

CALL FOR PROPOSALS FOR RESEARCH GRANTS

The Alberta Land Institute announces a Call for Proposals for its research grants competition. The deadline for receipt of applications is **July 10, 2018**. We expect that successful applicants will be notified by **September 15, 2018**.

About Alberta Land Institute (ALI)

The Alberta Land Institute was established at the University of Alberta in 2012 to connect research and policy for improved land use planning and land management in the province. ALI supports multidisciplinary research to investigate innovative land-use policies, including those that examine regulatory and market instruments that impact environmental, social, and economic outcomes. ALI works with stakeholders to identify specific research gaps related to a land use planning issue or policy. ALI focuses on four key policy areas: agriculture, municipal development, water, and governance. Current and completed research projects supported by ALI can be found online at <http://www.albertalandinstitute.ca/research/research-projects>

Selection Process

Applications will be pre-screened by ALI staff and reviewed by a Research Advisory Committee (RAC). Upon the recommendations of the RAC, the Research Director will make the final decision on the awards.

Prospective applicants are strongly encouraged to contact ALI's Research Director, Eran Kaplinsky, at eran.kaplinsky@ualberta.ca or 780-492-2941 to discuss the suitability and scope of the proposal prior to formal submission.

Requirements

Applicants must submit a completed application form along with a personal data form from a tri-council agency for themselves and for each Co-Investigator. Application forms, guidelines and additional information is available at: <http://www.albertalandinstitute.ca/research/callforproposals>

Please review the guidelines carefully before completing the application form. Please submit one PDF file containing all required information and documentation on or before the deadline to: <http://www.albertalandinstitute.ca/research/callforproposals>.

The following must be submitted within two months of project completion (i.e., by Dec. 30, 2019 for one year projects) for publication on the ALI website:

- A Final Report describing the research methodology, finding, and conclusions, as well as (and in a substantive manner) the policy issue that the research addresses and the implications of the report for policy and/or practice. The Research Director may set out other reporting requirements.
- A short (2–4 pages), non-technical summary of the Final Report.

Subsequent applications will only be considered if satisfactory final or interim progress reports of all previous and existing ALI grants have been fulfilled prior to the new application.

Any published work that is derivative of the research supported by the grant must acknowledge the financial support received from the ALI. ALI must be provided with a copy of any publications.

Please refer to the attached Grant Guidelines and Application for further information on the application process.

Budget and Project Period

Projects will be funded to a maximum of \$50,000 for a one-year period. Expected date of completion is November 2019. Funding for further research may be available in subsequent years depending on the potential policy implications and the proposed approach.

Contact

Inquiries can be addressed to: albertalandinstitute@ualberta.ca. Please clearly indicate the nature of your email in the subject line.



SPRING 2018 CALL FOR PROPOSALS: LAND, WATER AND SOCIETY

The Alberta Land Institute is accepting for consideration research proposals that fit one of the three Research Categories within ALI's research portfolio (see descriptions below) and that engage directly with at least one of ALI's four key areas (Agriculture, Water, Municipal Development, and Governance). For its Spring 2018 Call, ALI is particularly interested in proposals building on extending the themes of its Land Use 2018 Conference: *Land, Water and Society*. Proposals featuring an inter- or multi-disciplinary approach are especially welcome. Additional background for this call and examples of topics in which ALI has an active interest is provided below.

All prospective applicants, regardless of subject area, are encouraged to discuss their proposals in advance.

Research Categories: The Alberta Land Institute is seeking to augment its research project portfolio in the following three categories.

- Discovery Research:** Research undertaken to identify and examine emerging and future issues critical to the Institute's mandate. Successful proposals in this category will articulate broad research questions, inform long-range policy development using different disciplines and theoretical perspectives, and offer or inspire new information or innovative solutions to land use and land use management problems. Multi-year proposals may be considered in this category.
- Policy Research:** Projects focusing on a specific issue of immediate and critical concern to ALI's stakeholders, providing concrete analysis of policy alternatives, land use instruments, etc., and supported by comprehensive academic research. The primary purpose of projects in this category is to fill knowledge gaps and support decision-making in Alberta.
- Educational Projects:** Projects aimed at translating and transmitting existing or new ALI or other relevant knowledge beyond the academic community in order to shed light on issues specifically relevant to ALI's partners and stakeholders and to support public discussion and policymaking in Alberta.



