



# ALBERTA LAND INSTITUTE ANNUAL REPORT 2014-2015

CONNECTING RESEARCH AND POLICY FOR BETTER LAND MANAGEMENT



UNIVERSITY OF ALBERTA  
Alberta Land Institute





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**UNIVERSITY OF ALBERTA**  
Alberta Land Institute





# OUR STORY

More people are living in Alberta than ever before, and as they come here to build lives, raise families, and find futures, the landscape shifts around them.

Alberta is changing before our eyes. More people are living in the province than ever before, and as they come here to build lives, raise families, and find futures, the landscape shifts around them. Cities grow, land is repurposed, water is allocated, and governments create policy.

Sometimes the changes are almost unnoticeable, except to those paying closest attention to them. Sometimes they are obvious — when land that was farmed for a century gives way to a neighbourhood, where children might grow up without realizing what came before.

Is this a loss, or an evolution? When land changes, have we harmed our society, or gained a new future? Can policy help us keep what matters, or will policy force us to give up what's most important?

Answers cannot be purely objective. For each of us, the value of land in one form or another will be different. Some values are expressed through markets while in other cases markets cannot provide measures of the value of land uses. It is the business of governments,

duly elected and consulting with their people, to help determine the best ways forward. This often-complex process involves engaging stakeholders, input from independent science, and the processes of civil society. Embracing and balancing the diversity of thoughts, emotions, and ideals of Alberta's growing population is not a simple task. But at the Alberta Land Institute, we hope to make it just a little bit easier.

An effective land use policy making process should consider the available research evidence and the implications of different management choices. Introducing this knowledge into the policy process will assist leaders to make the best possible decision in the context of the many factors that must be considered.

Will a certain policy be effective? That decision must be taken in view of both its objective outcomes, and the reactions of those whom it will affect. To make a decision based on one factor, without understanding the other, can lead to greater confusion, and deeper division.

Objectively studying outcomes is

ALI's strength. We are an independent research institute, with an innovative and impartial investigative approach.

We know that research can only be truly objective when it is approached with a question — not with an answer already in mind.

We realize that academic research cannot answer every question, so we strive to address those issues where objective study can make the greatest contribution.

We understand that many difficult land use questions in Alberta — and beyond — do not confine themselves to the framework of a single academic field. Economic outcomes of policy options often depend on and affect environmental and social aspects.

At the same time, achieving environmental outcomes may have economic consequences. In most land use research questions, multiple disciplines will be involved, and in recognition of this, we seek researchers from different fields, often working in interdisciplinary teams.

We support our researchers both with funding, and with assistance in

securing additional research grants. We help facilitate consultation with experts and stakeholders. When our research teams are ready to report their findings, we share what they have learned with policymakers, stakeholders, and the public. They are entirely free to publish any of the research they conduct with our support, without interference.

Transferring knowledge to those who can make best use of it, and building research capacity so that more knowledge can be found, are essential parts of our mission. We do not lobby for any particular policy, but are dedicated to the active sharing of objective knowledge — outlining the consequences of alternative policies.

Land management is not simple — not in Alberta, not anywhere. As Albertans strive to make decisions that will shape this province's landscape for generations to come, ALI is proud to contribute an objective foundation for discussion, consensus, and decision-making.

At the Alberta Land Institute, we connect research with policy for better land management.

Research can only be truly objective when it is approached with a question – not with an answer already in mind.





# OUR AREAS OF STUDY

The Alberta Land Institute has turned its attention to four particular areas of study.

With thousands of new Albertans finding homes in the province — many within areas around or between Edmonton and Calgary — the province is experiencing countless kinds of change.

It is beyond the reach of any one institute to consider the full scope of this new reality, so the Alberta Land Institute has turned its attention to four particular areas of study.

These four areas are not independent of each other. In certain cases, research funded by ALI may address just one field, but in most instances, the research we support considers the interaction of two or more. The intersection of these themes is often where tension arises — between groups in society, between economic and environmental interests, or between jurisdictions.

These intersections also highlight the need for examination through multiple disciplines. The assessment of tradeoffs within or between sectors often requires linkages between social sciences, natural sciences, and engineering.

## Agriculture

Agriculture remains one of the pillars of Alberta’s economy. However, much of the province’s best farmland can be found in the corridor between Edmonton and Calgary — the same area where population growth has created the greatest demand for new homes.

The questions that arise are no secret to Albertans: are we losing our farmland? If improved efficiency and technology has opened new land to cultivation, how does that land compare to land that we were cultivating before?

Can policy prevent loss, and what could be the consequences if laws were passed to deny farmers their rights to modify their land use? Will the provision of ecosystem services, through projects like wetland restoration, provide new economic opportunities for farmers and land owners in the future?

## Water

Essential to life, agriculture, and industry, water is a resource of great importance — particularly in Alberta.

While a broad range of water management and conservation issues warrant research, the work we support focuses specifically on the importance of land use, and its impacts on water quality and quantity.

How can water policy related to irrigation influence industrial growth and community development in a place like southern Alberta — where water basins are fully allocated? Might the restoration of wetlands on agricultural land benefit watersheds — could floods be mitigated, or water purified?

## Municipal Development

As the population grows, so does the footprint of our cities. Many institutes have begun to consider urban development, so we direct our focus to questions surrounding the impact of these communities upon the land.

