



A proposal from AECO Innovation Lab and the Municipal Information Systems Association of Ontario (MISA Ontario)

Executive Summary

Working with Municipal Information Systems Association of Ontario (MISA Ontario), AECO Innovation Lab would like to engage with the Housing Accelerator Fund to move Canada towards an Integrated System to manage the Development Approval Process.

The complex and fragmented development application approval process

The development approval process across Canada permits provinces to delegate municipalities the responsibility for the enforcement of multiple provincial regulations. An increasing number of development proposals and higher public expectations have put municipalities under pressure to increase productivity and be more efficient.

In response, e-permitting systems are gradually being adopted by municipalities. However, permitting is a complex process often requiring the involvement of multiple applicable law agencies (for example, conservation authorities), regional governments, provincial and/or federal ministries, indigenous groups, and other organizations outside of individual municipalities. While e-permitting systems can help automate the application submission process within each municipality, they do not address issues related to engagement of these external partners. The problem is compounded by the fact that individual provincial *entities* must deal with multiple municipalities using different technology portfolios.

Investing in separate municipal e-permitting solutions is a tactical response to a strategic problem: it is an inefficient siloed approach that does not allow the Province to optimize return on their investment, nor harness the full benefits of an integrated province-wide approach.

This challenge is one that is being experienced by provinces across Canada; the focus of this brief is on work that is being done in Ontario, where the *One Ontario Coalition* has taken a leading role in advocating for the implementation of a strategic province-wide solution to these challenges, however this model can serve as an example and guide for other provinces.

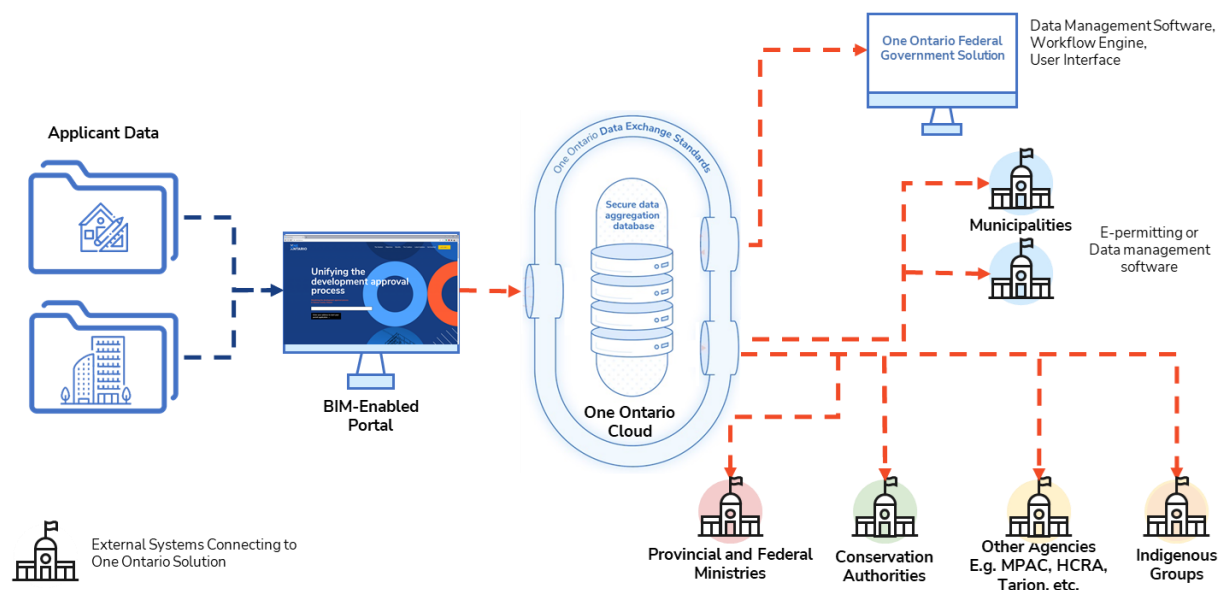
AECO and MISA’s proposal for an integrated system

Using One Ontario as a model for all of Canada, the strategic approach to development approvals process would be a fully integrated system that enables data exchange between applicants, municipalities, conservation authorities, provincial applicable law agencies, and indigenous groups. In addition to improving workflow efficiencies, this approach will defragment the process and create a secure central source of reliable data for all permitting processes. The data will be owned by the government, and available at no cost to municipalities, so that all stakeholders can leverage it to enable informed decisions, continuous improvement and responsiveness to changing needs.

