That's the only way we're going to meet that common ground, that commonality."

— Stephen Burtch, Wainwright

BIKE TOUR DAY 3

Lougheed Colony School presentation

After breakfast we said goodbye to Forestburg and headed east on Hwy 53/608 to the Lougheed Colony School. The BRWA has worked with this school and teacher, Cheryl Fotheringham, in the past. The students cheered and welcomed each cyclist by name (with our assistance). We were grateful to be out of the heat and were treated to popsicles and juice. Our team told the students about the bike tour and why we'd biked so far to learn about our local energy sources and the environment. The students, ranging from kindergarten to grade 8, sang us two lovely songs of welcome. Unfortunately, they asked us to sing as well! We were able to pull off "This land is your land, this land is my land". Much to the students' enjoyment, cyclist Glenys Smith stepped forward to perform a story of Miss Rumphius who made the world more beautiful. Glenys then challenged the students to find a way to make their world more beautiful. On our way out we stopped

to admire the lovely trees the students planted and care for to provide wind protection and habitat for the birds and pollinators. It was here that 32 trees were later planted the following spring to offset the carbon emissions of our tour. Refreshed by our visit, we returned to the road.

"People are being proactive. They're planning ahead from any shortcomings and falls. And it may not even happen, but if it does, they're ready for it... there are a lot of opportunities for you guys out here. The government is opening so many doors... I feel they're being very supportive." — Donna McKay, Edmonton

– Donna Michay, Lunionicol

Prairie Land and Cattle Company

Landowner, Cliff Drever, welcomed us to the Prairie Land and Cattle Company, where we were treated to a BBQ lunch. After eating our fill, Prairie Land and Cattle Company's manager, Ben Stuart, told us more about the farm's efforts to be environmentally and economically sustainable. The mixed cattle and cropping operation is a 16,000 acre year-round rotational grazing operation that uses regenerative farming practices to create healthy soil. With 1,500 breeding cows, the group also has 2,000 acres for cereal crops and 2,000 acres for feed crops. Grass-fed cattle help put nutrients back into the soil through their manure.

The farm works to find the right combination of crops for their cattle, and fall seeding of winter crops like winter wheat are excellent for shoulder seasons. Legumes like alfalfa provide fast animal growth and help with fertility, while their deep taproots also provide for soil water storage. Bale grazing puts important nutrients back into the soil in select areas. They know the importance of soil in their system and work hard to replenish the soil through crop rotation before allowing it to be grazed for 5-10 years. Stuart says that a 1% increase in organic matter results in as much as 25,000 gallons of available soil water per acre. These adaptive and progressive methods help reduce their carbon footprint and build resilience for changing economics and climate.

Moderate cattle grazing is good for both natural grasslands and crops. Photo credit: Don and Marie Ruzicka.

"Everyone knows cows are emitters of methane... but a healthy grassland actually scrubs methane out of the soil as well." — Edward Bork, University of Alberta

> "We need a common understanding of the scientific evidence on which to base our decisions."

- Community conversation participant

Rangeland Ecosystem Goods and Services: A review of current research efforts in Alberta

University of Alberta professor, Edward Bork, outlined the many social, environmental, and economic benefits provided by rangeland and grassland ecosystems. Focusing on the area of carbon storage, Bork explained how the earth breathes carbon and oxygen. In central Alberta, short but intense periods of carbon uptake in the warmer months are balanced by gradual carbon release in dormant or drought seasons.

Alberta makes up over 40% of Canada's beef production, which means rangelands are important to study. Light to moderate long-term grazing maintains soil carbon, helps increase plant diversity and can sustain long-term forage production.

Grasslands are important carbon sinks as they store 10-30% of the world's organic carbon. While the burning of fossil fuels plays a big part in rising CO2 levels, many people are unaware that land-use change through cultivation also releases huge amounts of carbon into the atmosphere. Temperate grasslands store 97% of their carbon in the soil. High root to shoot ratios in grassland vegetation build high soil

Edward Bork spoke to our tour group about the benefits of grassland ecosystems.

organic matter, much of which is carbon. Because this carbon is below-ground it remains quite stable in the face of disturbances like fire. However, direct disturbance to soil via cultivation can lead to rapid loss of 30-50% of carbon in the soil, thereby contributing to rising CO2. Native grasslands' large (and drought resilient) root mass makes them better at carbon storage than tame forages.