Does the growth of cities and towns in Alberta qualify as ‘urban sprawl’, or is that term even properly understood? Can improved municipal and regional planning protect some of Alberta’s finest farmland and the ecosystem services it provides, and what might

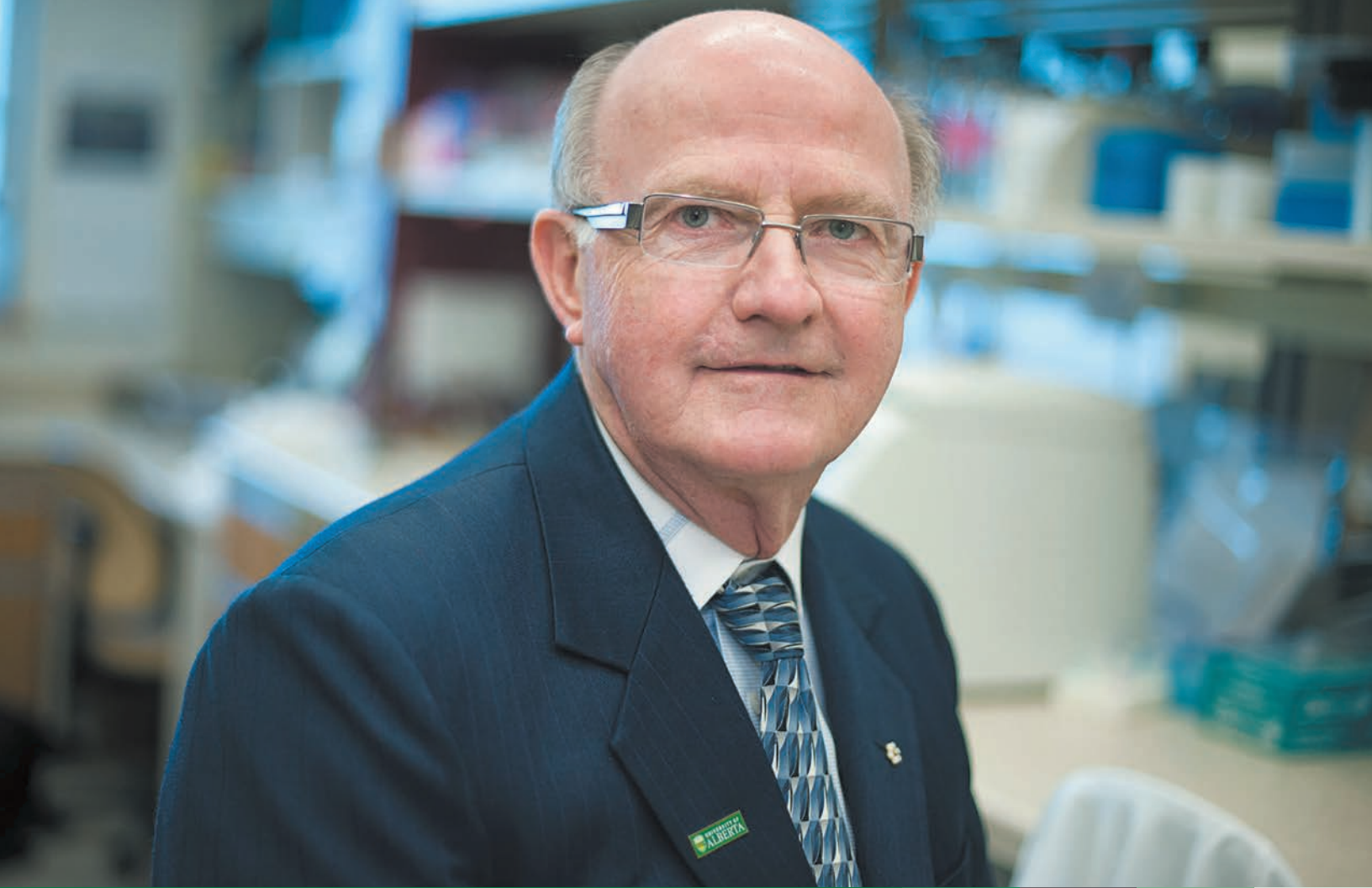
the socio-economic consequences of such planning be for farmers, urban dwellers, and the public at large?

## Governance

Policy is central to all of ALI’s research. Understanding how the decisions of government influence the use of land in Alberta is vital to helping shape the province’s decisions for generations to come. While this policy consideration is often embedded within the examination of other subjects, it is sometimes necessary to look directly at the structure and process of government, and its impact on the making of policy.

How have individuals’ property rights in Alberta been influenced by the implementation of the province’s Land Use Framework? How does Alberta’s property rights framework compare to that of other jurisdictions — are there lessons we can learn? Are municipalities positioned to collaborate on regional planning, and how do their individual objectives integrate with the Alberta Land Stewardship Act?

These four areas are not independent of each other. In most instances, the research we support considers the interaction of two or more.



# OUR ADVISORS

**Dr. Lorne Babiuk**  
O.C., SOM, PhD, DSc, FRSC  
Community Advisory  
Board Chair

“The importance of  
impartial research  
into land use issues  
is greater than ever  
before.”

Alberta has seen great change in 2014-2015, with both the election of a new provincial government and continuing pressure on energy sector revenues influencing the economy. As new policies are developed within this evolving context, the importance of impartial research into land use issues is greater than ever before.

Conducting objective, academic research to inform policy is the mandate of the Alberta Land Institute, and I am pleased to continue in my role as the Chair of ALI’s Community Advisory Board. This board helps guide the Institute’s research efforts, making

certain that ALI undertakes studies on subjects relevant to the current policy environment. We also provide strategic advice, which I am pleased to note is reflected in the strategic plan outlined later in this report.

