NAVIGATIONSPORTS
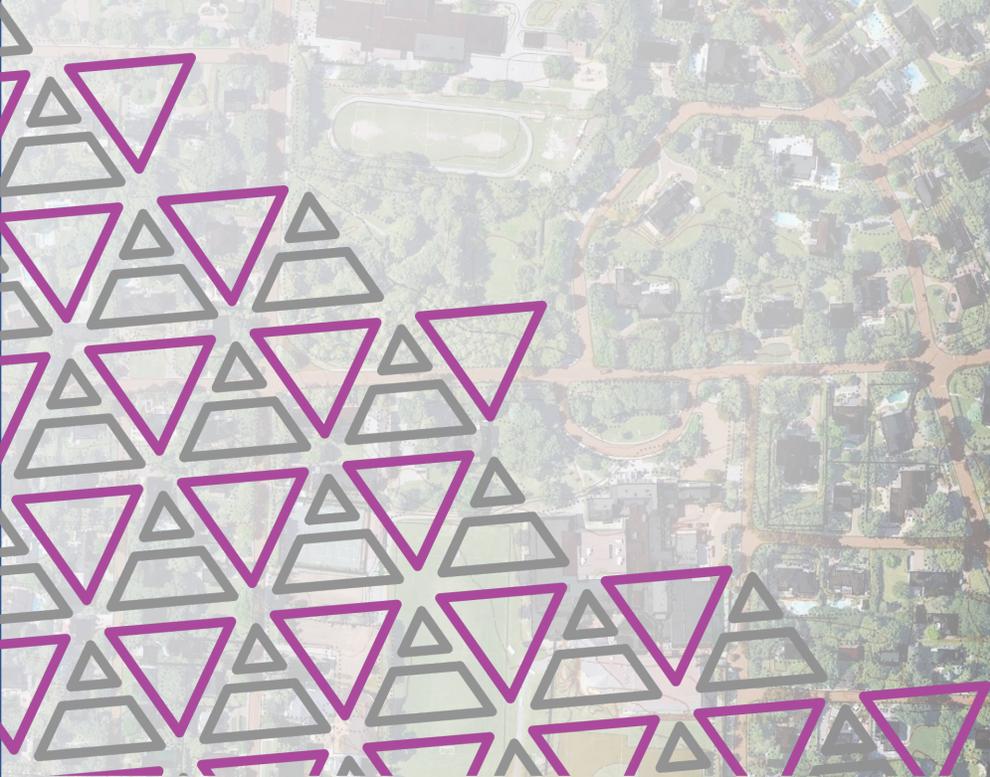Coaching | Cartography | Consulting

Project Report:

Waterloo Park map

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Base material methodology and notes

Lidar

Lidar data includes 4 tiles from the Lake Erie 2018 lidar acquisition project from province of Ontario:

1km175380481302018LLAKEERIE.laz

1km175380481202018LLAKEERIE.laz

1km175370481302018LLAKEERIE.laz

1km175370481202018LLAKEERIE.laz

The four lidar tiles were processed by David Bakker using his system of PDAL scripts.

Open data

The following open data were downloaded from Waterloo's open data portal at https://data.waterloo.ca/.

- Building Footprints
- Creeks
- Railways
- Sidewalks
- Street Tree Inventory
- Trails and Pathways
- Water Bodies

All of the open data was in WGS 84 (no projection).

All of the data were downloaded as shape files and covered the entire city of Waterloo and then imported directly into OOM. Most of the data wasn't used in the end.

Aerial imagery was also downloaded through the open data portal.

All of this data is available in an Ocad/OOM readable format upon request.

Queen's University

Basic Details

Name of Map/Project: Waterloo Park

Client details: Waterloo Stars (Nick Duca)

Size and description of area:

Waterloo Park East

- 0.36 sq km
- Decent city park
- Bounded by: Seagram Dr, Albert St, Caroline St. N, Erb St W, Father David Bauer Dr/rail line

Waterloo Park West

- 0.34 sq km
- Decent city park

Bounded by: Father David Bauer Dr, Westmount Dr N, University Ave W, Seagram Dr, Rail line

Additional comments: This map was completed by Navigation Sports with the pre-fieldwork drawing subcontracted to David Bakker.

Landowners

Waterloo Stars was responsible for securing permissions so the specifics of who the landowners are is unknown to Navigation Sports. However, it is understood that Waterloo Park is owned and managed by the City of Waterloo. There are small sections around the outside of the park that are various private residential and other landowners including the Wilfred Laurier University Stadium in the North East and the gas station in the South West amongst others.