Bork advises cattle farmers to maintain their perennial cover, watch their stocking rates (amount of cattle per acre) and keep their grazing at low to moderate intensity, in order to maintain grassland health.

Bork highlighted some government payment incentives for farmers who use direct seeding or minimum till systems in annual cropland. While these systems help increase soil carbon, the resulting carbon stores in these situations remain below that found in perennial grasslands. Bork and his colleagues are looking at what species of insects, amphibians, plants and mammals live in pastured areas across Alberta in a project known as the Beef and Biodiversity study. In the future, Bork hopes that the data from these projects will be used to give landowners monetary incentives to conserve native grasslands and help maintain the diverse ecological goods and services they provide.

Enbridge at Hardisty Terminal

Enbridge is one of many energy companies at the Hardisty Terminal, a major hub of oil transportation and economic revenue in our watershed. Due to safety considerations, we were unable to go into the site, but we did meet with Shane Thompson, the Area Manager for Enbridge Pipelines, to hear about the facility. Shane explained that his company's role at the terminal is strictly about the storage and transportation of Alberta oil (not refining). Enbridge operates 30 tanks and underground oil storage caverns on the facility with a combined capacity of 13 million barrels. Enbridge moves crude oil to markets in eastern Canada and the United States. They currently have seven pipelines operating in the Hardisty area, the largest being about 36". This line has a capacity of about 6,000 cubic metres an hour.

When asked about environmental practices, Thompson explained how pipelines are continuously monitored for flow and velocity rates,

corrosion of pipe, and checked for anomalies. Thompson said that the entire site is bermed and every tank is additionally bermed to hold about 125% of its maximum capacity.

Pipelines continue to be an important sustainability issue in the watershed, impacting the social, economic, and environmental health of our region, and are an important issue to discuss and find common ground.

Global Institute for Water Security, University of Saskatchewan

Climate scientist, Elaine Wheaton, told us that the bitterly cold days of winter on the prairies are disappearing. This is causing other problems like insects, diseases like West Nile virus, more ticks, and plant hardiness zone changes. Less snow cover and fewer cold days in winter mean less groundwater recharge and storage for the summer months. Freezing rain will be more normal and will lead to transportation and monetary expenses. Precipitation averages are more erratic as record hot summer days create more severe drought and flooding.

CO2 is a very impactful substance as it absorbs heat very well. Wheaton says that like arsenic, a small amount can be important. While Canada may only contribute a small part of total world emission, we are among the top emitters in the world per person. She also explains that the rate of change cannot be explained by natural causes. She says that time and space changes have a GHG gas signature that is related to human activities.

Wheaton believes we have reason for concern as drought will result in water scarcity, increased forest fires and health impacts. All of these will cause damages, disruption and health impacts and a change requires adaptation. The consequences for places inland and further north (Canadian Prairies) will be more drastic than other areas of the planet. Temperatures are projected to increase more on the Prairies. We will see more extreme weather events as the jet stream blocks, moves and stalls storm systems. There will also be fewer blizzards. Drought impacts on livestock and pasture will mean greater demand is put on groundwater, aquifers and other water sources.

In order to find solutions, it is important for citizens to get informed and create more grassroots partnerships. Citizen science is another tool to explore how climate change is already impacting us. Wheaton suggested these sources: "Canada in a Changing Climate", "The New Normal", Intergovernmental Panel on Climate Change, and planthardiness.gc.ca. She also suggested finding ways as an individual or community to reduce GHG emissions, adapt to negative impacts, coordinate governance, take action, innovate for surprises, and find common ground and common values to motivate people to move towards solutions.

"Prairie temperatures are increasing about double or more of the average global surface temperature increase. Canada's temperatures are rising more quickly than other places such as lower latitudes, mainly because of the effects of decreasing snow-cover... These trends are associated with the specific patterns of human-caused global warming." — Elaine Wheaton, Global Institute for Water Security "I really feel like being exposed to some of the speakers and presentations and industry leaders that we met today challenged some of my biases and perceptions about different industries." — Alison Robert

"I get my energy - both gas and electricity - from an energy cooperative. The money that I invest as a member goes back to buying more renewable energy and to fostering renewable projects." — Annie McKitrick, MLA for Sherwood Park

"When two opposing sides can truly listen to one another's point of view, in almost all cases, people want similar things but the approach is different. If we don't listen to what others have to say, we are not going to be able to connect."

— Augustana student

"Common ground to me is an understanding and a willingness to listen to the other even when the other disagrees with what you think is truth. It's hard work because you have to be vulnerable to listen to something that you absolutely disagree with."