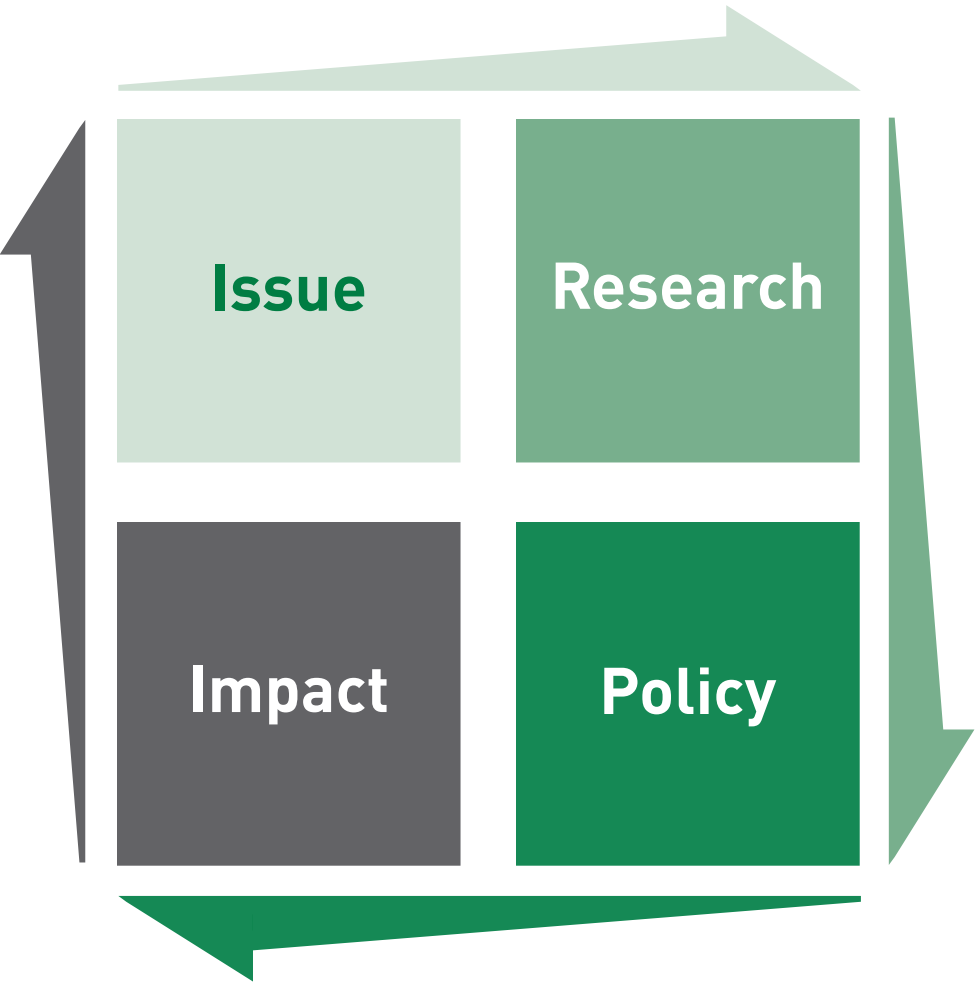
I would like to thank the highly-engaged and diverse members of our board for their service over the past year, and extend my appreciation to the many researchers who are participating in ALI-funded projects. Together, I believe we will continue to be highly successful in connecting research and policy for better land management, both here in Alberta, and beyond.

## Members of the ALI Community Advisory Board:

Throughout 2014-2015, ALI has greatly benefited from the contributions of these members of the Community Advisory Board:

- Dr. Lorne Babiuk (Chair)
- Mr. David Bissett
- Mr. Rick Blackwood
- Ms. Kelly Hall
- Mr. Colin Jeffares
- Dr. F.L. (Ted) Morton
- Mr. Gerald Rhodes
- Mr. Peter Woloshyn
- Mr. Todd N. Zimmerling

In addition, Mr. Mel E. Benson and Ms. Beverly Yee concluded their work with the Community Advisory Board this year. We thank them both for their many contributions.



## Where can objective research make a difference?

Determining what land management issues might benefit from the attention of independent researchers can be a complex process. Sometimes, information on a subject is available, but decisions are being deferred for reasons that an academic study would do nothing to change. Sometimes, the nature of an issue means it would be best addressed in a non-academic manner.

In order to detect issues that would be beneficially informed by research, the Alberta Land Institute draws upon the expertise of its Community Advisory Board. The members of this board

provide ALI with input about emerging trends, and raise questions that are proving significant to land use in Alberta. This advice helps the Institute decide what subjects warrant study.

Once a suitable research question is posed, a call for proposals leads to research. The research findings are then connected to policy, and an assessment is made of the impact of that policy recommendation. The impact assessment often highlights additional questions and knowledge gaps, leading to new potential research.





# STRATEGIC PLAN: 2015-2018

**Brian Manning**  
CMC  
Executive Director

“ALI’s research is strong and well-regarded by both stakeholders and government.”

The Alberta Land Institute’s first three-year strategic plan was launched in 2012. The following pages outline ALI’s new, 2015-2018 Strategic Plan.

Success for any research institute seeking to inform policy is heavily influenced by two closely-related factors: the quality of its research, and the robustness of its network. While ALI’s research is already strong and well-regarded by both stakeholders and government, this quality must be carefully maintained. Simultaneously, the strength of the Institute’s network must continually be improved.

The value of a strong network can be incalculable. Including stakeholders,

government contacts, media, and members of the public, a network can serve many functions, particularly when an institute seeks to inform policy. The Alberta Land Institute’s growing network will enhance its ability to connect research with policy for better land management, in a number of ways.

Perhaps the most obvious benefit of a network is the direct assistance it can provide in connecting research findings to policymakers. When findings are available and the Institute’s communications process begins, a strong network of stakeholders, media, and members of government can greatly improve the prospects of those results

reaching decision makers, and being treated as credible.

