

Project Final Definition

Project Objectives

1. Data Preparation
 - a. Cleaning
 - b. Merging
2. Data Aggregation
 - a. Analysing a specific group of data
3. Visualization

Goal

Finding the features that can affect the number of accident in Calgary City.

All data provided is based on <https://data.calgary.ca/browse>

Features

1. Road Features
2. Weather Features

Road Features

1. Road Speed

- a. <https://data.calgary.ca/Health-and-Safety/Speed-Limits-Map/rbfp-3tic>

2. Average Traffic Volume

- a. 2018 (Traffic_Volumes_for_2018.csv)

3. Road Signals

- a. Traffic Signals (Traffic_Signals.csv)
- b. Traffic Signs (Traffic_Signs.csv)
- c. Traffic cameras (Traffic_Camera_Locations.csv)

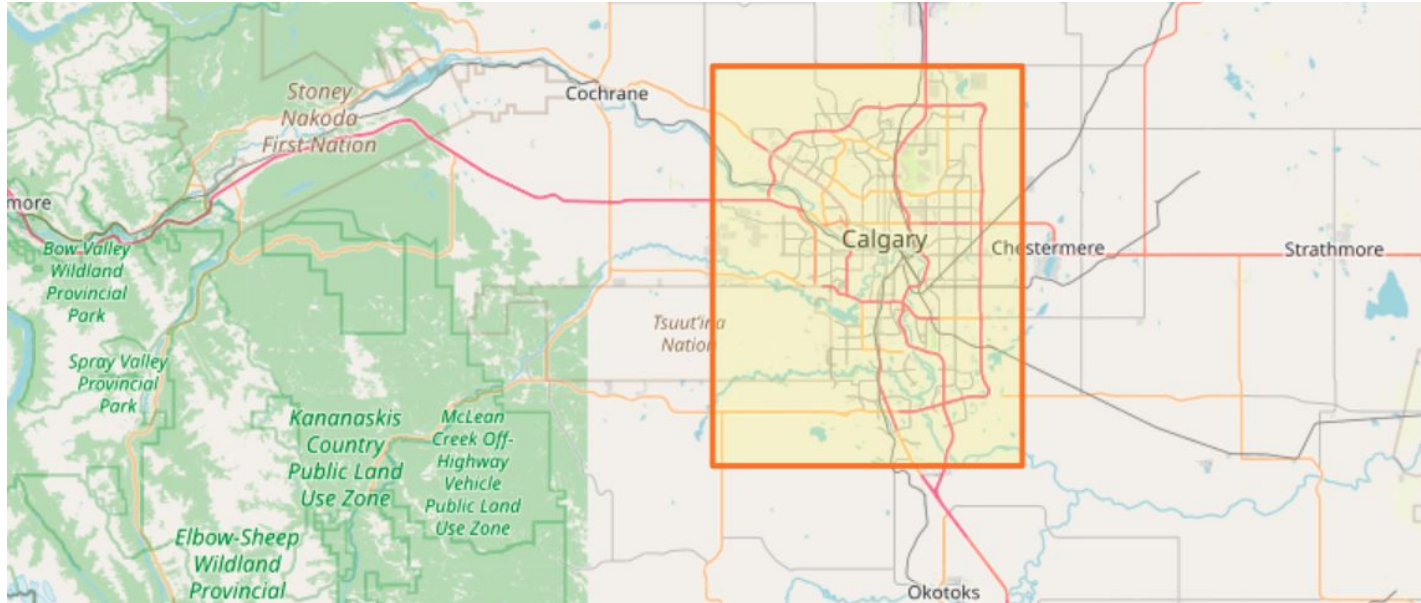
Weather Features

- Temperature
- Visibility

Ref: climate.weather.gc.ca

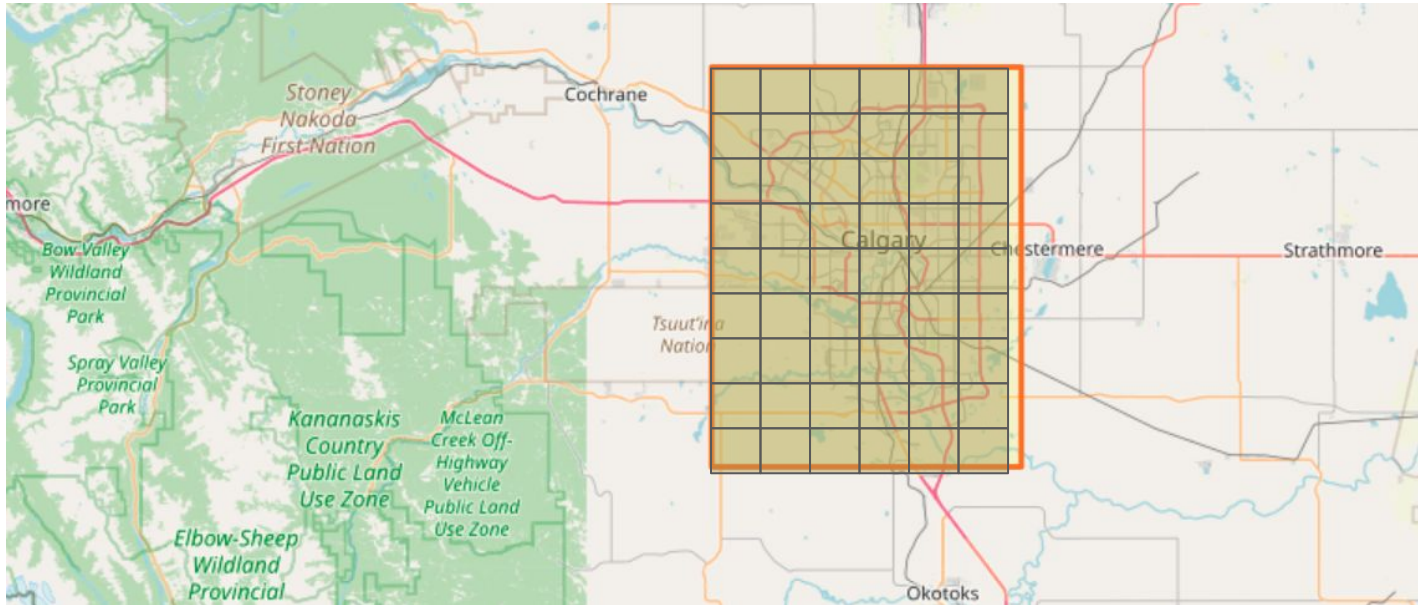
Project Flow

- 1. Read the calgary boundary from City_Boundary_layer.csv.
- 2. Draw a rectangle on Calgary map that shows the boundary of Calgary City.



Project Flow

- 3. Divide calgary to a 10x10 matrix of areas. You need to investigate each area according to different features.



