

## CITY OF HAMILTON

### PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT (PLANNING DIVISION – HERITAGE AND URBAN DESIGN - LOCATION 71 MAIN ST. W., 4<sup>TH</sup> FLOOR)

### GEOGRAPHIC INFORMATION SYSTEM (GIS) – 3D MODEL/VISUALISATION SPECIALIST - CUPE 5167

#### SUMMARY OF DUTIES

The position requires a strong background in GIS, 3D modelling and visualization to assist with the development of the City's 3D model and analysis. Reporting to the Coordinator, Information Systems & Cartography Planning, the GIS 3D Model and Visualisation Specialist is responsible for developing the City's 3D model as well as performing 3D calculations and analysis (line of sight analysis, skyline analysis, view corridors, shadow volume, solar potential, diagrams for design guidelines). The successful incumbent will also maintain, update, manipulate, analyze, compile, organize, interpret, and disseminate geographically referenced data sets through processing and inputting digital spatial and attribute data into a geographically referenced database to produce a variety of high-quality data sets, digital files, maps, renderings, sketches, graphic displays and reports.

#### GENERAL DUTIES

Develop the City's 3D Model using City Engine.

3D modelling and printing of existing buildings and development proposals.

Expansion and upkeep of the City's physical 3D printed model.

Creating 3D models, renderings, development concepts and illustrations for design guidelines.

Develop final products including digital visuals, fly/walk/drive through scenarios, audio and video media, 3D web scenes.

Prepares, maintains, updates, manipulates and analyzes the digital maps and associated databases related to the City's Geographic Information System.

Creates custom databases and thematic maps. Inputs, manipulates and retrieves spatial and tabular data and investigates field conditions as necessary.

Liaise with other sections, departments, consultants, the public and other outside agencies to provide or collect information that furthers the realism of the models such as: urban street tree canopy, street lighting, transit assets, street furniture.

Perform 3D calculations, analysis and peer review (Line of Sight analysis, Visual and Non-Visual Impact Assessments, Skyline Analysis, View Corridors, Wind and Sun / Shadow Study modelling).

Review 3D submissions in support of development applications including Zoning By-law Amendments, and Site Plan Control and Design Review Panel.

Assist in the sourcing and acquisition of updated 3D data from public or private sector providers as required

Performs quality assurance/quality control tasks to ensure data integrity.

Liaises with City business areas to provide spatial data and analysis function to assist in decision making, public awareness, program implementation, and policy development.

Completes spatial analysis and/or GIS application development projects with functional business units to assist in decision making, public awareness, program implementation, and policy development.

Employs existing software tools and procedures to analyze, extract and distribute GIS data in a variety of standard data and media formats, maintaining a detailed data service request log, ensuring data distribution contracts, copyright and statements of liability are complete and properly authorized.

Receives data from external agencies and, using existing tools, to analyze, verify and document the content and quality of the data, import it into the GIS environment, and propose a maintenance plan that meets the business user's requirements.

Works in accordance with the provisions of applicable health and safety legislation and all City of Hamilton corporate and departmental policies and procedures related to occupational health and safety.

Performs other such duties as assigned, which are directly related to the major responsibilities of the job.

### **QUALIFICATIONS**

1. University Degree or College Diploma in Geographic Information Systems, Engineering, Land Surveying, Geography, Urban Planning, Architecture or related disciplines.
2. Considerable demonstrated experience and proven knowledge in mapping and spatial database development and/or application development, and user support, including practical experience working with GIS technology (ESRI suite of products preferred), preferably in a municipal environment.
3. Must have a solid foundation and experience with ESRI suite of products include ArcGIS Desktop (preferably ArcGIS Pro), ArcGIS 3D Analyst / ArcScene, Spatial Analyst, City Engine; ArcGIS Online, and ArcGIS Urban Suite, as well as Adobe Creative Suite (PS, AI, & ID).
4. Demonstrated proficiency in City Engine, Trimble Sketchup, 3D finishing tools such as LuminRT, Blender or equivalent, and Video Editing Software (Adobe Premiere & After Effects) are preferred.
5. Experience in creating and manipulating 3D Models.
6. Knowledge of land use planning including site plans, zoning by-laws, and official plans.
7. Knowledge of data modelling practices and database design standards including database security protocols.
8. Experience defining and implementing physical data models for standard business and spatial data/information.
9. Experience creating and maintaining spatial information in map and database format, including experience in processing, and analyzing LiDAR data
10. Experience with presentation and graphic design tools for the production of professional quality mapping output products.
11. Experience creating analytical based reports.

12. Strong working knowledge of relational database management system software (ORACLE, SQL Server along with Microsoft Access), SQL (Structured Query Language) and Microsoft applications including M365 suite.
13. Working knowledge of application and data quality assurance best practices, including backup, and recovery.
14. Proven analytical and problem-solving abilities.
15. Ability to make sound and logical judgments.
16. Strong interpersonal, written, and oral communication skills.
17. Excellent presentation and graphic design skills to produce professional quality mapping output products.
18. Thorough working knowledge of spatial theory and practice.
19. Ability to develop functional and technical specification documents.
20. Experience with development planning and development applications such as zoning by-law amendments and site plans will be considered an asset.
21. Experience in architecture, master planning, and graphic design will be considered an asset.

**THIS POSITION REQUIRES A VALID CLASS "G" DRIVER'S LICENCE AND PROOF THEREOF IS REQUIRED AFTER HIRE.**

**THE INCUMBENT SHALL COMPLY WITH ALL HEALTH AND SAFETY POLICIES AND PRACTICES FOR THIS POSITION AND THE WORKPLACE**

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