In addition, while direct relationships with policymakers can be vulnerable to elections, economics, and changes in policy, a strong network can offer a variety of avenues of approach, minimizing the possibility that research findings might be overlooked simply because they arrive at an inopportune moment. Indeed, as timing can be a key concern when dealing with policy, a strong network offers assistance in making certain ALI’s research is relevant when conducted.

Being timely and relevant is vital to any research institute which seeks to influence policy, as it is necessary to speak to policymakers about issues of consequence to their jurisdictions. However, if efforts to be responsive are taken too far, an institute’s attention can be being divided across too many areas of focus, and its strategic direction can change with detrimental frequency. Striking the correct balance between timeliness and focus is vital, so ALI will remain consistently aware of issues of importance, while relying on a robust process for setting its research agenda, to make certain clear focus and direction are maintained.

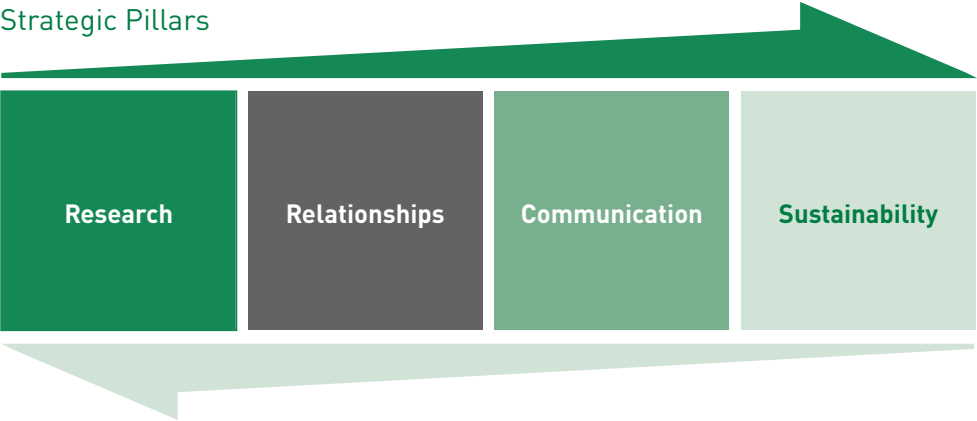
Here again, a strong network will prove useful: with effective connections to government and stakeholders, ALI will remain aware of upcoming issues, and will often have the opportunity to explore them before they reach the public eye. Employing innovative and academically-sound approaches, the Institute will have the opportunity for careful deliberation about which priorities to pursue.

As an independent institute, ALI depends almost entirely on external support (donors, funding agencies) both to operate and to fund research. Leveraging its network, and pursuing opportunities for fundraising partnerships within the University of Alberta, will be a vital and necessary element of the Institute’s sustainability strategy in the coming years. By continuing to conduct research that is valuable to policymakers, the Institute also enhances its appeal to prospective donors and funding agencies interested in improved land use policy.

Given the importance of protecting the integrity of its research, and expanding its network, ALI’s strategy for the coming years will rely upon the four pillars summarized on the following pages.

Success for any research institute seeking to inform policy is heavily influenced by two closely-related factors: the quality of its research, and the robustness of its network.

## Strategic Pillars







# STRATEGIC PLAN: FOUR PILLARS

## Research

ALI will continue to emphasize the funding and completion of relevant research projects, selected through a flexible, integrated system, in order to demonstrate value to policymakers.

## Relationships

ALI will develop strong institutional relationships with individuals and organizations relevant to its research, and call upon those connections for advice and support as it carries out research, communicates research findings, and seeks to inform policy.

## Research

The completion of high-quality, impartial academic research remains central to the Alberta Land Institute’s mission of informing policy. One of ALI’s key strategic priorities must therefore continue to be the funding of research projects which contribute to the Institute’s body of work, and demonstrate ALI’s value to stakeholders, government, media, and potential supporters.

However, setting research targets is not a simple proposition. Research is risky. If there is no risk of failure to develop new learning from a project, then the effort is not truly research. As such, projects must be carefully selected, in sufficient numbers to increase the likelihood of relevant outcomes, but without over-extending the Institute’s resources, or exceeding the grasp of its areas of study.

In support of this strategy, ALI’s effective call for proposals system will continue to serve an important role. Flexibility within the call process will also be essential, to recruit researchers

with relevant qualifications and expertise, and the Institute will foster approaches to research that target the needs of the policy community. At the same time, ALI will continue to identify relevant policy issues by leveraging its network, and utilizing its integrated approach.

## Relationships

In order to continue strengthening its network, ALI will renew and deepen its focus on building relationships. Building upon existing connections with key stakeholders, the Institute will seek out new partners in areas connected to its research, as well as policymakers and members of the media.

This process will continue primarily in a bilateral fashion; representatives of ALI will strengthen and build connections with relevant organizations, at both a personal and institutional level.

These strong bilateral relationships may develop into multilateral networks, as potential synergies between some of ALI’s partners become apparent. However, the aim of this relationship-

building will not be to simply create a series of groups; the Institute will seek strong and mutually-supportive engagements that benefit both institutions, and most importantly, positively contribute to the shaping of land use policy.

As these relationships strengthen and grow, the resources they provide — expertise, access to data, contacts in a given field, and so on — will benefit both ALI’s operational ability, and its research. By making any resources available through its network to its projects, the Institute can potentially enhance the opportunities available to its researchers, benefiting their work, and the ability of their research to inform policy.

## Communication

A strong network thrives on the ability to exchange information with ease. In order to maintain strong connections with stakeholders, government, and the media, ALI will continue to enhance its existing platforms for two-way communication, both in

print and digital mediums. Enhanced efficiency and diversity will be sought, to allow communication to a variety of audiences at reduced cost.