— Alan Ford, Camrose

"The thing that I found most interesting... is that there is more than oil and gas in Alberta. From what I've learned so far, Alberta is really pushing in on solar and wind energy sources as well as alternative biofuels." — Stephen Burtch,

— Stephen Durt Wainwright

FINDING COMMON GROUND: THE DOCUMENTARY

MAKING THE FILM

Alison Bortolon recalls how Nathalie Olson of the BRWA first approached her about making a documentary of the bike tour. The BRWA wanted to capture footage, discussion, and key ideas from the three-day tour to allow a broader audience to experience and participate in the conversations and ideas that emerged. This appealed to Alison, who has a film and photography company, Radical Productions, and also loves to bike.

Having worked on the web series AlbertaVoices project before this, Alison says this was a different kind of project for her. The immediacy and spontaneity of filming the bike tour meant allowing the story to unfold, rather than staging shots or trying to dictate how people responded. Alison says that she was impressed how people had come with certain preconceived ideas, but they were open-minded enough to rethink some of their biases as they saw first-hand how various energy sources work.

A highlight for Alison was at the end of the first night, following a long, hot day on the road and dinner at the Heisler Hotel. As participants drove to the Battle River Inn, someone pointed RIGHT: Alison Bortolon talks about her experience and vision for the Finding piled out. Alison grabbed her camera and caught some great Coordinator, Nathalie Olson, looks on. footage of the moon over a field. Alison's competitive biking

As with most journeys, there were hiccups along the way. Nevertheless, even car trouble represented an opportunity to work together toward a solution.

LEFT: A highlight for filmmaker, Alison Bortolon, was setting up a shot of the moon over the prairies at the end of Day 1.

out how beautiful the moon was. They stopped the car and Common Ground documentary while BRWA Education and Outreach

background came in handy several times on the tour when she would be on the side of the road helping cyclists change flat tires!

Four cameras were rolling throughout the tour which meant several hundred hours of footage to wade through in post-production. Alison worked with Nathalie and Sarah Skinner to develop a storyline and narration as key scenes were pieced together.

BRWA staff member, Sarah Skinner, spent many hours in the studio narrating the 24-minute documentary. Sarah says that as a cyclist on the tour, being the narrator was a valuable opportunity to reflect on the journey as a whole and speak to some of the important take-home messages. The recording process was an exercise in forgetting about the microphone and focusing instead on telling a compelling story that would draw people in.

The writing, editing, narration and final production took five months to complete. In February 2018, the Finding Common Ground documentary was ready to make its debut at the Palace Theatre in Daysland. It was a very exciting day for everyone who had worked so hard to make the movie!

DOCUMENTARY PREMIERE IN DAYSLAND!

Local residents came out to support the documentary's debut in Daysland.

The Finding Common Ground World Premiere took place at the historic Palace Theatre in Daysland. Although it was a cold February night, over 60 people came out to see the film and join in the conversation.

The evening was initiated by Palace Theatre volunteer and local musician, Ken Eshpeter. Ken set the mood with his heartfelt song about the Battle River. Nathalie Olson then took the stage to introduce the audience to the Battle River Watershed Alliance and its "Finding Common Ground" project. Nathalie explained why the BRWA wanted to get involved in an energy and climate change project. Given the BRWA's past "Rolling Down the Battle River" bike tours, it felt like a natural progression to tackle the topic of how climate change will change our region. Rather than just giving people information, we wanted to start a conversation about our energy use, our environmental footprints, and how we can adapt and mitigate the effects that climate change will have on this much-loved region.

Filmmaker Alison Bortolon and BRWA team member Susanna Bruneau joined Nathalie on stage to reflect on the tour. They shared a few stories on the making of the film and what they hoped people would take away from watching it. With that, the Finding Common Ground film began.

Following the film—and huge applause—a panel of tour participants met on stage. Panelists included Alison Bortolon (filmmaker), BRWA team member Susanna Bruneau (4-wheel support driver), Barb Bosh (ATCO Power site host) and Peter Hansen (Enbridge representative). Participating cyclists Alan Ford, Leslie Lindballe, and Glenys Smith also joined the panel discussion.

Panel participants described their connection to the tour, and parts that stood out to them. Community members also had a chance to ask questions, and there was a good conversation about the need for energy conservation and the need to diversify the economy.