Research Themes:

1. Land

Albertans feel a strong tie to the land, and the province is fortunate to have an abundance of agricultural and natural lands. However, there is mounting pressure on these lands due to rapidly growing urban populations and the continual push for economic growth. Agricultural land conversion, while slowed since its peak in the 1984-1992 period, continues to occur. The resulting fragmented agricultural land faces increased conversion pressures. Concern over the loss of both productive soils and grasslands is widespread. Better valuation of the land in question, including non-market benefits, will help to weigh the costs and benefits of conserving land, as urban and resource extraction areas expand.

ALI, with input from its stakeholders, has identified several research gaps within this theme, including, but not limited to the following:

Additionality: Incentivizing desirable practices is a critical component in sustainable policy (Defries and Nagendra, 2017). Financial incentives to landowners, both positive and negative, can be cost-effective mechanisms for achieving environmental outcomes (Pannell, 2008). A key feature of many compensation or credit schemes is that payments to landowners are made only for “additional” benefits, and that no payments are due for actions or practices which would have been carried out even in the absence of the scheme (Horowitz and Just, 2013). The rationale for the “additionality” requirement is that the purpose of compensation is to induce a change in private behaviour. On the other hand, failure to compensate landowners who already engage in best practices can be regarded as unfair. It may also be argued that additionality perversely incentivizes such landowners to abandon best practices in order to gain eligibility for compensation. How can additionality payments be designed to encourage continuation of sustainable practices while providing an incentive to increase uptake of best practices? Are there novel market mechanisms being used in other jurisdictions that could be adopted in Alberta to promote more sustainable agricultural practices that enhance ecosystem goods and services? How could such payments be funded?

Valuing the Benefits of Carbon Storage in Grasslands: Qiu et al. (2015) found that between 2000 and 2012, 41.3% of the grasslands in the Edmonton-Calgary Corridor were converted into farmland. As farmland near urban centres gets converted into urban and industrial development, farmers move production to grass and forest lands, often with less than optimal results due to poor soils. Not only can the conversion of grasslands to cropland result in reduced productivity but it also reduces the soil carbon storage capability of the soil. Researchers have been working to identify the carbon storage capacities of both grazed and un-grazed grasslands in various climatic conditions in Alberta. Hewins et al. (2018) found that moderate grazing of public lands maintained and enhanced soil organic carbon in the top 30cm of mineral soils in northern grasslands. Work continues to measure the rates of carbon uptake under different management scenarios, e.g. more intensively grazed privately owned lands, and under variable climatic conditions. Management practices that increase soil carbon concentrations may also lead to increases in other beneficial ecosystem services. Payment for these spin-off services bundled with the value of stored carbon could help preserve grasslands and their associated

ecosystem services. What ecosystem services should be included in such a bundle? Do management practices and land uses that increase carbon storage also benefit other ecosystem services? Can we calculate the associated benefits and costs of retaining grasslands at a regional scale? Are there policies that could be used to encourage these practices and what methods of compensation could be used?

Land Use Dynamics and Soil Health: Soil relocation is a problem across many jurisdictions in Canada. In 2017 Ontario's Ministry of Environment and Climate Change built on its Excess Soil Policy Framework to propose an Excess Soil Regulatory Package to manage the movement and relocation of soils. In Alberta, rural communities close to urban centres are witnessing the relocation of soils from development sites to agricultural lands, sometimes with undesirable consequences (J. Fleischer, personal communication). Soil tests of relocated topsoil indicate that they are often of lower quality than previously found top soils on the land (J. Fleischer, personal communication). Beyond changes in soil quality, movement can also impact crop productivity due to the increased risk of soil contamination. There is little information on how large an issue the movement of soil is in Alberta. A review of the situation across the province would provide useful background information on how much soil is being relocated in the white zone and could lead to additional questions on current and future soil regulations. Are there regulations that could be developed to avoid the inappropriate relocation of soils and to ensure that this valuable resource is being used to its maximum potential? Are such regulations necessary in Alberta?