“a fully integrated system that enables data exchange between applicants, municipalities and provincial applicable law agencies”

In June 2020, *AECO Innovation Lab* formed the *One Ontario Coalition* which includes critical stakeholders closest to the development application approval process. The coalition includes representation from governments, professional associations, and the private sector who are committed to, and have dedicated resources to, this goal. The important groundwork already undertaken by One Ontario will help expedite this Program, enabling the people and businesses of Ontario to reap benefits sooner than later.

The *One Ontario Coalition* believes that to achieve the desired efficiency, transparency, and data sharing throughout the development approvals process, the system include the following components:



On behalf of the *One Ontario Coalition*, *AECO Innovation Lab* is submitting this proposal to engage the Housing Accelerator Fund, share our nearly one decade of research and look to engage further to help streamline the development application approval process for jurisdictions across Canada. The system will make development applications and data more digitally accessible for all parties, and ultimately

better serve the people and businesses of Canada.

Past research and projects:

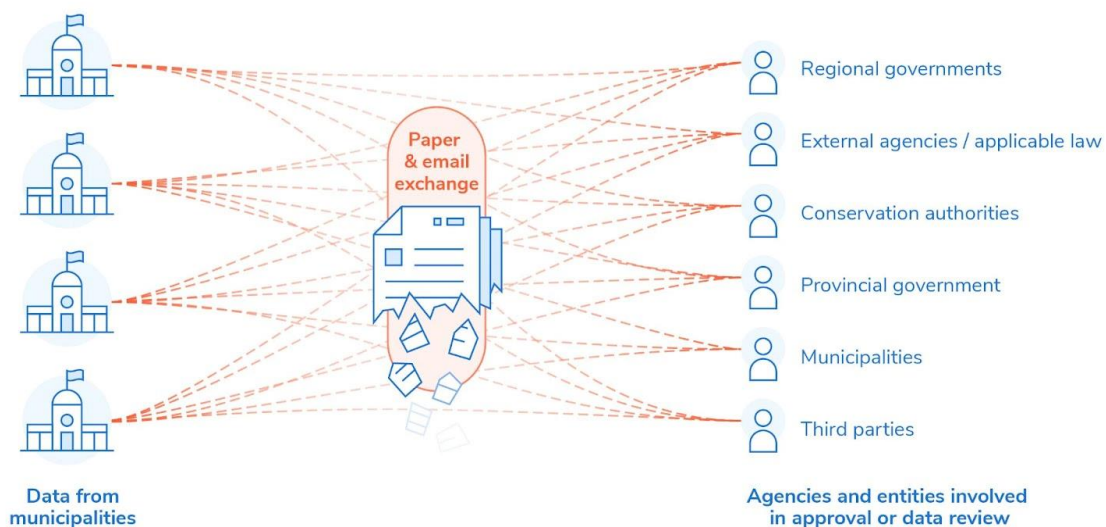
Initial work on this project was based on our team's eight years of research at University of Toronto. Our team published numerous papers on the causes and effects of lengthy pre-construction processes in Ontario as well as opportunities for improvement through the use of technology for municipalities, regional governments and others involved in the process.

Highlight of Selected Research Project:

- Electronic Development Approval Process (EDAP) - with OBOA and LMCBO
- Standardizing Ontario's Permitting Process for E-permitting Implementation (2020)
- Framework for Automated Model-Based e-Permitting System for Municipal Jurisdictions (2019)
- Benefits and Barriers to BIM adoption in Canada (2019)
- Streamlining the Development and Building Approvals Process in Ontario (2018)
- Evaluation of Tall Building Construction Permitting Process in Toronto (2017)
- CMHC Housing Supply Challenge: Pre-development Process Streamlining and Modernization in Support of Housing Affordability in Simcoe County: a scalable Proof of Concept solution for all regional governments in Canada.

Below is a picture of the existing situation in Ontario today - communication and data sharing is either fully paper, or every jurisdiction and authority is building a siloed structure for data that is not easily shared with anyone else involved in the development application approval process. This is not just an Ontario problem - every province is similar.

The complex and fragmented situation today:



From an applicant perspective, the existing development approval process is complicated and inefficient. For example, while the Ontario government issued a standard Application for a Permit to Construct or Demolish form in 2014, which all municipalities are required to use, it is only the first step in the submission process; the format for other documents and drawings has not been considered, nor the concept of PDF documents or digital submissions. With a plethora of requirements across multiple jurisdictions, applicants are clamouring for a uniform standard.