At the end of the evening, all participants were asked to submit their comments on their understanding of Finding Common Ground. These informal surveys were taken following the video presentations.

Panelists discuss their experience in the Finding Common Ground project. From left to right: Alan Ford, Glenys Smith, Leslie Lindballe, Peter Hansen, Susanna Bruneau, Barb Bosh, Alison Bortolon. On the far right stands moderator, Nathalie Olson.

AUDIENCE SCREENINGS AND FEEDBACK

After the Premiere, we took the film on tour to facilitate more discussion on the topic of energy and sustainability. We wanted to reach a variety of ages and demographics to talk about the ideas and information we'd learned.

WHERE, WHEN AND WHO WATCHED OUR DOCUMENTARY & THEN PARTICIPATED IN THE COMMUNITY CONVERSATION

When	Where	Audience
February 5, 2018	Camrose	Wildrose Outdoor Club
February 26, 2018	Daysland	Official Premiere. Members of the public, members of government, local partners in the tour
April 9, 2018	Forestburg	Forestburg residents at the Forestburg Public Library
May 17, 2018	Stettler	Buffalo Lake Nature Club
May 6, 2018	Camrose	Members of the United Church
June 19, 2018	Castor	County of Paintearth Council, and members of the public
July 25, 2018	Ponoka	Children in the Library Summer Camp program (ages 8-14)
July 30, 2018	Camrose	ECHO Network (Network of academics and community organizations working for environmental, community and public health from across Canada)
November 28, 2018	Forestburg	Biology 30 students (grades 11 & 12) at Forestburg School
November 29, 2018	Viking	Town of Viking Residents
January, 2019	Camrose	Augustana Environmental Science Class

During the film, we paused four times to ask the following questions.

Question 1: What do you appreciate about living in the Battle River Region?

Question 2: What are some pros and cons of different power generation types? How might these change?

Question 3: What personal actions can you take to address climate change? What political or community actions would you like to see?

Question 4: What is your understanding of Finding Common Ground?

Question 1: What do you appreciate about living in the Battle River Region?

- Land: open space, scenery/landscape, varied topography- badlands, woods, hills, flat, forest, clean air, big skies
- Camrose: Stoney Creek valley, access for recreation, being in nature in the city, walkable community
- Wildlife: wildlife as neighbours, wildlife for hunting and fishing, birding & fishing
- Small towns: one person can have greater impact, opportunities
- Community: friendly and supportive communities, comfortable, "home": family here for many generations
- "No traffic jams, less busy lifestyle (not like YEG). Everyone and everything more relaxed."
- People: more grounded and more attuned with the seasons and landscape. For example, seasonal knowledge like when Saskatoon bushes are in bloom it's time to plant the Barley, and when the Aspen bush is about to open (when it's lime green) it's time to plant wheat.

Community conversation participants discuss the documentary at the Forestburg Library.

Question 2a: What are some pros and cons of different power generation types? How might these power sources change?

- Renewable energy PROS: being better for the environment/climate change. CONS: more expensive (up front) and may not be as reliable.
- Would love to see Alberta be a leader in renewable energy. We are a leader in oil/gas, why not renewables too? It's so sunny and windy here!
- It's not fair to compare it [renewable energy] to the oil/gas industry which has had many years of research and development... If renewables were given the same time and financial support, they would be far more efficient and cost effective!
- Wind CONS: dividing communities, non-reliable, 'bad aesthetics', in the way of bird migration patterns causing mortality (to birds and bats). Lifespan of turbines, and concerns over who is responsible for them afterwards and how the material gets recycled.
- Solar CONS: non-reliable (not consistent), no good battery options.
- Coal CONS: air pollution. Contributes to climate change. Non-renewable PROS: we have a very large reserve of coal, right beside the ATCO plant. Having them so close saves a lot of energy in transportation. It is very cost effective.
- As coal plants get converted to natural gas, we have to consider the environmental effects of getting and transporting that gas.
- Small scale vs. large scale: In 20 years, hope to see a more decentralized energy system. More small scale/household systems.
- Batteries and energy storage will be better. Batteries will be better at household level (not city level).

Question 3: What personal actions can you take to address climate change? What political or community actions would you like to see?