With the platform in place, ALI will emphasize communication of research not just at project completion, but throughout the process (when appropriate from a research perspective). Timing of these communications must be flexible — able to respond to interest from government, stakeholders, or the press — while still allowing for research to be shared in a proactive fashion. Media relationships must be specifically cultivated, so that stories might be pitched at opportune times.

## Sustainability

Ongoing financial support from engaged donors and funding agencies is essential to ALI’s future. Building upon a track record of successful project-based funding partnerships, the Institute will pursue a variety of new sources of operational revenue.

## Communication

ALI will utilize multiple communication platforms to exchange knowledge with its network, policymakers, stakeholders, media, and the public, in both a proactive and responsive fashion.

## Sustainability

ALI will seek new revenue sources and pursue new fundraising tactics, in order to continue to fund the costs of research associated with its operation.





# RESEARCH

**Dr. Vic Adamowicz**  
PHD

Research Director

“ALI must always consider the Governance perspective.”

Over the past three years, the Alberta Land Institute has funded research across its four broad areas of focus: Water, Agriculture, Governance, and Municipal Development. In these areas, our specialization lies in the interface between rural and urban land. On the facing page, a matrix of ALI’s research shows how our projects fit within our areas of study. Our multi-year projects encompass multiple areas of focus; our single-year projects usually emphasize just two. It is important to note that Governance is the area all our projects have in common. Because of our mandate to inform policy, ALI

must always consider the Governance perspective. The pages that follow contain information about the projects ALI is currently funding. Future research will deepen our involvement in each of these areas, by either building upon past work, or exploring new subjects. For instance, our team recently conducted initial research into compensation for oil and gas disturbances on public grazing lease lands in Alberta. Work such as this identifies possible questions that may be addressed through academic research, through future calls for proposals.

## Research Advisory Committee

The Research Advisory Committee works with ALI’s Research Director to ensure that projects funded by the Institute adhere to strong fundamental research principles — that they remain objective and impartial. These experts also help ALI frame questions that are appropriate for academic research, and provide support as the Institute selects projects during each call for proposals.

The present ALI Research Advisory Committee includes the following members:

**Dr. David S. Chanasyk**  
University of Alberta

**Dr. Don Flaten**  
University of Manitoba

**Dr. David Pannell**  
University of Western Australia

**Dr. Enid Slack**  
University of Toronto

## Research Projects

Since its inception in 2012, ALI has funded eight projects:

### Multi-Year Projects

- Alberta’s Living Laboratory Wetlands Project
- Systems Modeling Sustainable Land and Water Policy in Alberta’s Irrigation Sector
- Economic Evaluation of Farmland Conversion and Fragmentation in Alberta

### Single-Year Projects

- Urban Form, Land Use and Sustainability: Recommendations and Key Research Gaps

- Municipal Revenue Generation and Implications for Land Use and Environmental Quality
- Linking Environmental Goals with Business Risk Management Programs in Canadian Agriculture

### Completed Projects

- Assessing Property Rights and Land Use in Alberta
- Municipal Governance Reform and Land-Use Planning in Alberta

## Matrix: ALI Research Projects & Areas of Study

Water	Agriculture	Governance	Municipal Development	
Wetlands				
	Conversion of Agricultural Land			
Irrigation				
	Property Rights			
	Cross Compliance			
		Urban Form & Growth		
		Municipal Tax Policy		
		Municipalities & Regional Planning		





# MULTI-YEAR PROJECTS

## Can We Restore Your Wetland?

### Alberta’s Living Laboratory Wetlands Project

**Principal Investigators:**  
Dr. Peter Boxall  
Dr. Irena Creed

**Co-Investigator:**  
Dr. Shari Clare

**Research Program Manager:**  
Stacey O’Malley

**Areas of Study:**  
Water  
Agriculture  
Governance  
Municipal Development

**Scheduled:**  
2013 – 2016

The Alberta’s Living Laboratory wetlands project is a multi-year, interdisciplinary research project examining the science and economics of wetland restoration in Alberta. This is a timely subject, because a new Wetland Policy is coming into force in the province, changing the replacement requirements for wetlands lost to development.

In the scientific sphere, the project is using some of the most advanced techniques available to create tools to predict the functions a wetland might provide if it is restored. Once wetlands are restored as part of the project, they will be studied on an ongoing basis, so that the accuracy of these tools’ predictions can be assessed. Both the tools and the improved understanding that accompanies them will help inform policymakers and developers as they work with Alberta’s new Wetland Policy.

At the same time, an economic study is being undertaken, examining the true cost of restoring wetlands on private land — including the cost of land

owner compensation. Using a ‘market-based instrument’, the research team will engage with land owners to set the price for restoration. By partnering with land owners, the project will develop a deeper understanding of the factors that influence the cost of wetland restoration, while also testing a system that might allow for more efficient use of wetland restoration budgets. This knowledge will be useful both for policymakers, and for those seeking to meet their restoration obligations under the new policy.

Through 2014-2015, work with remote sensing tools for the identification and analysis of wetland restoration sites has commenced. Promotion of the market based instrument — a reverse auction — amongst eligible land owners in the project area, Rocky View County, has also begun. The auction will take place in 2016.

For the most up-to-date information, visit: [albertalandinstitute.ca/wetlands](http://albertalandinstitute.ca/wetlands)

## Do We Have The Water We Need?

This three-year research project focuses on the opportunities and risks associated with irrigated agriculture in the province in the short- and long-term. The objective of the program is to identify the relationships between irrigated agriculture and economic, environmental, social, and policy factors. It also seeks to identify and assess the impacts of alternative policy options on the irrigation sector in the province over the next twenty-five years. This work is being conducted in several stages.