“the benefits that could be realized from investment in a comprehensive approach are well documented in several reports”

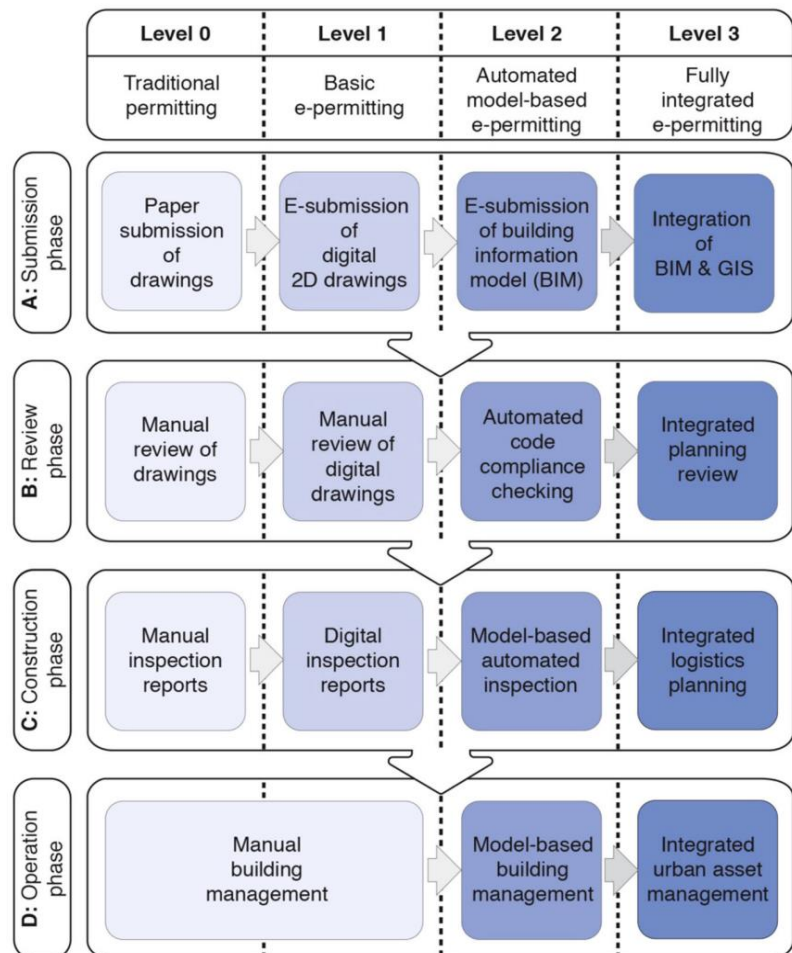
Research suggests that investing in separate municipal e-permitting solutions is not sufficient, and does not allow the provinces nor the federal government to harness the full benefits of an integrated development approvals approach.

International precedent

Many other jurisdictions around the world have achieved great results through digitization and automation of the development application approval process. We conducted a 4 year research project doing an international scan of federal, state/provincial, and municipal development approval technologies that have been implemented around the world. Canadian municipalities are just moving to Level 1 now - Singapore achieved Level 1 in 1995, and many developed nations around the world are now moving towards Levels 2 and 3.

When examining how other countries have successfully implemented e-permitting, a holistic solution that integrates and connects all stakeholders is most common. A report from The World

Bank Group details Serbia as an example of the significant impact that a fully integrated e-permitting solution can have. Theirs was not an isolated front-end e-permit application system; The World Bank Group report describes it as “a national online platform... with a wide scope of functionalities, such as



electronic filing, archiving, electronic exchange of information between the various authorities, automatic notifications to reviewers about upcoming deadlines, and monitoring of all statutory deadlines.” This practice is common throughout the developed world, including in the United Kingdom, Finland, and Estonia where the federal government gave support to digitize the development approval processes to lower tier governments in successful efforts to improve productivity.

A single Window Solution: Aggregated data yields the highest returns

A holistic approach to e-permitting has paid dividends for every country that has embraced the opportunity. The World Bank Group report stresses the need for an aggregated data layer for success, stating “a national technology platform can help strengthen oversight and performance management. For example, the central authority managing the platform can monitor service delivery by local building authorities and technical review by *applicable law agencies* (if these are connected to the system) or even track performance of individual reviewers.”

A Client Journey Map for Housing and Business Investment Development in Ontario recently completed by the Province of Ontario highlighted many limitations that currently exist in the development approval process in the province. It points to a central review platform for provincial applicable law agencies, standardized pre-consultations, and data exchange standards as necessary next steps for the province.