PERSONAL

- Grow your own food. Can/preserve your own food. Buy local [food]. Eat food in season. Support local economy.
- Sometimes we can do without. For example "When I was a kid we only got mandarin oranges at Christmas, and that made them
 special. Now you can get them all year round!"
- Travel less. Fly less often. Explore your own backyard!
- Vote!
- Not taking other people's decisions as personal attacks on you. For example, a neighbour who buys an electric car is not an attack on the oil field worker. It doesn't mean they want you out of the job.
- Keep up-to-date on initiatives (such as energy efficiency grants)

- Reduce energy consumption
- Talk about the problem. Listen to others' opinions!

Supporting rural transportation options like the Camrose Connector is one of the ways suggested to reduce emissions.

POLITICAL/COMMUNITY

- Glad to see there is finally government action on climate change
- "I think it's better to offer incentives to reduce emissions rather than tax"
- Need to update building codes. Ensure new buildings have better insulation values. This also makes them safer for fires! This is an example of Finding Common Ground. Firefighters also want stronger building codes- it's a win for them and a win for energy conservation!
- Need to have more conversations about climate change and how it will affect us.
- Carbon tax is the best way to control emissions. Have polluters pay.
- Supporting rural transportation services.
- "It's not important for us to reduce emissions. We are only a small percentage of the global emissions. Until China starts reducing theirs, why should we?"

Youth from Ponoka watch the Finding Common Ground documentary as part of their Library Summer Camp program.

Question 4: What is your understanding of Finding Common Ground? Repeated Themes

- We need to listen to each other and respect a variety of opinions. Try to remember that we all share many of the same values and needs, rather than focusing on where our opinions differ.
- We can work together to find solutions that will benefit the producer, the consumer, and the environment.
- There is no one solution, but a variety of energy sources will be needed.
- There is a shared concern for future generations and sustainable, clean energy
- We are caretakers and stewards of the earth: land, air, and water.
- We need to reduce our impact, consumption, and footprint both individually and collectively, which will mean lifestyle changes.
- Education and awareness are key factors as we move forward.

"We are a long way from agreeance. We are caring less about the everyday Joe and worrying more about the world as a whole." — Forestburg high school student

"Listen to all to understand first... then agree what is best for all." — Cody Kohlman, Enbridge Pipelines

> "I learned that coal is a nonrenewable and I also learned that you can save money by playing outside and not using electronics!" — Summer camp student, Ponoka

"It is important to try to prevent the polarization. That will prevent finding common ground." — Community conversation participant

"How do we respond to changing conditions? To see change as the invitation and opportunity to bring greater well-being..."

- Community conversation participant

"We need coal and we should not lose jobs because of the environment when we have such a low one in the world. It doesn't matter per capita."

- Forestburg high school student

"Recognize that we are all in this together . There is no 'villain'. Not farmers, or oil and gas, or consumers. We are all part of it." — Community conversation participant

RESULTS AND FEEDBACK

After the documentary screenings, we asked our participants to reflect back on whether their experience with the Finding Common Ground project changed their opinions or might have shaped their actions as a result. Here's what the people who filled out our online survey shared:

How people participated in Finding Common Ground?

A priority of the project was to get people thinking, discussing, and acting on local energy options and opportunities. Did Finding Common Ground (FCG) encourage you to THINK ABOUT, HAVE ACTION IDEAS, DISCUSS OR ACT ON personal energy use, or the local system?

- THINK 58.8% DISCUSS 52.9%
- IDEAS 41.2% ACT 29.4%

How did Finding Common Ground (FCG) encourage you to THINK ABOUT, HAVE ACTION IDEAS, DISCUSS, OR ACT ON climate change?

- THINK 41.2% DISCUSS 52.9%
- IDEAS 52.9% ACT 58.8%

82.4% of those surveyed said that their participation allowed them to speak to friends or family about their experience of the FCG bike tour and/ or documentary film and/or about climate change.

"I found the discussion after the film encouraging and was pleased to hear others taking climate change seriously and wanting change and willing to take action."

- Survey respondent

"The community interaction at the various locales plus the knowledge of the speakers with research-based information made this for me a very educational and worthwhile experience for me. I have since prepared and presented an environmental topic on a project I have been working on regarding the importance of planting and saving native grasses for the environment and saving of grassland birds using some of the research presented by Edward Bork who lectured on this tour. Finding Common Ground principles can be applied to other situations as we listen and learn with compassion and understanding."

- Survey respondent

Comments about what surprised, concerned, or interested people most about the FCG project?

