

## **Aidan Brown**

### **GEOG 521 Fall 2023**

#### **Deliverable 1**

- The location of my point is at the start of a section of the Nanaimo Parkway Trail, loosely covered by a forested area close to a residential neighbourhood. There are multiple ways to get to this location, Either following the Parkway Trail North all the way until the tunnel that runs underneath the highway. Instead of taking the highway take the left paved trail and continue along the path until you see a bike post. The exact point is a few meters away from a set of mailboxes on the sidewalk. You can also get to this point by driving into the neighbourhood of North Jinglepot, on Willowmere Crescent. Here you can park along the street and will be able to see the Nanaimo Parkway trail head, along with the mailboxes.

#### **Deliverable 2**

- Average X coordinate: 424899.82381
- Average Y Coordinate 5450.697465
- 68 Percentile precision: 3 meters
- 95 Percentile precision: 5 meters

#### **Deliverable 3**

- Based on measuring distance between the average waypoint to all recorded waypoints the average horizontal distance accuracy is: 2.6m.

#### **Deliverable 4**

## Buffer Zones Containing GPS Mapped points to compare Horizontal Accuracy In Nanaimo, BC.



Map Produced By: Aidan Brown

Data Source: City of Nanaimo

### Deliverable 8

My line area feature is in the same area as my point feature, this is a part of the Nanaimo Parkway trail that starts at the trailhead on Willowmere Crescent in Nanaimo BC, and ends right at the intersection of the parkway trail. By starting at the street in the residential neighbourhood, and walking in the north direction you will find a mailbox to the right side. Continue along the paved path until you get the intersection where the paved trail continues left and right. On the left side you will see a tunnel that goes



underneath the highway, and to the right the trail continues up a gradual sloped hill. Standing here is where my line features end.

## Deliverable 9

### GPS Line Area tracking in Nanaimo BC



Map Produced By: Aidan Brown

Data Source: City of Nanaimo

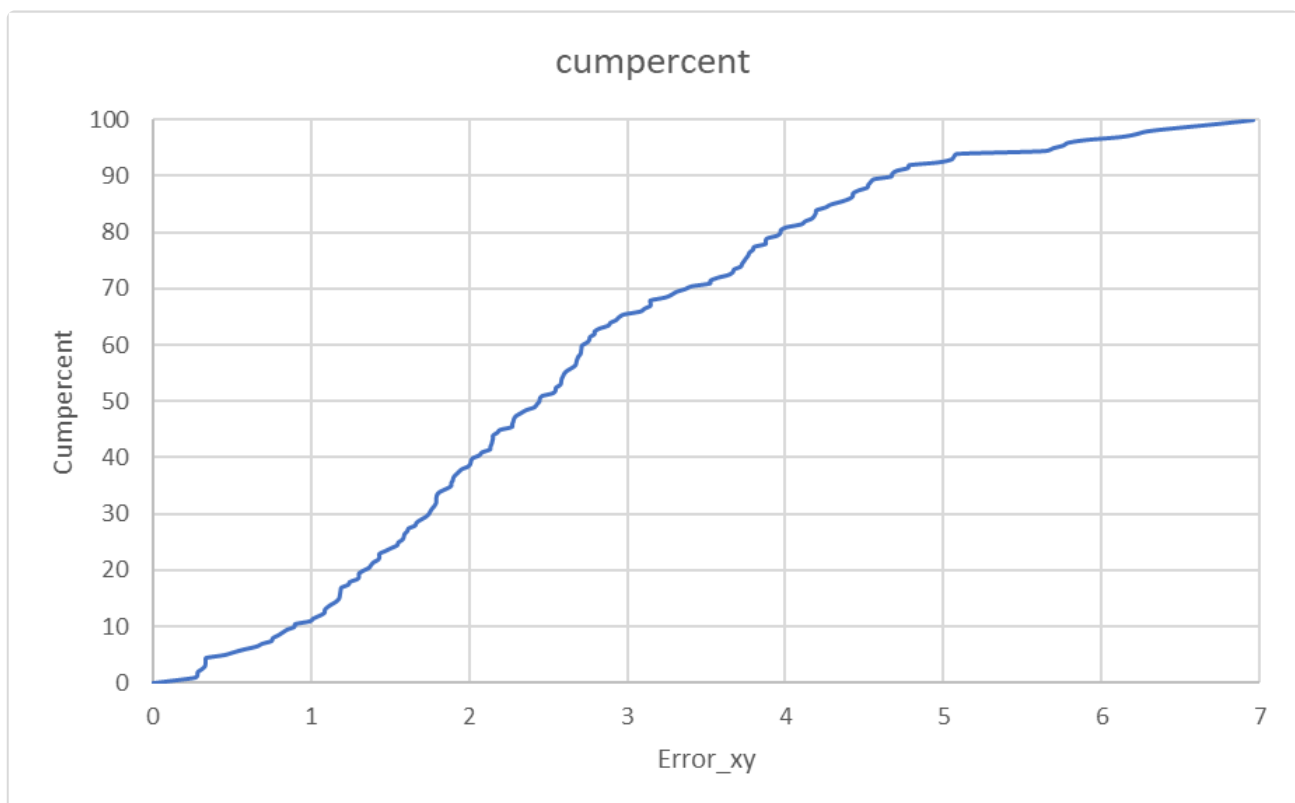
## Deliverable 10

- There was definitely some disparity between my points when going back to collect the 2nd round of gps entries. The method of collecting data was simply walking 10 steps in the north direction to collect the data points. Going off of memory of the collection points with some nearby objects to reference where the starting points were (the mailbox, specific trees). The data could have been a lot more accurately collected using a simple flagging system for each collection point.

## Deliverable 11

- RMSE = 3.062
- Mean = 2.668
- Median = 2.445
- 95th Percentile = 5.693
- 68th Percentile = 3.176
- 90th Percentile = 4.668
- Min = 0.143
- Max = 6.955

## Deliverable 12



## Deliverable 13

- The created CDF represents the magnitude of the x and y errors and provides a simplified view of the values. IE: the maximum value at 100% is the maximum calculated error from the coordinate

values. The Cumulative percentage represents the percentage of errors that fall below a specific value threshold.

#### **Deliverable 14**

	<b>WAAS</b>	<b>NO WAAS</b>
RMSE	1.792	1.46
MIN	0.367	0.045
MAX	10.358	10.075
MEDIAN	5.479	3.948
68th Percentile	6.226	4.962
95th Percentile	9.269	7.648