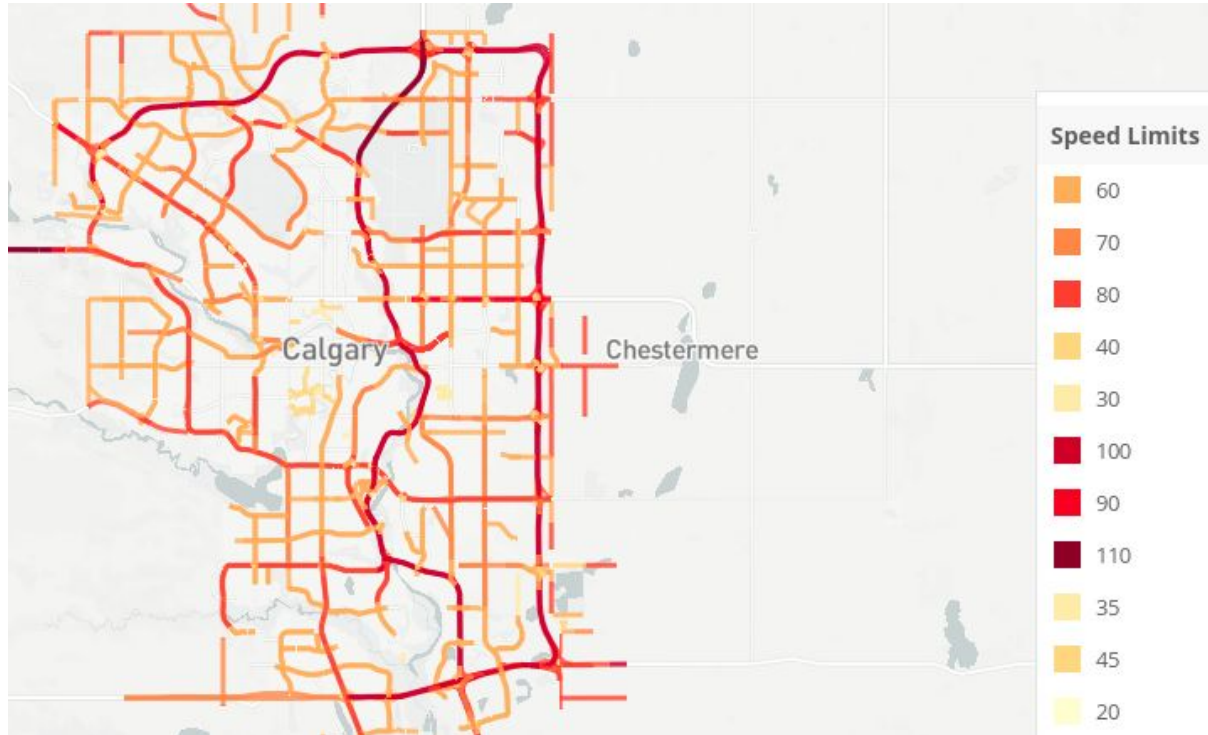
Project Flow

4. For Each area (grid) calculate the following features: (15 Marks)

- Average speed limit
- Average Traffic volume
- Average number of traffic cameras
- Number of Traffic Signals
- Number of Traffic Signs
- Daily Weather Condition
 - Temperature
 - Visibility
- **Target:** Average number of Traffic accidents
- **Analyse the data and interpret what is the relation between the number of accidents and the above feature in 2018. (Use different techniques of visualizing data like histogram, scatter plot, line graph, heatmap to interpret your answer)**

