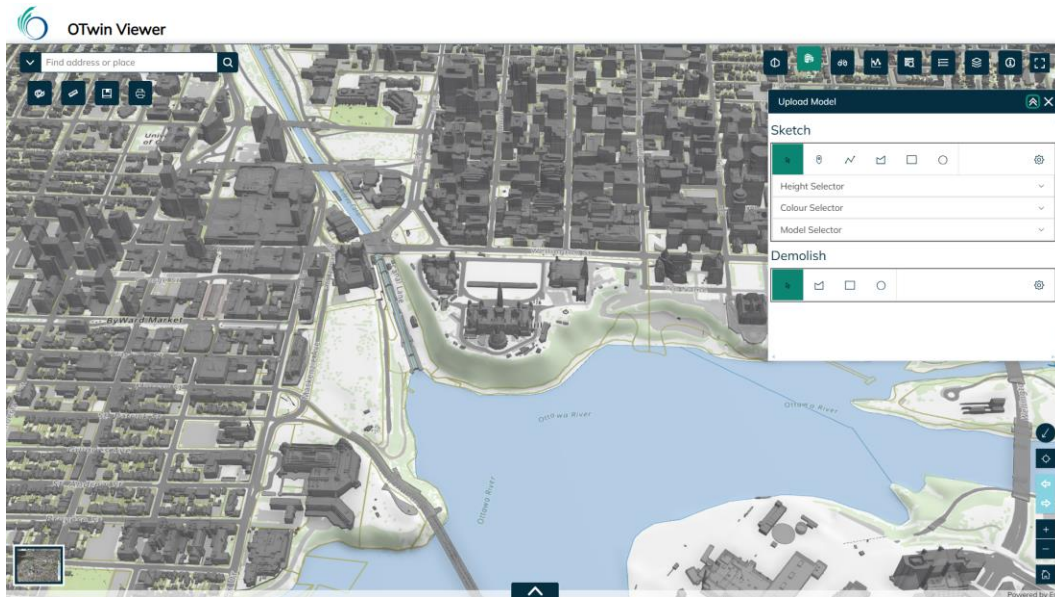


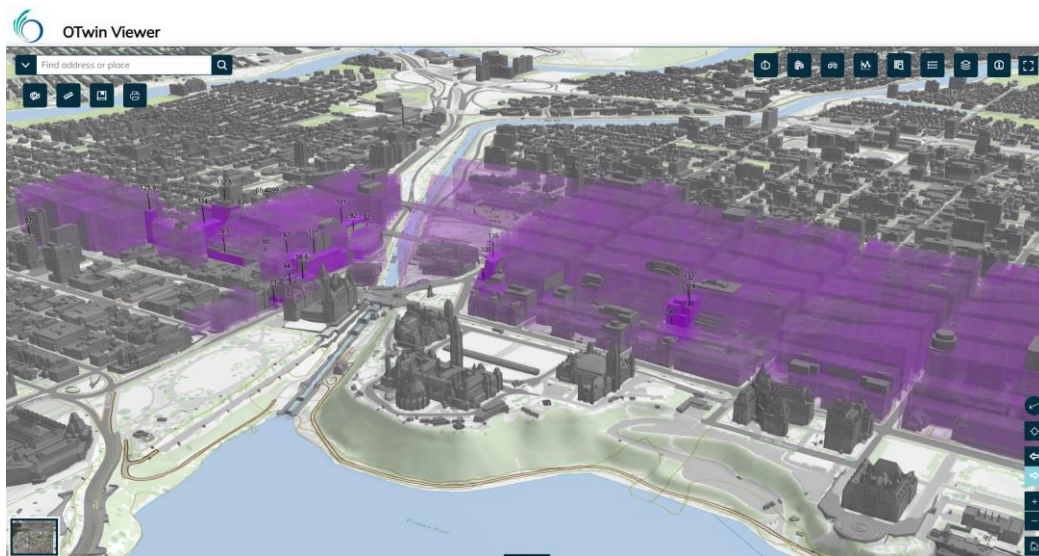


Document 13 – Digital Twin Update

The Geospatial Analytics, Technology and Solutions team (GATS) in collaboration with the GeoSolutions will launch the OTwin Viewer to City staff this fall. The OTwin Viewer is a web-based platform that provides a realistic 3D digital model of Ottawa. It allows City staff to explore and analyze buildings, roads, zoning, development applications, underground infrastructure, and more—all in one integrated environment.



Built using aerial photography, mobile mapping, LiDAR scanning, and 360° imagery, the OTwin Viewer supports a wide range of City initiatives and service areas.