“online exchange with supporting external agencies is an essential element of success”

Furthermore, The World Bank Group conducted a survey regarding important features and capabilities of an e-permitting solution. One question focussed on information exchange with other supporting *agencies* such as utilities, land registry, the tax department and other municipal systems including Geographic Information Systems (GIS). When these entities were surveyed, more than 80% stated that “online exchange with supporting external agencies” is an essential element of success, and that “Broadly, the higher the number of stakeholders connected to the system, the greater the benefits for building authorities, referral applicable law agencies, and end users.” World Bank Group, Leveraging Technology to Support Construction Regulation and Permitting Reform, June 2018

Throughout The World Bank Group report, there is a common theme: shared, transparent, well governed centralized data, and end-to-end engagement are critical success factors: “where the technology solution had a national scope, some respondents stated that automation helped push broader standardization and uniformity in building control procedures across the country.”

Impact of a single Window platform for the Federal, Provincial, Municipal and Regional Governments

Here are some highlights from past research on the impact of implementing a streamlined federated

system done by the AECO team and others:

Cost Savings: Savings for Governments and Citizens

- South Korea has seen annual savings of over \$166M (CAD) by instituting a streamlined, digitized process. Singapore saves over \$13M per year. Ontario could save nearly \$60M per year from reduced printing and hard copy storage costs alone.
- York Region estimates cost savings of \$2.65M per year for the Region of York alone.

Time Savings: Faster Permits

- International examples show significant reduction in approval process time: Mumbai (43% reduction), Delhi (42%), Kuwait (72%), Serbia (68%), China (76%), Côte d'Ivoire (74%), Singapore (76%).
- For a small warehouse in Ontario, permitting takes 249 days. It takes 28 days in South Korea, 36 in Singapore and 65 in Denmark or Finland.
- CANCEA reports that a 6 month reduction in delays for permitting will result in 33,100 additional units in the next 5 years without any increase in investment.
- Every six-month delay in approvals reduces new housing supply by 3.7% (Fraser Institute).
- A 6 month reduction in development approval processes would result in \$4.5 billion added to Ontario's economy annually by 2025, and 40,500 additional jobs.

Lower Housing Costs through Quicker Approvals

- BILD suggests that, for every month a project is delayed, a 125 home low-rise development and a 125 unit high-rise incur \$456,000 and \$276,000 respectively in additional extra cost due to loan carrying costs, increased municipal charges, and inflation.
- C.D. Howe estimates homebuyers paid an extra \$168,000 on an average new home in part due to lengthy approval processes.

Staff Capacity: Building Through Automation

- Hiring skilled Building Officials, Inspectors, and Planners within the municipal space has become a major issue for Canadian municipalities. Government and agencies are struggling with more complex requirements and are facing a growing project backlog, and an inability to attract new talent. Tools for capacity building are key.

Building Bridges: Municipalities, First Nations, and Indigenous People

- Duty to Consult and Accommodate ensures Indigenous rights are respected. It is legislated but lacks implementation standards. An integrated system can facilitate notification of a development application as early as possible and ensure rights holders are made aware of projects that impact them.
- Our solution will also result in more inclusive processes throughout the pre-construction process. One of the main opportunities of this project is improved communication with external groups, including Indigenous groups. With this system and the incorporation of GIS tools and

layers, notifications can be automatically sent out to First Nations where Indigenous or Treaty rights are impacted.

- A technology solution based on standards can ensure indigenous communities are adequately consulted, which will strengthen relationships with municipal partners and reduce costs and delays for all parties.

With municipalities eager to make progress on digitization of their development approvals and permitting services, this Program of work needs to be undertaken as soon as possible. It is more efficient and cost-effective for the federal government, or individual provinces, to take a holistic approach to digital permitting infrastructure, rather than to attempt to retrofit a solution if municipalities and allow them take a siloed approach to implementation of their digital permitting systems.

AECO would like to work with the federal government through the Housing Accelerator Fund to take the lead on moving Canada towards an integrated system. We have been researching this problem for nearly a decade, know what needs to be done, and need the federal government at the table with us to move this much needed effort forward.