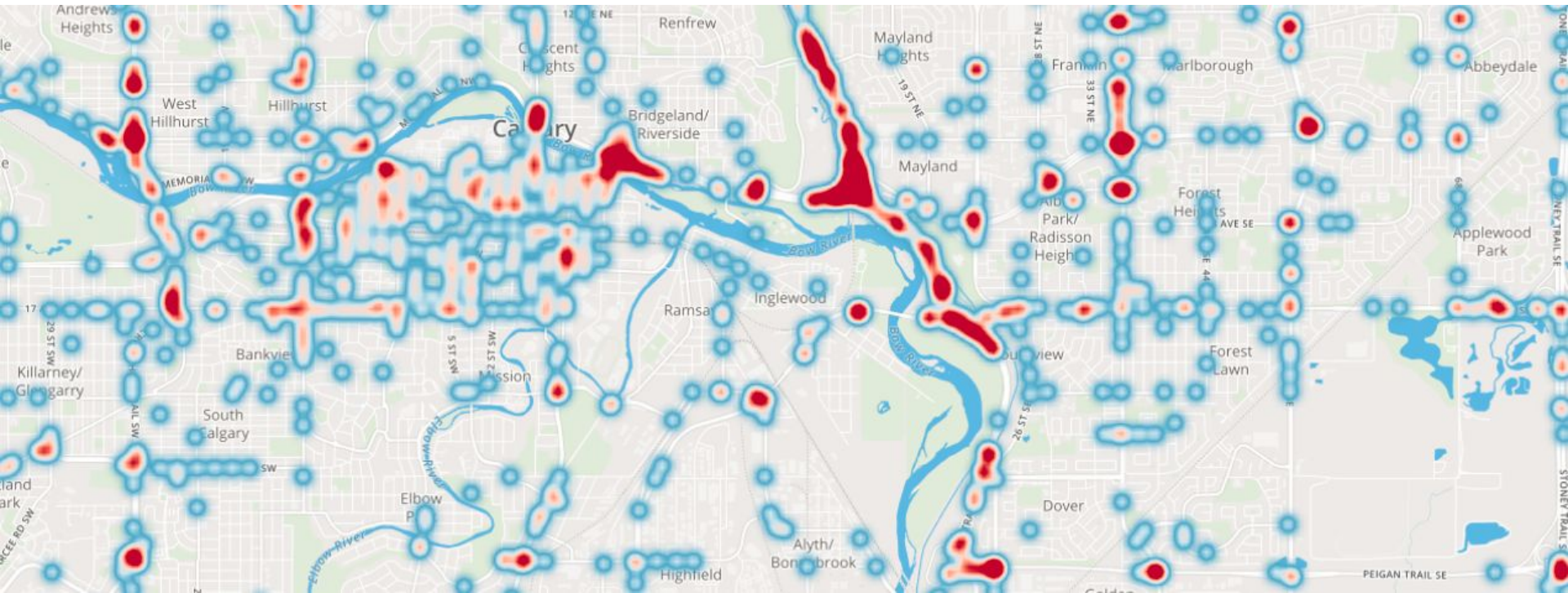
Visualization

5. Visualize the speed limit according to the roads. (5 Marks)



Visualization

6. Show traffic heatmap of 2018. (5 Marks)



Marking

- Analysing Data- (Visualization: 10 Marks + Conclusion: 5 Marks) (15 Marks)
- Visualizing speed limit (5 Marks)
- Visualizing Traffic heatmap (5 Marks)
- Project Demo (5 Marks)
- Total Mark: 30 Marks

Due date to upload the report(Presentation Slides) and source code: **13-Aug 11:59 midnight.**