2. Water

Alberta's policy paradigm has shifted to examine land use planning using a watershed approach. Water is critically important to Alberta's agricultural and resource industries. It is also vital to our urban and natural areas. Alberta's lakes suffer from the effects of agricultural run-off, its wetlands in the white zone have been depleted by an estimated 60% and its rivers will likely be altered as climate change progresses and major storms become more frequent. ALI has been a leader in wetland restoration discussions through its Living Laboratory project and wetlands continue to be an area of interest. Driving the water theme are questions around conservation and restoration, and the ways in which our relationship with water will need to change given the uncertainty of climate change.

ALI, with input from its stakeholders, has identified several research gaps within this theme, including, but not limited to the following:

Precision Conservation: More and more farm operators are adopting smart agriculture technology to maximize returns. New spatial technologies linked to mapped data can also be used to implement and evaluate management practices and the resulting impacts on soil and water health (Berry et al., 2003). It has been proposed that the use of precision conservation provides an opportunity to gain higher economic returns, use resources more efficiently and increase environmental sustainability in light of the increased demand placed on agricultural systems by growing populations (Berry et al., 2003). Technology can help identify sources of pollution and where conservation interventions can improve outcomes (McCormick, 2016). Goddard (2005) suggests that there will be no one size-fits-all application of precision conservation. Instead variable landforms across the Alberta region will require diverse applications of the technology. How could precision conservation technology be used to



calculate the effect of best management practices and at what scale? Could precision conservation guide efforts to tackle waterways with the worst water quality? Could precision conservation be tied to additionality payments in a way which is equitable to farmers?

3. Society

Environmental and economic factors impact societal structures and goals. Climate change drives societal decisions regarding energy generation and use, pushing the province to diversify Alberta's energy landscape. The modernization of the Municipal Government Act generates new research questions and policy implications as Alberta municipalities work to create city charters and Intermunicipal Collaboration Frameworks and advance municipal/indigenous relations. Alberta's agricultural communities faces the continuous challenge of increased land values while striving to be good stewards of the land and create a new generation of farmers and ranchers. The status of Alberta's environment and the pressures threatening it need to be better conveyed to the general public, so they can help champion a societal shift.

ALI, with input from its stakeholders, has identified several research gaps within this theme, including, but not limited to the following:

Renewable Energy Decommissioning: Solar and wind energy are expanding in Alberta. The government's Renewable Electricity Program is supporting the pledge to replace coal-fired electricity generation with cleaner energy sources by 2030 and four wind projects were selected in the first round of competition. Windfarms are often placed on land leased from rural landowners and farmers. In Alberta, wind developers are required to provide a decommissioning plan for each project (Pembina Institute & Capital Power). Currently there have been no standards developed for reclamation standards for wind and solar power (Bryanskiy, Salsman, and Ridge, 2018). Given the current state of orphaned wells in Alberta, it would seem prudent to collect securities to ensure the proper reclamation of wind and solar sites once they have reached the end of their operating life or in the case that advancements make current technology obsolete. Within the mining and oil and gas industries a number of policies to limit end-of-life liability on taxpayers have been proposed. White et al. (2012) explore combining a 'Damaged Land Tax' along with an environmental bond, to ensure reclamation is properly funded. Dachis, Shaffer and Thivierge (2017) propose partial bonding and mandate insurance for existing and new wells while de Beer (2017) suggests improving the timeliness of abandonment and reclamation, collecting upfront security, and establishing a legacy fund. Ferrell and DeVuyt (2013) proposed renewable reclamation legislation for Oklahoma that would combine a refundable bond and a generation-based tax sufficient to cover the costs of decommissioning but met with resistance from developers who face many initial capital costs. Should such policies be explored and implemented for the renewables sector? What would the impacts be of implementing securities on renewable projects? Which types of securities would be preferred? Are there any legal limitations that would restrict the collection of securities?

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