First, a variety of water management policy options are being identified through literature reviews, meetings with an advisory panel of stakeholders and policymakers, and the identification of cause-and-effect relationships between key economic, environmental and social factors. Identified options will then be evaluated using a systems model that simulates the potential near- and long-term economic, environmental and social impacts associated with the implementation of each option.

This analysis will be further supported by sub-projects relating to the environmental and economic impacts of various “what-if” scenarios, benefit-cost analysis, analysis of water- and land-use impacts, and analysis of risks and mitigation strategies. Taken together, these studies and the systems model built as part of the project will be of great use to policymakers engaged with the issue of water management in Alberta’s irrigated districts.

Through 2014-2015, members of the research team have conducted extensive lab and field research into factors such as crop growth and reservoir management practices, which will be included in their systems model. Construction of the model has also been substantially completed, with many of its elements now undergoing validation. The systems model will be completed in 2016.

For the most up-to-date information, visit: [albertalandinstitute.ca/irrigation](http://albertalandinstitute.ca/irrigation)

### Systems Modeling Sustainable Land and Water Policy in Alberta’s Irrigation Sector

**Principal Investigators:**  
Dr. Evan Davies  
Dr. Miles Dyck

**Co-Investigators:**  
Dr. Scott Jeffrey  
Dr. Feng Qiu  
Dr. Jim Unterschultz

**Areas of Study:**  
Water  
Agriculture  
Governance

**Scheduled:**  
2013 – 2016





## MULTI-YEAR PROJECTS

### Economic Evaluation of Farmland Conversion and Fragmentation in Alberta

**Principal Investigators:**  
Dr. Scott Jeffrey  
Dr. Brent Swallow

**Co-Investigators:**  
Dr. Feng Qiu  
Dr. Arturo Sánchez-Azofeifa

**Areas of Study:**  
Agriculture  
Governance  
Municipal Development

**Scheduled:**  
2013 – 2016

### How Much Land Are We Still Farming?

This three-year project focuses on the economics of fragmentation and conversion of agricultural land to non-agricultural uses in Alberta. The objective of the research is to assess and quantify the economic impacts and implications of land fragmentation and conversion for policy and planning.

To engage with this complex issue, the project team is conducting four related studies that focus either on the province as a whole, or on two areas within the province: the Capital Region around Edmonton, and the Highway 2 corridor linking Edmonton and Calgary.

The first study makes use of Geographic Information System (GIS) modeling and remote sensing analysis to identify patterns of land use and land use change over time, with the results informing the other projects.

The second study undertakes an economic analysis to identify factors (relating to both ownership and policy) that impact conversion in both the province as a whole, and in the specific study sites.

The third study uses statistical techniques to examine the economic relationships between conversion and a variety of influencing factors, including land values.

Finally, the fourth study defines and evaluates the public values associated with, and the public interest in, goods and services associated with the lands in the Capital Region.

Taken together, the results from the four studies will be used to identify how current policies impact the level and rate of conversion and fragmentation, and to identify policy and planning options that may assist in future management of fragmentation and conversion in Alberta.

Through 2014-2015, research in each of the four studies has been substantively completed. The findings will be assembled into a final report to ALI in 2016.

For more information, visit:  
[albertalandinstitute.ca/fragmentation](http://albertalandinstitute.ca/fragmentation)



## SINGLE-YEAR PROJECTS

### How Are Our Cities Growing?

Urban growth in Alberta has taken various forms, including downtown, inner-city, and exurban development. Most growth, however, has been suburban. A substantial literature exists on urban growth and its forms, most under the rubrics of 'urban sprawl' (focusing on its costs, causes, and remedies) and more recently, opportunities for 'smart growth'. What is missing is a systemic understanding of the growth of cities and towns in Alberta, and the reasons, context, and regulatory framework under which it has occurred.

It remains unclear what level of density, degree of mixed use, and access to transit are considered 'sustainable'. The effectiveness of taxation, development or congestion charges, and other economic and regulatory mechanisms geared towards fostering 'sustainable' growth is also uncertain.

This one-year project is developing a 'state of knowledge' report focusing on Alberta, which will identify criteria by which sustainable urban or suburban

growth can be evaluated. The report will clarify mechanisms to foster sustainable growth, and describe the key research gaps in understanding the benefits and costs of urban form.

Through 2014-2015, Principal Investigator Dr. Sandeep Agrawal (Director of the University of Alberta's Planning Program) has reviewed scholarly and grey literature, and conducted interviews with key personnel in this area. He has also assembled an advisory group of leading urban scholars and professionals from across the country. When members of this group visited Edmonton, they were made available for a public panel discussion (see page 21). This project's report will be delivered to ALI in November 2015.

For more information, visit:  
[albertalandinstitute.ca/urban-form](http://albertalandinstitute.ca/urban-form)

### Urban Form, Land Use and Sustainability: Recommendations and Key Research Gaps

**Principal Investigator:**  
Dr. Sandeep Agrawal

**Areas of Study:**  
Governance  
Municipal Development

**Scheduled:**  
2015



# SINGLE-YEAR PROJECTS

## Linking Environmental Goals with Business Risk Management Programs in Canadian Agriculture

Principal Investigators:  
Dr. James Rude

Co-Investigators:  
Dr. Alfons Weersink  
Dr. James Unterschultz  
Dr. Scott Jeffrey

Areas of Study:  
Agriculture  
Governance

Scheduled:  
2015

## Municipal Governance Reform and Land-Use Planning in Alberta

Principal Investigator:  
Dr. Lars Hallstrom

Areas of Study:  
Governance  
Municipal Development

Scheduled:  
Completed 2015

## What Could Cross-Compliance Mean For Our Farms?

Business Risk Management (BRM) programming began in 1958 in Alberta, as a way to stabilize farm incomes. Now, as new environmental, social, and economic goals emerge for the agricultural sector, suggestions have been made that these goals should be linked to BRM support.