In general I erred on the side of caution when it came to uncertain landowners / private residences and used olive green fairly liberally though there is a section of parking lots and the like around some apartment buildings in the South East that have not been mapped as out of bounds.

Work

Base material processing: 2.25 hrs

Base map drawing: 21.5 hrs

Fieldwork: 35.75 hrs

Final map drawing: 1.75 hrs

Total time on project: 61.25 hrs

Mapping rate: 82 hrs/sq km (not including base material processing nor final map drawing)

Fieldwork was done over 4 days of work in one trip to Waterloo from September 13th to April 16th

Map Details

Mapper: Jeff Teutsch

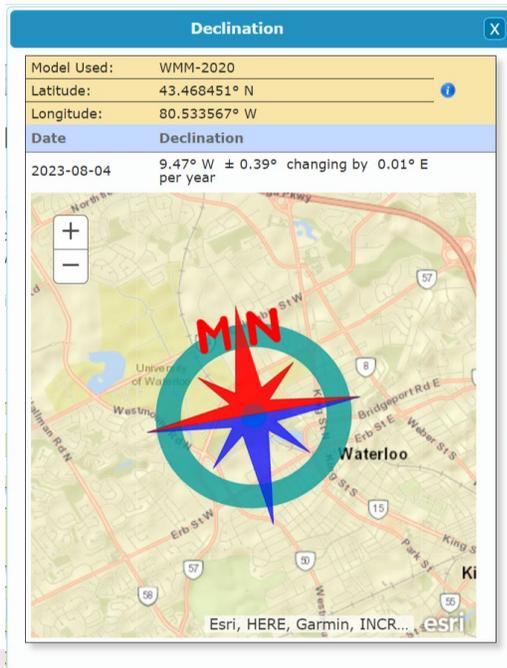Date completed: September 2023

Specification: ISSprOM 2019-2 (latest version)

Contour interval: 2m

Scale info: 1:4000

Coordinate reference system: WGS 84 UTM 17N

Grivation: -9.79° (Declination of -9.47° + -0.32° grid convergence), based on the following:

Attribution notes:

All published version of the map must include:

- **The following statement: "Contains information licensed under the Open Government Licence – Ontario."**
- **Some version of the following statement: Map created by Jeff Teutsch of Navigation Sports, and David Bakker, September 2023 with updates _____.**
- **The Navigation Sports logo**

Additionally the map should include the following statement:

- **"Contains information provided by the City of Waterloo under licence."**

Specific Symbols

Playground structures have been significantly simplified using black Xs and passable wall symbols. Swing sets and the like have been mapped using the powerline symbol typically with just crosses at the ends looking like an I-beam (see sample)

Black Os have been used for large flower planters (small ones not mapped) and large (2m diameter) garbage bins.

Greens Xs are used to represent both significant root stocks and tall dead tree stumps as in the photo below.

The only special symbol used was the black x which was used for goal posts, small signs, and a few other objects.

Here are some comments about how some other key features were mapped:

Bleacher stands are not mapped as they are regularly moved. Soccer goal posts have been mapped in one instance where they are permanently affixed to the ground. Picnic tables and benches have not been mapped even if permanently fixed. Some large significant signs are marked as black Xs. Large power boxes and similar square features are mapped with the black square pillar symbol (522.1).

The furthest upstream (west) part of the creek running through the park is clearly ankle deep and crossable and has been mapped as such. Further downstream the creek is variably crossable but has been mapped as uncrossable to lessen risk of someone falling into the water. The spot where the map shows the creek changing from crossable to uncrossable is in a spot where it makes no sense to cross so no one should need to worry about whether they are crossing legally.

A mix of white forest, scattered trees, and individually marked trees (both regular and large distinct symbols) have been used depending on whether there is grass on the ground (scattered or individual trees) or not (white). Trees have been mapped individually where they can be clearly identified on the ground (and in the base material) though simplification by the runners would be warranted in most cases.

Large spruce trees and the like with branches down to the ground have been mapped to shape using green and distinct vegetation boundaries.

There are three large out of bounds sections marked on the map that have not been properly mapped. Two of these are for major ongoing construction projects which will need to be updated when the construction is done. The third is a large unhoused encampment in the woods which was left unmapped and out of bounds to give them privacy and for the comfort of orienteers.