

Attachment 1 – Municipal Benchmarking Review:

In most jurisdictional scans conducted in other cities, several AI and automation tools are available for different stages of the planning and development process. These include:

Pre-Application Stage:

Initiative	Municipality	Description	Benefits
Automated Compliance Check Archistar – eCheck solution	Burlington, ON, Canada [Staff report]	Solution used to conduct a pre- check assessment for zoning by-law. Solution assesses the designs and evaluates the submission against the digitized Zoning By-laws. The system creates a comprehensive assessment, standardized compliance report identifying areas that are in and not in compliance, which is then included with the permit application demonstrating compliance Status: The proof of concept demonstrated sample reports for the City Zoning By-law relating to industrial buildings in zones BC1, GE1 and GE2. The next phase is to expand scope to handle a wider range of permit categories.	The Proof of Concept was able to automate significant zoning features such as setbacks, heights, and parking ratios to enhance the permitting process's efficiency. Ability to generate “same day” feedback on application submissions.
	Markham, ON, Canada [Staff report]	Automated zoning plans checker to support low-density development including accessory dwelling units. Status: Solution procured but not launched yet.	This solution can be used by the Public, Planning, Building, Licensing and By-Law Enforcement departments

	<p>Surrey, BC, Canada [Staff report]</p>	<p>Proof of Concept with initial focus on new single family building permits (in Zones RH, RF and RF-13).</p> <p>Status: Solution procured but not launched yet.</p>	<p>Each year, the City issues approximately 800 new single-family building permits.</p>
	<p>Vancouver, BC, Canada [News release]</p>	<p>The solution can assess laneway house designs to check if they follow Zoning and Development By- law.</p> <p>Future phases to include other regulations from the Zoning and Development By-law, Parking By- law, and Vancouver Building By-law and Other housing types, such as single detached house, duplex, and multiplex.</p>	<p>Increased applicant confidence</p> <p>Fewer incomplete applications</p> <p>Reduced manual staff review</p>
	<p>Burnaby, BC, Canada [News release]</p>	<p>Digitize zoning bylaws and perform automated zoning reviews.</p> <p>This includes single and two-family homes, including those with secondary suites and laneways, and small-scale multiunit housing up to six units.</p>	<p>Anticipate up to 400 R1 permits will be processed through the new technology in a year.</p>
	<p>Austin, TX, USA [News release]</p>	<p>The initial roll out will be limited to single-family residential properties, with plans to expand to other review types.</p>	<p>The city manages complex zoning by laws. This solution provides faster and more informed feedback on building plans.</p>

CivCheck (pilot)	City and County of Honolulu, USA [case study]	The Guided AI Plan Review (GPR) platform streamlines and automates permit pre-screening and plan reviews for both applicants and municipal plan reviewers. By ensuring applications meet jurisdiction-specific rules and regulations before submission, and enabling a comprehensive and standardized review experience, CivCheck aims to reduce permitting times, improve compliance, and streamline communication.	Reduction in plan review time by over 70%.
AI Chatbots and Virtual Assistance	Kelowna, BC, Canada [News article]	Automate permit applications and answer questions about the city's zoning bylaws and official community plan.	Unknown
	Surrey, BC, Canada [News release]	The Development Inquiry Assistant (DIA) is designed to help answer questions about development, building and renovating.	The DIA currently handles an average of 460 inquiries per month, which has helped reduce the volume of inquiries handled by frontline staff.

Planning Review & Approval Stage and Public Consultation & Engagement Stage:

Initiative	Municipality	Description	Benefits
<p>Digital Twin</p> <p>Digital twins are virtual replicas of physical entities, enabling real-time simulation and analysis.</p> <p>Digital twins enable planners to make better</p>	Virtual Singapore	Virtual Singapore is a comprehensive digital twin of the city-state that leverages cutting-edge technology to enhance urban planning, management, and sustainability.	Residents can use digital twins to view proposed neighborhood changes, such as new parks, road expansions, or high-rise buildings.
	Boston Smart City Twin, USA	Boston's digital twin is built with data that enables the city to analyze urban development projects and their impact on housing, zoning, and parking within neighborhoods.	The digital twin helps stakeholders make informed decisions about the city's planning and development, and modeling of flood risks. Boston officials are also considering integrating data from sensor feeds into maps and models to help offer real-time visualization of city services.

decisions by providing a dynamic, holistic view of city systems by integrating real-time data from sensors and historical records to offer an up-to-date depiction of urban settings.	Helsinki's 3D City Model	Helsinki's digital twin is vital for energy efficiency planning, infrastructure management, and decision-making for new city development initiatives.	Users can see how new developments affect traffic flow, environmental conditions, and community amenities. Additionally, digital twins can incorporate feedback mechanisms, allowing residents to share their opinions and concerns directly with planners.
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Building Permits Stage

Initiative	Municipality	Description	Benefits
Auto Permit Approvals	Edmonton, AB, Canada	Using Rule-based automation, the system reviews and pre-screens single- family home permit applications for zoning compliance. Most new single and semi-detached applications in lots zoned small- scale flex residential (RSF) in developing neighbourhoods are eligible for Auto- Review. To qualify, projects must be on registered lots and meet all requirements of the Zoning Bylaw.	For single detached or semi-detached home in a greenfield area, once the application is submitted and meets the necessary zoning requirements, a development permit will be issued immediately. The City does note some plans will be subject to a random audit.
Express Building Permits (Not AI)	Toronto, ON, Canada [website]	Permit applications for smaller, less complex projects within a predefined scope will be processed through the Express Services stream. Types of Projects included in Express Services include: Small Residential Projects, Small Commercial Projects and Sign Permits	If the application is submitted with all required documentation, it will be processed, and an Examiner will review the application within 3 days.

<p>Residential Renovation Fast Track permitting stream</p> <p>(Not AI)</p>	<p>Vancouver, BC, Canada</p> <p>[website]</p>	<p>For simple residential renovations under \$250,000. Issues permits within 1 week.</p>	<p>Home renovations: 50 percent faster median processing time, currently 23 days compared to 44 days in 2023. 63% of all home renovation permits are processed in 3 days, through the Residential Renovation Fast Track permit stream.</p> <p>New detached and duplex homes: 25 percent faster median processing time, currently 33 weeks compared to 43 weeks in 2023.</p> <p>Laneway Homes: 60 per cent faster, currently 13 weeks compared to 32 weeks in 2023.</p>
<p>ePlans</p>	<p>Cities of Markham, Mississauga, Hamilton</p> <p>Cities of Miami, Chicago, Austin, Honolulu (USA)</p>	<p>Advanced automation will enhance the efficiency of permit intake and plan review, leading to expedited approvals.</p>	<p>Expedited approval times, transparency, consistency (uniform responses), enhanced efficiencies</p>

Building Inspections Stage:

Initiative	Municipality	Description	Benefits
<p>Drone Usage for building inspections</p>	<p>New York City, USA</p> <p>[News release]</p>	<p>City is issuing new rules setting forth a permitting process and guidelines for the take-off and landing of unmanned aircraft in New York City. The rules including building inspections, infrastructure inspections, and capital project planning.</p>	<p>Supplement the critical surveying work they perform on construction and building maintenance projects</p>

Mobile Application for building inspections	Cities of Brampton, London, Waterloo, St. Catherines	Transition from paper based to digital inspections for onsite inspections with mobile phones	Enhanced efficiency, accuracy, accessibility (easy access to data), enhanced records (integration of photos, etc.)
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