In the Federal/Provincial policy framework *Going Forward II*, the possibility of ‘cross-compliance’ was raised in relation to the support program AgriInvest: individual provinces or territories “may require participants to comply with certain criteria before they are eligible to receive government contributions under AgriInvest.” Those criteria were broadly defined to include

traceability, the environment, business development, and innovation.

Dr. James Rude leads this one year project to study global examples of this sort of cross-compliance in action. Reviewing regulations from the EU, the US, and Quebec, he is developing a conceptual model to produce simulations that can quantify the potential impact of hypothetical AgriInvest cross-compliance on farms.

This will allow him to examine implication of hypothetical AgriInvest cross-compliance on other support programs, budgetary implications, and the impacts on welfare of agents in the sector. For more information, visit:

[albertalandinstitute.ca/cross-compliance](http://albertalandinstitute.ca/cross-compliance)

## How Well Do Our Land Management Plans Work?

This one-year research project examines how rural municipal governance in Alberta can be reformed to better support local ability to conform with the planning objectives set down by Alberta’s Land Use Framework. The project assesses the current governance framework for land use planning in Alberta, and identifying potential gaps within Alberta’s current land-use governance structure.

The researchers examine other jurisdictions’ models for provincial-municipal relations and regional land use planning, and consider the relevance

of those models to the Alberta context. Finally, the researchers seek to identify what types of legislative or regulatory changes could assist in clearly defining the roles and responsibilities of all stakeholders involved in the ongoing implementation of Alberta’s Land Use Framework.

*Note: this work was initiated before the announcement of changes to Alberta’s Municipal Government Act.*

For more information, visit:  
[albertalandinstitute.ca/municipal-governance-reform](http://albertalandinstitute.ca/municipal-governance-reform)

## How Do City Revenue Strategies Alter Our Land Management?

Alberta’s municipalities generate local revenue through residential and business property taxes, user fees for services, licensing, and a host of discretionary tax tools that include business taxes, special taxes and development-related levies. Concerns have been expressed about the adequacy of these revenue sources to meet municipal responsibilities and whether the current revenue sources have contributed to urban sprawl, land fragmentation and infrastructure duplication.

Nowhere is this more evident than in the Edmonton and Calgary metropolitan areas, where the expansion has resulted in tension between cities and their rural and small urban centre neighbours.

The research project explores the factors driving urban growth and whether municipal revenue sources

have affected development decisions within the rural-urban fringe in the Calgary and Edmonton metropolitan regions. It also reviews the experiences of other jurisdictions around municipal revenue generation, service provision, land use change, and environmental quality.

This research will improve the understanding about the impact of municipal revenue generation on land use and environmental quality among municipal officials, developers, and policymakers.

In May 2015, this project’s findings were presented at the University of Calgary School of Public Policy’s Urban Policy Symposium. The final report will be provided to ALI in November 2015.

For more information, visit:  
[albertalandinstitute.ca/municipal-revenue](http://albertalandinstitute.ca/municipal-revenue)

## Municipal Revenue Generation and Implications for Land Use and Environmental Quality

Principal Investigator:  
Dr. Bev Dahlby

Co-Investigators:  
Dr. Melville McMillan  
Brian Conger

Areas of Study:  
Governance  
Municipal Development

Scheduled:  
2015

## Internal Projects

To determine whether a land use issue might yield questions suitable for further study, ALI’s team sometimes conducts internal research. During the past year, the Institute has examined two issues which may form part of a future call for proposals.

An annually-updated natural capital account of Alberta’s agricultural land could help the province determine how policy impacts the agricultural industry, and the economy. In the fall of 2014, ALI

held a workshop to determine whether interest in this tool would exist, and what research resources are available.

Through 2014-15, ALI explored the issue of compensation to public lands grazing leaseholders for oil and gas surface disturbances. Alberta’s Auditor General also raised this matter in July 2015. After consultation with stakeholders and government in September 2015, ALI will determine whether to conduct additional research.





## PARTNERSHIPS

### Building Strong Partnerships to Inform Policy

**Above:**  
Dr. Shari Clare, Co-Investigator with the *Alberta's Living Laboratory Wetlands Project*, presents at the Alberta Innovates Bio Solutions event *Impact Innovation 2015*. The event was hosted by writer and broadcaster Jay Ingram.

The influence of research is often dependent on how it is shared. Effective 'knowledge exchange' with relevant audiences (such as policymakers) can be conducted through a variety of channels, including traditional scholarly publications, conference presentations, public and stakeholder workshops, media stories, websites, and briefings.

The Alberta Land Institute utilizes all of these channels in its efforts to inform policy, and whenever possible, works with partners to magnify the efforts of this outreach.

By focusing on research questions that address the interface of urban

and rural issues in the 'white zone' of Alberta (populated areas not set aside for resource development), ALI occupies a unique position among Alberta's research entities. However, many connections exist between the Institute's work and research being conducted by other organizations, so whenever appropriate, ALI joins with these institutions to both fund projects, and to share findings.

This collaborative approach greatly enhances the Institute's ability to inform policy, and the ALI team will continue to build positive, effective partnerships in the years to come.