Key capabilities include:

- Visualizing the built environment in 3D to better understand spatial relationships



- Analyzing sunlight, sightlines, and elevation to support planning and development
- Integrating data across departments to improve collaboration and operational efficiency
- Supporting emergency management, climate resiliency planning, and infrastructure monitoring

The OTwin Viewer is more than a technical platform—it is a strategic decision-support tool that:

- Improves transparency by presenting complex data in a clear, visual format
- Supports evidence-based planning, including the development of the draft Zoning By-law and implementation of the Housing Accelerator Fund
- Enhances resiliency by enabling spatial analysis of risk and mitigation strategies
- Empowers non-GIS staff to self-serve their analysis needs, reducing reliance on manual GIS requests and site visits

To support the implementation of the new Zoning By-law and the Digital Twin initiative, GATS modernized and recreated 460 site-specific and area-specific zoning schedules included in Part 16 of the draft Zoning By-law. These updated schedules incorporate detailed maps and graphics that clarify how zoning provisions apply across the city.

The new 3D visualizations, shown in the example below, illustrate maximum permitted building heights within their real-world context. This enhanced information provides clearer spatial understanding and improves interpretation of zoning provisions.

This is Schedule 32 to Zoning By-law No. _____
Annexe 32 au Règlement de zonage n° _____

This is Attachment _____ to By-law Number _____, passed _____
Pièce jointe n° _____ du Règlement municipal n° _____, adopté le _____

Revision / Révision - YYYY / MM / DD
24-2024-Z / M / Zoning_bylaw/Schedules

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Property parcel information matches Teramit parcel information as of the revision date for this schedule / En date de la révision de la présente annexe, les renseignements sur la parcelle correspondent aux renseignements de Teramit.

The 3-dimensional mapping in the left half of this Schedule is for reference purposes only in the event of any conflict between the 3-dimensional mapping and the heights, setbacks or other performance standards prescribed on the right half of this Schedule. The latter will prevail. / La cartographie tridimensionnelle présentée sur la côté gauche de la présente annexe sert toujours à titre de référence uniquement. En cas de conflit entre la cartographie tridimensionnelle et les indications de hauteur ou de retrait ou toute autre norme fonctionnelle prescrite sur la côté droit de la présente annexe, ces dernières renseignements prévalent.

Maximum Permitted Building Height / Hauteur de bâtiment maximale permise

Building heights must not exceed the elevation above sea level of the plane that is formed by the lines joining the co-ordinates / La hauteur de bâtiment ne doit pas dépasser le plan au-dessus du niveau de la mer contenu dans les lignes joignant les coordonnées

Co-ordinates / Coordonnées

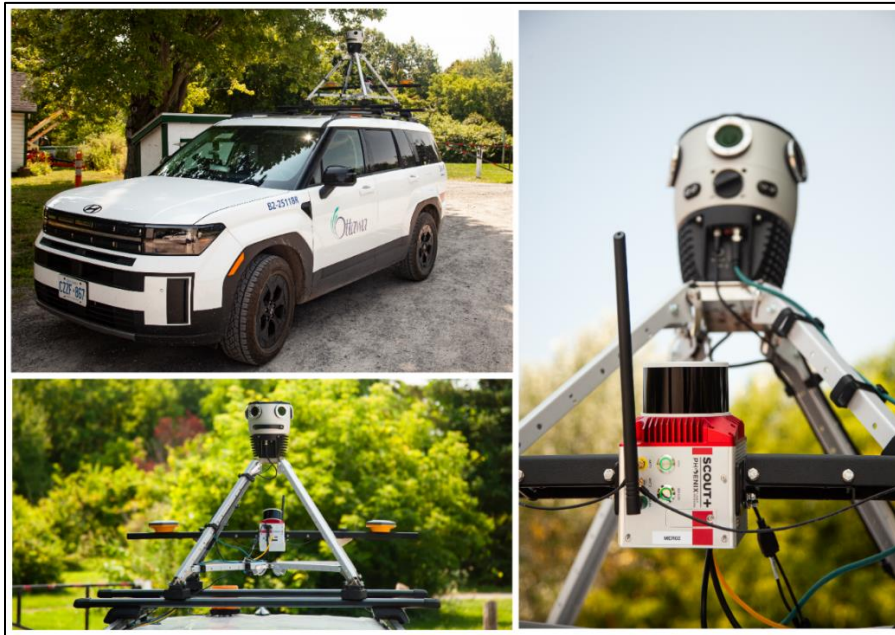
Co-ordinates shown are 3" MTM NAD83 zone 9 / Les coordonnées sont indiquées MTM 3" (NAD83 zone 9)