The One Ontario Coalition

Although AECO Innovation Lab and MISA Ontario would like to lead this effort on behalf of the Housing Accelerator Fund, we would not be doing it alone. Over the past two years we have built the largest coalition ever of organizations involved in the development approval process. We have also submitted a proposal to the CMHC Housing Supply Challenge to create a single window solution for Simcoe County as a proof of concept. Our partners in One Ontario are significant, and with the CMHC proposal we have brought together technology and implementation partners who can help us get the work done:



The coalition brings together like-minded organizations across governments, professional associations and the private sector with the firm belief that through a collaborative approach, we can realize productivity and economic benefits much greater than could be achieved individually. Only by engaging all relevant parties – municipal, provincial, and federal governments; applicable law agencies; architecture, engineering and construction stakeholders; software providers and academics – can we successfully, efficiently and cost-effectively improve the development approvals process and be able to achieve the benefits of a collaborative, integrated system.

The *One Ontario Coalition* was spearheaded by *AECO Innovation Lab* (AECO), which has provided a hub for the initiative and is leading the efforts to communicate with, engage and involve all necessary stakeholders. A Steering Committee was formed for One Ontario, composed of members from initial *One Ontario Coalition* organizations. Many of the Steering Committee members have a long history of involvement with research initiatives on the topics of e-permitting and development approval process improvement, and are passionate about transforming these research findings into an effective, economical and highly beneficial solution for Ontario.

“Only by engaging all relevant parties . . . can Canada successfully, efficiently and cost-effectively improve the development approvals process and be able to achieve the benefits of a collaborative, integrated system”

Members of the Coalition

There has been tremendous support for the *One Ontario* initiative from both the public and private sectors. We would be happy to provide the Housing Accelerator Fund copies of our support letters if requested, but at this time members of the coalition include the following organizations:

AECO Innovation Lab	MISA Ontario
Residential Construction Council of Ontario (RESCON)	Ontario Professional Planners Institute (OPPI)
Deloitte Canada	Esri Canada
Ontario Building Officials Association (OBOA)	Large Municipal Building Officials (LMCBO)
First Nations National Building Officers Association	Conservation Ontario
Innovate Cities	Notarius
Association of Consulting Engineering Companies of Ontario (ACEC-O)	The Toronto Regional Real Estate Board
Ontario Home Builders Association	Building Industry and Land Development Association (BILD)
Ontario General Contractors Association (OGCA)	buildingSMART Canada (bSC)
Toronto BIM Community (tBIMc)	Digital Built National Capital Region (dbNCR)
Home Construction Regulatory Authority (HCRA)	Tarion

Residential and Civil Construction Alliance of Ontario (RCCAO)	Digital Built National Capital Region (dbNCR)
Ontario Structural Wood Association (OSWA)	Municipal Property Assessment Corporation (MPAC)
Association of Municipalities Ontario (AMO)	Real Property Association of Canada (REALPAC)
Carpenters' District Council of Ontario	Ontario Ministry of Labour, Skills and Training
Nottawasaga Valley Conservation Authority	Lake Simcoe Region Conservation Authority
Severn Sound Environmental Association	Georgian Triangle Development Institute
The Town of Oakville	The City of Windsor
The County of Simcoe	The Town of Innisfil
The Town of Collingwood	The City of Orillia
The Township of Ramara	The City of Toronto

We have done the research, built a coalition, and we know what needs to be done to help streamline development approvals starting with Ontario. With the support of the Housing Accelerator fund the solution could be implemented to benefit all of Canada. We ask that the Housing Accelerator Fund engage with us to help move this important initiative forward to bring faster building of lower cost housing across Canada.

About AECO Innovation Lab:

We are a digital transformation partner, bringing together the best from industry, academia and government to provide collaborative, innovative, research driven answers to challenging industry problems. We want to create an environment for government and industry to work together to achieve faster, greener, better building solutions for society.

Our Vision: AECO Innovation Lab empowers the architecture, engineering, construction and associated government sector by connecting stakeholders to produce research driven, innovative, commercial solutions that tangibly improve business outcomes.

Our Mission: AECO Innovation Lab is dedicated to breaking down silos and increasing the productivity of AEC and government institutions by providing a hub for collaboration, knowledge sharing and digital transformation.

About Municipal Information Systems Association of Ontario (MISA Ontario)

MISA Ontario is a non-profit organization fostering an engaged and active community of municipal professionals, at all levels, in order to share information, experiences and promote municipal best practices. As such, we understand the value of working together to provide a modern, consistent, standards-based approach that can be applied across multiple municipalities, the province and

associated agencies. MISA Ontario is excited to help facilitate the discussions moving forward around the current initiatives that AECO is involved in to ensure the results provide the most value to all involved.

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