- How we at the grassroot level can make a difference and facilitate this through passing on information by demonstrating (walking our talk) and open discussion to help ourselves and others make informed decisions regarding changes that are inevitable.
- The small town experience in Forestburg.
- How wind, solar and coal could compliment each other utilizing the best features of each for efficient, economical and sustainable energy for heating, cooking, and transportation.
- It was interesting to hear the opinions of the workers in different energy sectors and how there were many overlaps.
- I learned where our water comes from and some threats to our water quality.
- There are more climate deniers than I thought.
- The challenges in discussing the issues with persons whose life experiences make them more unwilling to explore the need for

changes or accept climate change as real.

- Acknowledging that as a species, we handle the long term inefficiently.
- The concern for me is what about the biggest polluters on the planet U.S.A., China, India. What are they doing , if anything, to fight climate change?
- I was interested in the wind turbines and power generation.

COAL WAS A BIG TOPIC OF INTEREST

The tour of the coal plant was especially interesting. It really made me think about the scale at which electricity is generated and the inputs it requires. The in-depth tour of the mine was very interesting. — Alberta and its coal use. — How much coal is still used to power Alberta. — Wanted to learn more about the coal mine and plant. — The remediation of the coal mine. — How fast land is reclaimed and agriculturally viable in 3 yrs after it is mined.

What do you want to know more about?

- "How to create a distribution and regulatory environment that includes all players. Decentralizing the system so solar panels at home can be used effectively by the gird and conversely I can have economical access to the gird when needed."
- solar power, alternate energy sources
- "I would like to know more about how electricity is priced, and besides the available supply and demand what other legalities or agreements drive the price of electricity. I am curious about how the price will be affected by the phase out of coal and how the marketing surrounding it will change. I would like to know more about how Albertans will respond to the energy transition once coal is off-line."
- Energy use in Camrose
- The possibility of solar farms in Alberta

- "More on the action companies are taking."
- Would have liked to have the opportunity to talk more to the miners about the plans they are making for future employment and what they may have done in the past to prepare themselves for the downturn in the coal industry.
- The shift in viewpoints of the members who partook in the FCG Bike Trip
- "How oil and gas is marketed to United States and also how other provinces send their oil and gas through Alberta to be marketed in United States?"
- "Where is all this carbon tax that our government is collecting going to? Is it actually doing anything to fight climate change? I am doubtful that it is."
- Any alternative actions that the government is willing to support.

Participants expressed an interest in knowing more about solar projects and incentives. Photo Credit: Rajan Rathnavalu

Participants who rated their overall experience of the FCG project as helpful or very good was 88.8%.

When asked about the importance of having programs like FCG to increase levels of knowledge about our local energy and climate systems, 72.2% said it was very important and 22.2% said it was important.

Final input and feedback for the FCG organizers...

"Awesome project! I think this type of experience and learning should be implemented as a way of education for all ages."

- Survey respondent

"appreciate the marriage between cycling and energy efficiency"

Survey respondent

"Thank you. Money well spent."

— Survey respondent

"We can't all

ride a bike to work. Canada, and indeed Alberta are large. We need vehicles to get to work, deliver goods, and keep us economically viable which puts pollution into the air. That won't change anytime soon." — Survey respondent

"Loved the tour - but it was a large commitment of time in the middle of the week; in order to appeal to more people a day tour in a variety of locations might allow more people to attend (including youth), or consider shorter evening/ education events." — Survey respondent

"I really enjoyed the whole trip. I felt you did a great job putting this all together."

- Survey respondent

"More of the same, more intensive, more practical applications with specific follow-up with providers and supplies would be appreciated." — Survey respondent

"... a great way to get the conversation going with the public." — Survey respondent "Thank you so much to the organizers. It took a lot of coordination and organization to pull something like this off with a large group like we had. I am thankful for the fact that costs for this trip were covered, as that made it possible for me to attend. It was a very good experience. I really enjoyed it." — Survey respondent

FINDING COMMON GROUND BIKE TOUR AND DOCUMENTARY

The Finding Common Ground project was created to increase knowledge, dialogue, and action about energy and climate change in the Battle River region. Three main components of the project were a cycling tour, a documentary film, and a community conversations series.

This report distills "what we heard" along the way: the stories, participants' feedback and input from all three parts of the project.

Open and constructive dialogue gave participants from a range of backgrounds and communities the chance to safely ask questions and consider concerns, in order to work toward positive changes. The hope was that those involved would not only increase their knowledge and understanding of energy and climate change, but will have the opportunity to share their opinions, plans and ambitions.

Join in Finding our Common Ground. #BattleRiverResilience

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> > WATERSHED ALLIANCE

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