### Our Partners

Over the past year, ALI has worked closely with numerous partners to help fund research, exchange knowledge, and inform policy. We look forward to continuing our strong relationships with these and other organizations:

The University of Alberta

Western University

Alberta Innovates –  
Bio Solutions

Alberta Environment & Parks  
(Wetland Resiliency and  
Restoration Program)

Alberta Agriculture & Forestry

Rocky View County

City of Calgary

Ducks Unlimited Canada

Kule Institute for  
Advanced Study

City-Region Studies Centre

Fiera Biological

Max Bell Foundation

Capital Region Board



### Using partnerships to support knowledge exchange

Municipal development is one of ALI's four main areas of study, and with *Urban Form, Land Use and Sustainability: Recommendations and Key Research Gaps* (page 17) Dr. Sandeep Agrawal, (Director of the University of Alberta Planning Program) examines one aspect of that subject: the growth of cities.

As part of this one year ALI project Dr. Agrawal is developing a 'state of knowledge' report to help identify what researchers from across North America already 'know' about municipal growth. What criteria have been established to evaluate the growth of cities? Have the mechanisms that might support sustainable growth been defined? What research gaps currently exist around the subject of Alberta's urban growth?

When delivered in the fall of 2015, Dr. Agrawal's report will help frame new research questions which may form the basis of a future ALI call for proposals.

One essential part of Dr. Agrawal's research plan called for him to bring

together a group of experts in municipal planning and development from across North America, for sessions exploring the existing knowledge surrounding urban and suburban growth. Those meetings occurred in Edmonton in March 2015, and because it is rare for such a diverse group of experts to come together in one city, Dr. Agrawal proposed to make the most of the occasion.

Working in partnership with the City-Region Studies Centre (CRSC), the Kule Institute for Advanced Study (KIAS), and his own University of Alberta Planning Program, Dr. Agrawal coordinated a knowledge exchange event: a public forum at which all the assembled experts were able to take part in panel discussions, and take questions from the audience. The event was hosted at the Art Gallery of Alberta, as part of CRSC's Regional Planning Speakers Series, and was sold out.





## BUILDING CAPACITY

### Creating Valuable Opportunities for Student Researchers

**Above:**  
Dareskedar Amsalu, a Masters student working on ALI's project *Systems Modeling Sustainable Land and Water Policy in Alberta's Irrigation Sector*, tours the Western Irrigation District with General Manager Erwin Braun.

The Alberta Land Institute focuses on research questions that will have significant implications for the future of the province, and the world. From the development of ecosystem services to the consequences of different types of urban planning on land use, the issues considered by ALI's projects will be important for generations.

Recognizing these long-term policy implications, the Institute strives to provide opportunities for students to work on its projects. During each ALI call for proposals, one criteria for the assessment of applications is the ways in which the a potential project

can contribute to 'building capacity' — how the research can help graduate students gain experience and expertise which will benefit them throughout their careers.

This emphasis on capacity building has already proved a great success. The Principle Investigators on all of ALI's projects are committed to providing opportunities for their students to participate in research, write and publish papers, and present their findings at conferences. These students benefit from their experience, and in the process, serve as ambassadors for ALI's research around the world.

### Our Students

Over the past year, ALI's research has benefited from the involvement of the following students:

#### Post-Doctoral Fellow

Ali Ameli  
Francesco Accatino

#### PhD

Mohamed Ammar  
Bijon Brown  
Njeri Mbajiorgu  
Xiaofeng Ruan  
Kai Wang

#### Masters

Dareskedar Amsalu  
Angela Bentley  
Kaitlyn Cyr  
Darren Haarsma  
Marie-Ève Jean  
Anna Kauffman  
Saloni Salaria  
Kayla Stan  
Haoluan Wang  
Anna Waz

#### Undergraduate

Alex Cebulski  
Lauren Corlett



### Graduate students help build a better model

Systems models produce sophisticated simulations to predict what might occur as a result of specific future circumstances. By helping decision makers understand potential benefits of challenges, such models can help inform policy. However, the accuracy of a model's projections depends heavily on how it is constructed — what factors are taken into account, how accurately they are represented, and what levers are provided to modify them.

The three-year ALI project *Systems Modeling Sustainable Land and Water Policy in Alberta's Irrigation Sector* (page 15) leverages the expertise of an expansive, multi-disciplinary team to build such a systems model. To date, seven graduate students have joined the project, including PhD candidate Mohamed Ammar, and Masters Student Marie-Ève Jean.

Mohamed has constructed a crop growth module within the larger systems model, with two vital features:

the ability to accurately simulate outcomes for a variety of crops in the Alberta context, and the capacity to extend those simulations over long periods of time. Existing Alberta models do not address those factors — they either use generic crop information, or only consider growth over a single season.

Marie-Ève went into the field to learn how southern Alberta's reservoirs are truly managed. Speaking with water managers, operators, and planners both in southern Alberta and with the provincial government, she gathered information which now enhances the model's accuracy in simulating reservoir management practices.

By integrating detailed, scientific, real-world data into the irrigation systems model, both Mohamed and Marie-Ève have made vital contributions to ALI's project, and gained valuable experience which will benefit their careers.





## ABOUT US

### OUR STAFF

**Brian Manning**  
Executive Director

**Vic Adamowicz**  
Research Director

**Susan Martin**  
Executive Assistant

**Quentin Lau**  
Research Associate

**Kenneth Tam**  
Communications Coordinator

### CONTACT US

[www.albertalandinstitute.ca](http://www.albertalandinstitute.ca)  
[albertalandinstitute@ualberta.ca](mailto:albertalandinstitute@ualberta.ca)  
780.492.3469

3-173 Centennial Centre for  
Interdisciplinary Science  
11455 Saskatchewan Drive  
University of Alberta  
Edmonton, AB, Canada, T6G 2E9





[www.albertalandinstitute.ca](http://www.albertalandinstitute.ca)