Letter / Lettre	East / Est (X)	North / Nord (Y)	Letter / Lettre	East / Est (X)	North / Nord (Y)	Letter / Lettre	East / Est (X)	North / Nord (Y)	Letter / Lettre	East / Est (X)	North / Nord (Y)
A	367 484.5	5 031 384.2	D	367 485.2	5 031 303.6	GG	367 482.7	5 031 288.0	WW	367 483.0	5 031 291.2
B	367 475.9	5 031 375.6	R	367 483.4	5 031 314.5	HH	367 518.8	5 031 305.6	XX	367 503.2	5 031 423.9
C	367 488.4	5 031 366.7	S	367 479.3	5 031 281.1	I	367 519.3	5 031 319.3	YY	367 507.8	5 031 416.8
D	367 480.3	5 031 361.6	T	367 480.2	5 031 281.3	JJ	367 513.0	5 031 315.0	ZZ	367 506.1	5 031 403.2
E	367 489.8	5 031 346.7	U	367 488.4	5 031 283.5	KK	367 516.2	5 031 319.7		367 514.6	5 031 389.7
F	367 474.4	5 031 345.6	V	367 488.7	5 031 281.6	LL	367 507.3	5 031 324.4	2	367 503.1	5 031 376.2
G	367 481.6	5 031 337.8	W	367 492.0	5 031 284.1	MM	367 504.4	5 031 320.0	3	367 501.5	5 031 362.9
H	367 486.9	5 031 330.7	X	367 497.2	5 031 286.6	NN	367 501.6	5 031 333.7	4	367 498.9	5 031 364.3
I	367 480.1	5 031 326.0	Y	367 501.1	5 031 289.0	OO	367 498.7	5 031 338.4	5	367 490.3	5 031 348.7
J	367 483.0	5 031 323.4	Z	367 502.2	5 031 291.9	PP	367 495.6	5 031 343.1	6	367 493.3	5 031 360.1
K	367 484.9	5 031 316.8	AA	367 500.3	5 031 294.0	QQ	367 492.9	5 031 347.8	7	367 492.2	5 031 364.2
L	367 487.6	5 031 312.2	BB	367 513.5	5 031 296.5	RR	367 490.1	5 031 352.3	8	367 497.8	5 031 377.6
M	367 489.1	5 031 311.7	CC	367 517.4	5 031 299.0	SS	367 487.2	5 031 357.1	9	367 493.3	5 031 391.1
N	367 487.8	5 031 311.4	DD	367 521.4	5 031 301.3	TT	367 484.3	5 031 361.9	10	367 490.9	5 031 404.7
O	367 493.5	5 031 308.8	EE	367 522.7	5 031 306.6	UU	367 486.2	5 031 361.0	11	367 502.3	5 031 418.3
P	367 480.4	5 031 306.2	FF	367 487.2	5 031 280.7	VV	367 483.8	5 031 337.7	12	367 503.8	5 031 431.9
									13	367 478.8	5 031 439.8



Mobile Mapping Update

This summer, the City deployed the GATSmobile, a mobile mapping unit that captures 360-degree oriented imagery and high-resolution LiDAR data. The City-owned imagery and LiDAR offer more current and accurate data than commercial alternatives and will reduce reliance on site visits and external datasets.



360° imagery provides immersive, panoramic views of streetscapes, buildings, sidewalks, and vegetation. When paired with LiDAR's precise 3D measurements, planners can:

- Conduct virtual site inspections without visiting the location.
- Assess building facades, sidewalk conditions, and tree canopy coverage.
- Monitor changes over time to support infrastructure maintenance and urban renewal

LiDAR captures millions of data points to create detailed elevation models and topographic maps. When fused with 360° imagery:

- Planners can measure street widths, curb heights, and slope gradients.
- It supports drainage design, earthwork calculations, and accessibility audits.
- Enables zoning compliance checks and urban density analysis.
- Integration with AI for automated feature extraction and predictive modeling.
- Enhanced public engagement through interactive visualizations.

This work is part of the [Mobile Mapping of Traffic Infrastructure Project](#), a collaboration between Public Works and Planning, Development & Building Services. The data captured



by the GATSmobile will be accessible through the OTwin Viewer, enabling staff to reference street-level imagery and LiDAR alongside zoning layers and 3D models.

The GATSmobile successfully captured Ottawa's entire road network — approximately 7,000 km. The initial release of this content is planned for Q4 2025, with phased publication to follow.

AI-Driven Zoning and Digital Twin Innovations:

Zoning AI Chatbot

GATS in partnership with ITS, are developing an artificial intelligence (AI) chatbot to assist planners and internal staff in learning and working with the new Zoning Bylaw. The AI chatbot is being designed to provide answers to zoning-related questions in Zoning By-law 2008-250 and the new Zoning By-law.

Exploring GeoAI and vGIS

Geospatial Artificial Intelligence (GeoAI) merges the power of artificial intelligence with geospatial data to unlock deeper insights and drive smarter decision-making. By leveraging deep learning to extract rich spatial features and applying machine learning for predictive analysis, GeoAI reveals complex patterns and relationships across diverse datasets—enabling more informed, equitable, and sustainable urban planning.

GATS sees the usage of GeoAI and vGIS as a critical partner in its Digital Twin journey. By connecting immersive AR field tools with the city's growing digital twin, inspectors and contractors can collect and view data in real time, ensuring accuracy and speeding up workflows.

City inspectors will feed real-time field data into the Digital Twin using RTK-enabled tools. This near real-time integration ensures that the twin reflects current conditions, enabling more accurate planning, faster inspections, and proactive infrastructure management.

